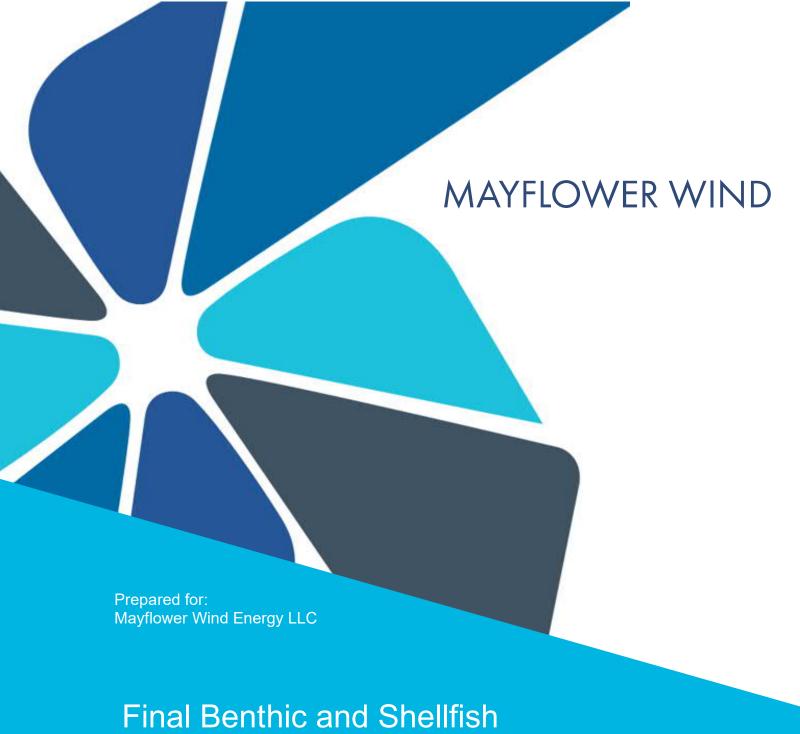


Appendix M. Benthic and Shellfish Resources Characterization Report

Document Revision A

Issue Date February 2021





Final Benthic and Shellfish Resources Characterization Report

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Quality Information

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Acronyms and Abbreviations

Abbreviation or Acronym Definition

AC alternating current

BERR U.K. Department for Business Enterprise and Regulatory Reform

BMP Best Management Practice

BOEM Bureau of Ocean Energy Management

CFR Code of Federal Regulations

CMECS Coastal and Marine Ecological Classification Standard

COP Construction and Operations Plan

CR CR Environmental
EC Export Cable(s)
ECC Export Cable Corridor
EFH Essential Fish Habitat
EMF electromagnetic field

ft foot/feet

Fugro USA Marine, Inc.
GBS gravity-based structure

G&G Geophysical and Geotechnical HDD Horizontal Directional Drilling

IAC Inter-Array Cable(s)

IISD International Institute for Sustainable Development

Integral Integral Consulting, Inc.

IPF Impact Producing Factor

km kilometer kV kilovolt m meter

MA Commonwealth of Massachusetts
Mayflower Wind Mayflower Wind Energy LLC

Mass DMF Massachusetts Division of Marine Fisheries

mi mile

MLLW Mean Lower Low Water

MSIR Marine Site Investigation Report
NA not applicable or not analyzed

ND not detected

NEODP Northeast Ocean Data Portal
NECC Northern export cable corridor

nm nautical mile

NMFS National Marine Fisheries Service

NOAA National Oceanic and Atmospheric Administration

NWF National Wildlife Federation
O&M Operations and Maintenance
OCS Outer Continental Shelf
OSP Offshore Substation Platform
OSRP Oil Spill Response Plan
POI Point of Interconnection

PV Plan View

Abbreviation or Acronym	Definition
SAV	Submerged Aquatic Vegetation
SECC	Southern export cable corridor
SPI	Sediment Profile Imaging
spp.	species
SFWF	South Fork Wind Farm
TOC	Total Organic Carbon
USCS	United Soil Classification System
WTG	Wind Turbine Generator

1.0 Introduction

Mayflower Wind Energy LLC (Mayflower Wind) proposes an offshore wind renewable energy generation project (the Project) located in federal waters off the southern coast of Massachusetts in the Outer Continental Shelf (OCS) Lease Area OCS-A 0521 (Lease Area). The Project will deliver electricity to the regionally administered transmission system via export cables with a sea-to-shore transition in Falmouth, Massachusetts and onshore transmission system extending to the anticipated point of interconnection (POI) in Bourne, Massachusetts.

The Bureau of Ocean Energy Management (BOEM) has produced regulations and guidelines for preparing a Construction and Operations Plan (COP) as well as for the conduct of specific technical studies to support COP development. Specific guidelines applicable to this benthic resource characterization include:

- BOEM's Information Guidelines for a Renewable Energy Construction and Operation Plan (COP) (BOEM, 2020a);
- Guidelines for Providing Geophysical, Geotechnical, and Geohazard Information Pursuant to 30 Code of Federal Regulations (CFR) Part 585 (BOEM, 2020b); and
- Guidelines for Providing Benthic Habitat Survey Information for Renewable Energy Development on the Atlantic Outer Continental Shelf Pursuant to 30 CFR Part 585 (BOEM, 2019).

In 2020, the National Marine Fisheries Service (NMFS) published the Recommendations for Mapping Fish Habitat (NMFS, 2020) to clarify and supplement the BOEM benthic habitat survey guidelines.

1.1 Assessment Objectives

The objectives of this benthic assessment are to document benthic seafloor habitat and sediment characteristics that will contribute toward understanding essential fish habitat (EFH) as required by BOEM (BOEM, 2019) and NMFS (NMFS, 2020) guidelines. Results from the benthic assessment provide *in situ* information to support the Mayflower Wind COP. Consistent with BOEM guidance, the specific objectives of this benthic habitat assessment are to:

- Identify and confirm dominant benthic macrofaunal and macrofloral communities and substrate in the Lease Area and export cable corridor (ECC) from the Lease Area to landfall(s) in Falmouth, Massachusetts;
- Establish a pre-construction baseline in the Lease Area to assess whether detectable changes occur in post-construction benthic habitat associated with proposed Project operations.
- Collect information aimed at reducing uncertainty associated with baseline conditions and/or to inform the interpretation of survey results;
- Inform development of an approach to quantify substantial changes in the benthic community composition associated with proposed Project activities; and
- Provide data to inform the EFH assessment.

1.2 Report Organization

This report includes a general Project overview (Section 2.0), a description of the assessment approach (Section 3.0), a characterization of existing conditions (Section 4.0), and a characterization of effects (Section 5.0). Conclusions are provided in Section 6.0, and references are listed in Section 7.0. Attachments include Sediment Profile and Plan View Imaging Survey of the Mayflower Wind Project Areas (Integral Consulting, Inc. [Integral], 2020a and 2020b), Coastal and Marine Ecological Classification Standards (CMECS) Substrate Classification and Habitat Type, Grain Size and Total Organic Carbon Analytical Data, CMECS Biotic Classification – Epifauna and Infauna, Benthic Laboratory and Community Reports (Spring and Summer 2020), and Benthic Community, Folk Classifications and Seafloor Morphology.

2.0 Project Overview

2.1 Project Overview

The Mayflower Wind Lease Area is located south of Martha's Vineyard and Nantucket (Figure 2-1). Wind turbine generators (WTGs) constructed within the Lease Area will deliver power via inter-array cables to the offshore substation platforms (OSP[s]). The WTG/OSP positions have been established based on a 1 x 1 nautical mile (nm) (1.9 x 1.9 kilometer [km]) grid oriented along the cardinal directions to maintain a uniform spacing of WTGs across all the lease areas within the Massachusetts/Rhode Island Wind Energy Area. Up to five submarine offshore export cable(s), including up to four power cables and up to one dedicated communications cable, will be installed from one or more OSP(s) within the Lease Area in federal waters, and run through Muskeget Channel into Nantucket Sound in Massachusetts state waters. The offshore export cables will make landfall via horizontal directional drilling (HDD) at three potential landing location(s) at the end of Mill Road, Shore Street, or Worcester Avenue in Falmouth, Massachusetts.

The Offshore Project Area includes the Lease Area, offshore ECCs, and the HDD to the landfall location(s).

2.2 Specific Project Details

Each primary offshore Project component is briefly described below in Table 2-1. Additional details may be found in the COP Section 3 –Description of Proposed Activities.

Table 2-1. Key Project Details

Project Attribute	Description
Lease Area Size	127,388 acres (51,552 hectares [ha])
Layout and Project Size	Up to 149 WTG/OSP positions - Up to 147 WTGs - Up to 5 OSP(s)
WTGs	Rotor diameter: 721.7 – 918.6 feet (ft) (220.0 – 280.0 meters [m]) Blade length of 351.0 – 452.8 ft (107.0 – 138.0 m) Hub height above Mean Lower Low Water (MLLW): 418.7 – 605.1 ft (127.6 – 184.4 m)
OSP(s)	Top of topside height above MLLW: 160.8 – 344.5 ft (49.0 – 105.0 m)
WTG/OSP Substructures	Monopile, piled jacket, suction-bucket jacket, and/or gravity-based structure Seabed penetration: 0 – 295.3 ft (0 – 90.0 m) Scour protection for up to all positions
Inter-Array Cables	Nominal inter-array cable voltage: 60 kilovolts (kV) to 72.5 kV Length of inter-array cables beneath seafloor: 124.3 – 497.1 miles (mi) (200 – 800 km) Target burial depth (below level seabed): 3.2 – 8.2 ft (1 – 2.5 m)
Offshore Export Cables	Number of export cables: 1 – 5 Nominal export cable voltage: 200 – 300 kV Length per export cable beneath seabed: 51.6 – 87.0 mi (83 – 140 km) Cable crossings: 0 – 9 Target burial depth (below level seabed): 3.2 – 13.1 ft (1 – 4 m)
Landfall Location(s)	Falmouth, MA Three locations under consideration: Mill Rd, Shore St, and Worcester Ave

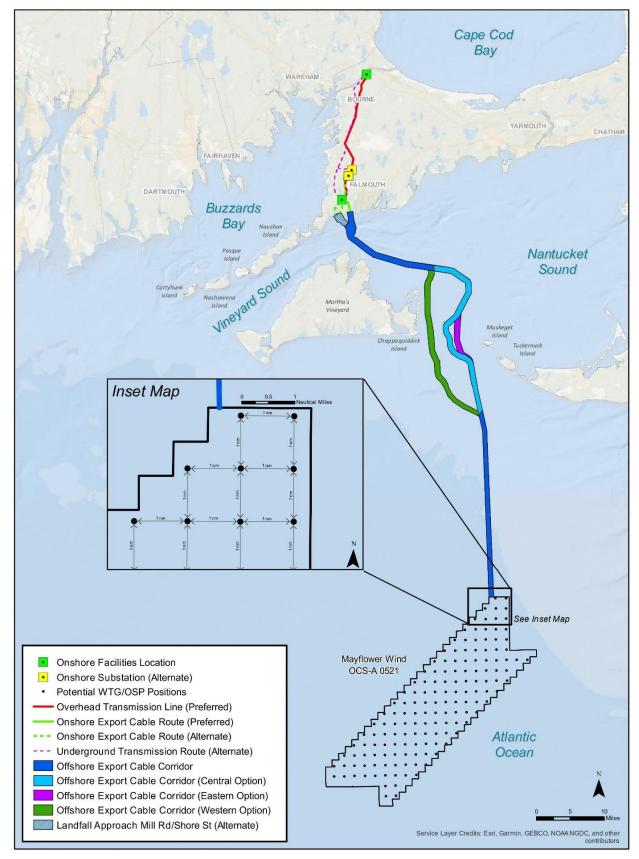


Figure 2-1. Location of the Mayflower Wind Offshore Wind Renewable Energy Generation Project

3.0 Assessment Approach

The description of the affected environment and assessment of potential benthic resource effects was developed based on a desktop review of available data sources and conducting Project-specific field investigations.

Primary data sources included:

- Benthic habitat field surveys, conducted in May and August 2020 by Fugro USA Marine, Inc. (Fugro) and Integral. Fugro and Integral collected samples and imagery to identify and confirm dominant benthic macrofaunal and macrofloral communities (see Attachments 1 and 2);
- Geophysical data collected during the Geophysical and Geotechnical (G&G) Surveys, completed by Fugro from May - October 2020, to characterize and evaluate seafloor conditions (see COP Appendix E, Marine Site Investigation Report [MSIR]);
- Eelgrass survey completed by contractor CR Environmental, Inc. in the Summer of 2020 to map eelgrass at three proposed export cable landing locations (see COP Appendix K, Seagrass and Macroalgae Report);
- Geophysical studies conducted by TerraSond (TerraSond, 2019) in the Lease Area;
- BOEM Revised Environmental Assessment for the Rhode Island Massachusetts Wind Energy Area (BOEM, 2013);
- National Oceanic and Atmospheric Administration (NOAA) NMFS technical reports, data, and mapping; and
- Other relevant literature such as the Draft Vineyard Wind COP (Epsilon Associates, Inc., 2018) and studies cited therein.

Benthic and shellfish resources are described in the following subsections in terms of benthic habitat types/substrates and commonly associated taxa, including macroalgal assemblages and micro- and macrobenthic communities, and a brief discussion of ecologically and economically important shellfish species. The habitat distribution descriptions and discussions for the Lease Area and the ECC are followed by an evaluation of potential Project-related effects.

3.1 Site-Specific Benthic Surveys

Consistent with BOEM (BOEM, 2019) guidance and NMFS (NMFS, 2020) recommendations, the Project is conducting a series of benthic surveys over the Lease Area, along the ECC (survey extending 0.6 mi [1 km] to either side of the corridor center line), and at control areas to characterize the benthic resources in the Offshore Project Area. The surveys are conducted consistent with the *Benthic Infaunal and Seafloor Habitat Study Quality Assurance Project Plan* (AECOM, 2020a). Following each survey round, Mayflower Wind reviews results in light of study objectives, adjusts the subsequent seasonal survey plan based on the new data, and prepares a summary memorandum for BOEM and NMFS (AECOM, 2020b and 2020c). Geophysical data are integrated into the benthic assessment as they become available.

Each survey includes collection of the following data:

- Sediment grab samples for laboratory analysis of benthic biotic community structure and physical
 parameters (e.g., grain size) and total organic carbon (TOC) (grab samples are collected using a
 dual bucket van Veen grab sampler with 0.43-square foot [0.04-square meter] bucket size);
- Real-time video in conjunction with grab samples, and
- Sediment Profile Imaging/Plan View (SPI/PV) imaging data.

Mayflower Wind is using a combined technique for assessing seafloor habitat using high-resolution geophysical data (e.g., multibeam bathymetry, side-scan sonar, and backscatter) collected during concurrent geophysical surveys with the benthic specific data to determine baseline seafloor habitat conditions.

Data from each benthic survey are evaluated in accordance with BOEM's guidelines on benthic habitat surveys for renewable energy development (BOEM, 2019) and NMFS's supplemental recommendations on mapping essential fish habitat (NMFS, 2020). The CMECS (Federal Geographic Data Committee [FGDC], 2012), the use of which is recommended by BOEM Benthic Habitat Survey Guidelines (BOEM, 2019) and modified by NMFS (NMFS, 2020), provides a means to categorize habitat using the Substrate and Biotic data. Specific CMECS classifications are capitalized as formal terms (i.e., Substrate, Biotic) to differentiate from qualitative terminology.

Currently, benthic field investigation results available for the Spring and Summer 2020 surveys form the basis of this evaluation (Attachments 1 - 8). The ECC Western Option was not sampled in Spring or Summer 2020 but was included in the Fall 2020 sampling event; results were not available for this report.

For ease of discussion, the ECC has been divided into the Southern ECC and Northern ECC (Figure 3-1) based on benthic characteristics. The Southern ECC includes station 031 to the connection to the Lease Area. The Northern ECC includes samples collected from the landing location(s) to station 030. These terms were adopted after review of the Spring sampling data.

3.1.1 Spring 2020 Benthic Sampling Survey Scope

The Spring 2020 benthic survey was conducted aboard the *M/V GO Liberty* in May 2020. Table 3-1 and Figure 3-2, Figure 3-3, and Figure 3-4 provide details of sampling stations, including station identification numbers.

Table 3-1. Spring 2020 Survey Design

Control Areas

		Campio Type and Tital	
Location	Benthic Grab	SPI/PV	SPI/PV Transect
Lease Area	30	32	0
ECC	30	34	0

Sample Type and Number

15

Grab and SPI/PV stations were spaced 0.6 – 1.2 mi (1 - 2 km) apart along the ECC and at one sample per 247 to 494 acres (100 to 200 hectares) within the area of potential effect within the Lease Area, compliant with BOEM guidance (BOEM, 2019). Spring survey sampling stations in the Lease Area were selected based on spatial representation and review of geophysical data collected by TerraSond (TerraSond, 2020). Further detail related to the Spring 2020 field survey, including sampling methodology, is presented in the *Mayflower Wind Benthic Infaunal and Seafloor Habitat Field Study Plan - Spring 2020* (AECOM, 2020b).

3.1.2 Summer 2020 Benthic Sampling Survey Scope

3

Mayflower Wind used the preliminary Spring 2020 sampling program results to inform the Summer 2020 sampling scheme. Specifically, data from the Spring 2020 sampling survey were assessed to identify complex habitats. Complex habitats were characterized as vegetated habitats, hard bottom substrates, and hard bottom substrates with epifauna or macroalgae cover, consistent with NMFS guidance (NMFS, 2020). In addition to identification of complex habitats, the data were also used to determine areas of homogeneity. Key observations based on the Spring 2020 survey results include:

- The majority of the substrate in the northern Lease Area was homogeneous, dominated by Sand and Muddy Sand.
- The surficial substrate in the southern Lease Area was homogeneous with finer sediments (Sandy Mud and Mud) than that observed in the northern portion.

0

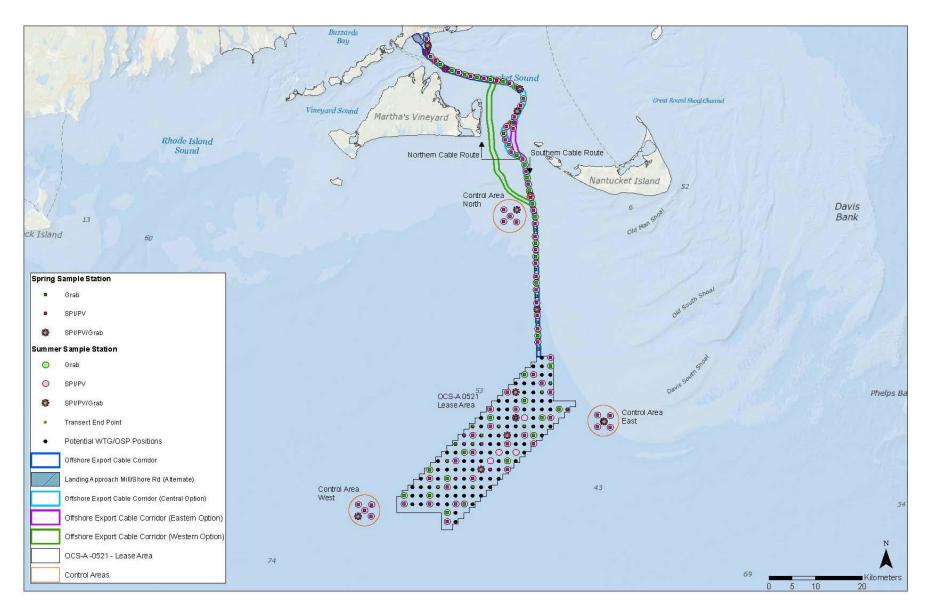


Figure 3-1. Overview of Sampling Stations in the Lease Area, Export Cable Corridor, and Control Areas

- The Southern ECC has homogenous bottom habitats, mostly comprised of Sandy Mud and Sand, similar to the northern portion of the Lease Area.
- The Northern ECC (inclusive of the Muskeget Channel) was heterogenous, with areas of complex habitat (NMFS, 2020) ranging from Gravel and Gravel Mixes to Sand and Muddy Sand with macroalgae noted at several stations.
- Control stations (Figure 3-1) reflected the homogeneous habitat conditions (e.g., sand, mud) observed in the Lease Area and Southern ECC, based on substrate characterization.

Mayflower Wind discussed the Spring 2020 benthic sampling results with NMFS and BOEM to solicit feedback for the Summer 2020 sampling design. Based on NMFS input, the Summer 2020 sampling survey emphasis was shifted to characterization of epifauna and substrate in the potentially complex habitat areas identified in the Spring 2020 survey. Summer 2020 sampling increased epifauna characterization using SPI/PV in areas of complex habitat including five transects across the ECC to better define adjacent habitat and further assess seafloor conditions. Due to the homogeneous habitat noted in the majority of the Lease Area, the spatial density of sampling was reduced in this region.

The Summer 2020 benthic survey was conducted aboard the *M/V Berto L. Miller* in August 2020. Table 3-2 and Figure 3-2, Figure 3-3, and Figure 3-4 illustrate sampling stations for the Summer 2020 survey.

Table 3-2. Summer 2020 Survey Design

Sample Type and Number

Location	Benthic Grab	SPI/PV	SPI/PV Transect
Lease Area	18	32	0
Southern ECC	11	17	1
Northern ECC	11	23	4
Control Areas	3	15	0

Further detail related to the Summer 2020 field survey, including sampling methodology, is presented in the *Mayflower Wind Benthic Infaunal and Seafloor Habitat Field Study Plan – Summer 2020* (AECOM, 2020c).

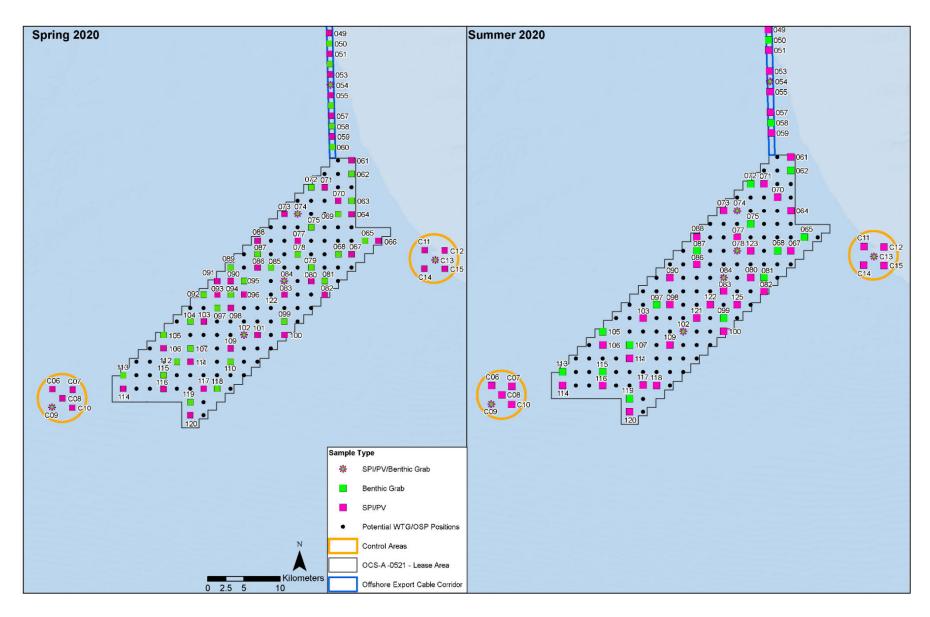


Figure 3-2. Sampling Stations in the Lease Area – Spring and Summer 2020

AECOM 3-5 Prepared for: Mayflower Wind Energy LLC

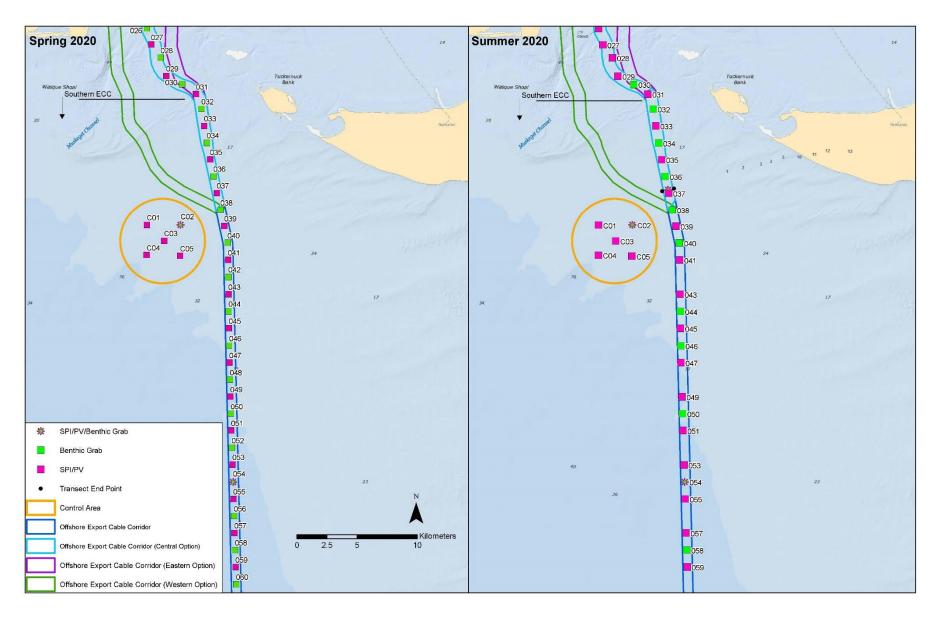


Figure 3-3. Sampling Stations Along the Southern Export Cable Corridor – Spring and Summer 2020

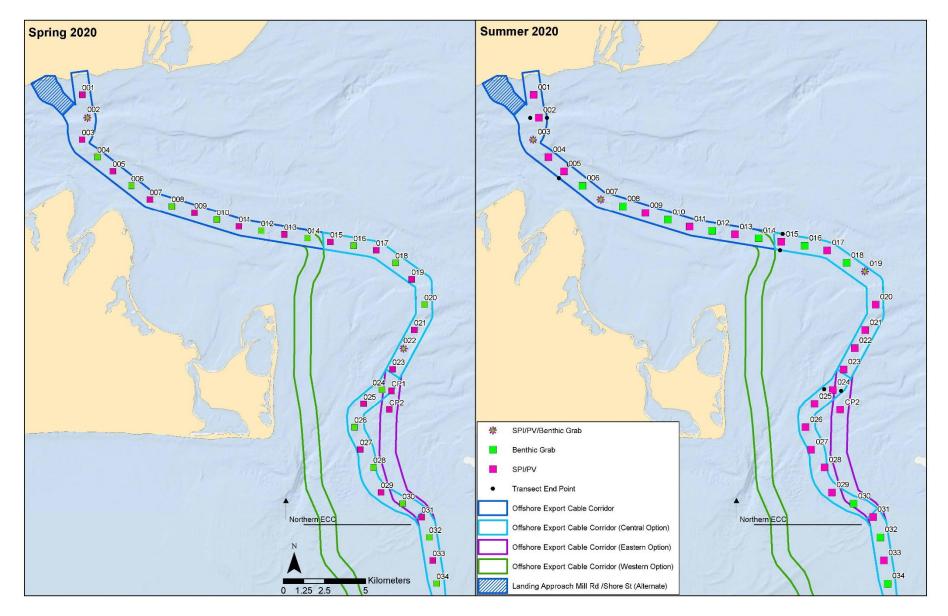


Figure 3-4. Sampling Stations Along the Northern Export Cable Corridor – Spring and Summer 2020

3.2 Marine Site Investigation Report Summary

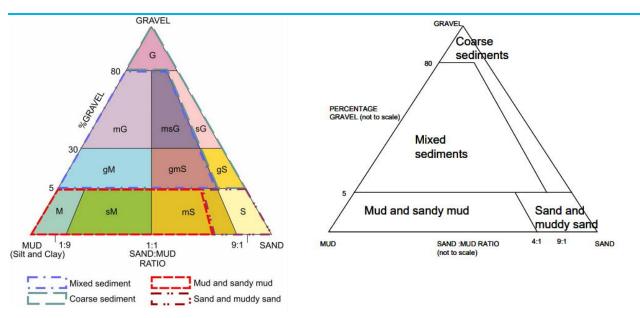
Fugro completed geophysical surveys for Mayflower Wind from May through October 2020 to characterize and evaluate seafloor conditions along portions of the ECC and within the Lease Area. Results of the site characterization work are presented in the MSIR (COP Appendix E). Additional geophysical surveys of remaining portions of the Offshore Project Area are planned for 2021. The Spring/Summer 2020 benthic survey data have been evaluated relative to the available geophysical data to support the characterization of benthic communities (see Section 4.2.1) and characterization of EFH (COP Appendix N, Essential Fish Habitat Assessment and Protected Fish Species Assessment).

The geophysical surveys included collection of side-scan sonar, multibeam bathymetry, and backscatter data, which help inform the characterization of benthic habitats along the ECC and within the Lease Area. Both geotechnical and geoarchaeological vibracores were collected to ground-truth geophysical data and provide additional engineering and archaeological data.

The Wentworth CMECS grain size analyses of the geotechnical cores (COP Appendix E, MSIR) were used to classify sediments via the simplified Folk classification system (Long, 2006), which groups sediments into broad categories. Modified Folk Classifications include Mixed Sediment, Coarse Sediment, Sand and Muddy Sand, and Mud and Sandy Mud (Figure 3-5). Fugro added the "Glacial Till" classification for outcroppings and similar features that are missing from the Folk classification scheme.

Reclassification of the Folk triangle

Simplified classification of the Folk triangle



Source: Long, 2006.

Figure 3-5. Simplified Folk Classification

Fugro provided AECOM with imagery that AECOM used for benthic feature analysis. Morphology classifications defined by Fugro (Appendix E, MSIR) are described in Table 3-3. For the benthic resource habitat evaluation, the secondary morphology classifications were used.

Table 3-3. Morphology Classifications

Primary Classification	Secondary Classification
Smooth	Sand and Muddy Sand Coarse Sediment Crepidula veneer
Irregular	Outcropping/Subcropping Glacial Till High Density Mounds (well-developed) Low Density Mounds (scattered) Hummocky Small-scale Pitting
Mobile Bedforms	Ripples (wave-generated) Predominantly Ripples (tidal current-generated) Predominantly Megaripples (tidal current-generated) Sandwave Crests

Attachment 8 integrates the Folk classifications and seabed morphology from the geophysical surveys with benthic data (SPI/PV, benthic grab samples) collected from the Spring and Summer 2020 surveys. The evaluation presents an assessment of biota and habitat types observed and infers what biota are likely to be found in the region.

4.0 Existing Conditions

4.1 Environmental Setting – Regional Overview

The Lease Area and ECC lie on the continental shelf off southern New England. The northeastern edge of the Lease Area is approximately 20 nm (37 km) southwest of Nantucket Island, Massachusetts. From the Lease Area, the Southern ECC route traverses terrain similar to that in the Lease Area until it reaches the distinctly shallower area in Muskeget Channel between Martha's Vineyard and Nantucket Island, and then into Nantucket Sound.

The seafloor within the Lease Area is generally flat with slopes ranging from very gentle (<1°) to gentle (1° to 4.9°) (COP Appendix E, MSIR). Lease Area water depths range from 121.7 ft (37.1 m) below mean lower low water (MLLW) at the north to 208.3 ft (63.5 m) below MLLW at the southernmost end. The central portion of the Lease Area has ridges with moderate slopes (5.0° to 9.9°) associated with shallow channels (Figure 4-1).

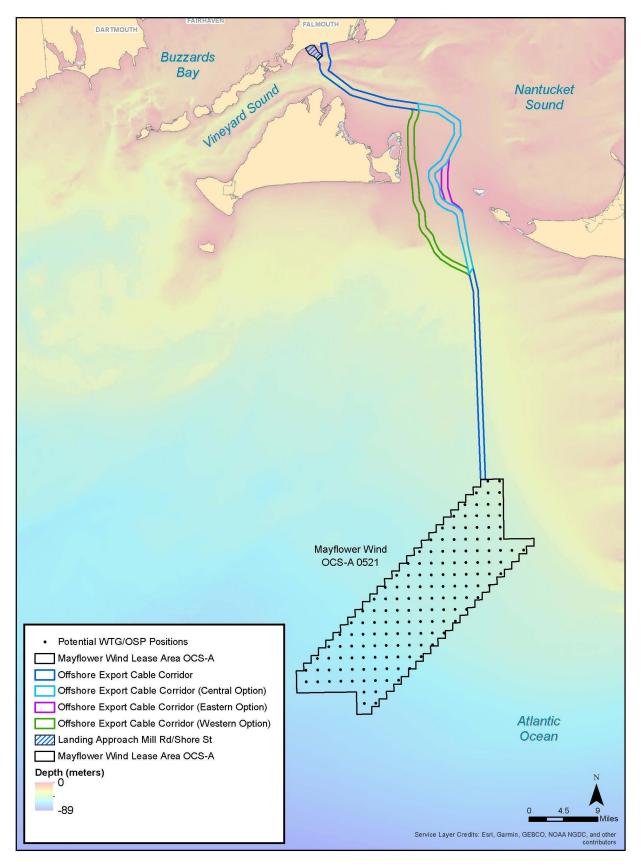
SPI/PV data collected as part of the benthic surveys indicates varying levels of surficial sediment mobility throughout the Lease Area and ECC, evidenced by the ubiquitous presence of bedforms (ripples) both large and small. The deeper shelf waters of the Lease Area and ECC are characterized by predominantly rippled sand and soft bottoms. Where the ECC enters Muskeget Channel and Nantucket Sound the surficial sediments become coarser sand with gravel and hard bottoms (i.e., pavement) are also noted. The coarser material represents reworked glacial materials. The complete classification of the seafloor in the Offshore Project Area is provided in COP Appendix E, MSIR.

Benthic information is available from surveys completed on leases adjacent to Mayflower Wind OCS-A 0521 and in Muskeget Channel (Epsilon, 2018). Seafloor conditions in the Lease Area align with the findings at nearby leases showing low complexity, homogeneous, fine sand to silt (Figure 4-2) with little relief (Epsilon, 2018). Based on the NOAA Deep-Sea Coral Data Portal, there are no live bottom areas (e.g., reef type habitat near the Lease Area (NOAA, 2020). The closest live bottom areas are stony coral habitats observed approximately 19 mi (30 km) north and southwest of the Lease Area.

Typical New England benthic communities at similar depths to the Lease Area include amphipods crustaceans, gastropods, polychaetes, bivalves, sand dollars, and burrowing anemones (BOEM, 2014; Epsilon, 2018). These organisms are important food sources for several commercially important northern groundfish species. The Spring and Summer 2020 grab sample results are consistent with prior studies (Epsilon, 2018). Results of the benthic community structure analysis of Spring and Summer 2020 samples within the Lease Area confirmed the softbottom substrate was habitat for common benthic Soft Sediment Fauna with benthic infaunal assemblages dominated by tube-dwelling amphipods such as *Ampelisca* species (spp.), bivalves, and surface burrowing worm species (e.g., Cossuridae and Paraonidae).

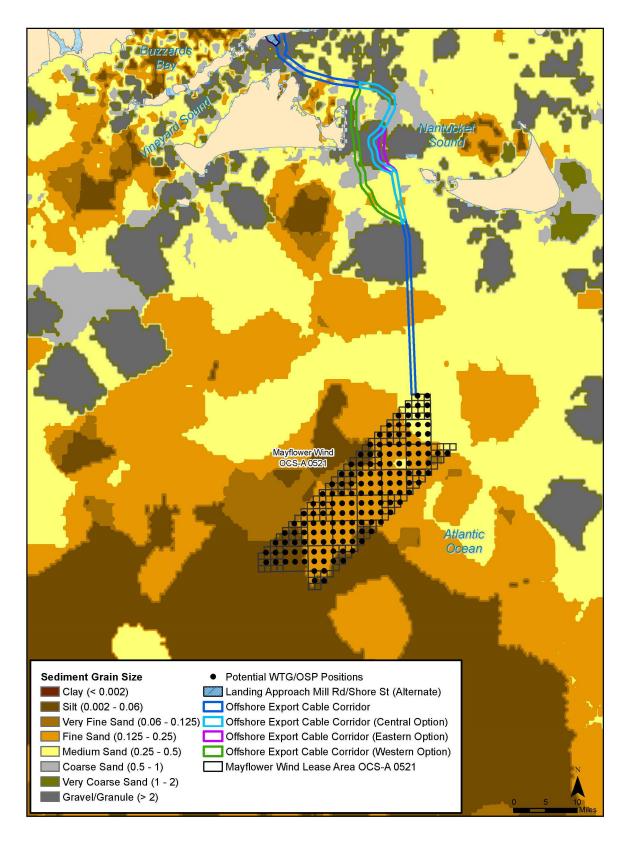
The Southern ECC seafloor morphology is similar to the Lease Area, being mostly homogeneous and dominated by sand. Moving northward, the ECC habitats shift to larger grained sand and gravel, with areas of shell aggregate and Atlantic Slipper Shell (*Crepidula*) reefs. Similar to prior studies in the area (Epsilon, 2018), epifaunal and infaunal communities in the ECC varied with habitat type. Areas with soft bottom habitat were dominated by crabs, sand dollars, amphipods and polychaetes; while hard bottom areas along the Northern ECC contained sponges and bryozoans typical of complex habitat communities. The Northern ECC transverses shellfish habitat as documented in several studies (Northeast Ocean Data Portal [NEODP], 2020). Ocean Quahog (*Arctica islandica*), bay scallop (*Argopecten irradians*), and Atlantic surf clams (*Spisula solidissima*) were observed in several samples in the ECC.

Figure 4-3 identifies areas in the Offshore Project Area that are suitable shellfish habitat for commercial and recreational species. These habitats are in the immediate nearshore of Upper Cape Cod, Martha's Vineyard, and Nantucket, and through Muskeget Channel.



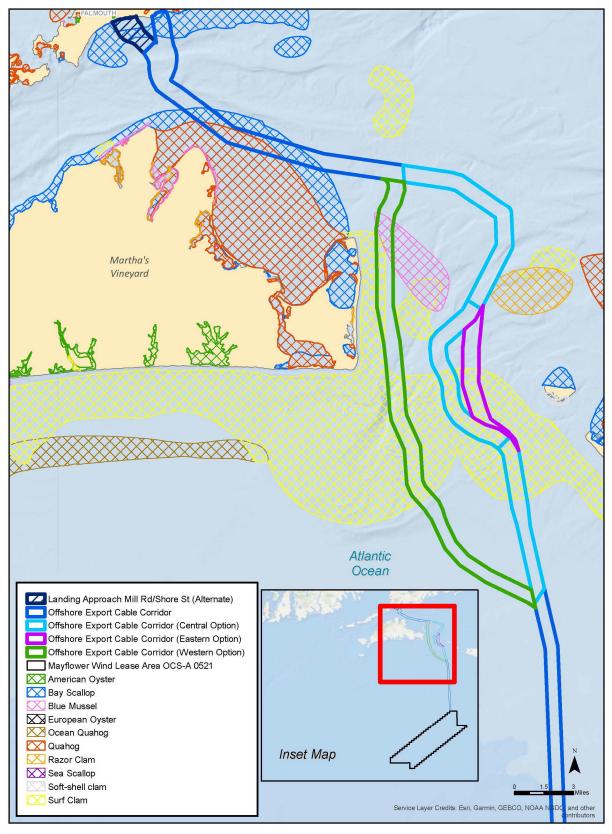
Source: NOAA GIS CRM

Figure 4-1. Continental Shelf – Northeastern Unites States



Source: Interpolated data from USGS usSeabed: Atlantic coast offshore surficial sediment data (Data series 118, version 1.0); USGS East Coast Sediment Texture Database (2005), Woods Hole Coastal and Marine Science Center. (Anderson, et al., 2010)

Figure 4-2. Generalized Sediment Types of the Continental Shelf – Northeastern United States



Source: Massachusetts Division of Marine Fisheries (MassDMF) (2020)

Figure 4-3. Shellfish Suitability Areas

4.2 Benthic Habitats and Biota in the Offshore Project Area

4.2.1 Substrate Classification

Substrate classification describes the physical aspects of the seabed based on particle size and composition of the substrate surface features. The SPI/PV images, grain size data from benthic survey grab samples, and images (grab camera) were used to identify the CMECS Substrate Components listed below:

- Habitat Type (e.g., hard bottom, sand, rippled sands);
- Substrate Class (e.g., rock, consolidated mineral, unconsolidated mineral and shell);
- Substrate Subclass (e.g., coarse, fine, shell reef);
- Substrate Group (e.g., gravels, gravel mixes); and
- Substrate Subgroup (e.g., sandy gravel, gravelly sand).

NMFS further defines three types of complex habitats based on CMECS classifications (NMFS, 2020):

- 1) Hard bottom substrates including CMECS Groups: Gravel, Gravel Mixes, Gravelly and Shell.
- 2) Hard bottom substrate with epifauna or macroalgae cover.
- 3) Vegetated habitats such as tidal wetlands and submerged aquatic vegetation.

The NMFS guidance CMECS substrate classification modifiers (NMFS, 2020) were used for this assessment. Modifications to the CMECS substrate classifications identified by NMFS are provided in Table 4-1. The NMFS 2020 guidance included the addition of a new subgroup, Gravel Pavement, which is used herein to describe substrate viewed in and classified from the PV images composed of Boulders, Cobbles, and/or Granule/Pebble that combined covers ≥80% of the substrate. For grab samples with quantified grainsize analysis from the top 6 inches (15 centimeters) of the sediment, more precise classifications (e.g., Pebble/Granule) was used. Both the CMECS Substrate classifications and Habitat Type for the Spring and Summer 2020 samples are summarized in Attachment 3. A summary of TOC and grain size (analyzed using Unified Soil Classification System [USCS] and Wentworth sieve sizes) analytical data for the Spring and Summer surveys were consistent between surveys and are provided in Attachment 4. Wentworth sieve sizes were used for consistency with the NMFS (NMFS, 2020) modified CMECS classification of Substrate, and the USCS data were used to provide a #200 sieve size determination of "fine sediment" to support permitting within Massachusetts State Waters. Figure 4-4, Figure 4-5, and Figure 4-6 illustrate the CMECS substrate classification at each sample station in the Lease Area, Southern ECC and Northern ECC, respectively. Where both a grab sample and SPI/PV data were collected at one station, classification based on each are depicted.

Table 4-1. Applicable CMECS Substrate Classifications Deleted or Modified by NMFS

CMECS Classification	Change in NMFS (2020)
Group Gravels	Modified median to percent cover
Subgroup Pebble/Granule	Modified to combine Subgroups Pebble and Granule
Subgroup Gravel Pavement	Modified to add new Subgroup
Group Slightly Gravelly	Deleted
Subgroup Very Coarse/Coarse Sand	Modified to combine Subgroups Very Coarse and Coarse Sand
Subgroup Fine/Very Fine Sand	Modified to combine Subgroups Fine and Very Fine Sand
Group Muddy Sand	Delete all Subgroups
Group Sandy Mud	Delete all Subgroups
Group Mud	Delete all Subgroups

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Within the Lease Area, the sediment was CMECS Subclass Fine Unconsolidated (i.e., <5 percent gravel) (Figure 4-4) during the Spring survey. Two samples (113 and 115) during the Summer survey were classified Coarse Unconsolidated – Gravelly – Gravelly Muddy Sand. The remaining Group classifications were mostly Mud, Sandy Mud, and Muddy Sand. A few stations (Spring [061] and Summer [062, 068, 078, 121 and 122]) were Sand with Subgroup Fine/Very Fine Sand. The Lease Area is mostly homogenous with little relief. The Lease Area is considered Soft Bottom habitat with no complex features. TOC was generally < 1 percent.

The Southern ECC samples (Figure 4-5) were Subclass Fine Unconsolidated, except for station 032 (Spring) and stations 031 and 124-grab (Summer), which were Coarse Unconsolidated with >5 percent Gravel. The majority of samples (87 percent in Spring and 93 percent in Summer) were Group Sand, with Muddy Sand identified at three stations in the southern portion (048, 054 and 056) in Spring and two stations in Summer (031 and 124) identified Gravelly in Summer. The Sand Subgroup classifications transitioned to coarser grain size, from Fine/Very Find Sand to Medium and Very Coarse/Coarse Sand moving northward from the Lease Area. The Habitat Type of the Southern ECC is mostly Rippled Sand or Sand, with some soft bottom nearing the Lease Area. Sample 032 (Spring) and samples 031 and 124 were identified as complex habitat (Group Gravelly). No other complex habitats were noted, and TOC was <1 percent in the samples.

The Northern ECC (Figure 4-6) marks a change from Fine Unconsolidated Class in the Southern ECC to Coarse Unconsolidated. Substrate through this area is highly varied, with Sand, Gravel, Gravelly and Gravel Mix Groups. South of Nantucket Sound Main Channel, Coarse Unconsolidated, Gravelly samples dominate. Through the Nantucket Sound Main Channel, Sand was identified, including some Fine/Very Fine Sand at stations 013 through 020. With the exception of two stations (008 and 011) north of the Nantucket Sound Main Channel along the Northern ECC, the samples were classified as the Class Unconsolidated Material. Stations 008 and 011 were Class Shell (Shell Reef, Crepidula Reef [i.e., slipper shell reef]). Areas of complex habitat were noted throughout the Northern ECC, primarily due to the Group Gravel or Gravelly classifications. Some Gravel Pavement was noted in the SPI/PV images. Details of this are discussed in COP Appendix N, Essential Fish Habitat and Protected Fish Species Assessment. TOC was non-detect in 54 percent of samples. Of the samples with detected TOC, concentrations were low, with the greatest concentration (1.03 percent) at station 028.

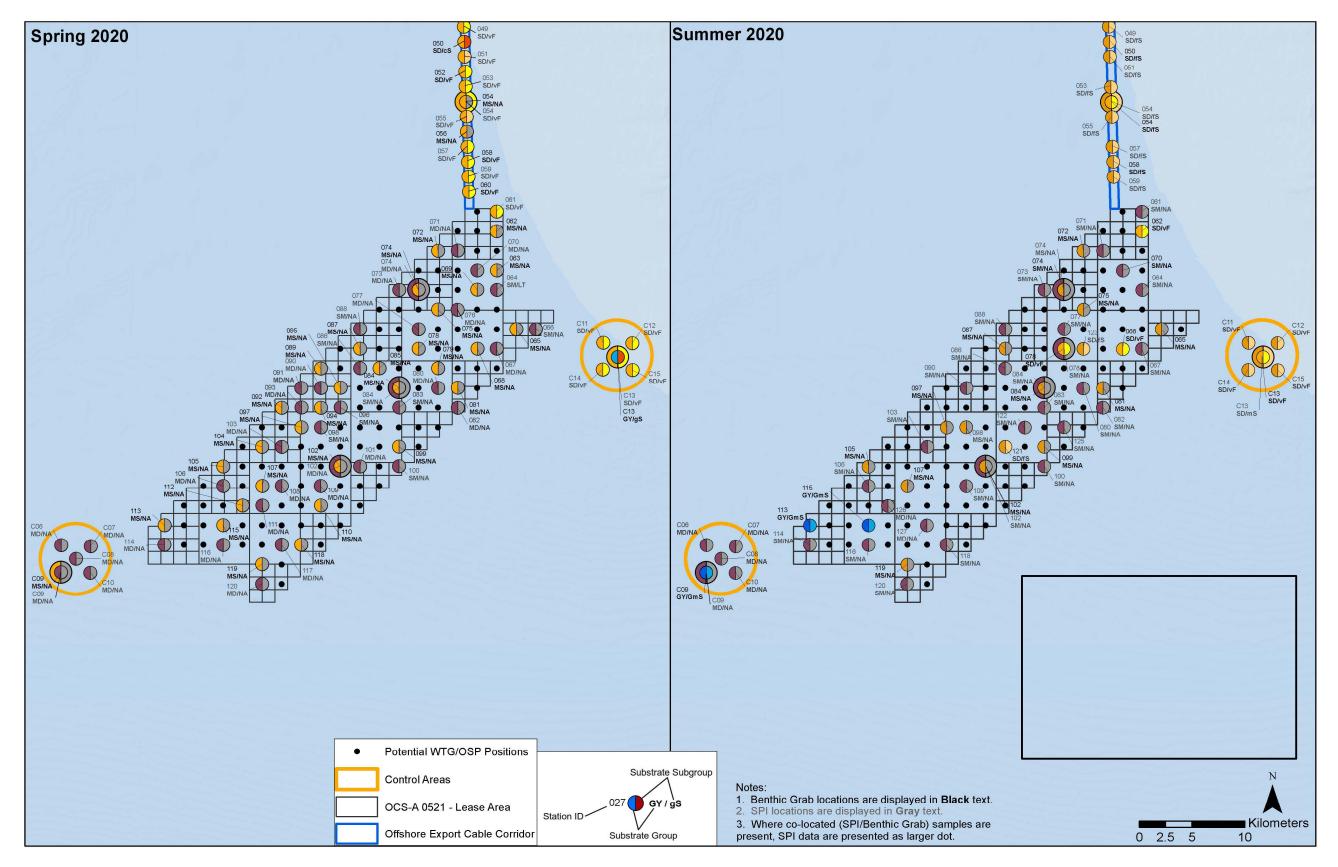


Figure 4-4. Spring and Summer 2020 Lease Area CMECS Substrate Classifications

AECOM 4-7 Prepared for: Mayflower Wind Energy LLC

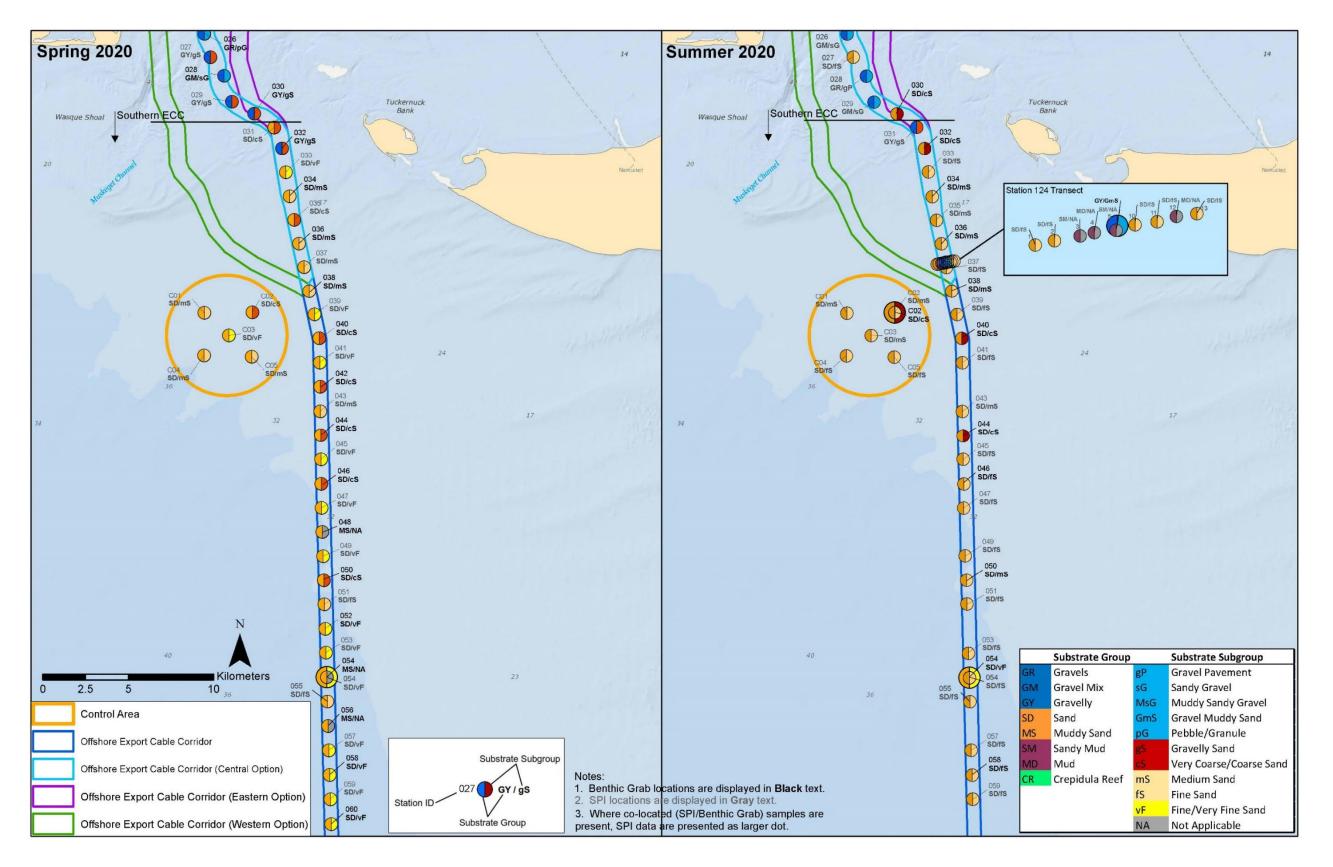


Figure 4-5. Spring and Summer 2020 Southern Export Cable Corridor CMECS Substrate Classifications

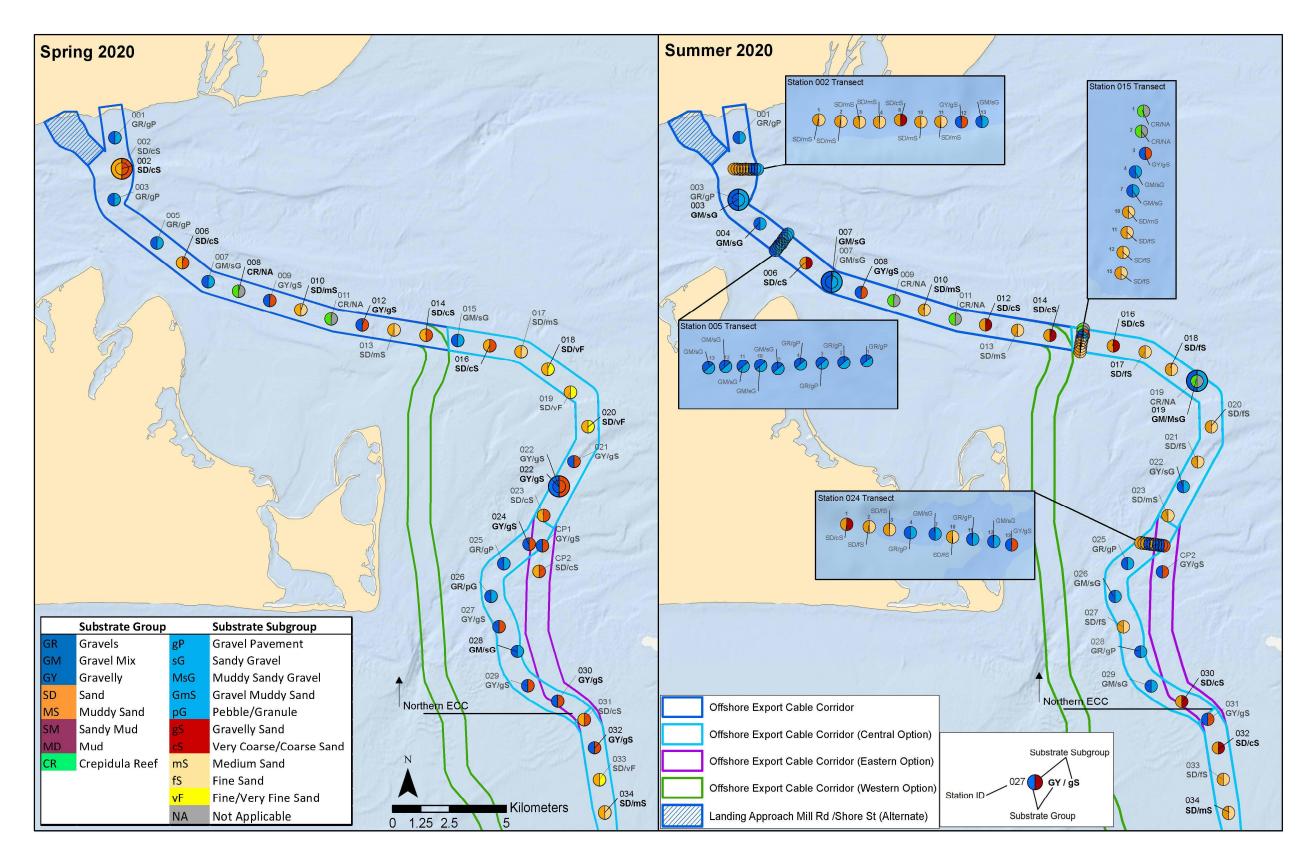


Figure 4-6. Spring and Summer 2020 Northern Export Cable Corridor CMECS Substrate Classifications

4.2.2 Benthic Epifauna, Infauna, and Macrofauna

Benthic fauna were described from the following types of data collected by Mayflower Wind during surveys completed in Spring and Summer 2020:

- Benthic grab sampling, which involved taxonomic analysis of collected samples benthic grabs cannot penetrate hard surfaces (gravels, cobbles, etc.) and are typically used to identify attached biota;
- Video collected by a camera on the benthic grab sampler provided video imagery of the benthic surface before the grab sampler hits the seabed;
- Images of subsurface (near surface) using the SPI shows relatively high resolution of infauna and is used to identify successional stage; and
- Images of the benthic surface by the PV camera.

4.2.2.1 Epifauna/Megafauna

The PV results summarizing the biological features observed in the images for the Spring and Summer 2020 surveys are presented in the SPI/PV reports in Attachment 1 and Attachment 2, respectively. In addition to PV image analysis, analysis of imagery from video obtained from a camera attached to the benthic grab frame as the grab approached the seafloor was performed.

Each PV replicate image and benthic grab camera video was classified to CMECS standards for biology as the biotic component, the biotic group, and co-occurring biotic group, which provides detailed information on the biological community structure and organisms observed at each sample station (Attachment 5). These biotic components are mapped on Figure 4-7, Figure 4-8, and Figure 4-9 on a station-by-station basis in the Lease Area, Southern ECC, and Northern ECC, respectively. When biotic components varied among station replicates, the dominant classifications for the station overall were mapped.

Epifauna/megafauna and epiflora observed included macroalgae (red, green and brown), sponges, bryozoans, hydroids, barnacles, tunicates, anemones, gastropods, bivalves, nudibranchs, urchins, brittle stars, starfish, sand dollars, crabs (hermit, brachyuran, spider), amphipods, isopods, shrimp, squid, skates, and some finfish (Attachment 1 and Attachment 2).

The Lease Area is classified as Fine Unconsolidated material, generally homogeneous and considered soft bottom habitat with no complex features (Attachment 3). Epifauna/megafauna found in the Lease area were classified as Soft Sediment Fauna, predominantly organisms living on the surface (i.e. crabs, sand dollars, gastropods) or burrowing into the sediment (i.e. anemones, amphipods, polychaetes) (Attachments 1 and 2). Habitat in the Southern ECC was similar to the Lease Area, comprised of Fine Unconsolidated material inhabited by Soft Sediment Fauna similar to fauna present in the Lease Area.

In contrast, habitat in the Northern ECC was heterogeneous, with Coarse to Fine Unconsolidated material noted. This area was inhabited by both Soft Sediment Fauna and Attached Fauna. Attached epifauna/epiflora (i.e., macroalgae, hydroids, bryozoans, sponges) were observed in PV and video imagery in areas with suitable substrate (gravels, cobbles, shells, manmade objects, etc.). Imagery from SPI/PV transects collected at five stations during the Summer 2020 survey illustrate the heterogeneous, complex habitat noted along the Northern ECC and adjacent corridor.

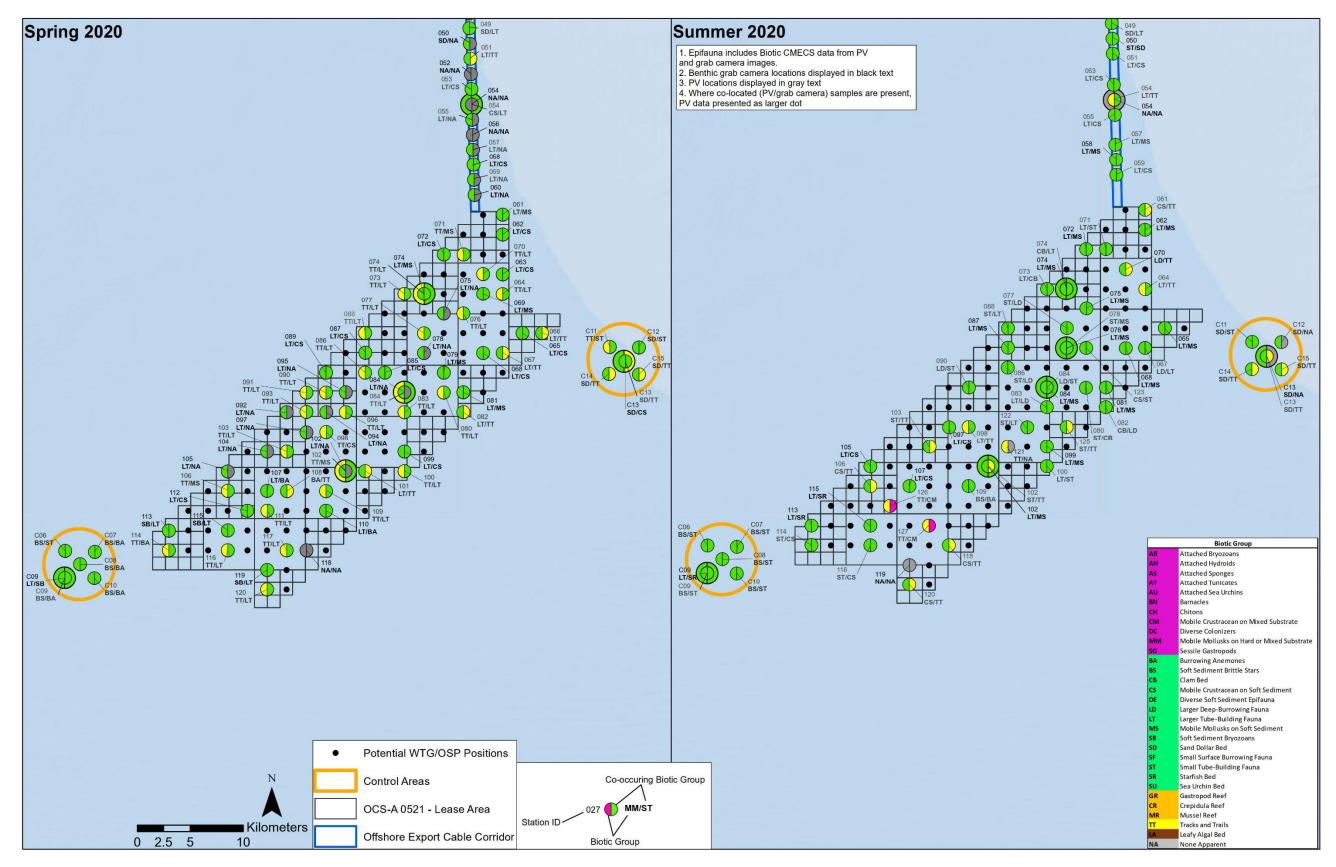


Figure 4-7. Spring and Summer 2020 Lease Area CMECS Biotic Classifications - Epifauna

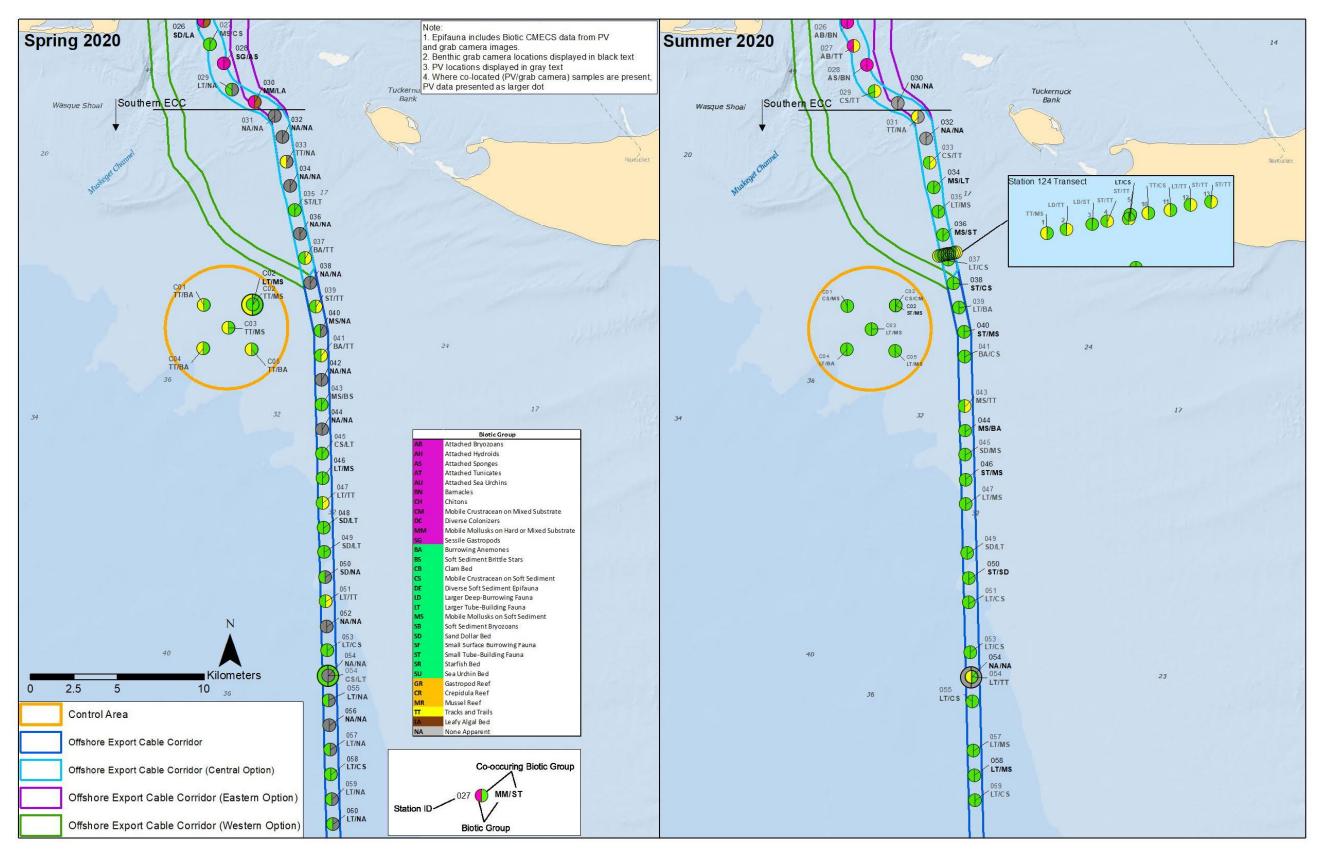


Figure 4-8. Spring and Summer 2020 Southern Export Cable Corridor CMECS Biotic Classifications - Epifauna

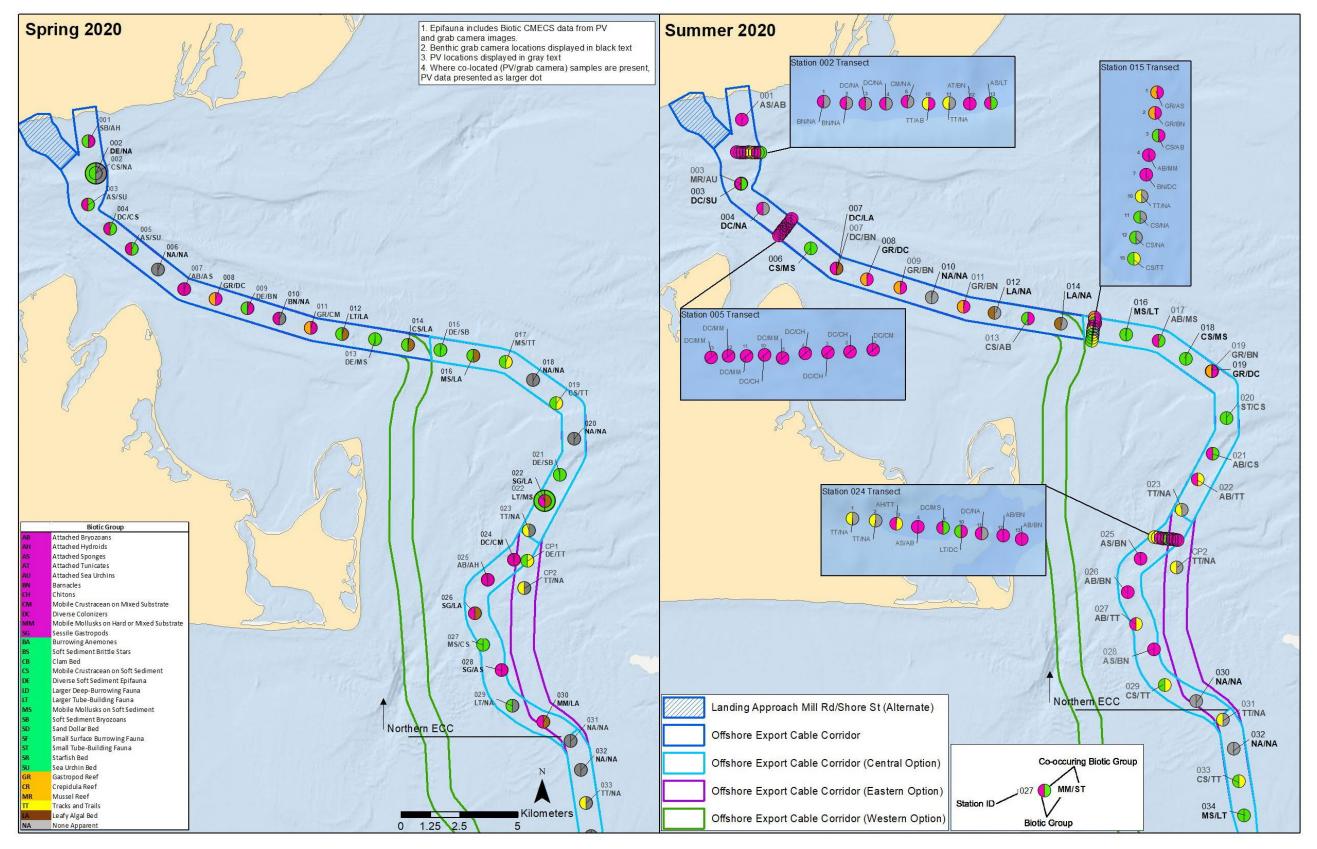


Figure 4-9. Spring and Summer 2020 Northern Export Cable Corridor CMECS Biotic Classifications - Epifauna

4.2.2.2 Infauna/Macrofauna

Consistent with observations of epifauna, the dominant infaunal biotic subclass in the Lease Area was Soft Sediment Fauna (Figure 4-10). The biotic and co-occurring biotic groups found in the Lease Area in both Spring and Summer were typical of soft sediment environments and included clam beds (*Nucula* beds), larger tube-building fauna (*Ampelisca, Corophium*, and *Leptocheirus* amphipod beds), and small surface-burrowing fauna (Paraonidae and Cossuridae polychaetes).

Similar to the Lease Area, the dominant biotic subclass in the Southern ECC was Soft Sediment Fauna (Figure 4-11). The biotic groups and co-occurring biotic groups found in the Southern ECC included larger deep-burrowing fauna, clam bed, mobile crustaceans on soft sediments, diverse soft sediment epifauna, larger tube-building fauna, and small surface-burrowing fauna. Clam beds in this area were *Nucula* in the spring but included *Periploma* spp. and *Spisula* spp. in the Summer. The larger tube-building fauna in this area were *Ampelisca* amphipods, the larger deep-burrowing fauna were Nephtyidae polychaetes, and the small surface-burrowing fauna included oligochaetes and Polygordiidae, Spionidae, and Lumbrineridae polychaetes. The mobile crustaceans on soft sediments were haustoriid and phoxocephalid amphipods and tanaids. Attached Fauna (tunicate) were observed at the northernmost section of the Southern ECC (station 032) in the Spring.

Heterogeneous habitat types ranging from hard bottom substrates to fine unconsolidated material were observed in the Northern ECC (Figure 4-12), with areas of complex habitat as characterized per NMFS (NMFS, 2020) noted. There were multiple biotic subclasses, which included Attached Fauna and Soft Sediment fauna, with Reef Biota present at two stations (008 and 019). CMECS defines attached fauna as those found in areas with rock, gravel, or other hard or mixed substrates. In the spring, the five stations with attached fauna as the dominant biotic group were found to be gravelly sand or sand. The infauna at Station 008 in the spring and Station 019 in the summer was dominated by *Crepidula* (gastropod), and from video analysis at both stations it was clear that it was a "gastropod reef" with no visible sediment. The other biotic groups classified in the Northern ECC included soft sediment epifauna, barnacles, mobile mollusks on soft sediment, mobile mollusks on hard or mixed substrates, attached tunicate, small tube-building fauna, diverse colonizers, small surface-burrowing fauna, mobile crustaceans on hard or mixed substrates, and clam bed and mobile crustaceans on soft sediments. The Northern ECC area displayed the greatest number of biotic classifications of the surveyed areas due to the variety of substrates found along the corridor in this area.

The biotic groups of the Control Stations C02 and C09 were similar to those of the Lease Area and Southern ECC. The dominant biotic group of Station C13 in the spring was sand dollar bed, which was unique to only this station.

A summary of the full CMECS infauna classification per station and season are presented in Attachment 6. The full report of the Spring and Summer 2020 benthic infaunal community analysis is provided in Attachment 7.

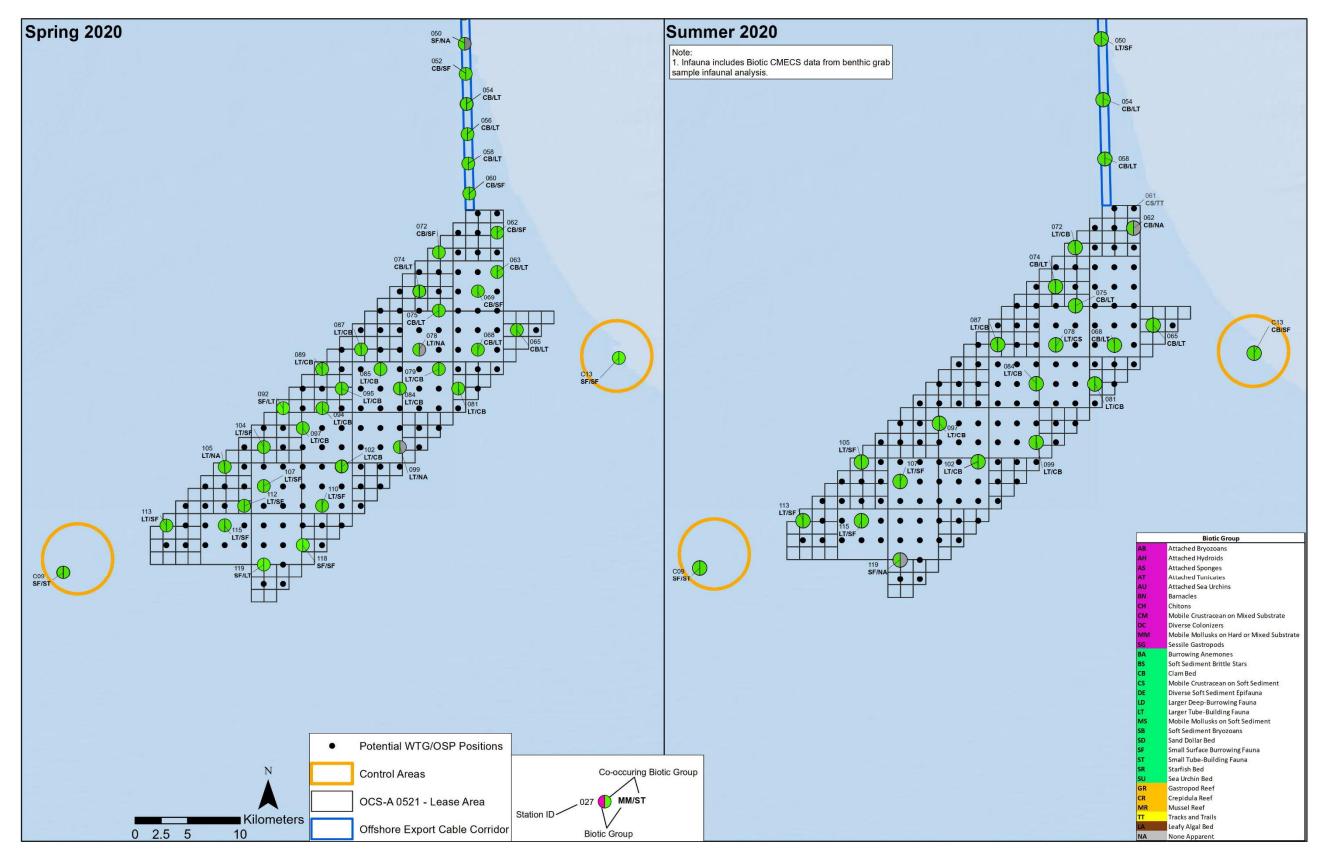


Figure 4-10. Spring and Summer 2020 Lease Area CMECS Biotic Classifications – Infauna

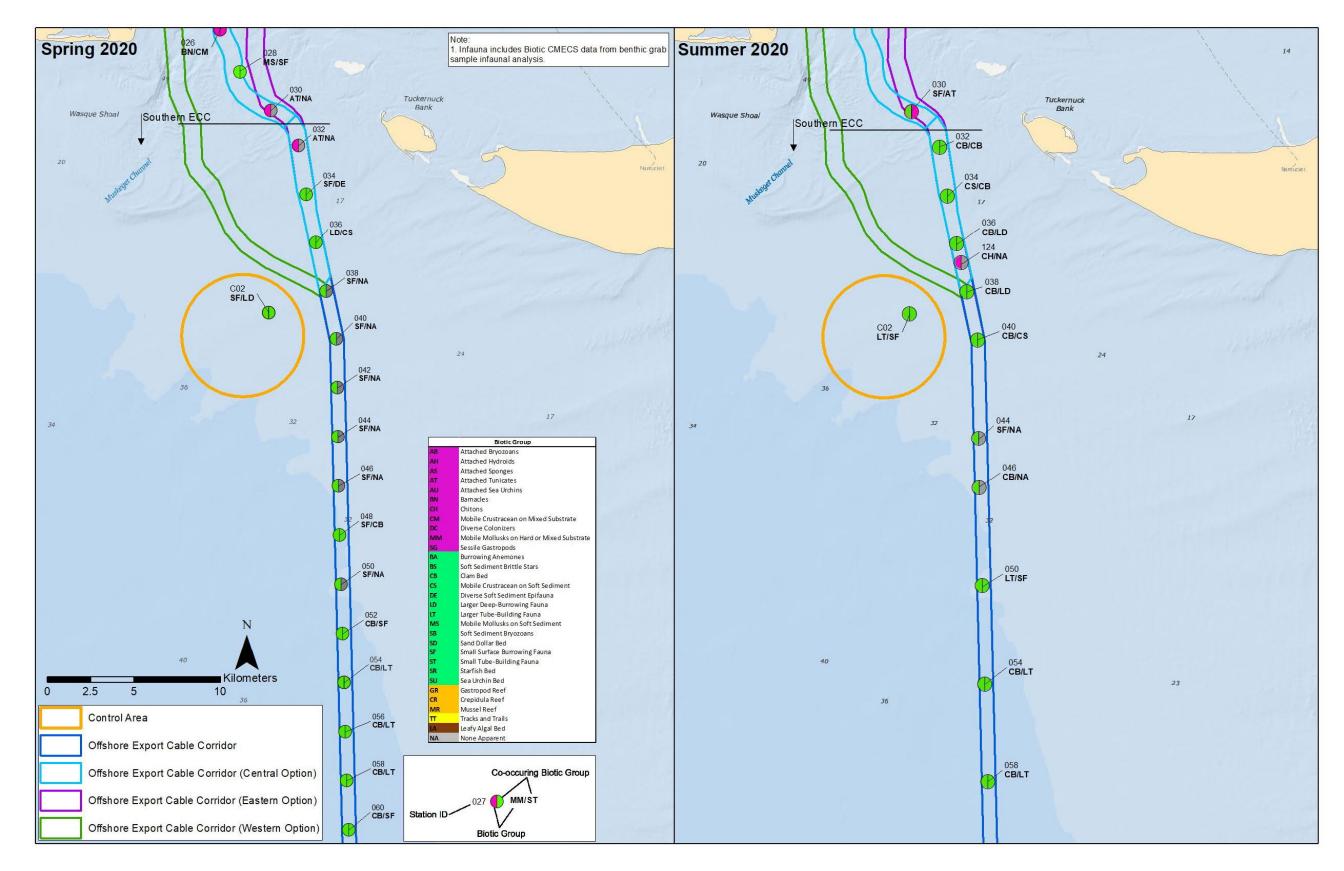


Figure 4-11. Spring and Summer 2020 Southern Export Cable Corridor CMECS Biotic Classification – Infauna

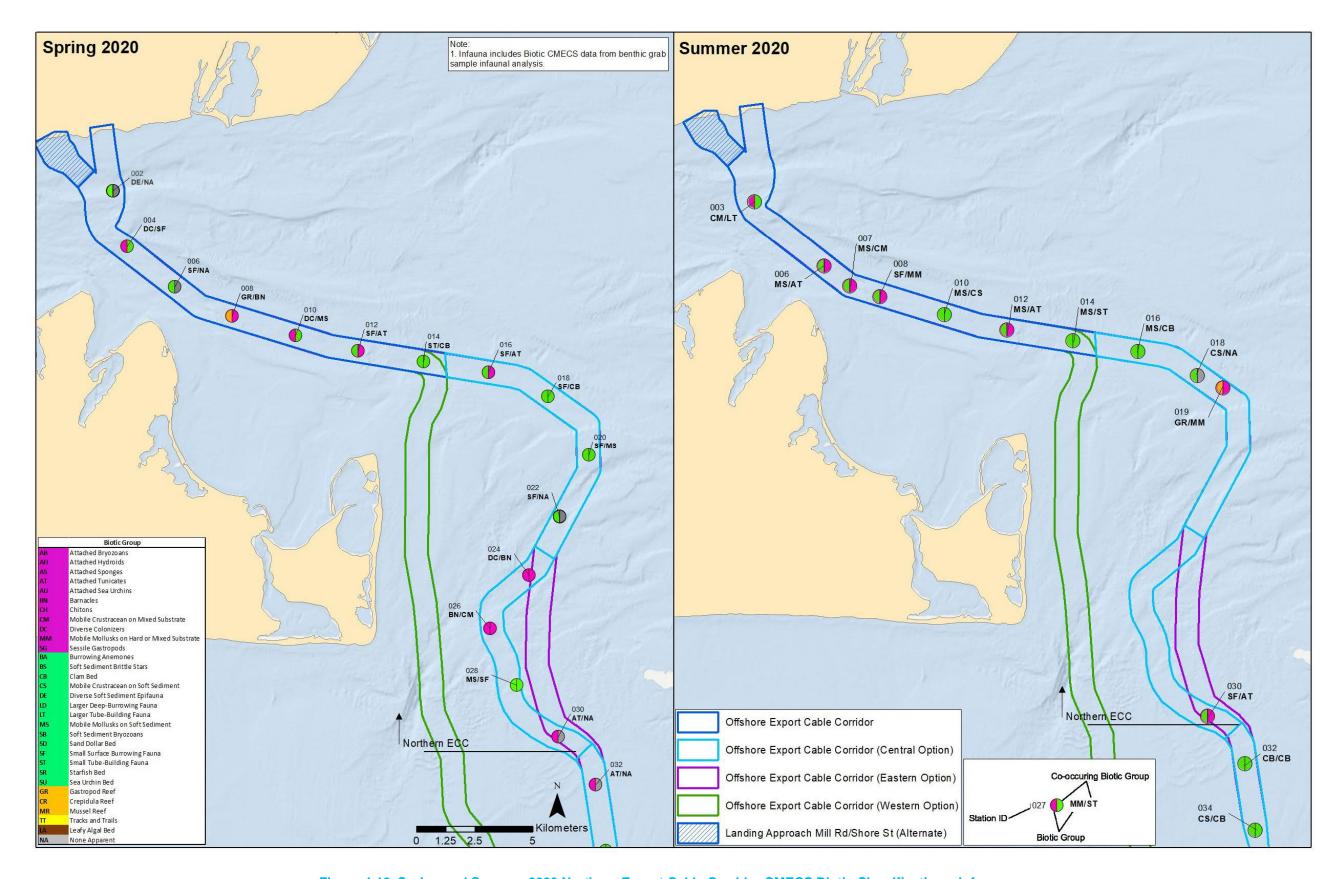


Figure 4-12. Spring and Summer 2020 Northern Export Cable Corridor CMECS Biotic Classification – Infauna

4.2.3 Interpretation of Biotic Community based on Geophysical Seafloor Data

Data from the geophysical surveys conducted by Mayflower Wind in 2020 were integrated with the data (SPI/PV, benthic grab samples) collected from the Spring and Summer benthic surveys to further characterize seafloor habitat. Figures illustrating the physical-biological associations and seabed morphology along the ECC and the Lease Area are presented in Attachment 8.

4.2.3.1 Overview of Habitats and Species

Lease Area

Based on Simplified Folk classifications of the sediment samples collected during the Spring and Summer benthic surveys, the dominant benthic habitat type observed in the Lease Area was Sand and Muddy Sand. A small swath of Coarse Sediment was present south of stations 084 and 094, associated with an area of Wave Generated Ripples. Areas of Low Density Mounds were observed at the northernmost portion. Organisms found in the Lease Area included many typically found in Sand and Muddy Sand habitats, such as bivalves (e.g., clams), polychaetes and tube-forming amphipods (Table 4-2). Attachments 8a through 8d depict benthic habitats in the Lease Area.

Southern Export Cable Corridor

As discussed in Section 4.2.1 and confirmed with geophysical data, the Southern ECC marks a transition from homogeneous sand and muddy sand habitat with few discernable features to a mix of Sand/Muddy Sand and Coarse sediment with Wave-Generated Ripples and High and Low Density Mounds and a small area of Hummocky seafloor noted. In comparison to the Lease Area, there was a greater variety of biota observed along the Southern ECC including attached epifauna (e.g., hydrozoa, bryozoa, sponges) in addition to mobile epifauna and tube-building and burrowing infauna (Table 4-3). Attachment 8e through 8h illustrate the benthic habitats observed in the Southern ECC.

Northern Export Cable Corridor

Heterogeneous, complex habitat was noted along the Northern ECC, with Tidal Current Generated Ripples and Megaripples, Glacial Till Outcroppings, and Crepidula Reef observed. Scattered Sandwave Crests (i.e. bedforms greater than 4.9 ft (1.5 m) high) were also noted along the Northern ECC. These four unique benthic habitat types were observed along the Northern ECC, with Sand/Muddy Sand to the south transitioning to Coarse Sediment in northernmost portions and Mixed Sediment and Glacial Till also observed (Attachment 8i through 8l). The variety of biotic subclasses noted in the Northern ECC were reflective of the range of habitat types observed (Table 4-4). Attached fauna were prevalent in nearshore hard bottom areas along with associated mobile epifauna, while tube-building and burrowing infauna were found in the soft sediment areas.

Table 4-2. Common Species by Habitat Type in the Lease Area

Simplified Folk Classification	Phylum or Class	Selected Species Found in SPI/PV Images, Video and Grab Samples*	Other Species Typically Found in the Habitat	References
	Bivalvia	None	jingle shells, discord mussels, Atlantic sea scallop (<i>Placopecten magellanicus</i>)	Greene et al 2010, Norden 2012
Coarse Sediment	Echninodermata	None	green sea urchin (<i>Strongylocentrotus</i> droebachiensis), brittle star (<i>Ophiopholis</i> amphiuridae)	Greene et al 2010
	Crustcea	None	hermit crabs, lyre crab (<i>Hyas coartatus</i>), Aesop shrimp (<i>Pandalus montagui</i>), Jonah crab (<i>Cancer borealis</i>), Atlantic horseshoe crab (<i>Limulus polyphemus</i>)	Greene et al 201 BOEM 2020c, NWF 20210,
	Bilvalvia	Subsurface feeder Atlantic nut clam (<i>Nucula proxima</i>) Suspension/filter feeders Atlantic surf clam, oval spoon clam (<i>Periplom leanum</i>), ocean quahog	Atlantic sea scallop	Norden 2012
	Polychaeta	Subsurface feeder polychaetes Polygordius jouinae and Levinsenia gracilis	Sternaspidae spp. Onuphidae spp.	Maurer and Wigley, 1984
	Oligochaeta	Subsurface feeder: Oligochaeta spp.		
Sand and Muddy Sand	Crustacea	Tube forming amphipods (Ampelisca spp.), hermit crabs (Paguridae), Cancer spp., Atlantic rock crab (Cancer irroratus), Phoxocephalid, Chiridotea and Haustorid amphipod species	American lobster (<i>Homarus americanus</i>), sand shrimp (<i>Crangon septemspinosa</i>), pandalid shrimp (Pandalidae spp.), Jonah crab, Atlantic horseshoe crab	South Fork Wind Farm (SFWF), 2018; Vineyard Wind, 2020 BOEM 2020c, NWF 2021
	Echinodermata	common sand dollars (<i>Echinarachnius parma</i>)	blood star (<i>Henricia sanguinolenta</i>); Ophiuroidea spp.	SFWF, 2018; Maurer and Wigley, 1984
	Gastropoda	mud snails (<i>Nassarius</i> spp.), channeled whelk (<i>Busycotypus canaliculatus</i>)	Northern moon snail (Lunatia heros)	SFWF 2018

Note: *See Attachments 1, 2, and 7 for full list of species observed during Spring and Summer benthic surveys.

Table 4-3. Common Species by Habitat Type in the Southern Export Cable Corridor

Simplified Folk Classification	Phylum or Class	Selected Species Found in SPI/PV Images, Video and Grab Samples*	Other Species Typically Found in the Habitat	References
Classification	Crustaceans	Caprellidae spp., Tanaidacea spp., Ampelisca spp., attached barnacle spp., hermit crabs (Pagurus spp.)	Jonah crab	BOEM 2020c
	Bivalvia	Atlantic nut clam, Atlantic surf clam, chestnut Astarte (Astarte castanea)	Atlantic sea scallop, jingle shells, discord mussels, blue mussels	Norden 2012, Greene et al 2010, BOEM 2020c
Coarse	Gastropoda	threeline mud snail (Tritia trivitatta)	Knobbed whelk (Busycon carica)	
Sediment	Oligochaeta	Oligochaeta spp.		
	Polychaeta	Polygordius spp., Paraonidae spp., Lumbrineridae spp., and Nephtyidae spp.		
	Bryozoa/Hydrozoa	Attached bryozoa spp. and hydrozoa spp.		
	Porifera	Attached sponge spp.		
	Echinodermata	Sea urchins – attached, common sand dollar	brittle star	Greene et al 2010
	Bivalvia	Subsurface feeder: Atlantic nut clam, Suspension/filter feeders: Atlantic surf clam, oval spoon clam (<i>Periploma leanum</i>), ocean quahog, chestnut Astarte	Atlantic sea scallop, bay scallop, Nuculana spp., paper clam (<i>Lyonsia arenos</i>)	M Norden 2012, Brand 2016, aurer and Wigley, 1984; Greene et al 2010
	Gastropoda	immaculate moonsnail (Euspira immaculata)	Northern moon snails (Lunatia spp.), pygmy whelk (<i>Colus pygmaeus</i>)	Greene et al 2010
Sand and	Polychaeta	Subsurface feeder polychaetes <i>Polygordius jouinae</i> and <i>Levinsenia gracilis</i> , Orbiniidae spp., Spionidae spp., Ampharetidae spp.	Capitellidae spp.	AECOM, 2012
Muddy Sand	Oligochaeta	Subsurface feeder: Oligochaeta spp.		
	Crustacea	Tube forming amphipods: <i>Ampelisca</i> spp.; hermit crabs (Paguridae); <i>Cancer</i> spp.; Atlantic rock crab; <i>Phoxocephalid, Chiridotea</i> and <i>Haustorid</i> amphipods, <i>Diastylis</i> spp., isopod <i>Edotia triloba</i>	American lobster, sand shrimp, pandalid shrimp (Pandalidae spp.) Jonah crab, Atlantic horseshoe crab	SFWF, 2018; Vineyard Wind, 2020, NWF 2021
	Echinodermata	common sand dollars	blood star, Amphioplus spp., Amphilimna olivacea	SFWF, 2018; Maurer and Wigley, 1984
	Gastropoda	mud snails, channeled whelk	Northern moon snail	SFWF 2018

Note: * See Attachments 1, 2, and 7 for full list of species observed during Spring and Summer benthic surveys.

Table 4-4. Common Species by Habitat Type in the Northern Export Cable Corridor

Simplified Folk Classification	Phylum or Class	Selected Species Found in SPI/PV Images, Video and Grab Samples*	Other Species Typically Found in the Habitat	References	
	Crustaceans	Hermit crabs (Paguridae spp.), Caprellidae; tube- forming amphipods (<i>Cymadusa compta</i> and <i>Ampelisca</i> spp.), portly spider crab (<i>Libinia</i> <i>emarginata</i>), attached barnacle spp.	green crab (<i>Carcinus maenus</i>), Jonah crab	Greene et al 2010	
	Bivalvia	Atlantic nut clam, Atlantic surf clam, blue mussel (Mytilus edulis), razor clam (Ensis leei), soft-shelled clam (Mya arenaria)	Atlantic sea scallop, egg cockle (<i>Laevicardium</i> mortoni), Eastern oyster (<i>Crassostrea</i> virginica)	Norden 2012	
Coarse Sediment	Gastropoda	lunar dovesnail (<i>Astyris lunata</i>), glassy lyonsia (<i>Lyonsia hyaline</i>), <i>Caecum</i> spp., sea snail (<i>Bittium alternatum</i>), knobbed whelk			
	Polychaeta	Lumbrineridae, Ampharetidae/Terebellidae, Syllidae Paraonidae, Polygordiidae, Cirratulidae and Glyceridae; Spionidae, and large tube- forming Diopatra	Oweniidae spp. and Scalibregmatidae spp.	AECOM, 2012; Maurer and Wigley, 1984	
	Bryozoa/ Hydrozoa	Attached bryozoa spp. and hydrozoa spp.			
	Porifera	Attached sponge spp.			
	Echinodermata	Sea urchins - attached			
	Polychaeta	Scavenger feeder - Glycera spp. and subsurface feeders <i>Polycirrus</i> spp and <i>Polygorduis jouinae</i>	Polychaete species (Spiophanes kroeyeri)	Greene et al 2010	
	Bryozoa	Attached Bryozoan species			
Glacial Till	Bivalvia	Suspension/filter feeders (Atlantic surf clam and narrow hinged Astarte [Astarte montagui])	Northern hatchet-shell (<i>Thyasira gouldii</i>), little combed crenella (<i>Crenella pectinula</i>), black mussel (<i>Musculus niger</i>)	Greene et al 2010	
	Echinodermata	Common sand dollar	Holothurians	Theroux and Wigley 1998	
	Gastropoda	Predator feeder <i>Caecum</i> spp. and scavenger <i>Turbonilla</i> spp.	chalice bubble snails (<i>Cylichna gouldi</i> , and <i>C. alba</i>)	Greene et al 2010	

Simplified Folk Classification	Phylum or Class	Selected Species Found in SPI/PV Images, Video and Grab Samples*	Other Species Typically Found in the Habitat	References
	Bivalvia	Jingle shells, transverse ark clam (<i>Anadara</i> transversa)		
	Polychaeta	Nereidae, Syllidae, Pectinaridae and Sabellidae		
Mixed Sediments	Crustacea	hermit crabs (Paguridae spp.), Cancer spp. Crabs, Atlantic mud crabs (Panopeus herbstii); tube-forming amphipods (C. compta), Caprellidae		
	Echinoidermata	starfish	Echinoidea spp	Theroux and Wigley 1998
	Gastropoda	mud snails, common slipper shells (<i>Crepidula</i> spp.); sea snail <i>Bittiolum alternatum</i> ; lunar dovesnail		
	Bivalvia	Subsurface feeder: Atlantic nut clam, Suspension/filter feeders: Atlantic surf clam, oval spoon clam, ocean quahog	Atlantic sea scallop, bay scallops	Norden 2012, Brand 2016
	Polychaeta	Subsurface feeder polychaetes Polygordius jouinae and Levinsenia gracilis	Maldanidae and Scalibregma inflatum; Syllidae, Cirratulidae and Glyceridae	Maurer and Wigley, 1984; AECOM, 2012
	Oligochaeta	Subsurface feeder: Oligochaeta spp.		
Sand and Muddy Sand	Crustacea	Tube-forming amphipods (<i>Ampelisca</i> spp.), hermit crabs (Paguridae spp.), <i>Cancer</i> spp., Atlantic rock crab, <i>Phoxocephalid, Chiridotea</i> and <i>Haustorid</i> amphipods	American lobster, sand shrimp, pandalid shrimp (Pandalidae spp.), Jonah crab, Atlantic horseshoe crab	SFWF, 2018; Vineyard Wind, 2020 BOEM 2020c, NWF 2021
	Echinodermata	common sand dollars	blood star, Ophiuroidea spp. and Holothuroidea spp.	SFWF, 2018; Maurer and Wigley, 1984
	Gastropoda	mud snails, channeled whelk	Northern moon snail, knobbed whelk	SFWF, 2018

Note: * See Attachments 1, 2, and 7 for full list of species observed during Spring and Summer benthic surveys.

4.2.3.2 Details of Select Areas

Selected sample stations and transects (Figure 4-13) representative of conditions observed in the Lease Area, Southern ECC, and Northern ECC are detailed in the following sections and figures. The figures below show the results of the transect investigations: simplified Folk sediment classifications, morphology classifications, hillshadeo (i.e., multibeam bathymetry data) of the transect, PV and SPI and/or grab camera imagery. The interpretation of the epifauna found in the images displayed as the CMECS biotic group and the co-located biotic group are provided below. In addition to the interpretation of the images, additional information about other fauna that might be found in the habitat is presented below and summarized in Table 4-2, Table 4-3, and Table 4-4. An overview figure of these select areas is provided as Figure 4-13. Figure 4-14 shows sampling stations from the Lease Area that are adjacent or in-line with each other. Figure 4-15 and Figure 4-16 are figures from the Southern ECC from stations that are, respectively, adjacent to each other and from a Transect. Figure 4-17, Figure 4-18, and Figure 4-19 are figures from Transects in the Northern ECC. The figures are all presented in a general north-up orientation.

Lease Area Stations 074, 077 and 078

Stations 074, 077, and 078 are situated in the northeastern portion of the Lease Area and run in a north/south transect covering approximately 4.3 mi (7 km) in water depths of 151 to 157 ft (46 to 48 m) (Figure 4-14). The relative location of these stations in the Offshore Project Area is provided in Figure 4-13. The simplified Folk classification for these stations is Sand and Muddy Sand. The morphology for the three stations shows Low Density Mounds and Small-Scale Pitting. The observed epifauna included Small Tube-Building and Larger Deep-Burrowing Fauna, Mobile Mollusks, and Clam Beds. Other fauna that might be found in this habitat include sea cucumbers (*Pentamera calcigera*), slender armed star (*Leptasterias tenera*), acorn worms (*Stereobalanus canadensis*), bivalves (*Thyasira* spp, wavy astarte [*Astarte undata*]), cumaceans, caprellids, isopods, and amphipods (Greene et al. 2010).

Transects Across the Southern ECC

As described in Section 3.1.2, the Summer 2020 sampling design included epifauna characterization using SPI/PV in areas of potentially complex habitat along five transects over heterogenous areas of the ECC (identified in Spring 2020). Transect sampling consisted of nine SPI/PV stations sampled approximately evenly across the 0.6-mi (1-km) wide ECC. The transects were selected based on Spring 2020 survey data and preliminary geophysical data and reflect locations where seafloor morphology and observed biota suggested potentially complex habitat. The transects are being used to better define habitat and seafloor conditions across the heterogenous portions of the ECC. Acoustic data were not yet available for the transect at Station 024 at the time of this report. Geophysical data collected from the Transect 124 from the Southern ECC are discussed below. Transects were not collected in the lower, more homogenous portion of the Southern ECC.

Southern ECC Stations 045, 046 and 047

Though no SPI/PV transects were collected south of station 124, this second set of stations along the Southern ECC (045, 046, and 047) was selected to show the sediment/fauna overlay along a 1.9-mi (3-km) stretch in water depths of 105 to 108 ft (32 to 33 m) (Figure 4-15). The relative location of these stations in the Offshore Project Area is provided in Figure 4-13. This reach of the Southern ECC is fairly homogeneous and is much more similar to the Lease Area than it is to the Northern ECC. The Folk classification shows that there are areas of both Coarse Sediment and Sand and Muddy Sand, where the hillshade and morphology swaths show areas of Sand and Muddy Sand along with areas of Wave Generated Ripples indicative of a dynamic environment. The epifauna observed here included a Sand Dollar Bed, Small and Larger Tube-Building Fauna, and Mobile Mollusks. Other fauna that might be found in this type of habitat include rag worms (*Nereis zonata*), the polychaete *Capitella capitata*, lady crabs (*Ovalipes ocellatus*), and Atlantic rock crab (Greene et al. 2010). These Soft Sediment Fauna are generally well adapted to disturbance within their habitats, due to frequent sediment mobility prevalent in sandy environments.

Southern ECC Transect 124

Transect 124 (Figure 4-16) ran approximately east-west in water depths from 85 to 95 ft (26 to 29 m) MLLW, approximately 12 mi (20 km) southeast of Martha's Vineyard in the Southern ECC. The relative location of

this transect in the Offshore Project Area is provided in Figure 4-13. The Folk classification characterized the surficial sediments as Sand and Muddy Sand. The seafloor morphology exhibited well-developed High Density Mounds and Hummocky areas. Epifauna identified from the PV and grab camera images included Larger Deep-Burrowing Fauna, Larger and Small Tube-Building Fauna, Mobile Crustaceans and Mollusks, and Tracks and Trails of mobile organisms. Other fauna that would be expected in shallow water depressions would include bamboo worms (*Euclymene collaris, Owenia fusiformis*), blood worms (*Glycera americana*), Spionidae spp. Syllidae spp., and Ampharetidae spp., longwrist hermit crabs (*Pagurus longicarpus*), common razor clams (*Ensis directis*), file Yoldia (*Yoldia limatula*), and dwarf surf clams (*Mulinia lateralis*) (Greene et al 2010).

Transects Across Southern and Northern ECC

Geophysical data collected from the other Transects 002, 005, and 015 from the Northern ECC are discussed below.

Northern ECC Transect 015

Transect 015 (Figure 4-17) was collected approximately north-south perpendicular to the centerline, approximately 3.1 mi (5 km) northeast of Chappaquiddick Island, Martha's Vineyard in water depths of approximately 52 ft (16 m) MLLW. The relative location of this transect in the Offshore Project Area is provided in Figure 4-13. The four southern transect stations were classified as Sand and Muddy Sand, while the centerline and northern transect stations were identified as Coarse Sediments. The morphology along the southernmost portion of this transect were characterized as predominantly displaying Tidal Current Generated Megaripples, while the remaining transect shows the predominant characteristic as Tidally Generated Ripples, with Coarse Sediment noted at the centerline. The epifauna observed across this transect varied and included Mobile Crustaceans and Tracks and Trails to the south, Attached Barnacles and Diverse Colonizers at the centerline, and Attached Bryozoans and Sponges, Barnacles, and Mobile Mollusks along with Gastropod Reef (*Crepidula* spp.) as the primary biotic group in the two northernmost stations. The diversity of fauna observed correlated with the range of sediment types, with attached fauna prevalent in hard bottom areas and mobile epifauna in the softer sediment along this transect.

Northern ECC Transect 005

Transect 005 (Figure 4-18) was collected in water depths of approximately 79 ft (24 m) in an area approximately 1.6 mi (2.5 km) off the coast of Tisbury, Martha's Vineyard. The relative location of this transect in the Offshore Project Area is provided in Figure 4-13. The transect was collected northeast to southwest perpendicular to the centerline. The Folk classification was Coarse Sediment, consistent with the morphology noted in the three southwestern and northeastern most portions of the transect. The areas immediately northeast, southwest, and along the centerline were identified as a Glacial Till Outcrop. The images along the transect show Diverse Colonizers (mollusks, sponges, and tunicates) as the primary biotic group classification, the co-located groups include Mobile Mollusks and Mobile Crustaceans, as well as Chitons, which are typical of coarse sediment environments.

Northern ECC Transect 002

Transect 002 (Figure 4-19) is approximately 1.2 mi (2 km) southeast of the landing(s) in Falmouth, MA in water depths of approximately 30 ft (9 m) MLLW. The east-west transect was perpendicular to the Northern ECC centerline. The relative location of this transect in the Offshore Project Area is provided in Figure 4-13. The two halves of the transect had very different sediment and organisms.

The western side of the transect was primarily Sand and Muddy Sand, with a morphology predominantly of Tidally Generated Ripples and Megaripples and Coarse Sediment towards the centerline. Sandwave crests (i.e., bedforms greater than 4.9 ft [1.5 m] high) were noted in the western portion of this transect. The epifauna found on the western side included Attached Barnacles, Mobile Crustaceans, and Diverse Colonizers including sponges, tunicates, and bryozoans.

The two stations east of the centerline were Glacial Till Outcrop showing Tracks and Trails and Attached Bryozoans. The eastern portion of the transect was Coarse Sediment, predominantly with ripples with epifauna of Attached Tunicates, Attached Barnacles, Sponges, and Larger Tube-Building Fauna (i.e., *Diopatra*). Fauna that was not observed but is common in this type of habitat includes hermit crabs

(Paguridae spp.), Caprellidae, tube-forming amphipods (*Ampelisca* spp and *C. compta*), green crabs, portly spider crab, the gastropods lunar dovesnail and glassy lyonsia, the egg cockle, the sea snail bivalve *B. alternatum*, and other opportunistic species that can inhabit shifting sand. In the areas of glacial till, other expected fauna in this type of habitat include attached sea urchins, holothurians, and hydrozoans, and the bivalves Northern hatchet-shell, little combed crenella, and black mussel (Theroux and Wigley, 1998; Greene et al. 2010).

4.2.4 Submerged Aquatic Vegetation

In Massachusetts, only two species of submerged aquatic vegetation (SAV) occur, eelgrass (*Zostera marina*) and widgeon grass (*Ruppia maritima*). No widgeon grass has been identified in the Offshore Project Area. In August 2020, CR Environmental (CR) conducted an eelgrass survey at three potential export cable landfall sites at Shore Street, Mill Road, and Worcester Avenue in Falmouth, MA. CR mapped eelgrass beds at the three proposed landings. The eelgrass beds extend approximately 1,900 to 3,100 ft (600 to 950 m) from shore. Details and results of this survey and the presence of SAV and macroalgae are presented in COP Appendix K, Seagrass and Macroalgae Report, and are summarized below.

Neither eelgrass beds nor isolated eelgrass attached to the seabed were observed in other portions of the Offshore Project Area. In Muskeget Channel, several detached eelgrass leaves in the water column above the seabed were observed. Given the high-energy current and mobile seabed in the channel, eelgrass is unlikely to occur in the Muskeget Channel.

Macroalgae has been observed in many PV images and grab camera videos from the Northern ECC. The macroalgae is further described in COP Appendix K, Seagrass and Macroalgae Report, and details of the macroalgae observed are presented in Attachments 1 and 2.

4.2.5 Shellfish Resources

The Massachusetts Division of Marine Fisheries (MADMF) maps areas suitable for shellfish beds based on the expertise of local Shellfish Constables, commercial fishermen, and maps and studies of shellfish in Massachusetts. Species included in the MADMF assessment are American oyster, bay scallop, blue mussel, European oyster, ocean quahog, quahog, razor clam, sea scallop, soft-shelled clam, and surf clam. The areas covered include sites where shellfish have been observed beginning in the mid-1970s but may not currently support shellfish, as a result the maps represent potential habitat areas. Site-specific surveys may be necessary to ascertain current distribution and abundance but will not be used to alter the designation of potential habitat without MADMF input. Additionally, because of changing habitat and water quality conditions, shellfish may exist in areas not identified on these maps. The ECC crosses through areas mapped as suitable for surf clams, bay scallops, and quahogs (Figure 4-3).

Several benthic substrates were identified that may be suitable habitat for various species of shellfish. Boulder and patchy cobble habitat are considered suitable and regionally important for the American lobster (Collie and King, 2016). Benthic substrates of sand with mobile gravel and sand sheet habitats are suitable for horseshoe crab, Atlantic surf clam, ocean quahog clam, channeled whelk, Atlantic rock crab, Jonah crab, and Atlantic sea scallop.

Ocean quahogs were the most abundant shellfish identified in the Lease Area; individuals were observed at 22 out of 63 benthic grab survey stations in May 2020 and 12 out of 43 benthic grab survey stations in August 2020. Atlantic surf clam was the most abundant shellfish species along the ECC; Atlantic surf clams were observed at 15 out of 53 benthic grab survey stations in May 2020 and at 12 out of 43 benthic grab survey stations in August 2020. Other recreationally/commercially fished species observed in the Lease Area and/or along the ECC included blue mussels, razor clams, soft-shelled clams, Jonah crab and whelk.

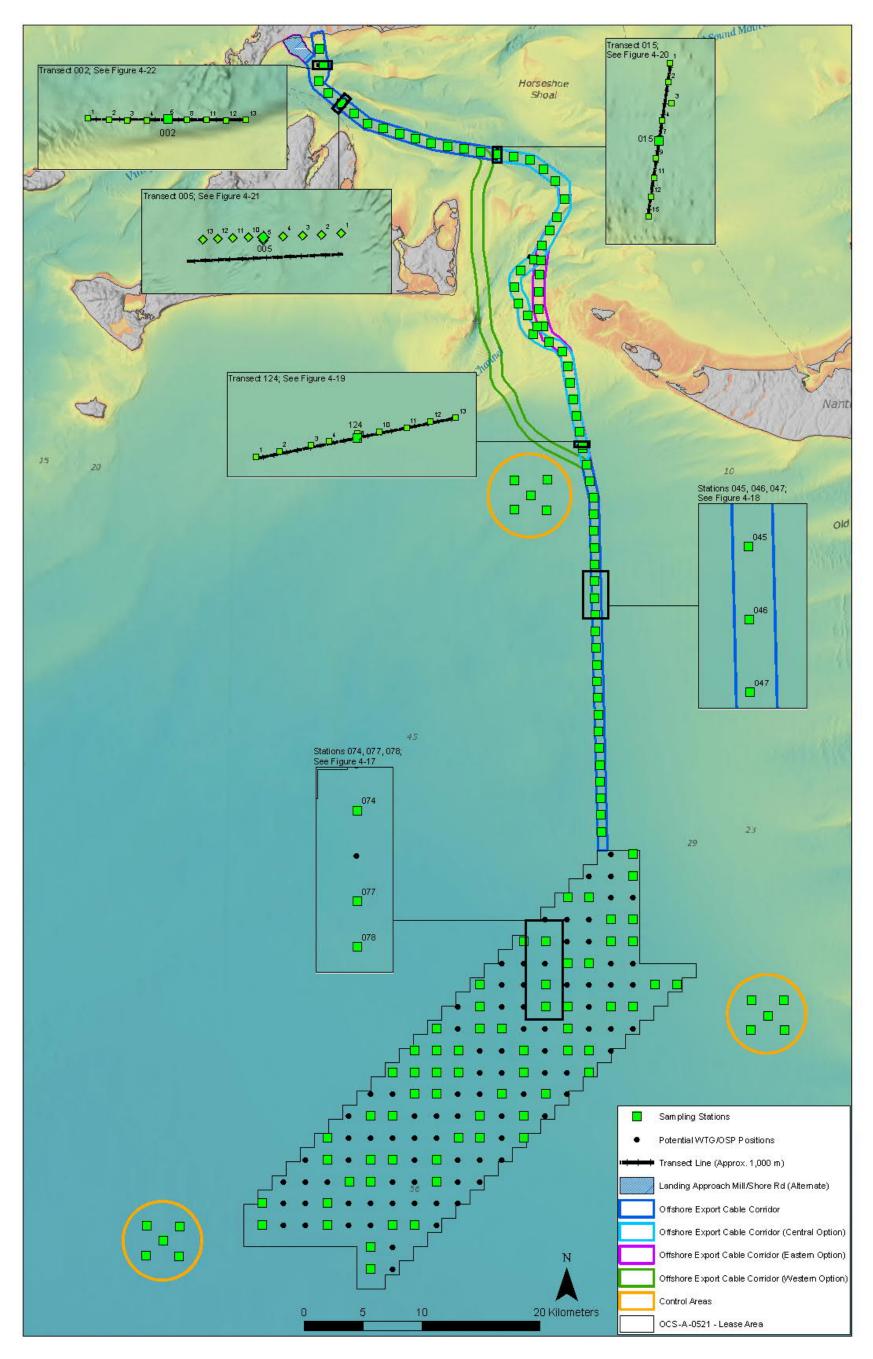
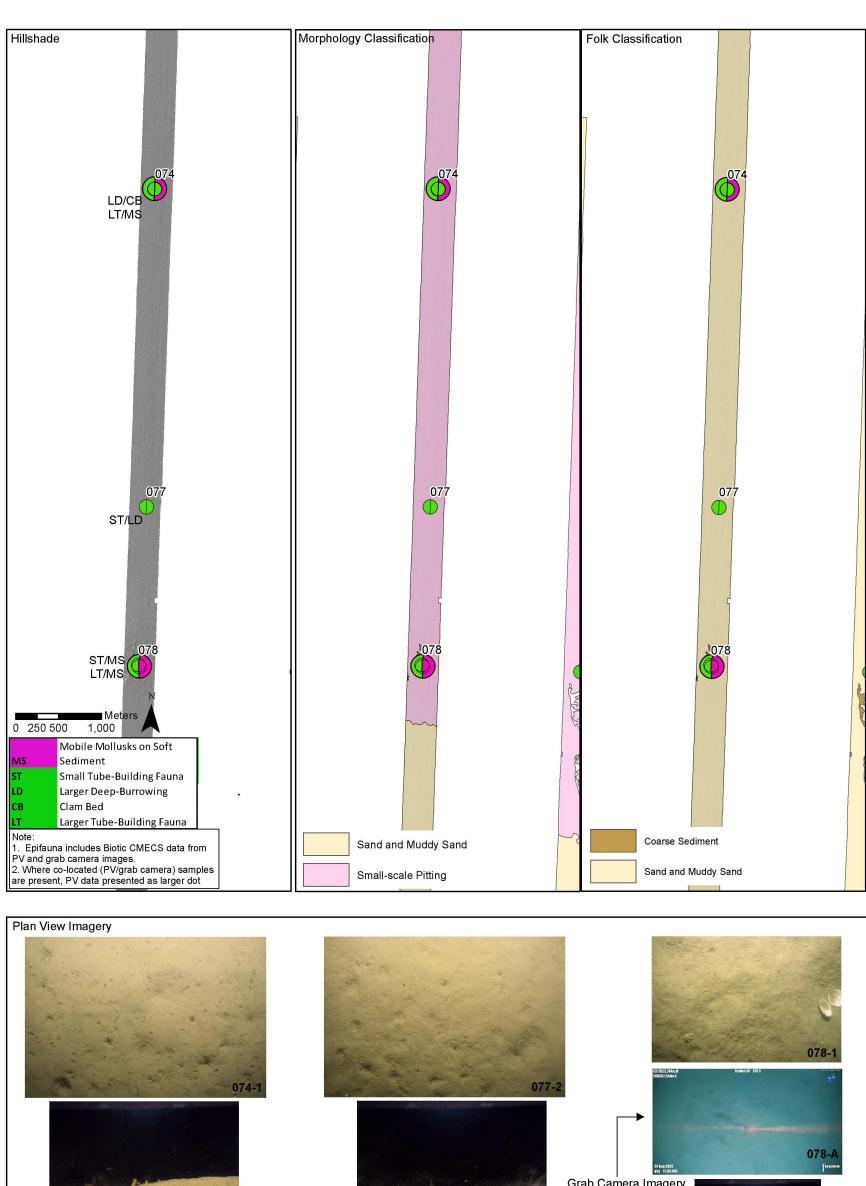


Figure 4-13. Overview of Select Stations Evaluated with Benthic Community, Folk Substrate Classifications, and Seafloor Morphology



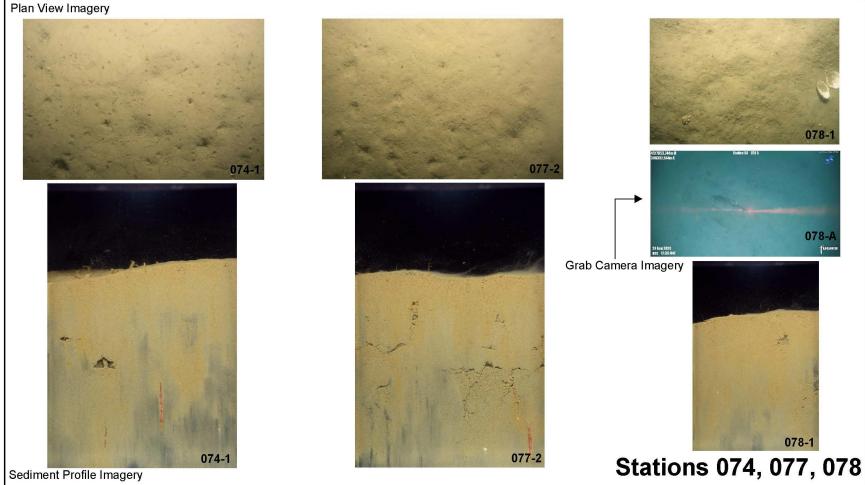


Figure 4-14. Spring and Summer 2020 Lease Area Stations 074, 077, and 078 Benthic Community, Folk Substrate **Classifications, and Seafloor Morphology**

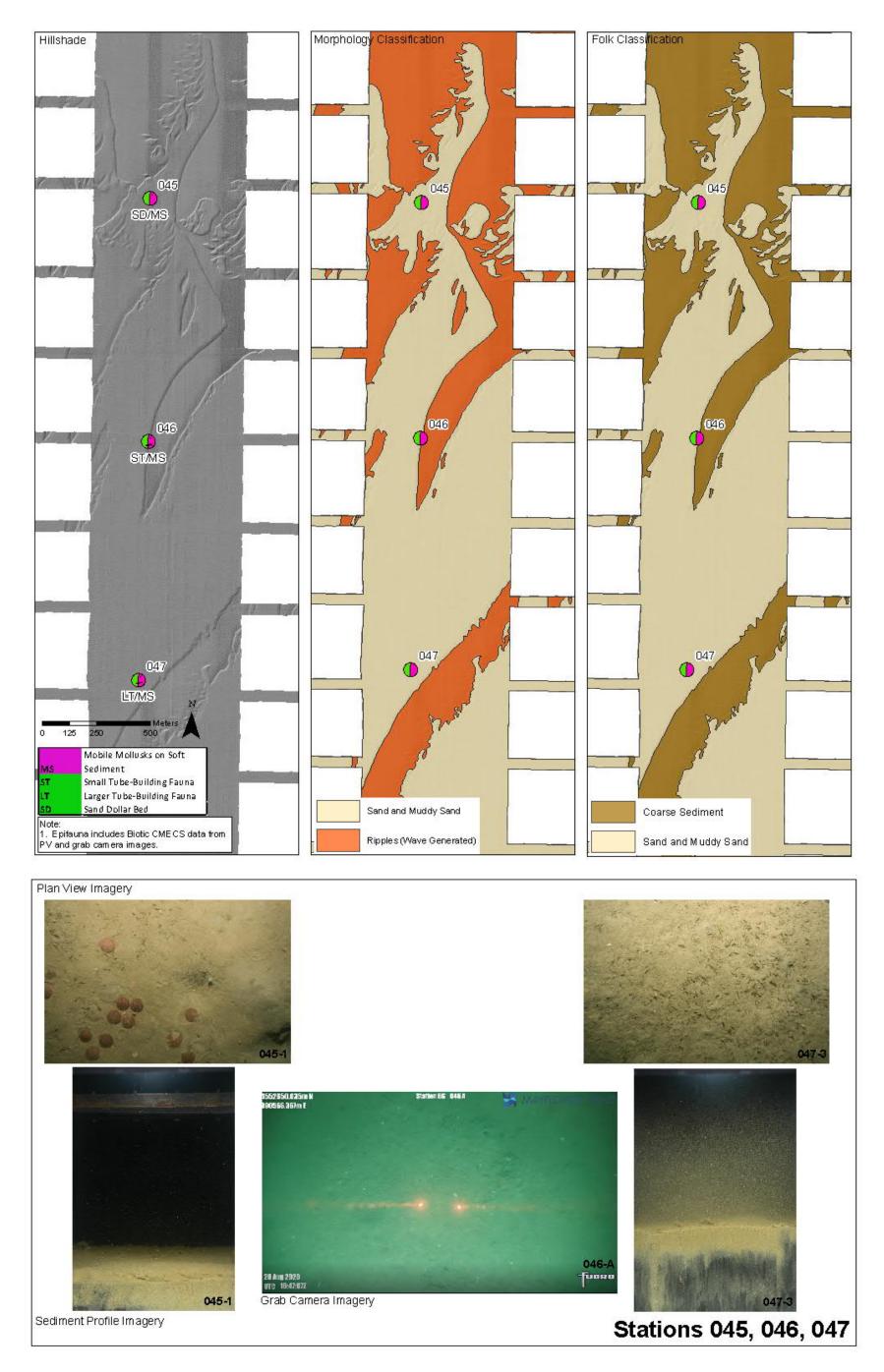


Figure 4-15. Spring and Summer 2020 Southern Export Cable Corridor Stations 045, 046, and 047 Benthic Community, Folk Substrate Classifications, and Seafloor Morphology

AECOM 4-28 Prepared for: Mayflower Wind Energy LLC

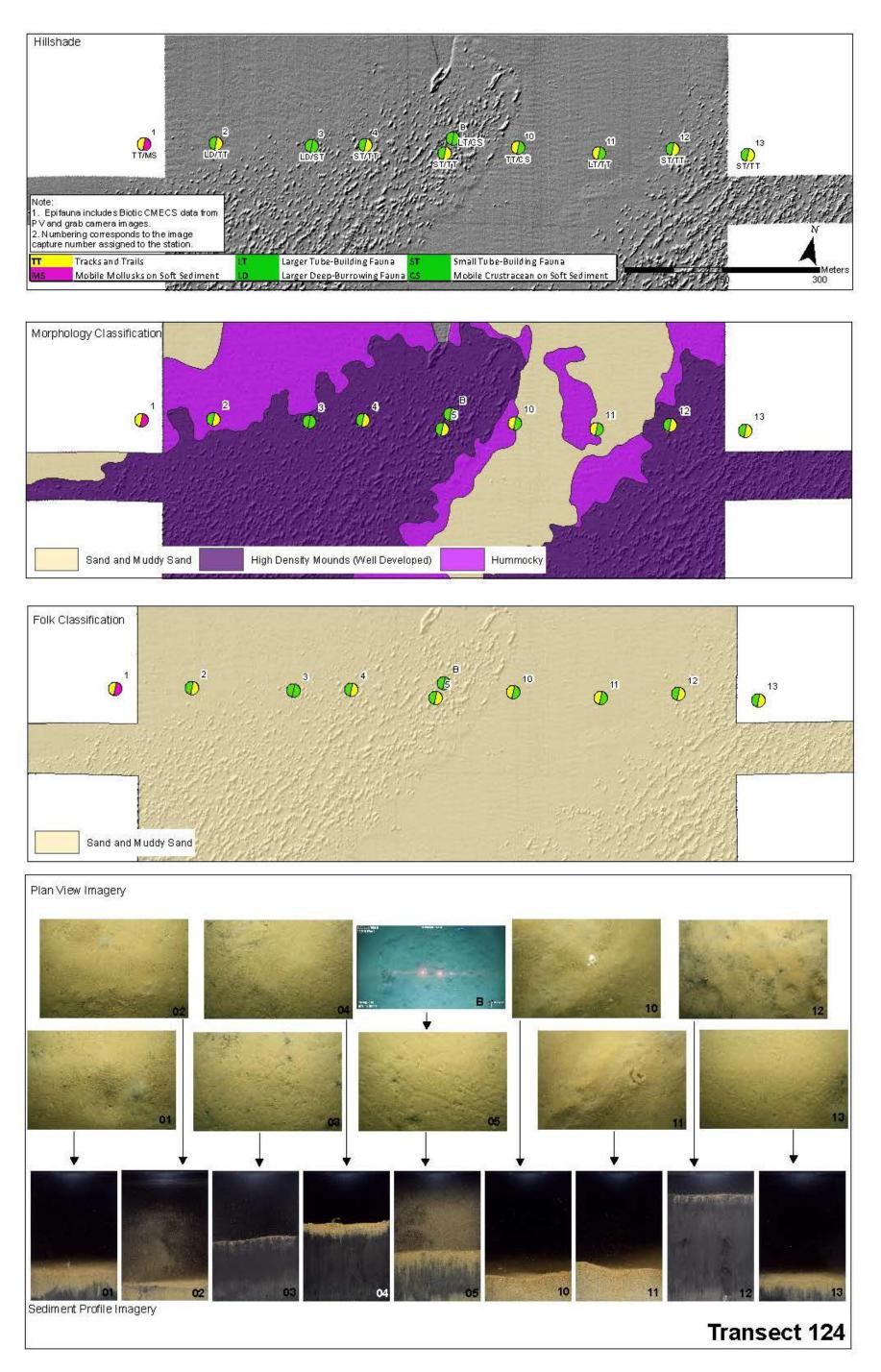
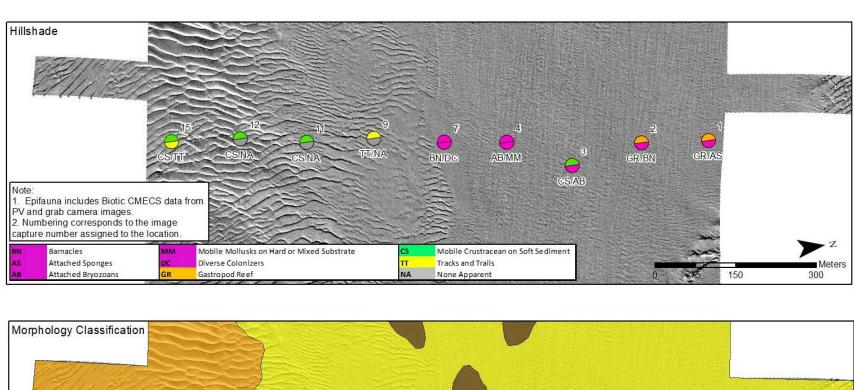
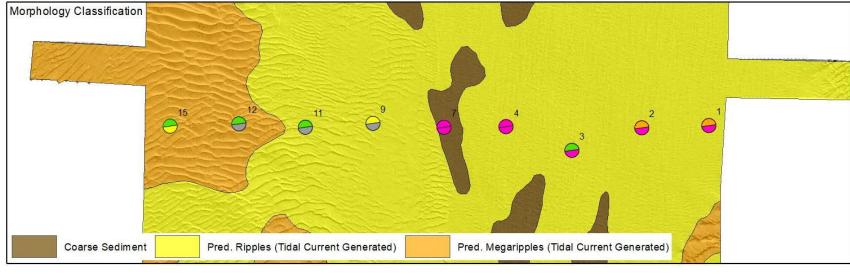
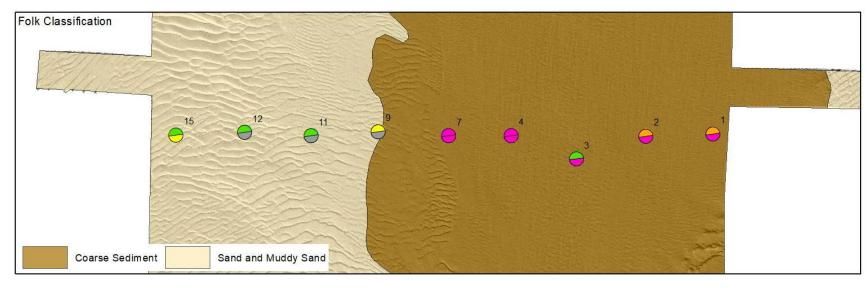


Figure 4-16. Spring and Summer 2020 Southern Export Cable Corridor Transect 124 Benthic Community, Folk Substrate Classifications, and Seafloor Morphology

AECOM 4-29 Prepared for: Mayflower Wind Energy LLC







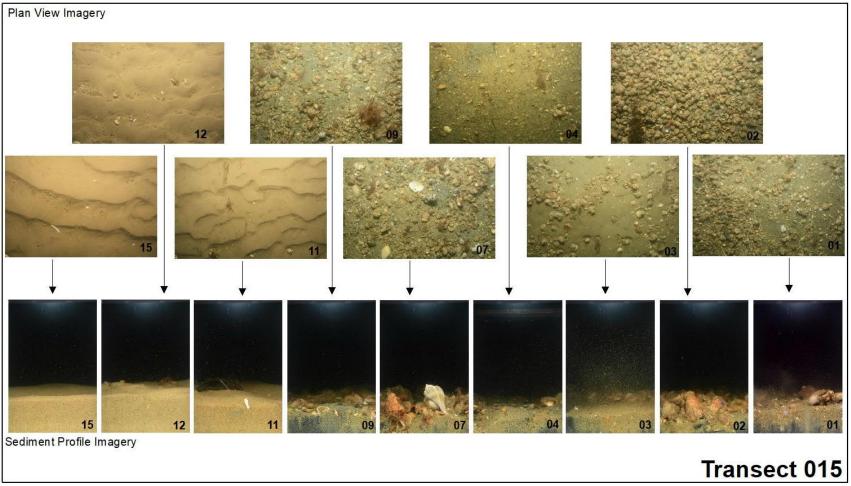


Figure 4-17. Spring and Summer 2020 Northern Export Cable Corridor Transect 015 Benthic Community, Folk Substrate Classifications, and Seafloor Morphology

AECOM 4-30 Prepared for: Mayflower Wind Energy LLC

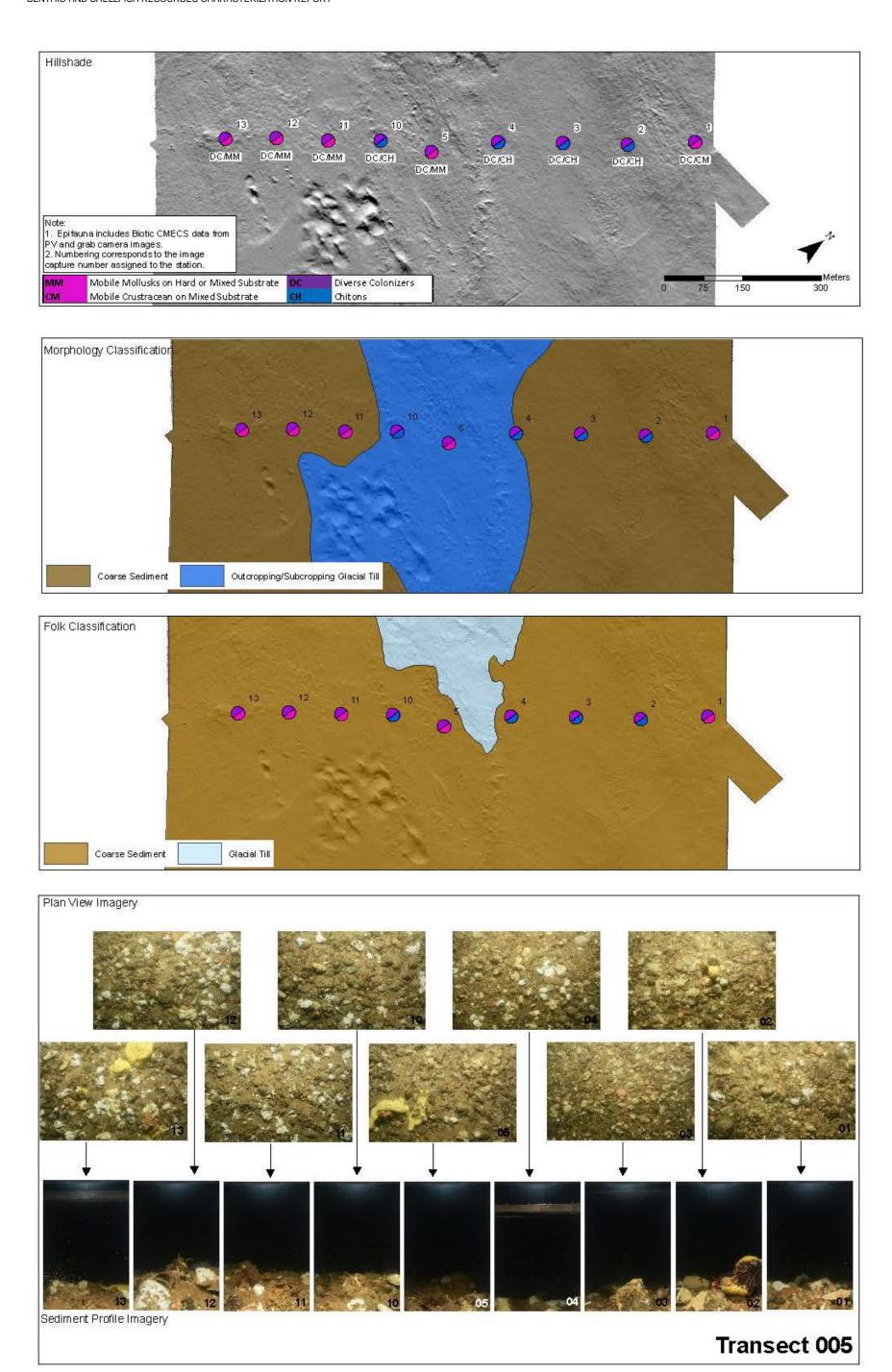
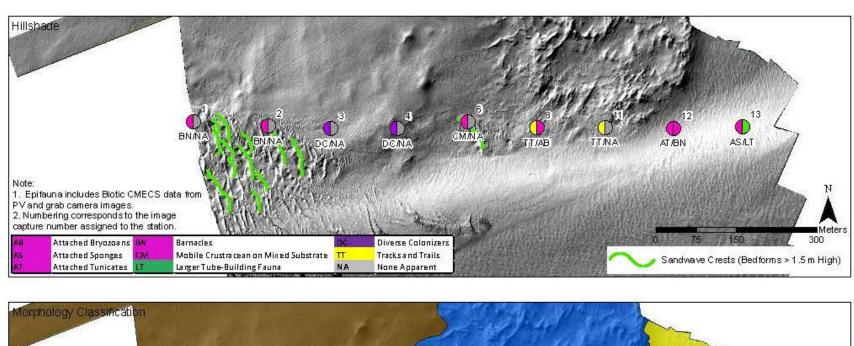
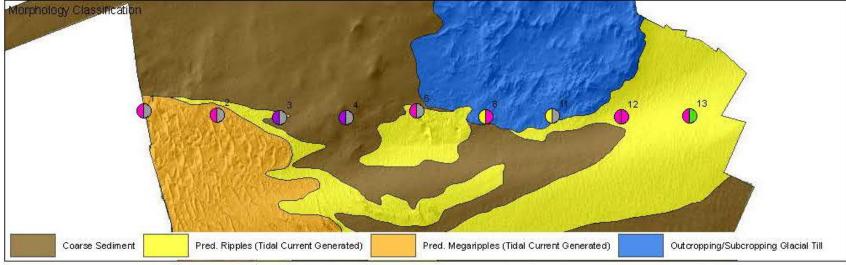
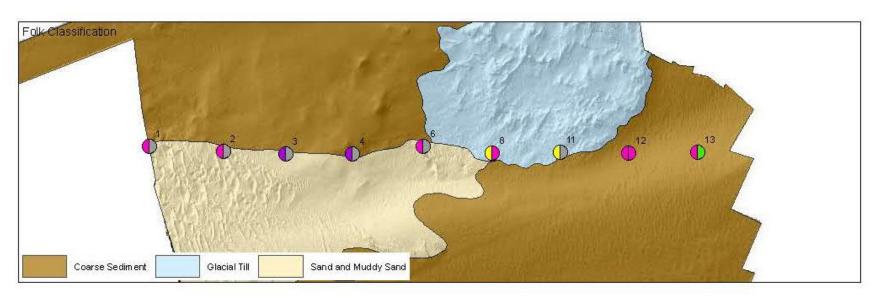


Figure 4-18. Spring and Summer 2020 Northern Export Cable Corridor Transect 005 Benthic Community, **Folk Substrate Classifications, and Seafloor Morphology**







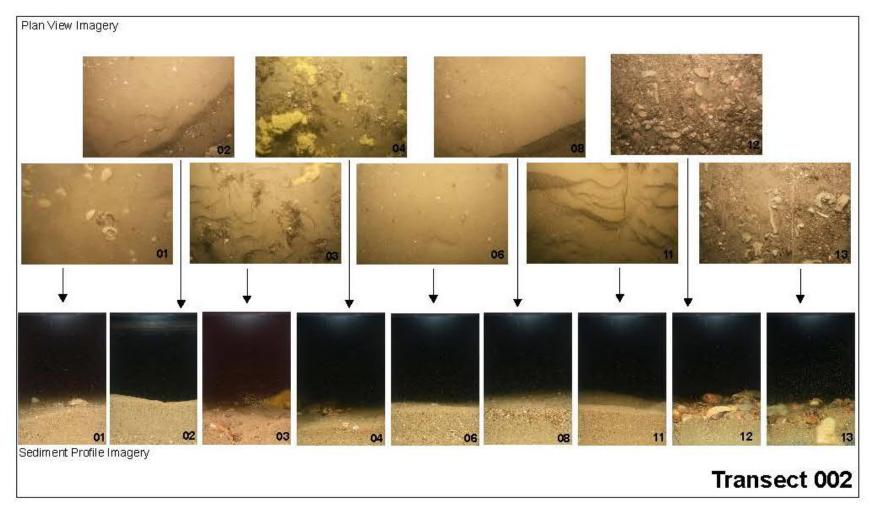


Figure 4-19. Spring and Summer 2020 Northern Export Cable Corridor Transect 002 Benthic Community, Folk Substrate Classifications, and Seafloor Morphology

AECOM 4-32 Prepared for: Mayflower Wind Energy LLC

5.0 Characterization of Project Effects

This section discusses the characterization of potential for effects to benthic habitats and species associated with the Project. This assessment draws upon the characterization of resources presented in Sections 3.0 and 4.0. Reference to sea bottom throughout this section is synonymous with seafloor referenced throughout the document.

5.1 Characterization Approach

The following provides a description of the approach used to characterize effects of the Project on resources (receptors) within or in the vicinity of the Project. This approach used in this Report includes three primary steps:

- 1. Identification and characterization of Impact Producing Factors (IPFs)
- 2. Identification of potentially affected resources
- 3. Effect characterization

5.1.1 Impact Producing Factors and Potentially Affected Resources

BOEM, in its *Information Guidelines for a Renewable Energy Construction and Operations Plan (COP)* identified primary IPFs potentially affecting biological resources (BOEM, 2020a). The spatial extent and duration of activities associated with each IPF are described in detail in Section 3.4 of the COP. These were adapted to address the IPFs associated with the Project relevant to benthic infauna and epifauna and associated habitats.

Based on an assessment of the Project activities described in Section 2.0 (and detailed in Section 3.3 of the COP), each anticipated IPF is assigned an intensity ranking based on a qualitative assessment of the criteria provided in Table 5-1.

Based on these criteria an effect intensity is assigned (none, very low, low, medium, or high).

Table 5-1 below provides definitions of the criteria used to qualitatively assess the anticipated effect intensity with the effect being change to the resource brought about by the presence of a Project component or by the execution of a Project activity.

Based on the qualitative assessment and the application of professional judgment, each anticipated effect is assigned one of the intensity levels defined in Table 5-2.

Table 5-1. Effect Criteria Qualitative Definitions

Effect Criteria	Definitions
Nature	 Positive – An effect that is considered to represent an improvement to the baseline or to introduce a new desirable factor. Negative – An effect that is considered to represent an adverse change from
	the baseline, or to introduce a new undesirable factor.
	• Direct – An effect created as a direct result of the Project or Project activities.
Type	 Indirect – An effect that may be caused by the Project but will occur in the future or outside the direct area of Project influence.
	 Temporary – Effects that are transient, intermittent or occasional in nature (reversible).
Reversibility	 Permanent – Effects that occur during the development of the Project and cause a permanent change in the affected impact indicator or resource that endures substantially beyond the Project lifetime (irreversible).
	 Short-Term – Effects that are predicted to last only for a limited period (less than four years) but will cease on completion of an activity, or as a result of mitigation measures and natural recovery.
Duration	 Medium-Term – Effects that will occur over a period of four to 10 years. This will include impacts that may be intermittent or repeated rather than continuous if they occur over an extended time period.
	 Long-Term – Impacts that will occur over an extended period (more than 10 years). This will include impacts that may be intermittent or repeated rather than continuous if they occur over an extended time period.
	 Local – Effects that alter or influence locally important resources or are restricted to a single (local) administrative area or local community (not widespread).
Geographical Extent (Area)	 Regional – Effects that alter or influence regionally important environmental resources or are experienced at a regional scale as determined by administrative boundaries (widespread).
	 National – Effects that alter or influence nationally important resources, affect an area that is national important/protected or macro-economic consequences (widespread).
Cumulative	 Cumulative – Direct or indirect effects that could have a greater expression due to the proximity and timing of other activities in the Project Area.
Cumulative	• Synergistic - Direct or indirect effects that could have a greater expression due to the additive or interactive nature of the effect in a place and within a time.

Notes:

(a) Effect criteria and definitions adapted from IISD (2016)

Table 5-2. IPF Intensity Levels and Defining Characteristics

IPF Intensity Level	Example Characteristics
	 Negative effect is permanent (irreversible). Long-term duration of negative effects (more than 10 years) that are widespread.
	 Effects that influence or alter nationally important resources (e.g., federally listed or managed species).
High	 Effects that change ambient conditions to cause (or reasonably may cause) death or injury with population-level effects to non-protected species.
	 Changes to ambient conditions that may cause death or injury to a protected species and could influence overall species survival.
	 Cumulative or synergistic effects will occur, or may be reasonably expected to occur, and have population-level effects on non-protected species
	 Medium-term duration of effects (five to 10 years) that are geographically widespread (wide-spread regional).
Medium	 Direct or indirect effects that are temporary (reversable), with recovery over a longer period.
	 Water contamination or coastal pollution by slightly biodegradable products and/or hazardous substances having a chronic effect on human health after long-term exposure.
_	Shorter-term effect (one to four years), local and reversible.
Low	 Level of water and coastal pollution detectable, but less than thresholds known to have a negative effect on biota.
	Short-term impact (less than one year), local and reversible.
Very Low	Little to no change in the ecosystems and/or habitat. Weste official released into water at pear natural concentrations.
	 Waste effluents released into water at near-natural concentrations. No impact on protected species.
None	 Intensity is so immaterial that any resulting impact is scoped out of the impact assessment process.

Based on an assessment of the environment described in Section 4.0, the benthic habitat resources are assigned a **sensitivity** "ranking" based on a qualitative assessment of the criteria presented in Table 5-3, whereby sensitivity is ranked as follows: Very Low, Low, Medium, and High. The degree of sensitivity of resource is, in part, based on resource's resilience, its ability to naturally adapt to changes or recover from effect.

Table 5-3. Biological Resource Sensitivity Ranking

Ranking	Resource Characteristics
High	 An already vulnerable resource with very little capacity and means to adapt to or tolerate the changed conditions; or a protected ecosystem or habitat of regional, state or federal importance
	 A resource with limited capacity and means to adapt to change and tolerate changed conditions
Medium	 Adaptation may take an extended period (years) and / or may only be partial
	 Presence of a few species of sensitive or protected fauna and/or flora or a sensitive ecosystem or a locally protected ecosystem or habitat
	 A resource with some capacity and means to adapt to change and maintain/improve current conditions
Low	 Adaptation may take time (weeks/months) and / or may only be partial
20	 Rare or unlikely presence of protected fauna and/or flora, presence of sensitive species not subject to federal, state or local protection; or is an ecosystem which is not protected at local, state or federal levels
Very Low	 A resource with the capacity and means to adapt to change and tolerate the changed conditions
very LOW	 No sensitive or protected fauna and/or flora or is an ecosystem/habitat that is not sensitive or that is already impacted

5.1.2 Effect Characterization

This report describes the approach for characterizing the potential effects resulting from the interactions between the IPFs generated by the Project activities and the biological resources (receptors). The interaction between the IPF **intensity** of the effect and the **sensitivity** of the receptors supports a characterization of the severity of potential effects. For the purposes of this assessment, the potential intensity of the IPFs and sensitivity of receptors have been characterized. Characterization of the severity of potential effects is beyond the scope of this assessment.

5.2 Identification and Characterization of Effects

Benthic species effects associated with the construction, operations and maintenance (O&M), and decommissioning of the Project are expected to be temporary, localized, and short-term. Section 2.0 describes the acreage range of benthic habitat that is expected to be affected by construction. The soft sediment habitat in the Lease Area and portions of the Southern ECC would be temporarily disturbed during construction and O&M, but these homogeneous habitats are expected to recover rapidly (HDR, 2020a). In areas of complex habitat such as the Muskeget Channel and Northern ECC, recovery may take longer but is expected to occur (HDR, 2020a). Similar recovery is expected following removal of offshore facilities during decommissioning at the end of the Project. The loss of soft-sediment habitat due to installation of WTGs and OSP(s) is expected to be relatively insignificant and the addition of new hard substrate may be beneficial to benthic communities (Hemery, 2020; Rastelli et al., 2020.). Benthic communities are expected to recolonize the affected area following construction activities, and this may occur within months or 1 - 3 years of disturbance (U.K. Department for Business Enterprise and Regulatory Reform [BERR], 2008; BOEM, 2013; Guarinello et al., 2017, HDR 2020a). The acreage of benthic habitat expected to be affected by construction (Section 2.0) is small relative to the total area of available surrounding habitat and EFH. Effects to EFH are fully addressed in COP Appendix N, Essential Fish Habitat Assessment and Protected Fish Species Assessment.

Details on potential effects to benthic and shellfish resources from the various IPFs of the Project during construction and decommissioning are described in the following sections. Decommissioning includes

removal of WTG and OSP equipment and support structures using similar methods as during installation, thus resulting in similar expected effects.

Each IPF (COP Section 3.4) including relevant construction, O&M, and decommissioning activity are described in the sections that follow. The pre-mitigation IPF intensity was assigned based on criteria identified in Section 5.1.1. Where appropriate, potential mitigation measures are briefly described. Pre-mitigation IPF intensity is described within the text of the following sections, and both pre- and post-mitigation intensity is summarized in Table 5-4.

5.2.1 Sea Bottom Disturbance

5.2.1.1 Construction and Decommissioning

Construction activities with the potential to disturb bottom sediments include:

- vessel anchoring (including spuds);
- · foundation and scour protection installation; and
- installation of the WTG, OSP(s), inter-array cables, and export cables.

These activities are expected to cause sediment suspension and deposition with increased turbidity near the seafloor as well as direct disturbance (e.g., burial) of habitats within the limit of disturbance. Areas of sea bottom disturbance from construction are presented in Section 3.4 of the COP. To assess the potential impacts from cable placement Scour Modeling and a Sediment Plume Impact Model were conducted for this Project (COP Appendix F1, Sediment Plume Impacts from Construction Activities). The modeling calculated both plume dispersion (TSS mg/L in the water column) and sediment deposition.

The modeling indicated that TSS concentrations above 100 mg/L generally remain suspended during construction activities around the route center line. The 150 mg/L contour is always within 820 ft (250 m) of the center line. TSS concentrations of 100 mg/L are predicted to extend to a maximum of 1,214 ft (370 m) from the cable route center lines and affect a cumulative area of 4,569 acres (1,849 hectares) for the entirety of the export cable and inter-array cable routes. Modeled sediment concentrations exceeding 50 mg/L are generally limited to the first 16 ft (5 m) above the seafloor, although they can reach 16 ft (10 m) above seafloor in the case of the inter-array cables. TSS dissipates upon cessation of construction activities.

Turbidity levels associated with HDD dredging are much smaller than those associated with cable trenching of dredging with concentrations. TSS levels exceeding 100 mg/L are predicted at a maximum distance of 118 ft (36 m), affecting a cumulative area equal or less than 1 acre (0.4 hectare).

Sediment deposition varies based on the installation method and region of the Offshore Project Area:

- Through Nantucket Sound, accretion greater than 0.02 inches (0.5 millimeters) deep may occur
 within 650 ft (200 m) of the disturbance; the majority of accretion is less than 0.02 inches (0.5
 millimeters) deep.
- In Muskeget Channel, the majority of accretion is less than 0.04 inches (one millimeter) deep. Deposition of sediment deeper than 0.04 inches (one millimeter) may occur 100 ft (20 m) from area of disturbance.
- The finer sediment found in the Southern ECC may disperse further. The sediment plume model indicates that most of the accretion will be less 0.04 inches (one millimeter), but some deposition up to 0.2 inches (five millimeters) deep may occur 330 ft (100 m) from the disturbance area.
- The sediment plume from installation of the inter-array cables in the Lease Area is expected to behave much like the Southern ECC, with the majority of accretion 0.04 inches (one millimeter) deep or less, but accretion of up to 0.2 inches (five millimeters) may occur approximately 800 ft (250 m) from the disturbance area.

• The HDD exit pit dredging may cause more effect on a spring tide (0.008 inches [0.2 millimeters] deep approximately 460 ft [140 m] from the pit) than a neap tide (no accretion expected up to 330 ft [100 m] from the pit).

Increased sediment suspension and deposition could result in mortality of benthic organisms through smothering, irritation to respiratory structures, and reduction in feeding success. In all simulated scenarios the maximum TSS level dropped below 10 mg/L within two hours and below 1 mg/L after less than four hours. These effects are expected to be temporary, short-term, and localized.

Vessel anchoring may result in temporary disturbance of bottom sediments during foundation installation, WTG and OSP construction, and inter-array cable and export cable installations. Temporary, short-term, direct effects associated with vessel anchoring include mortality or injury of slow-moving or sessile species within the affected area of spuds, vessel anchor, or anchor chain. The area of these potential effects is presented in Section 3.4 of the COP. The extent of the effects will vary based on vessel type, number, and duration.

Pile driving for the installation of WTG and OSP foundations and scour protection installation will result in localized temporary sediment resuspension and deposition. Scour protection installation may also result in a temporary increase in suspended sediments due to resuspension of bottom sediments as the rock is placed. Effects, including mortality through smothering and displacement of life stages of benthic species, are expected to be short in duration and localized in extent, as benthic species are expected to recolonize following the disturbance.

Inter-array cable and export cable installation, as well as sediment dredging within the ECC, will result in material being sidecast or backfilled, or temporarily disturbed and suspended if plowing installation methods are used. These activities may cause a temporary increase in suspended solids in the water column due to sediment remobilization. The volume of suspended solids released will vary based on the speed and type of equipment used. Sediment mobility and plume dispersion associated with construction activities are addressed in modeling assessment reports (COP Appendix F1, Sediment Plume Impacts from Construction Activities). The installation of the offshore export cable will temporarily alter the bottom habitat but is not expected to cause long-term habitat disturbance to the seafloor; however, the long-term recovery time of sessile, epifaunal benthos expected to occur along the ECC (particularly in the northern portion) may cause a temporary shift in the benthic community composition, which could have permanent effects on the benthic habitat. Inter-array cable and export cable installation methods are still under evaluation. Details of the methods under consideration are provided in Section 3.3 of the COP. Mayflower Wind anticipates use of HDD for the installation of the export cable in the shallower areas closer to shore. Use of HDD is expected to substantially reduce effects of sediment disturbance on benthic habitat in the near shore area. Final cable corridor selection and cable micro-routing within the selected corridor in the northern portion of the ECC will seek to avoid complex habitats that may be expected to have slower recovery to pre-construction conditions, where possible.

Seafloor habitats within the Lease Area and Southern ECC are homogeneous sand plains, which are prevalent on the OCS. Greater habitat complexity including hard bottom habitats are found in the Northern ECC. Benthic communities are expected to recolonize the affected area following construction activities. Recolonization rates are driven by the benthic communities surrounding the affected region. Communities well adapted to disturbance within their habitats (e.g., Soft Sediment Fauna dominant in sandy sediments in the Lease Area and Southern ECC) are expected to quickly recolonize a disturbed area, while communities less well adapted to frequent disturbance (e.g., Attached Fauna such as anemones and encrusting sponges associated with gravel, boulders, and cobble habitat noted in the Northern ECC) may take upwards of a year to begin recolonization (BERR, 2008; BOEM, 2013; Guarinello et al., 2017). Effects are expected to be temporary, short-term, and localized in the Lease Area and Southern ECC. In areas of more complex habitat (i.e., Northern ECC), recolonization is expected to occur over a longer period of time (1 to 3 years), though effects are still considered short-term, local, and direct (BERR, 2008; BOEM, 2012; Guarinello et al., 2017, HDR, 2020a). Decommissioning-related seafloor disturbances are comparable to construction if the structures and cables are removed. If WTG/OSP foundations are cut above the sediment line and the export cables and inter-array cables are abandoned *in situ*, no further sediment disturbance would occur.

Based on the above information, the effects of the sea bottom disturbance IPF on benthic resources during construction is assigned an intensity level of **Very Low** for the Lease Area and Southern ECC, and **Low** for the Northern ECC, which traverses more complex habitat with potentially longer recovery times. For decommissioning, the intensity level for the WTGs and OSP(s) would be the same as for construction. For decommissioning the inter-array cables and export cables, the intensity level would be **None** if there is no removal of cables, or **Very Low/Low** if cables are removed.

5.2.1.2 Operations & Maintenance

Operation of the WTGs, OSP(s), inter-array cables, and the associated export cables will not result in further sediment disturbance during normal operations. However, if/when required, the repair or replacement of the inter-array cables or export cables would result in additional short-term temporary sediment disturbances, comparable with construction.

The presence of foundations and scour protection is expected to result in long-term, direct effects on soft bottom benthic organisms because of the loss of habitat due to conversion of existing sand sheet or sand with gravel to hard bottom habitat. The conversion of a small area of sand sheet habitat to hard bottom habitat is unlikely to result in changes to the benthic community outside of the immediate area. Long-term benefits are expected for species associated with hard bottom habitat.

Recent studies performed as part BOEM's Real-time Opportunity for Development Environmental Observations (RODEO) program collected three years of benthic habitat data from the Block Island Wind Farm to assess the temporal and spatial changes in substrate characterization and benthos abundance and distribution near the WTG foundations during operations. Epifaunal monitoring data was collected using video analysis and benthic grab sampling from two of the five WTGs at various distances from the WTG foundations. Results of the RODEO program found that by year 2 of epifaunal monitoring, the foundations were primarily colonized by dense blue mussel aggregations; approximately 61-88 percent of epifauna observed were blue mussels (Hutchison et al., 2020). The epifaunal and sediment characteristics varied between WTGs and between survey years. These results are expected to be similar to those that may be observed during the operations phase of the proposed Project due to its close proximity to Block Island Wind Farm (located approximately 56.3 mi [90.6 km] southeast of the Block Island Wind Farm).

The intensity level is **None** for routine O&M to **Very Low** for potential repair or replacement of subsurface inter-array cables or export cables.

5.2.2 Displacement of Biological Resources

5.2.2.1 Construction and Decommissioning

Displacement of benthic biological resources would result from seafloor disturbance (e.g., foundation, scour protection, inter-array cable and export cable installation) described above. The installation of the WTG and OSP foundations and associated scour protection will alter the bottom habitat, resulting in local short-term direct effects associated with mortality and displacement during construction and decommissioning. Displacement would mainly occur in the footprint of construction activities. The maximum WTG substructure footprint diameter including foundation, scour protection and mud mats ranges from approximately 374 to 800.5 ft (114 to 244 m). The OSP maximum permanent footprint area including foundation, scour protection and mud mats, ranges from approximately 2.52 to 11.55 acres (1.02 to 4.67 ha). The total footprint area assuming full buildout and maximum foundation size is estimated to occupy approximately one percent of the Lease Area (COP Section 3.3). Due to the homogeneous sandy habitat observed in the Lease Area and much of the Southern ECC, recolonization rates in these areas are expected to be reversed in a relatively short period of time. Dernie et al. (2003) reports that sandy sediments recover rapidly. Since the Lease Area primarily consists of sand, the loss of soft-sediment habitat is expected to be relatively insignificant. The addition of new hard substrate may be beneficial to benthic communities, attracting a different community of organisms and enhancing diversity (Hemery, 2020; Rastelli et al., 2020). Complex habitats found in the Northern ECC may take longer to recover but would still recover (HDR 2020a). Benthic species are expected to recolonize the affected area following construction activities, and this may occur within months (e.g., sandy sediments) or 1 to 3 years (e.g., complex habitat areas) of disturbance (BERR, 2008; BOEM, 2012; BOEM, 2021; Guarinello et al., 2017).

The installation of the offshore export cable will temporarily alter the bottom habitat but is not expected to cause long-term habitat disturbance to the seafloor; however, the long-term recovery time of sessile, epifaunal benthos expected to occur along the ECC (particularly in the northern portion) may cause a temporary shift in the benthic community composition, which could have permanent effects on the benthic habitat.

Decommissioning related seafloor disturbance and corresponding displacement of benthic resources would be comparable with that of construction if the substructures and cables are removed. If not removed, foundations cut above the sediment line and abandonment of the inter-array cables in place would result in no further sediment disturbance.

The intensity level for resource displacement associated with construction and decommissioning activities is **Very Low**.

5.2.2.2 Operations & Maintenance

The installation of WTGs and OSP(s) in the Lease Area introduces structures that provide a source of new hard substrate for the life of the proposed Project. The Lease Area has a very limited amount of hard bottom habitat; therefore, the presence of WTG and OSP foundations are anticipated to directly affect the benthic habitat in the Lease Area during the operations phase. Epifaunal organisms that may settle on WTG foundations include algae, sponges, tunicates, anemones, hydroids, bryozoans, barnacles, and mussels (Hemery, 2020; ICF Incorporated, L. L.C., 2020; Kramer et al., 2015, Joschko et al., 2008). These organisms are known to occur on other hard bottom substrate areas in Nantucket Sound in association with man-made substrates such as navigation buoys and pier pilings. Benthos including polychaetes, gastropods, nudibranchs, and crustaceans are expected to be present on or near the WTGs and OSP(s) as growth of fouling organisms develops. Results of recent RODEO studies of epifaunal monitoring in Block Island Wind Farm found that following two years of installation, the foundations were primarily colonized by dense blue mussel aggregations (Hutchison et al., 2020). Similar results to those that may be observed during the operations phase of the proposed Project due to its close proximity to Block Island Wind Farm (located approximately 56.3 mi [90.6 km] southeast of the Block Island Wind Farm).

Effects related to displacement of biological resources are not expected during normal operations, as further sediment disturbance is not expected to occur. However, if/when required, the repair or replacement of the inter-array cables or export cables would result in additional short-term, local sediment disturbances, comparable with construction. Long-term effects are associated with the irreversible changes in the areas affected by foundation and scour protection placement.

The intensity level for resource displacement associated with O&M activities is Very Low.

5.2.3 Direct Injury or Death of Biological Resources

5.2.3.1 Construction and Decommissioning

During construction, the installation of the WTG and OSP foundations as well as placement of scour protection (rock material) will result in direct mortality of sessile species and life stages (e.g., benthic infauna, shellfish) in the foundation and scour protection footprint. During inter-array cable and export cable installation, sessile and/or slow-moving organisms in the direct path of cable-laying equipment may be injured or die during construction. Likewise, some sessile or slow-moving organisms may be injured or die as a result of burial from sidecast sediment, or within the cable backfill. Such effects are highly localized and limited to the actual time of cable laying. Due to the homogeneous habitat noted in the Lease Area and Southern ECC, recolonization rates in these areas are expected to be fairly short and effects are assumed to be temporary, short-term, and direct. Recolonization in heterogeneous habitats (e.g., Northern ECC and Muskeget Channel) are expected to be slower, although effects are still categorized as temporary, short-term, and direct. As noted in several studies (e.g., BERR, 2008; BOEM, 2012; Guarinello et al., 2017;HDR, 2020a), benthic species are

expected to recolonize the affected area following construction activities, and this may occur within months (e.g., sandy sediments) or 1 to 3 years (e.g., complex habitat areas) of disturbance.

Decommissioning and structure removal above the seafloor is not expected to result in high levels of injury or death to shellfish, other benthic, or epibenthic organisms. If structures (foundation or cables) below the seafloor are removed during decommissioning, effects would be similar to those for construction.

Based on the above information, the intensity level is **Very Low** for WTG/OSP foundation and cable installation as well as decommissioning. Once the construction ceases, so too will further habitat modification or disturbances. Marine organisms will begin to colonize and respond to the new structures; however, the area in the immediate footprint of the WTG and OSP foundations (less than one-quarter of one percent of the total Lease Area) will not be recolonized by soft bottom benthic organisms, and the effect in the footprint of the foundation is permanent. Following decommissioning, the footprint of the substructure will be available for recolonization. Neither the export cables, WTG, nor associated apparatus would serve as impediment to faunal movements.

5.2.3.2 Operations & Maintenance

The IPF intensity associated with long-term O&M is None.

5.2.4 Planned Discharges

5.2.4.1 Construction and Decommissioning

Vessels used during offshore construction activities may routinely release bilge water, engine cooling water, deck drainage, and/or ballast water (see COP Section 3.3.15). Such releases would quickly be dispersed and diluted and would cease when construction is complete. Due to expected dispersion and dilution, effects to benthic resources are expected to be temporary, short-term, and direct.

Vessels and the construction activities offshore will comply with the regulatory requirements related to the prevention and control of discharges. Decommissioning-related discharges are expected to be comparable to those for construction. Discharges are expected to occur as allowed by law, and will be temporary, short-term, and highly localized.

The assigned intensity level for discharges during construction operation and decommissioning is **Very Low**.

5.2.4.2 Operations & Maintenance

Vessels used in the long-term O&M of the Project will have planned discharges, similar to those described for construction. Given that O&M will require very few vessels compared to construction, the risk of occurrence for vessel-planned discharges would be substantially reduced from those expected during construction.

The assigned intensity level for discharges during O&M is **Very Low**.

5.2.5 Accidental Events (releases)

5.2.5.1 Construction and Decommissioning

Fuel spills or leaks from vessels could affect benthic habitat. Vessels engaged in construction may experience unplanned releases of oil, solid waste, or other materials (COP Sections 3.3.15 and 3.4). During the construction period, increased vessel traffic in the area of construction and at nearby ports may increase the potential for accidental events. Offshore structures also contain small quantities of coolants, oil, and other lubricants. Therefore, the potential exists for the unplanned release of such material during construction and decommissioning of the structures. Vessels and the construction activities offshore will comply with the regulatory requirements related to the prevention and control of discharges and the prevention and control of accidental spills, as documented in the Project's Oil Spill Response Plan (COP Appendix AA). As with

planned discharges, due to the expected dispersion and dilution of material released, effects on benthic resources are expected to be temporary, short-term, and direct.

Based on the above information, accidental events during construction and decommissioning were assigned a **Very Low** intensity level.

5.2.5.2 Operations & Maintenance

Effects related to accidental events during O&M would be similar as addressed above.

The intensity level associated with O&M activities is Very Low.

5.2.6 Introduced Sound

5.2.6.1 Construction and Decommissioning

Direct effects associated with sound during construction in the Lease Area may occur during pile driving and installation of the inter-array cables and offshore export cables. There is limited scientific literature regarding the potential effects of anthropogenic noise on benthic species and shellfish (Epsilon, 2018, Dannheim et al., 2019). Since benthic species and shellfish lack gas-filled organs, literature indicates that they are less sensitive than finfish and marine mammals to underwater noise (Edmonds et al, 2016; Normandeau Associates, Inc., 2012). While there is some evidence of sound production detection in some invertebrates including snapping shrimp (*Athanas nitescens*), cephalopods, and some bivalves, the role of sound in the ecology of marine invertebrates remains primarily unclear (Coquereau et al., 2016).

Although physiological effects to benthic species are not expected from introduced sound, ongoing research studying the effects of pile-driving on mussels have found that low frequency sounds may cause behavioral changes resulting in an increased potential for predation and potential interruption of communication (Spiga et a al., 2016; Roberts et al., 2016). Studies on the Norway Lobster (*Nephrop norvegicus*) have also shown potential noise-related behavioral changes affecting ecological processes such as bioirrigation (Solan et al., 2016). Dannheim concluded that sessile invertebrates may be affected by sound exposure (Dannheim et al., 2019) and additional research is underway studying sound speed and attenuation in sediments and the effects on tube-dwelling and burrowing marine infaunal organisms (Dorgan et al., 2020).

Based on review of these studies and the temporary nature of the introduced sound associated with construction and decommissioning activities, effects to benthic organisms is assumed to be temporary, short-term, and direct.

The assigned intensity level for sound introduction during construction and decommissioning is Very Low.

5.2.6.2 Operations & Maintenance

The WTGs will produce low-level continuous underwater sound (infrasound) during operation; however, there are no conclusive studies associating WTG operational noise with effects on benthic resources and shellfish. Because of this, direct effects are expected to be temporary, short-term, and direct for WTG operational noise. No indirect effects are expected.

The intensity level associated with O&M activities is Very Low.

5.2.7 Electric and Magnetic Fields

5.2.7.1 Construction and Decommissioning

Effects associated with electromagnetic (EMF) during construction or decommissioning of WTGs and OSP(s), installation or decommissioning of the inter-array cables and export cables are unlikely to occur.

The assigned intensity level for EMF during construction and decommissioning is None.

5.2.7.2 Operations & Maintenance

The inter-array cables and the export cables will be sources of EMF in the marine environment throughout operation of the Project (COP Appendix P1, Electric and Magnetic Field [EMF] Assessment for the Proposed Mayflower Wind Submarine Export Cables). The responses of marine invertebrates to EMF has not been well studied. Because there are few laboratory-based studies regarding sensitivity of marine invertebrates, data from field studies have be examined to infer the potential for effects on invertebrates. Love et al., 2015 examined rock crabs located alongside unburied alternating current (AC) cables located off the coast of California. Data were generated from adjacent to both unenergized and energized cables in order to determine and effects of EMF from the energized cables. Field observations indicated that no behavioral responses (e.g., avoidance of the area surrounding the energized cable) were observed among crabs near the energized cable compared with responses of crabs near the unenergized cable (Love et al., 2015).

Recent studies have suggested that EMF perception, based on sensory ability and detection, likely varies through a species life history, and the species-specific movement ecology affects the probability for exposure to EMF based on the likelihood of encounters (Hutchison et al., 2020). Commercially important invertebrates are largely opportunistic and periodic. Opportunistic and periodic species are more resilient to environmental disturbances particularly those impacting early stages (egg, larvae, juvenile) as they manage to offset the disturbances by high fecundity, early dispersal, and natural mortality rates (Gross et al., 2002). Thus, detection of EMF effects, particularly in assessment of population effects, is more likely for adults of species maturing late and for juveniles of equilibrium species, stages when local effects on individuals represent a larger fraction of the population (Hutchison et al., 2020).

Although some studies suggest EMF have been associated with minimal levels of physiological effects on certain stages of benthic invertebrates, developmental responses are not expected to occur (Hutchinson, 2020). Direct effects are expected to be temporary, short-term, and local.

The intensity level of EMF associated with O&M activities is Very Low.

Table 5-4. Pre- and Post-Mitigation Potential Risk of Effect

IPF	Related Activities	Key Intensity Criteria ^(a)	Pre-Mitigation Intensity Level ^(b)	Receptor Sensitivity Rank ^(c)	Mitigation Type	Post- Mitigation Intensity Level ^(d)
Sea bottom disturbance	WTG/OSP construction and foundation installation, including pile driving, scour protection, and vessel anchoring WTG/OSP decommissioning	Direct Temporary Short-term Local	Very Low	Low	Selection of lower-impact construction methods, where possible	Very Low
	IAC/EC Installation	Direct Temporary Short-term Local	Very Low (Lease Area and SECC) Low (NECC)	Low	HDD for nearshore EC. Cable burial would allow benthic recolonization after construction is complete Avoid disturbance to nearshore productive shellfish beds	Very Low
	IAC/EC decommissioning	Direct Temporary Short-term Local	None to Very Low/Low	Low	HDD for nearshore EC See construction phase	None to Very Low
	O&M of EC, IAC, and WTG/OSP Structures	Direct Temporary Long-term Local	None for routine O&M Very Low/Low for bottom- disturbing maintenance	Low	Presence of structures and scour protection provides positive benefit in diversity of habitat	None

IPF	Related Activities	Key Intensity Criteria ^(a)	Pre-Mitigation Intensity Level ^(b)	Receptor Sensitivity Rank ^(c)	Mitigation Type	Post- Mitigation Intensity Level ^(d)
Displacement of	EC and IAC construction/installation WTG/OSP foundation construction/installation	Direct Temporary Short-Term Local	Very Low	Low	Minimize disturbance to hard bottom habitat to the extent possible Cable burial Avoid complex habitats to the extent possible Selection of lower impact construction methods, where possible	Very Low
biological resources	WTG/OSP, EC, and IAC decommissioning	Direct Temporary Short-Term Local	Very Low	Low	See construction phase	None to Very Low
	WTG/OSP foundation structure presence (O&M)	Direct Temporary Long-term Local	Very Low	Low	Minimize area of disturbance	Very Low
Direct injury or death	WTG/OSP, EC and IAC construction	Direct Temporary Short-term Local	Very Low	Low	Minimize scour protection to that required for protection of equipment	None – Very Low
Planned Discharges	Vessel discharges during construction, decommissioning, and O&M	Direct Temporary Short-term Local	Very Low	Low	Regulatory compliance Onboard best practices	None
Accidental Events	IAC, EC, WTG foundation installation and decommissioning WTG/OSP operation O&M Vessels	Direct Temporary Short-term Local	Very Low	Very Low	Regulatory compliance Onboard best practices OSRP implementation	None

IPF	Related Activities	Key Intensity Criteria ^(a)	Pre-Mitigation Intensity Level ^(b)	Receptor Sensitivity Rank ^(c)	Mitigation Type	Post- Mitigation Intensity Level ^(d)
Introduced Sound	WTG/OSP, EC and IAC construction WTG/OSP, EC and IAC decommissioning WTG/OSP Operation O&M vessels	Direct Temporary Short-Term Local	Very Low	Very Low	Soft start during initial pile driving activities to allow mobile epifauna and cephalopods to migrate away from the area	Very Low
	IAC and EC installation and decommissioning	None	None	None	None	None
Electromagnetic fields	WTG/OSP and cable O&M	Direct Temporary Short-Term Local	Very Low	Very Low	Optimization of cable placement to reduce overall length of cables.	Very Low

Notes:

EC - export cable(s)

HDD – horizontal directional drilling

IAC - inter-array cable(s)

NECC - Northern export cable corridor

O&M - operations and maintenance

OSP - offshore substation platform

OSRP - oil spill response plan

SECC - Southern export cable corridor

WTG - wind turbine generator

- (a) See Table 5-1
- (b) Pre-Mitigation IPF intensity level is characterized assuming no additional efforts to avoid, minimize and mitigate effects
- (c) See Table 5-2
- (d) Post-Mitigation IPF intensity level represents residual level assuming implementation of mitigation measures including avoidance, minimizing, restoration, and offsetting

5.3 Minimization/Mitigation of Potential Effects

Measures to mitigate potential effects were considered for each IPF identified. A summary of the effect of these measures is provided in Table 5-4. Such measures may fall into several categories including:

- Site selection Avoidance of construction activities in areas of sensitive seafloor and benthic habitat;
- Regulatory compliance Compliance with applicable federal, state, and local regulations that will lessen the potential for adverse effect;
- Construction methods Selection of construction methods that are less effect-producing (described in Section 3.3 of the COP); and
- Control measures/best practices Measures that, when employed, will lessen the potential for effect (i.e., selection of lower-impact construction methods).

The construction of the WTGs, offshore export cables, and inter-array cables will require considerable regulatory review and consultation, thus providing valuable input from regulatory agencies on Project design to minimize the potential for adverse effects. As noted in Table 5-4, selection of construction materials and methods that can minimize effects to complex bottom habitat will be used where possible. While these measures will reduce the potential for and severity of effects associated with construction activities, some residual short-term term risk will remain.

6.0 Conclusions

The benthic seafloor and habitat characterizations synthesize benthic sampling, imagery, and geophysical survey results to provide an assessment of physical and biological characteristics of the seafloor within the Lease Area and along the ECC.

The primary conclusions of this seafloor and benthic habitat assessment are:

- Benthic substrate in the Southern ECC and Lease Area are primarily classified as Fine
 Unconsolidated material, dominated by sand. Complex habitat (Gravelly) was only observed at one
 station along the Southern ECC in the Spring and two stations in the Summer. No other complex
 habitat features were noted in the Southern ECC or the Lease Area.
- Epifauna/megafauna found at the Southern ECC and Lease Area were predominantly surfacedwelling organisms (e.g., sand dollars, crabs, gastropods). Soft Sediment Fauna was the dominant CMECS subclass observed in the Southern ECC and Lease Area, characterized by tube-building and surface-burrowing fauna.
- The Northern ECC substrate was primarily classified as Coarse Unconsolidated material. Areas of complex habitat were noted at many stations along the Northern ECC.
- CMECS characterization of fauna along the Northern ECC was heterogeneous and included Soft Sediment and Attached Fauna (i.e., macroalgae, hydroids, bryozoans, sponges), with Reef Biota observed at two stations (008 and 019).
- 5. Effects associated with the construction, O&M, and decommissioning are characterized as follows:
 - Effects within Lease Area and ECC to benthic species are expected to be low, localized, and short-term.
 - b. Due to the heterogeneous habitat noted in the Northern ECC, recolonization of these complex areas is expected to occur over longer periods (e.g., 1 3 years) compared with recovery of up to a year expected in sandier sediments of the Lease Area and the Southern ECC. Effects to the benthic resources in the Northern ECC are considered temporary, short-term, and indirect.
 - c. Installation of foundations and scour protection in the Lease Area and Southern ECC would result in conversion of soft bottom habitat to hard bottom habitat within the footprint of the WTGs. This conversion could have beneficial effects through introduction of habitat diversity to a largely homogeneous sand plain.
 - d. Along the ECC and within the Lease Area outside of the footprints of WTGs and OSP(s), the substrates are expected to return to conditions similar to conditions before construction.
 - e. Recovery of the benthic habitat following removal of offshore facilities during decommissioning at the end of the Project is likely to be similar to the recovery during construction.

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ATTACHMENT 1 - Sediment Profile and Plan View Imaging Survey of the Mayflower Wind Project Areas. May 12 - 25, 2020. Integral, 2020a

Sediment Profile and Plan View Imaging Survey of the Mayflower Wind Project Areas

May 12–25, 2020 Final Report

Prepared for Fugro
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ACRONYMS AND ABBREVIATIONS

ac acre(s)

aRPD apparent redox potential discontinuity

BOEM Bureau of Ocean and Energy Management

cm centimeter(s)

CMECS Coastal and Marine Ecological Classification Standard

COP Construction and Operations Plan

DSC Digital Still Camera

ECR export cable route

Eh oxidation/reduction potential

FGDC Federal Geographic Data Committee

ft feet/foot

FSP Field Survey Plan

GUI graphical user interface

Integral Consulting Inc.

ISO International Standard Organization

km kilometer(s)

L liter(s)

lb pound(s) m meter(s)

MB megabyte

mi mile(s)

mL milliliter(s)

MLA Mayflower Lease Area

mm millimeter(s)

MW megawatt

NEF Nikon Electronic Format

NMFS National Marine Fisheries Service

nmi nautical mile(s)

NYSERDA New York State Energy Research and Development Authority

OIS Ocean Imaging Systems

PV plan view

QA/QC quality assurance and quality control

RPD redox potential discontinuity

RTVS Real-Time Visualization System

SD Secure Digital

SLR single lens reflex

SPI sediment profile imaging

SWI sediment-water interface

U.S. United States

UTC Coordinated Universal Time

W watt

WTG wind turbine generator

1 PROJECT BACKGROUND

Mayflower Wind proposes a 1,200-megawatt (MW) offshore wind renewable energy generation project located in federal waters off the southern coast of Massachusetts, approximately 26 nautical miles (nmi) (48 kilometers [km]) south of the island of Martha's Vineyard and 20 nmi (37 km) south of Nantucket within federal Lease Area OCS-A 0521 (Project). The Mayflower Lease Area (MLA) where the offshore wind turbine generators (WTGs) will be placed is approximately 127,388 acres (ac) (515 km²). The export cable route (ECR) will extend approximately 55 miles (mi) (90 km) from the MLA to a landing point in Falmouth, Massachusetts. Figure 1-1 shows the location of MLA and ECR; adjacent federal wind lease areas are also shown on the map.

Mayflower Wind requires approval from the Bureau of Ocean and Energy Management (BOEM) as well as other federal, state, and local permits and approvals prior to construction. Mayflower Wind will prepare and submit a Construction and Operations Plan (COP) to BOEM for its review and approval. Once approved, BOEM will engage a third party to prepare an Environmental Impact Statement as required under the National Environmental Policy Act. To support the development of the COP, Mayflower Wind is undertaking a number of technical studies intended to characterize the existing conditions and support the analysis of potential impacts of the Project on various resources. These studies include seasonal benthic infauna and seafloor habitat assessments of the MLA and ECR as well as several control or reference areas.

This report describes the sediment profile imaging (SPI) and plan view (PV) imaging survey methods and results conducted at the MLA and ECR in May 2020. This survey was conducted as part of the benthic infauna and seafloor habitat assessment survey, which also included the collection of sediment for laboratory analysis of benthic community structure and physical parameters (e.g., grain size, total organic carbon), and Real-Time Visualization System (RTVS) video footage of seafloor habitat. A high-resolution geophysical survey (bathymetry, side scan sonar) of the Mayflower project area was also conducted separately from this benthic survey. Those data sets are reported elsewhere; no synthesis or interpretation of the SPI/PV data reported here with the other benthic or acoustic data sets is presented in this report.

2 SPI CAMERA/PLAN VIEW VIDEO SURVEY

SPI technology was invented by Donald C. Rhoads, Ph.D., at Yale University as a benthic ecological research tool in the late 1960s (Rhoads and Cande 1971). The basic concept was to image surface sediments, i.e., the biologically and physically active portion of the sediment column, in profile so that in situ animal–sediment interactions/relationships could be observed and measured. SPI was commercialized in the early 1980s by Dr. Rhoads and one of his students (Joseph Germano, Ph.D.) as a reconnaissance tool for rapidly characterizing physical, geochemical, and biological surface sediment structures, and by inference processes (Rhoads and Germano 1982, 1986). Since then, SPI has since been used in numerous marine and estuarine surveys throughout North America, Asia, Europe, and Africa (e.g., see Rhoads and Germano 1990; Revelas et al. 1987; Diaz and Schaffner 1988; Valente et al. 1992). Germano et al. (2011) provide a comprehensive history of the development and diverse applications of SPI technology from 1970 through 2010. In the past decade, a PV camera has often been attached to the SPI camera frame to obtain a larger-scale image of the seabed immediately above and before the sediment profile image is obtained. This high-resolution PV image provides information on broader-scale seafloor habitat features that cannot be seen from the profile image perspective and is particularly informative in firmer sand or gravel settings where attached or mobile epifauna are prevalent.

This report describes the SPI/PV survey image collection methods (Section 2.1) and image analysis methods (Section 2.2), the SPI and PV image analysis results (Section 3), and classification of the SPI/PV data in the Coastal and Marine Ecological Classification Standard (CMECS) framework (Federal Geographic Data Committee [FGDC] 2012) in Section 4. CMECS is the framework recommended by BOEM (2013, 2019) and National Marine Fisheries Service (NMFS) (2020) documents for development projects on the continental shelf off the United States (U.S.) East Coast.

2.1 SPI/PV IMAGE COLLECTION

The SPI/PV survey was conducted as part of the Mayflower Wind benthic survey; the images were collected concurrently with the benthic grab and live feed video survey aboard the M/V GO Liberty from May 12–25, 2020. At each station, the vessel was positioned at the target location and a minimum of five replicate images were collected in an effort to collect at least three good quality SPI and PV images at each location. The SPI/PV system was determined to have reached bottom visually when the winch cable was observed to go slack. The SPI/PV system was left on the bottom for 20 seconds, raised 5 meters (m), vessel repositioned, and the subsequent replicates were acquired. Generally 1 minute was allowed to pass between replicates in order for the strobe to recharge and any suspended sediment to clear from next replicate location.

Figure 2-1 shows the actual locations sampled with the SPI/PV camera system, as well as the collocated and separate benthic grab sampling locations. At each of the 83 locations, a minimum of five SPI/PV replicate drops were completed to increase the probability of obtaining three analyzable SPI/PV collocated image replicates per location. Appendix A1 lists all the SPI/PV station and replicate drops conducted for this survey along with observed water depth and stations coordinates recorded during image acquisition. In some instances, more than five camera drops were made at a station in an effort to ensure that three optimal quality SPI and PV images were obtained for analysis. Decisions to re-sample/modify camera settings were made following download and review of the initial image sets from each location.

Three replicate SPI images were analyzed for each of the 83 stations for a total of 249 SPI images. Three replicate PV images were analyzed for each station except for Station 76, where only one PV image was acquired. At this location, the PV camera did not trigger on four of the five drops, and the missing images were inadvertently not noticed during the at-sea image review. Consequently, a total of 247 PV images were analyzed. In most cases, the SPI/PV replicate pairs analyzed were from the same camera drop. One replicate SPI image at four stations (7, 21, 51, and 117) was not collocated with the PV image (due to PV image water clarity).

The field notebook is provided in Appendix A2. Appendix A3 contains the SPI/PV image collection field forms. The field notebook and field forms list details on the camera system's configuration for each station, including stop collar settings and the number of weights used to achieve optimal prism penetration. For this survey, all weights were added to the camera frame for all deployments along the cable route because of the firm seafloor. The stop collar heights and number of weights were adjusted on multiple occasions in the MLA to optimize prism penetration depth due to the predominance of silt. The following subsections detail the respective SPI and PV sampling equipment setup and image collection process.

2.1.1 SPI Camera

Integral Consulting Inc. (Integral) used its Ocean Imaging Systems (OIS) Model 3731-D SPI system to take high-resolution *in situ* digital images of the sediment-water interface (SWI) for the Mayflower Wind benthic survey. The camera system features a Nikon D7100 digital camera set within a water-tight housing on top of a wedge-shaped prism. This prism assembly is mounted on a moveable carriage within a robust stainless steel frame. The frame is lowered to the seafloor on a winch wire, and the tension on the wire keeps the prism in its "up" position. When the frame lands on the seafloor and the winch wire goes slack, the camera prism descends into the sediment at a slow, controlled rate by the dampening action of a hydraulic piston to minimize disturbance of the SWI (Figure 2-2). On the prism's descent, a trigger is tripped that activates a time-delay circuit of variable length (15 seconds for this survey) to allow the camera to penetrate the seafloor before the image is taken. The prism has a Plexiglas® window at the front and a mirror on the bottom wedge at a 45-degree angle. The camera lens

looks down at the mirror, which reflects the image of the sediment column against the window. The resulting images give the viewer the same perspective as looking through the side of an aquarium filled with sediment. The prism has an internal strobe mounted inside at the back of the wedge to provide illumination for the image; this chamber is normally filled with distilled water, so image quality is unaffected by near-bottom water turbidity. After the first image is obtained at a target location, the camera is raised approximately 5 m off the bottom and a wiper blade mounted on the frame removes sediment adhering to the faceplate. The strobe recharges and the camera is ready to be lowered again for a replicate image. For this survey, a minimum of 1 to 2 minutes was allowed to pass between station replicates to avoid taking photographs of re-suspended sediments from the previous drop.

Two types of adjustments to the SPI camera frame system are typically made in the field to optimize prism penetration: 1) adjusting the chassis stop collars to set how far the prism assembly can descend; and 2) adding or subtracting lead weights to the chassis. Both adjustments can affect the prism penetration depth into the substrate. As noted previously, settings for stop collar height and number of weights were recorded on the image collection form (Appendix A3).

Camera settings (i.e., f-stop, shutter speed, International Standard Organization [ISO] equivalents, digital file format, color balance, etc.) are selectable through a water-tight USB port on the camera housing and Nikon Camera Control Pro 2® software. At the beginning of the survey, the time on the SPI camera's internal data logger was synchronized with the internal clock on the navigation system to Coordinated Universal Time (UTC) time. Details of the camera settings for each digital image are available in the associated parameters file embedded in the electronic image file. For this survey, the ISO-equivalent was set at 640, shutter speed to 1/250, aperture to f 10, white balance to flash, color mode to sRGB, Active D-lighting to off, and High ISO Noise Ratio to normal. Images were stored as lossless compressed raw (14 bit) Nikon Electronic Format (NEF) files (6,000 x 4,000 pixels) and optimal quality JPEG (fine; 6,000 x 4,000 pixels). Recording modes for two 32-megabyte (MB) Secure Digital (SD) memory cards were set as NEF in slot 1 and JPEG in slot 2. Adjustments to ISO, shutter speed, and aperture are documented in the field notebook (Appendix A2).

Calibration information for the SPI images was determined by measuring 1-centimeter (cm) gradations from the Kodak® Color Separation Guide image, which was obtained by placing the guide card against the SPI prism. This calibration information was applied to all SPI images that were analyzed. Linear and area measurements were recorded as number of pixels (conversion factor of 14.52 pixels per cm) and converted to metric units using the calibration information.

When reviewing image quality during the field effort, the unique time stamp on each digital image was cross-checked with the time stamp in the navigational system's computer data file. The field crew kept redundant written sample logs of image acquisition time and sampling

stations (Appendix A3). Images were downloaded after the first station and then periodically thereafter to verify successful image acquisition and assess prism penetration. The image files were renamed, during and immediately following the survey, with the appropriate station name in accordance with the field survey plan (FSP) (AECOM 2020).

2.1.2 Plan View Camera

An OIS Model Digital Still Camera (DSC) 24000 PV underwater camera system with a wideangle dome port (rated to 6,000 m) was attached to the SPI camera frame and used to collect PV photographs of the seafloor surface during each "drop" of the system. The PV system consisted of Nikon D7100 digital single lens reflex (SLR) camera encased in a 17-4PH stainless steel housing with a domed glass port, a 24 VDC autonomous power pack, a 500-Watt (W) strobe, and a bounce trigger. A 3-pound (lb) weight was attached to the bounce trigger with snap swivels (50-lb tensile breaking point) and a 3-foot (ft) nylon line so that the weight hung below the camera frame. The focus and trigger line length were adjusted during the survey based on observed water clarity conditions; these adjustments are documented in the field notebook (Appendix A2). Two OIS Model 400-37 Deep Sea Scaling lasers were mounted to the DSC 24000 housing that projected two red laser dots separated by a constant distance of 26 cm regardless of the field of view of the PV image, which is a function of the length of the trigger line. As the SPI/PV camera frame was lowered to the seafloor, the weight attached to the bounce trigger contacted the seafloor prior to the SPI/PV camera frame, hitting the bottom and triggering the PV camera to fire (Figure 2-2). Details of the PV camera settings for each digital image are available in the associated parameters file embedded in each electronic image file. Initially for this survey, the ISO-equivalent was set at 640, shutter speed to 1/20, and aperture to f 16. Changes to these three settings are documented in the field notebook (Appendix A2). Additional camera settings that were maintained for the entirety of the survey were white balance to flash, color mode to sRGB, Active D-lighting to off, and High ISO Noise Ratio to normal. Images were stored as lossless compressed raw (14-bit) NEF files (6,000 x 4,000 pixels) and optimal quality JPEG (fine; 6,000 x 4,000 pixels). Recording modes for two 32-MB SD memory cards were set as NEF in slot 1 and JPEG in slot 2. As with the SPI camera, the internal clock in the digital PV camera was synchronized with the navigation system computer (UTC) during field operations. Throughout the survey, PV images were downloaded at the same time as the SPI images (i.e., after collection image quality assurance and quality control [QA/QC]).

The ability of the PV system to collect useable images is dependent on the clarity of the near-bottom water column, which can be caused by excessive wave action from storm events and bottom turbidity kicked up by the SPI frame during previous replicate drops.

2.2 IMAGE ANALYSIS

Integral uses a proprietary, integrated, MATLAB-based image analysis software (iSPI v1.2) to analyze SPI and PV images. The image files along with the metadata-containing Microsoft® Excel files generated during the field survey are imported directly into iSPI. A menu-structured graphical user interface (GUI) in iSPI allows the image analyst to manually or semi-automatically measure and/or add descriptive comments for key imaged features. The analyst is presented with the paired SPI and PV images in the GUI (Figure 2-3) and can expand and annotate features on either image as desired. The draft data are stored in the system for review by a senior SPI scientist who can inspect all measurements recorded and revise as needed. Following the QA check of all measured and descriptive parameters, the data set is compiled and identified as final; the data can then be evaluated and exported. Figure 2-3 shows the iSPI v1.2a GUI display following QA review.

The subsections below describe the methodology used to identify and measure features observed in SPI images and PV images and the underlying interpretive rationale.

2.2.1 SPI Image Analysis

The SPI image analysis approach and interpretive frameworks described below are both based on and built upon the seminal SPI method development work conducted by Rhoads and Germano in the 1980s (Rhoads and Germano 1982, 1986).

2.2.1.1 Grain Size, Sediment Structure and Composition

The sediment grain-size major mode and range were estimated by visually comparing the textures in each image with a photograph set of known grain sizes (grain-size comparator). The comparator images were generated by imaging a series of sieved Udden-Wentworth sediment size class samples (equal to or less than coarse silt up to granules) that were placed against the SPI camera prism in the laboratory. Seven grain-size classes (phi units) are on this comparator: >4 (silt-clay), 4–3 (very fine sand), 3–2 (fine sand), 2–1 (medium sand), 1–0 (coarse sand), 0–(-1) (very coarse sand), and <(-1) (granule and larger). The lower limit of optical resolution of the photographic system is about 62 microns (the coarse silt/very fine sand boundary), allowing recognition of grain sizes equal to or greater than coarse silt (>4). For sediment particles larger than granules (< -2), such as pebbles and cobbles, the analyst directly measured the size of the particles in millimeters (mm) in the life-size images. The image analyst documented the predominant major modal grain size across the entire image (or noted the major mode of obvious layers if present) and total grain-size range (minimum to maximum particle size) observed in each image. Distinct layering in grain size or notable sedimentary fabrics were noted in the comment field.

2.2.1.2 Prism Penetration Depth

The reported SPI prism penetration depth is the average depth in centimeters (cm) from the SWI to the bottom of the image or stitched images. The analyst traces the SWI in each image and the iSPI software calculates the total cross-sectional area of the sediment column in the image; this area is divided by the linear width (14.42 cm) of the image to determine the average penetration depth. iSPI v.1.2a includes a neural network–based feature detector that automatically identifies and traces the SWI in the images. The analyst can then edit the SWI if needed; this combination of automation and manual editing streamlines the measurement of this parameter. Accurately delineating the SWI is the first step in the SPI image analysis workflow as subsequent measurements need this datum.

2.2.1.3 Small-Scale Surface Boundary Roughness

Once the SWI is delineated, the iSPI software determines surface boundary roughness automatically by calculating the vertical distance between the highest and lowest points of the SWI. The surface boundary roughness may be related to either physical structures (e.g., sand ripples) or biogenic features (e.g., burrow openings or fish foraging depressions). The analyst notes whether the overall roughness appears to be physical or biogenic in origin.

2.2.1.4 Apparent Redox Potential Discontinuity Depth

Near-surface marine sediments are typically aerobic and have higher optical reflectance than the underlying reduced or anaerobic sediments. Surface sands washed free of mud also have higher optical reflectance than underlying muddy sands. These differences in reflectance with depth in the sediment column are readily apparent in SPI images. The oxidized surface sediment particles are coated with ferric hydroxide, which has a brownish or olive color, while reduced sediments below this oxygenated layer are darker, generally gray to black (Fenchel 1969; Lyle 1983). The boundary between the colored ferric hydroxide surface sediment and underlying gray to black sediment is called the apparent redox potential discontinuity (aRPD). Note that this measure is referred to as the *apparent* RPD as the actual redox potential discontinuity (RPD) is the horizon that separates the positive oxidation/reduction potential (Eh) (oxidizing) region of the sediment column from the underlying negative Eh (reducing) region, which can only be determined with microelectrodes.

The color/reflectance contrast of the aRPD boundary can vary widely in SPI images as a function of organic loading and bioturbation levels, and the geochemical processes associated with different environmental settings (Germano et al. 2011). The relative contrast between the apparently oxidized, brownish surface sediment layer and underlying gray to blackish sediments is also noted and can be mapped across a surveyed area.

In iSPI manual mode, the average aRPD depth is measured in each image by the analyst tracing the redox color boundary across the image. This boundary is often undulated or wavy as a

function of the distribution of individual macrofauna and their localized biogenic mixing activities. The average depth of the aRPD is then calculated in iSPI by subtracting the aRPD boundary from the SWI. iSPI includes a semi-automated algorithm, based on a localized gradient analysis approach, that allows the analyst to quickly highlight the general aRPD transition zone. This step restricts the area of the image that is evaluated by the computer, and the routine then delineates a detailed RPD boundary and calculates its average depth across the image. As with the SWI delineation, the analyst can edit any portion of the computer-delineated aRPD boundary in a QA step.

The aRPD is a key SPI parameter for documenting changes (or gradients) that develop over time in response to benthic disturbance factors (e.g., sediment erosion or depositional events), demersal fish foraging, and temporal (seasonal or yearly cycles) changes in environmental factors, such as water temperature and organic loading. Overall, time-series RPD measurements following a disturbance are a diagnostic element in assessing the rate and degree of recovery in an area following a perturbation (Rhoads and Germano 1982, 1986) (Figure 2-4).

Finally, it is important to note that there are physical factors that may influence the aRPD depth in a SPI image. For example, in well-sorted sands with little or no silt or organic matter, the depth of the aRPD can be influenced by factors such as sediment porosity and near-bottom current flow velocities that force surface water into the substrate. If such factors are inferred by the analyst based on bottom texture and environmental setting, then these aRPD depths are considered physical aRPDs i.e., they are not solely a function of infaunal biogenic mixing.

2.2.1.5 Organic Loading, Sedimentary Methane, and Thiophilic Bacterial Colonies

If organic loading is high in marine sediments, porewater sulfate is depleted and methanogenesis occurs. In SPI images, methanogenesis can be revealed by the appearance of methane bubbles in the sediment column. These gas-filled voids are readily discernible in SPI images because of their irregular shape and glassy texture (due to the reflection of the strobe off the gas). The image analyst notes the presence of these methane voids, and the number and area of the voids can be measured.

A related feature that indicates if an area is suffering severe sediment oxygen demand due to organic enrichment and/or depleted water column dissolved oxygen levels (i.e., hypoxia or anoxia) is the presence of the sulfur-oxidizing bacterial colonies at or just below the SWI. These bacterial colonies have diagnostic bright white or orange filamentous morphology that has been documented in numerous SPI surveys (Germano et al. 2011). The presence of sulfur-oxidizing bacterial colonies appears when boundary-layer dissolved oxygen concentrations drop into the "hypoxic" range between 0 and 1 milliliters per liter (mL/L) (Rosenberg and Diaz 1993). If present, the image analyst notes the presence and relative extent of sulfur-oxidizing bacteria in a SPI image.

2.2.1.6 Infaunal Successional Stage

In fine-grained, silt-dominated sediment habitats, following a disturbance marine benthic infaunal communities follow the succession pattern described by Pearson and Rosenberg (1978) and Rhoads and Germano (1982). Figure 2-4 illustrates this generalized progression from an initial community of tiny, densely populated, tubiculous, surface-dwelling polychaete assemblages (Stage 1) to a mature, equilibrium community of deep-dwelling, head-down deposit feeders (Stage 3) that create distinctive feeding voids and aerated burrows that are visible in SPI images.

However, in temporal and spatially dynamic marine environments, benthic communities are unlikely to progress completely and sequentially through four stages in accordance with the idealized conceptual model depicted in Figure 2-4. Various and transitional combinations of these basic successional stages are possible (e.g., Stage 1 going to Stage 2). More frequently, secondary succession can occur in response to additional labile carbon input to surface sediments, with surface-dwelling Stage 1 or 2 organisms co-existing at the same time and place with Stage 3, resulting in the assignment of a "Stage 1 on 3" or "Stage 2 on 3" designation. The image analyst assigned an infaunal successional stage for each SPI image analyzed based on this interpretive paradigm.

The successional dynamics of invertebrate communities in sand and coarser sediments are less well-documented and biogenic structures are less-well preserved or discernable in SPI images from non-cohesive sediments, so successional stage is often indeterminate in sand-dominated settings, especially when prism penetration is minimal (e.g., less than 5 cm).

2.2.1.7 Other Biological Features

In addition to the infaunal successional stage designation, specific biological features can be identified and traced by the analyst when observed in the images. These features include: 1) the infaunal organisms themselves (bivalves, polychaetes, crustacea); 2) the feeding pockets or voids that subsurface, deposit-feeding polychaetes produce; and 3) the burrows that polychaetes and crustacea can produce. When biological features are identified and measured in an image, iSPI automatically counts and calculates each feature's size and depth in the sediment column. The "Sediment Profile Attributes" box in Figure 2-3 shows the number feeding voids, worms, and burrows identified in that SPI image.

2.2.2 PV Image Analysis

A PV image provides a different view of the seafloor than the associated SPI image. This complementary perspective can provide valuable information on the broader seabed topography, substrate composition and the presence and density of epifauna, and infaunal and demersal fauna and/or their biostructures, such as burrows and fecal casts. The PV image can

provide a broader spatial context for any features detected in the SPI image that exhibit a visible surface manifestation.

The scale information provided by the underwater lasers deployed with the PV camera (red dots in PV image in Figure 2-3) allows measurements of ripple wavelength, density counts of epifauna (number per square meter), or larger macrofauna or fish that may be missed in the SPI image cross section. During image analysis, the iSPI software automatically detects the lasers and calibrates the scale of each PV image. The key features noted/quantified in PV images for this survey are listed below:

General Observations:

- Field of View (cm²)
- Epifauna/Infauna Types (types and count)
- Biological Percent Cover (low, medium, and high)
- Fish Type (presence: yes/no, count and type)
- Flora (presence: yes/no)
- Bedforms (ripples; yes [wavelength in cm]/no)
- Burrows (presence: yes/no)
- Tracks (presence; yes/no)
- Tubes (presence: yes/no)
- General Comments (overall replicate biological and physical conditions, noteworthy/rare organisms, etc.).

For this survey, each PV image was also assessed relative to the CMECS framework (FGDC 2012) and more recent BOEM (2019) and NMFS (2020) recommendations for substrate and biotic components. These classifications are listed below and discussed in Section 4 of this report.

CMECS Substrate Components:

- Habitat Type (e.g., hard bottom, sand, rippled sands)
- Substrate Class (e.g., rock, consolidated mineral, unconsolidated mineral and shell)
- Substrate Subclass (e.g., coarse, fine, shell reef)
- Substrate Group (e.g., gravels, gravel mixes)
- Substrate Subgroup (e.g., sandy gravel, gravelly sand)
- Substrate Group Percent.

CMECS Biotic Components:

- Complex Habitat (presence: yes/no)
- Biotic Subclass (e.g., soft sediment fauna, attached fauna)
- Co-occurring Biotic Subclass (e.g., inferred fauna)
- Biotic Group (e.g., larger tube-building fauna, sand dollar bed)
- Co-occurring Biotic Group (e.g., mobile mollusks on soft sediment, tracks and trails).

3 SPI/PV RESULTS

The SPI and PV image analysis results are discussed in this section. Copies of all SPI and PV images analyzed for this report are provided in Appendices B1 and B2. Appendix C1 provides the complete SPI image analysis results, and the complete PV image analysis results are provided in Appendix C2. Spatial patterns in benthic habitat conditions along the ECR, within the MLA, and at the control areas are summarized below for the physical, geochemical, and biological features observed in the images. Inferences about processes based on the physical and biological structures observed in the SPI/PV images are based on this May data set only. Synthesis with other data sets (e.g., benthic taxonomy and acoustic data), as well as future SPI/PV surveys at the site, may either confirm or point to revisions needed in these initial hypotheses.

3.1 PHYSICAL CHARACTERISTICS

Table 3-1 lists the key SPI/PV physical parameters (e.g., grain size, presence and size of sand ripples, penetration depth) summarized by station. These data are mapped together in Figure 3-1 and the major spatial patterns in these parameters are described below. Note that the grain size major mode tabulated and mapped for each station is the coarsest major mode observed among all station replicates. Appendix C1 includes the designated grain size major mode for all individual replicates.

Coarser sediments (sands and gravels) dominate the ECR transect. The coarsest material is found at nearshore stations (Stations 001 to 007) and again on the shoal between Martha's Vineyard and Nantucket (Stations 025 to 029, including Stations CP1 and CP2). These higher energy regions show a mixture of medium to coarse sands, often mixed with gravels or with gravel pavements on the sediment surface. Between Stations 007 and 025 and south from Station 031 to 061, i.e., the northern edge of the MLA, medium to very fine rippled sands predominate. Finally, the MLA overall is dominated by silts mixed with major subfractions of very fine and fine sands, especially along the eastern edge of the MLA. Figure 3-2 shows examples of these three major facies: firm coarse sand and gravel mixes; rippled, well-sorted medium and fine sands; and soft, very fine sand and silt mixtures.

The colored-coded station dots in Figure 3-1 represent the station-averaged SPI prism penetration depth. Station-average penetration depths ranged from 0 (no prism penetration) to 20.0 cm, with an average depth of 9.6 cm (Table 3-1). The SPI camera was fully loaded with lead weights for all ECR stations, therefore the gradients in penetration depths along the route reflect the relative bearing strength of the sediment bed. Consistent with the grain-size patterns described above, the coarse-grained shoals show minimal penetration (<4 cm), with zero prism penetration obtained at Stations 007 and 029 (Table 3-1). Relatively deep penetration (>12 cm)

was obtained at nearly all of the locations sampled in the MLA, as well as at the control area (Stations C6 to C10) just west of the MLA. Intermediate penetration (4–12 cm) was typical in the fine/medium rippled sand zones and at the northernmost control area (Stations C01 to C05), which is immediately west of the north-south portion of the ECR. While also rippled fine to medium sand, penetration was notably shallower at the control area east of the MLA (Stations C11 to C15), which appears to be due to large numbers of sand dollars in that rippled sand area compared with elsewhere in the surveyed area (see Section 3.3). These sand dollars appear to have stopped the prism from dropping into the seabed (Figure 3-3).

Rippled sands were widespread along the ECR and at the southeast control area. When observed clearly in the PV images, the analyst estimated the crest-to-crest wavelength (to the whole cm) of the ripples. The largest ripples measured at each station are indicated in Figure 3-1. Large or extra-large ripples (≥21 cm) are prevalent in the northern portion of the ECR from between the islands south to Station 043, approximately halfway to the MLA. South of that point and at the control area, only medium to small ripples (≤20 cm) are observed on the finer sand bottom in this deeper water. Large ripples are also evident in two of the three replicate PV images at Station 098; this appears to be a relatively isolated medium sand area near the center of the MLA.

3.2 GEOCHEMICAL CHARACTERISTICS

Figure 3-4 shows the distribution of aRPD depths, averaged by station, across the survey area. At 26 of 83 (31%) of the stations, the aRPD was indeterminate due to minimal penetration in the gravels and coarse and medium sands. These areas encompass the hard substrate/highest energy areas noted above. Measured station-average aRPD depths ranged from 0.8 to 4.4 cm with an average aRPD depth of 2.6 cm. Consistently deeper aRPDs (>3 cm) were found in the central and northern portion of the MLA and the western control area (Stations C06 to C10). These well-developed aRPDs exhibited low contrast redox boundaries (Figure 3-5), suggesting a biogenically well-mixed upper sediment column without the buildup of labile organic matter.

Stations that exhibited shallow to intermediate aRPD depths with high-contrast redox boundaries are denoted with an asterisk (*) in Figure 3-4. The high-contrast redox stations are concentrated along the southern half of the ECR and into the northeast portion of the MLA, including Station C11 (and likely C12 through C15 but penetration is limited). Figure 3-6 shows three examples of the high-contrast aRPDs from this portion of the survey area. The well-sorted, rippled sands intercalated with sulfidic mud layers at Stations 041 and 057 suggests seasonal or inter-annual near-bottom energy regime changes with alternating periods of transgressive sand transport and fine-grained sediment deposition. This entire area is just west and downgradient of the shoals that extend south from Nantucket Island (Figure 3-4). An isolated high-contrast redox boundary is found at Station 011 along the northern portion of the ECR where the bottom consists of slipper shell (*Crepidula*) reef bed that overlies highly reduced,

black mud (Figure 3-7). This is the only station sampled where sedimentary methanogenesis was apparent based on the presence of methane bubbles in the sediment column.

Overall, there was no evidence of near-surface high sediment oxygen demand in the areas surveyed in May 2020. Sedimentary methane was only detected beneath the smothering *Crepidula* reef at Station 011. There was no evidence of sulfur-oxidizing bacterial mats in any of the SPI or PV images.

3.3 BIOLOGICAL CHARACTERISTICS

This section focuses on the infaunal community structure as inferred from the SPI images (i.e., the infaunal successional stage); some biological features observed in the PV images are also noted. Conversely, the CMECS biotic component classifications compiled in Section 4 of this report are based predominantly on the biological features observed and measured in the PV images.

Figure 3-8 shows the distribution of infaunal successional stage across the survey area for each SPI image replicate analyzed. The frequency distribution (inset on Figure 3-8) shows that 93 of the 249 replicates (37%) had indeterminate successional stages due to predominantly gravelly and sandy bottom where SPI prism penetration was minimal. For the images where infaunal successional stage was assigned, nearly all were either Stage 3 (including Stages 1 on 3 and 2 on 3) or Stage 2 (including Stage 2 to 3). Only three replicates were assigned Stage 1 (including 1 to 2) (Figure 3-7). The indeterminate successional stages are clustered along the northern portion of the ECR and at the control area east of the MLA (Stations C11 to C15). The southern portion of the ECR is a combination of Stages 2 and 3, which is consistent with the inferred seasonal or inter-annual physical disturbance pattern. The more physically stable MLA and control area to the west (Stations C06 to C10) exhibit predominantly Stage 3 successional stages.

A wide variety of surface-dwelling fauna (large and small tube-build fauna), encrusting/ attached epifauna, mobile epifauna, and fish were observed both in SPI and PV images. Appendix C1 (SPI results) includes a list of epifauna observed in either SPI or PV images for each replicate pair, and Appendix C2 (PV results) includes both the epifauna and surface infauna (e.g., *Diopatra* tubes burrowing anemones, etc.) observed and counts of each faunal type. Across the wide range of gravel, sand, and fine-grained substrates mapped, flora and fauna observed include macroalgae (red, green, and brown), sponges, bryozoans, hydroids, barnacles, anemones, gastropods (snails and slipper shells), bivalves, nudibranchs, urchins, brittle stars, sand dollars, hermit crabs, Jonah crabs, amphipods, isopods, shrimp, and finfish (e.g., sculpin, hake, etc.).

4 SPI/PV CMECS CLASSIFICATIONS

The SPI and PV images were evaluated in accordance with BOEM's guidelines on benthic habitat surveys for renewable energy development (BOEM 2019) and NMFS's supplemental recommendations on mapping essential fish habitat (NMFS 2020). BOEM previously recommended the CMECS framework (FGDC 2012) for offshore energy benthic habitat assessments (BOEM 2013). CMECS consists of four major components—water column, geoform, substrate, and biotic. SPI and PV image data have been used to inform the CMECS substrate and biotic components in offshore renewable energy studies (New York State Energy Research and Development Authority [NYSERDA] 2017; Integral 2019). The PV imagery, with its larger field of view and downward-looking perspective, provide the majority of information on gross physical and biological habitat characteristics for CMECS classifications. The collocated SPI image compliments the PV data by providing fine-scale details on physical and biological structures (and by inference processes) in the upper sediment column.

Each SPI/PV pair was evaluated in combination, and the CMECS substrate and biotic components listed below were designated for each station and replicate.

CMECS Substrate Component:

- Habitat Type
- Substrate Class
- Substrate Subclass
- Substrate Group
- Substrate Subgroup.

CMECS Biotic Component:

- Biotic Subclass
- Co-occurring Biotic Subclass
- Biotic Group
- Co-occurring Biotic Group.

Table 4-1 lists CMECS substrate and biotic classifications for each station and replicate. The epifauna/infauna types and counts and comments from the full PV image results table provided in Appendix C2, as well as whether a replicate is complex habitat as defined in NMFS (2020), are also included in Table 4-1.

Of the CMECS substrate components categories, the substrate group and subgroup classifications based on the SPI/PV imagery, when combined, provide effective descriptors of physical seafloor habitat. Figure 4-1 is a map of these components on a station-by-station basis. In most instances, all three station replicates exhibited the same substrate group/subgroup textures (Table 4-1). When there was within-station heterogeneity, the dominant textures are mapped.

For the CMECS biotic component, the biotic group and co-occurring biotic group provide detailed information on the biological community structure and organisms observed at each sample location. These biotic components are mapped in Figure 4-2 on a station-by-station basis. As with the substrate components, when biotic components varied among station replicates, the dominate classifications for the station overall were mapped.

Figures 4-1 and 4-2 provide a detailed "snapshot" of seafloor physical and biological habitat in accordance with the CMECS framework in May 2020. Additional surveys conducted in the same manner and project areas over time should allow seasonal and/or inter-annual changes in seabed habitat conditions to be documented.

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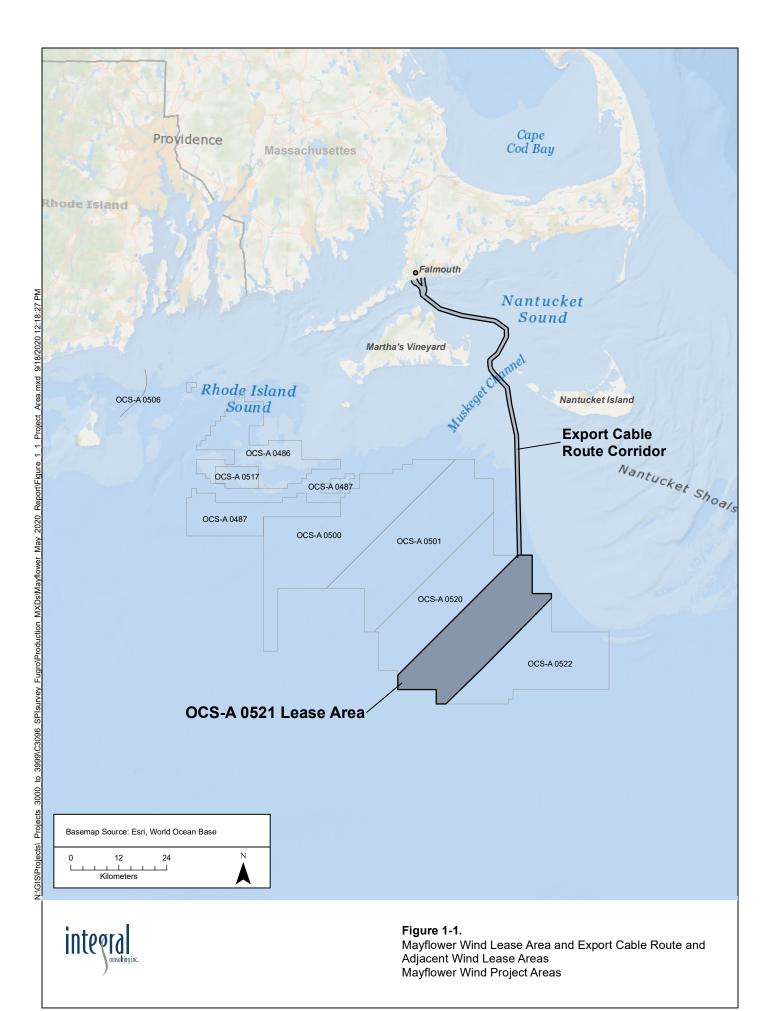
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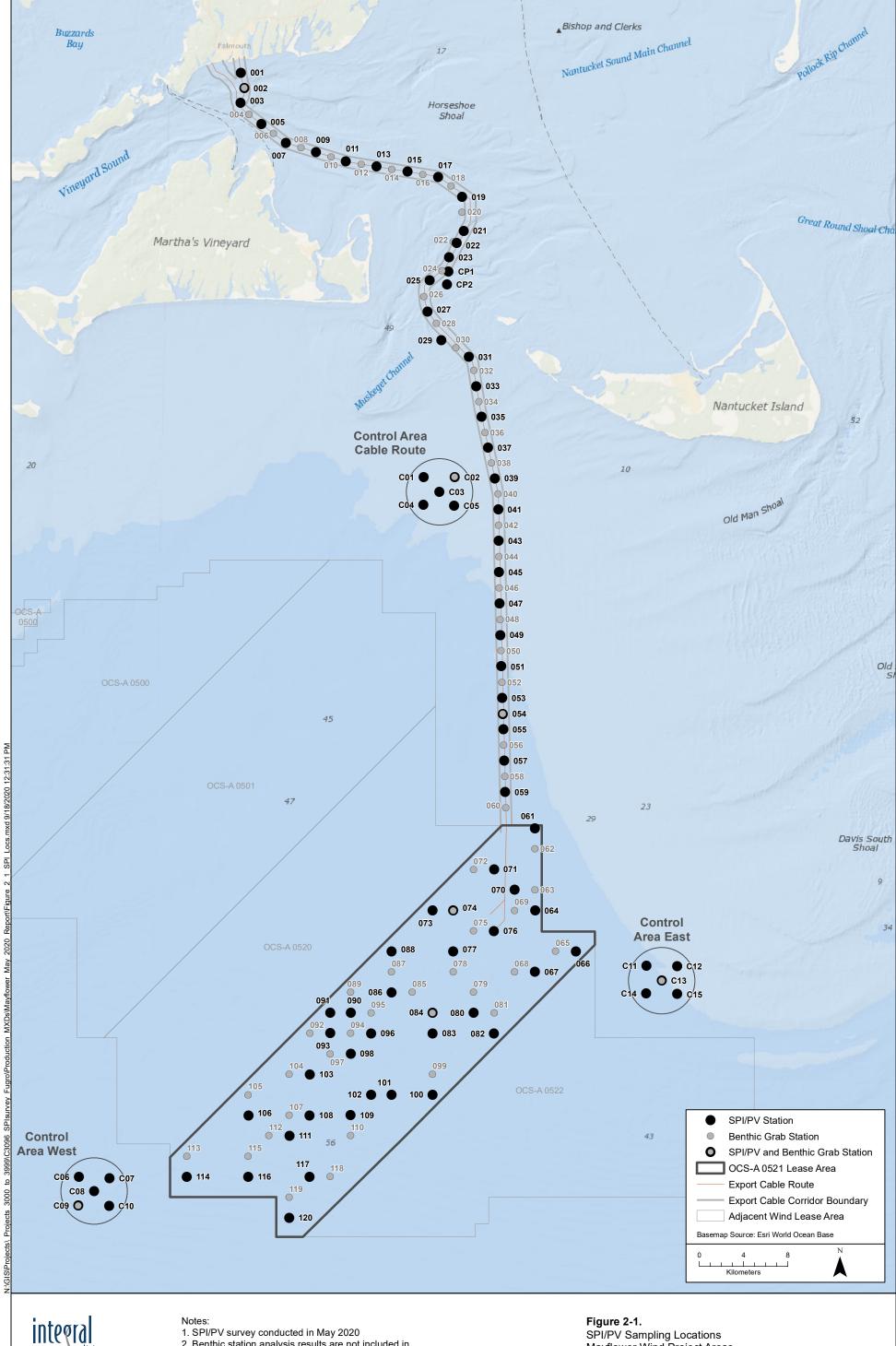
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Figures





integral

2. Benthic station analysis results are not included in SPI/PV imaging survey report

Mayflower Wind Project Areas

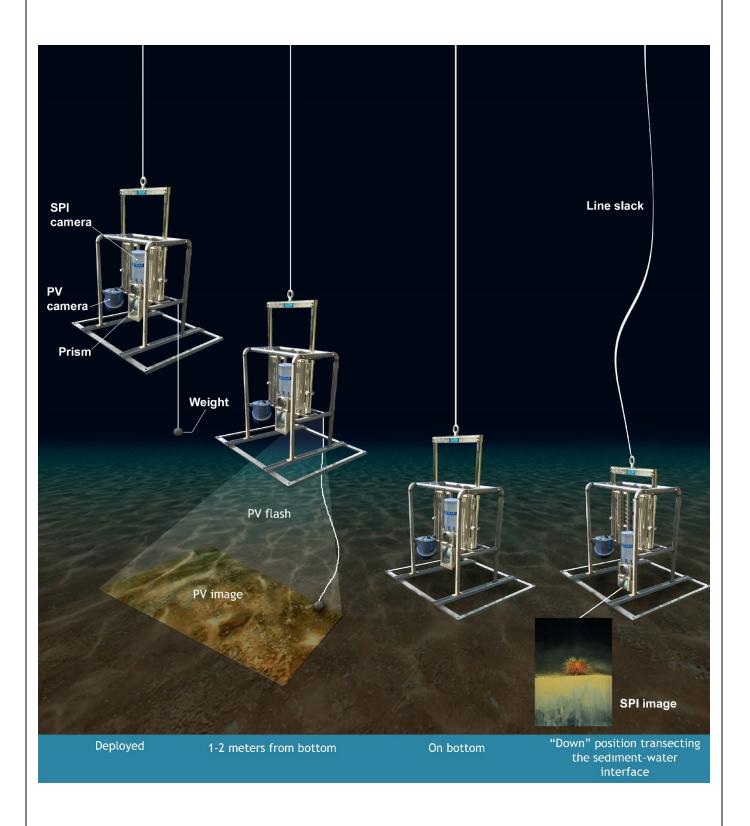




Figure 2-2.The Sediment Profile and Plan View Camera System Deployment

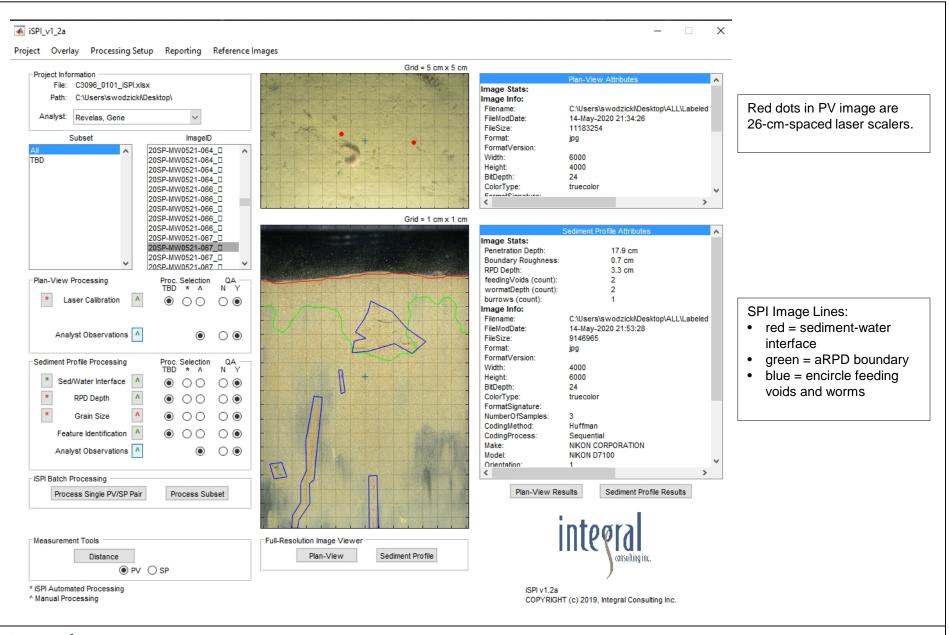




Figure 2-3. iSPI Display

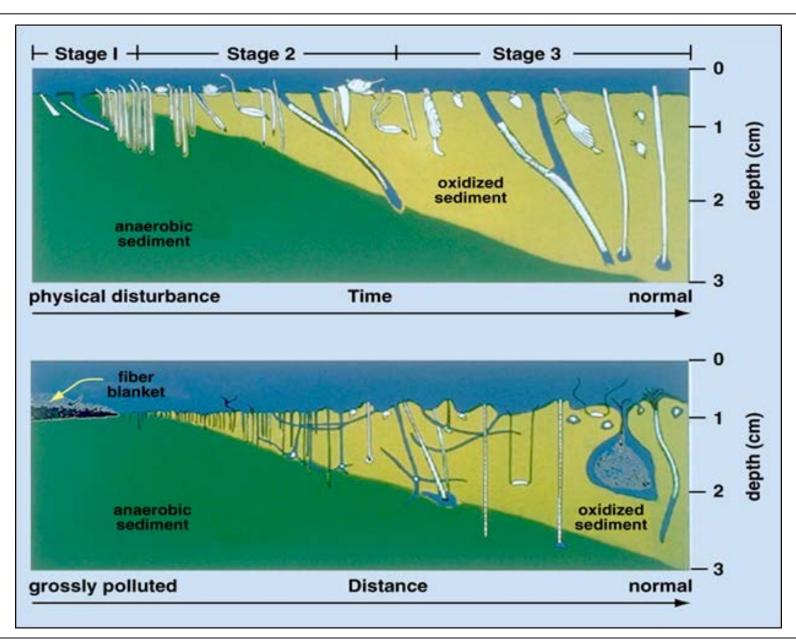
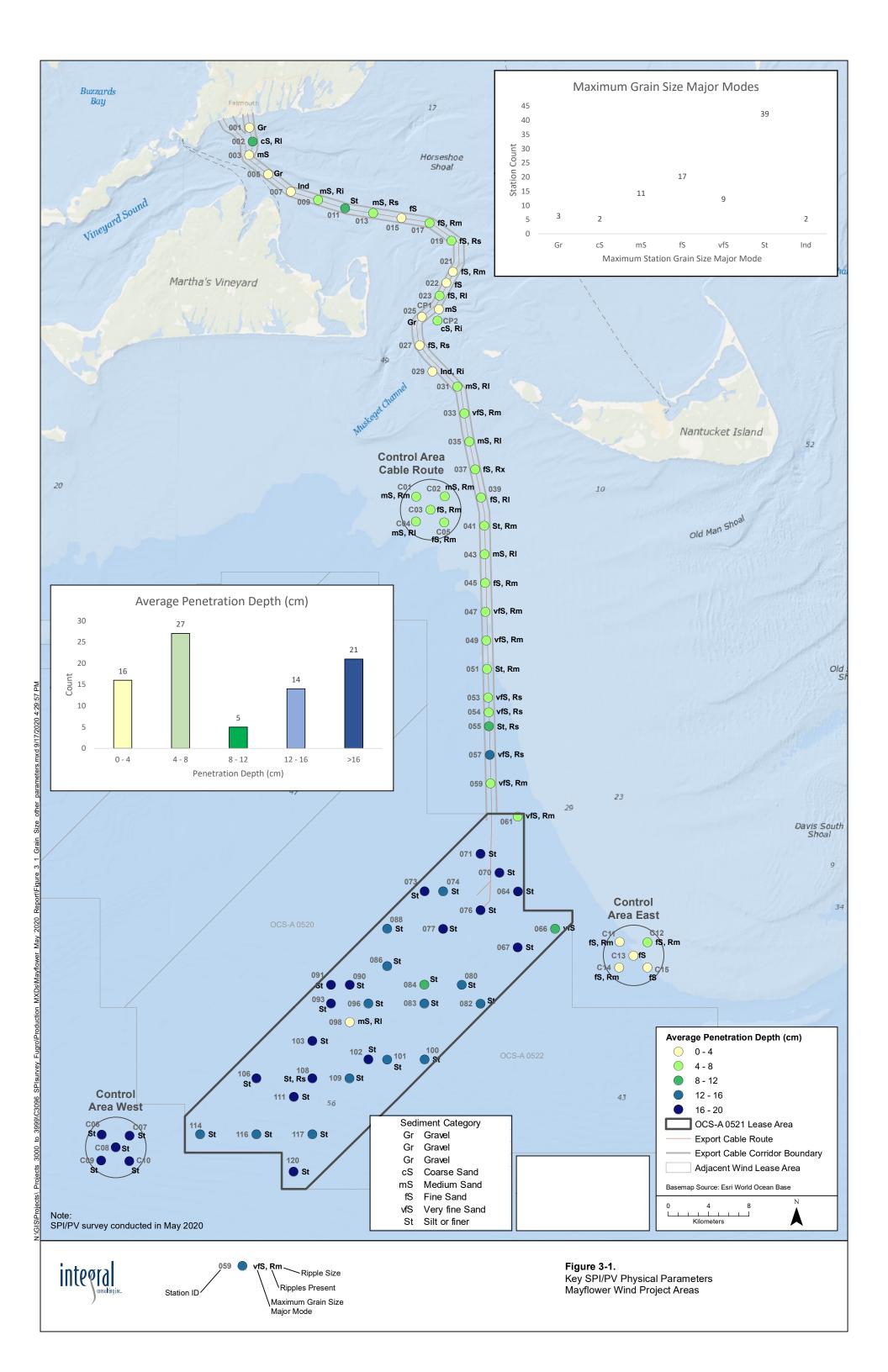
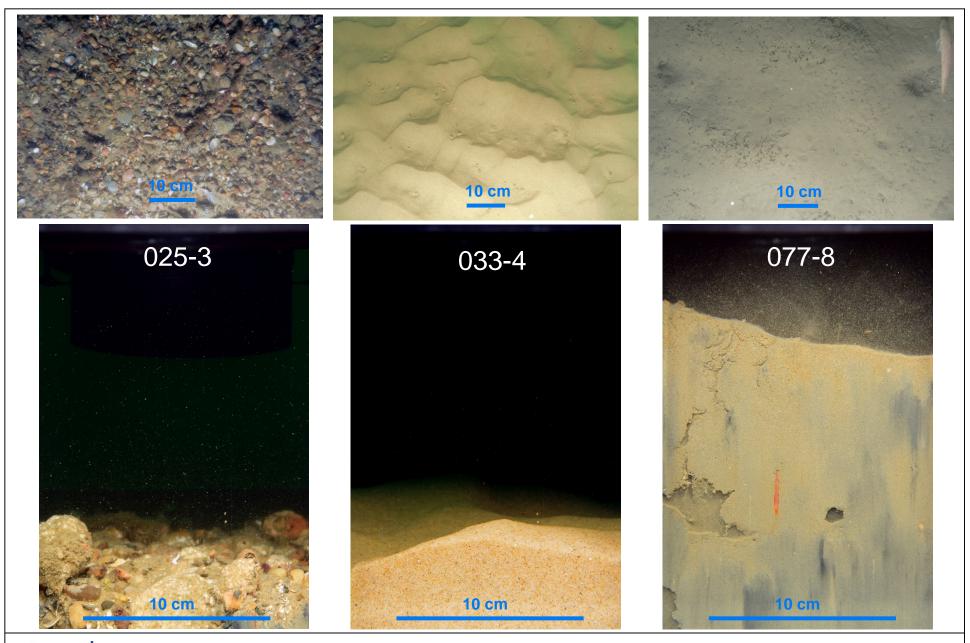




Figure 2-4.Benthic Infaunal Successional Stages that Develop Over Time or Space Following a Disturbance (from Rhoads and Germano 1982)







Three SPI/PV image pairs (Stations 025, 033, and 077) showing the three distinct sedimentary facies observed in the Mayflower project area: gravel/coarse sand mixtures; rippled, well-sorted fine/medium sands; and silt/very fine sand soft bottoms. Scale: width of SPI images = 14.4 cm; width of PV 025-3 = 66 cm, 033-4 = 79 cm, 077-8 = 76 cm.

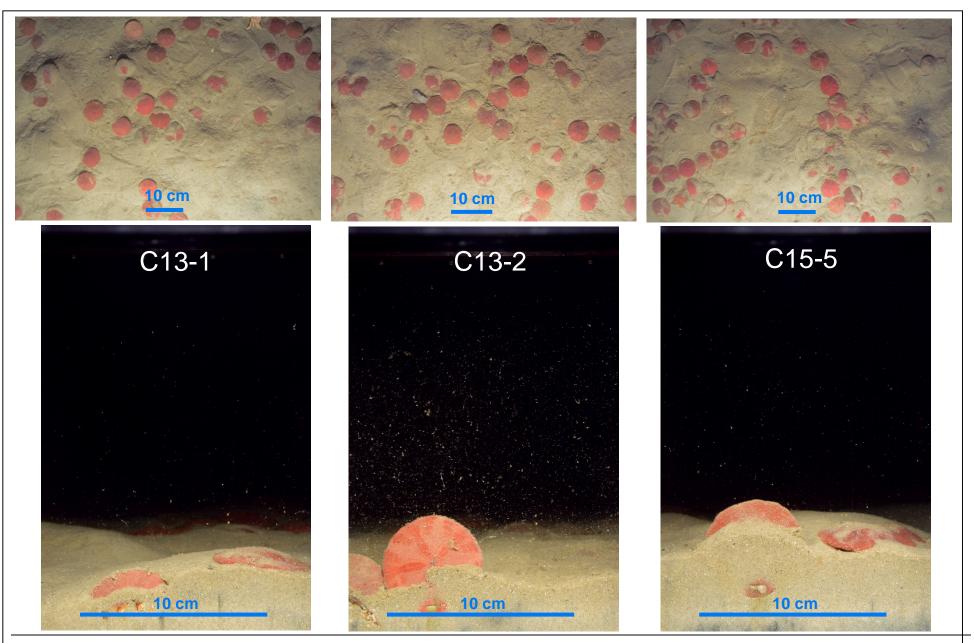
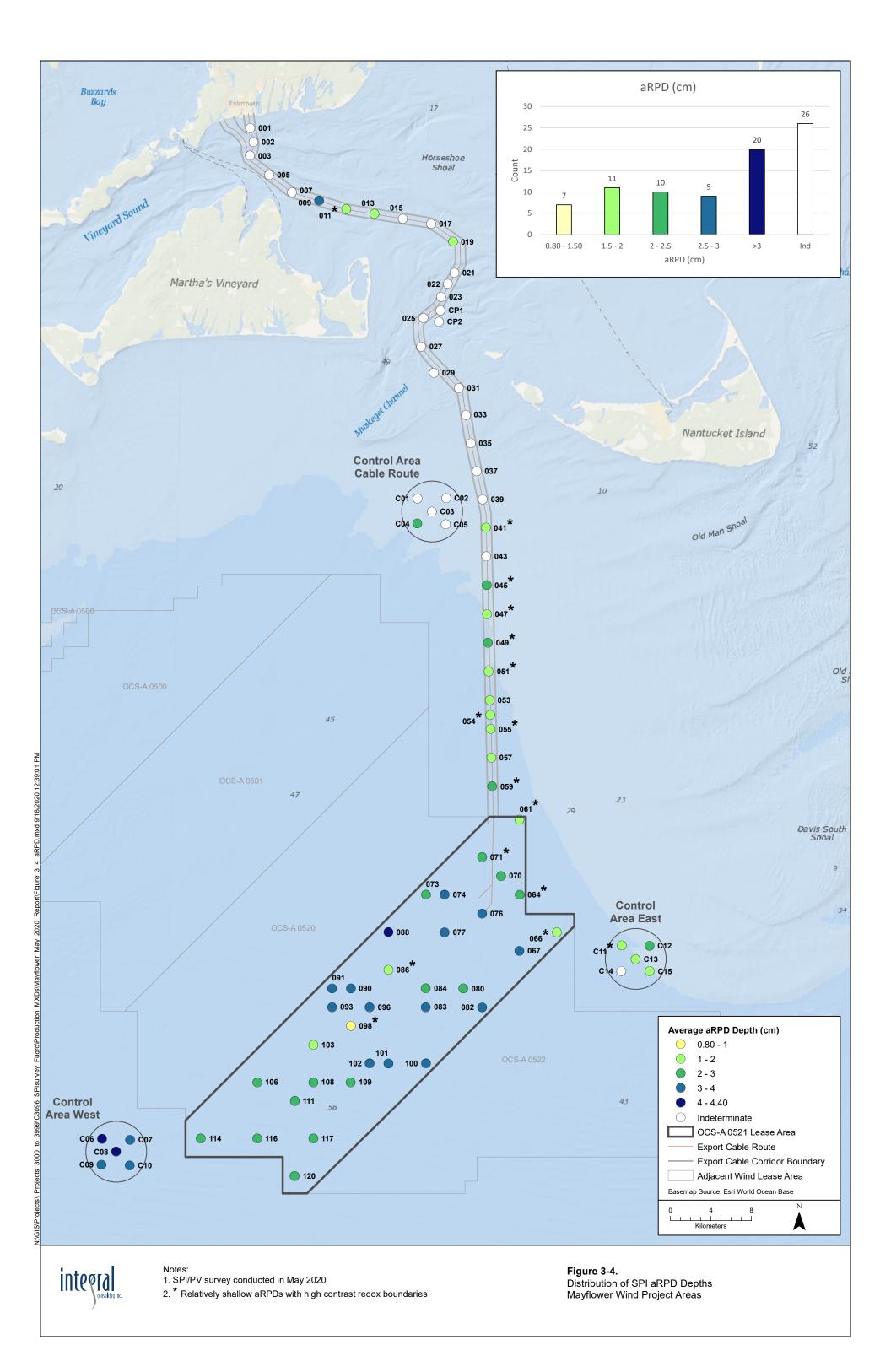




Figure 3-3.Three SPI/PV image pairs from Stations C13 (two replicates) and C15, the southeast control area, showing dense assemblages of sand dollars on a well-sorted fine sand seabed. The presence of the sand dollars appears to impede SPI prism penetration. Scale: width of SPI images = 14.4 cm; width of PV C13-1 = 81 cm, C13-2 = 74 cm, C15-5 = 81 cm.









096-4 C07-01 C08-04



Figure 3-5.

Three SPI images from the Lease Area and the western Control Area showing well-reworked silt/very fine sand sediments with relatively deep aRPD depths, low-contrast redox boundaries, and infaunal feeding voids. Diverse surface tube-building fauna are evident at the sediment-water interface. Brittle stars are present in the C07 and C08 images. Scale: width of SPI images = 14.4 cm.





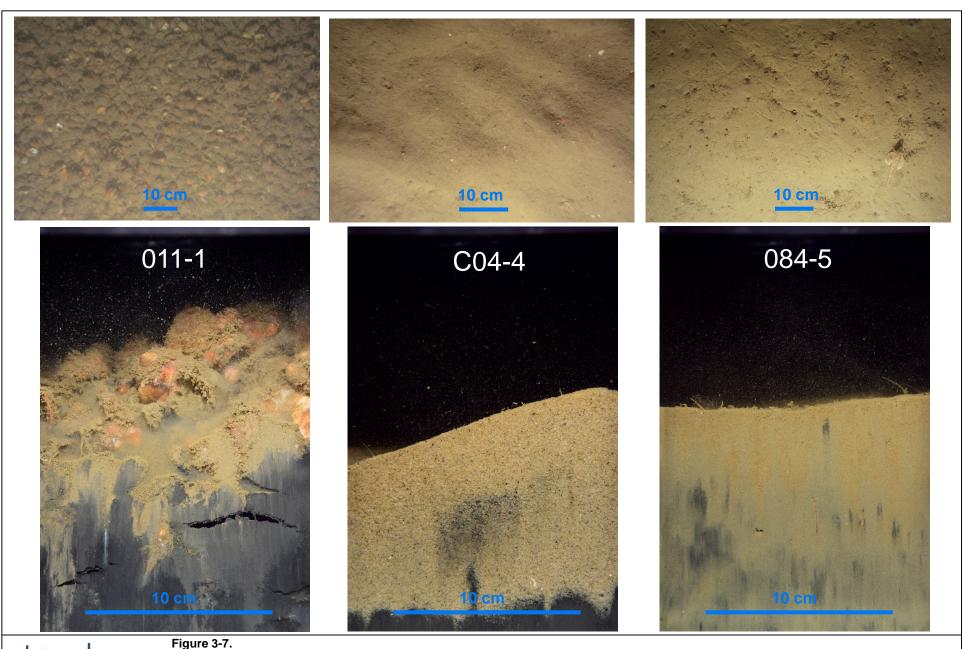


041-4 045-02 057-05



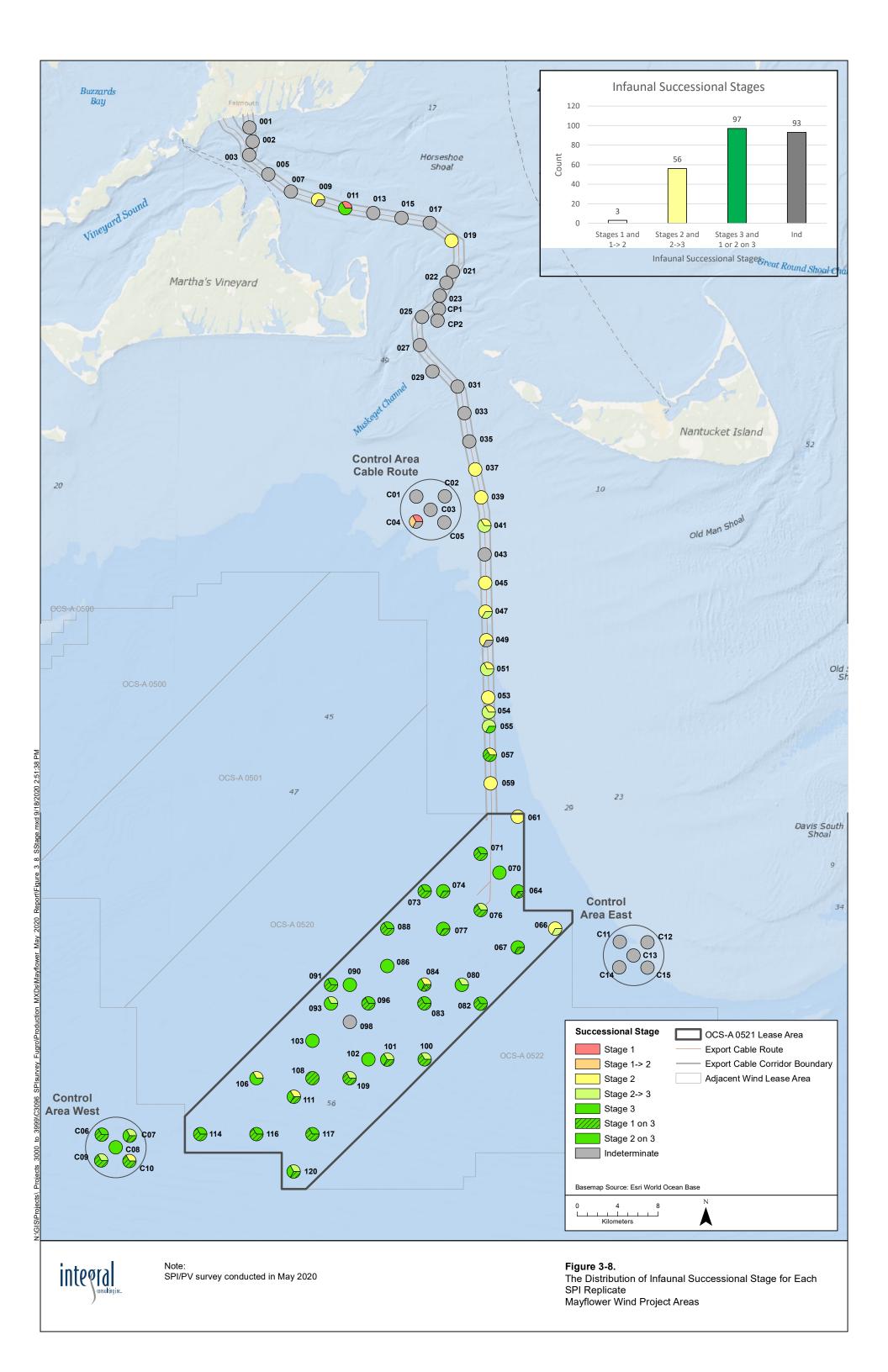
Figure 3-6.

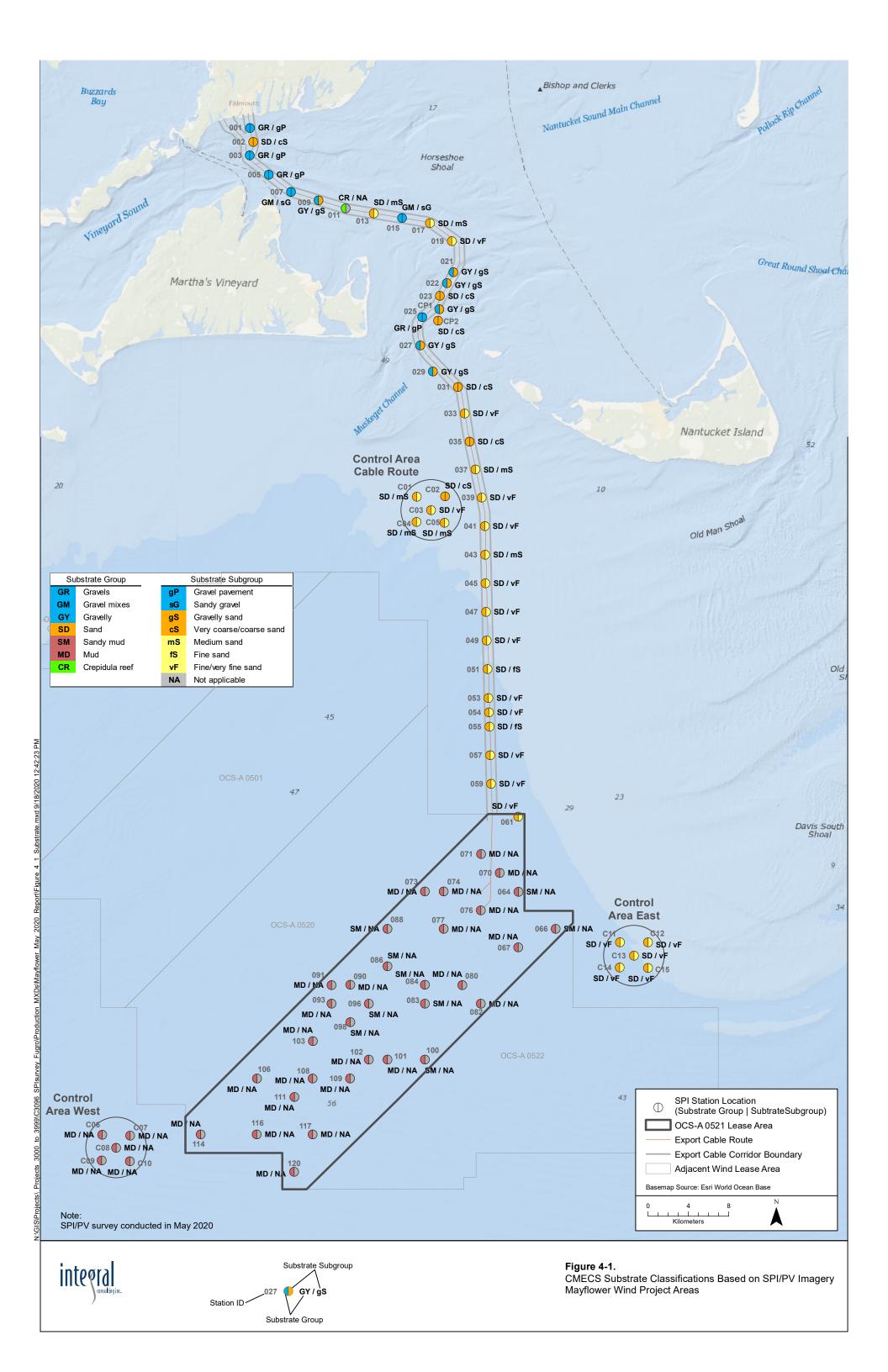
Three SPI images from the southern portion of the ECR showing what appears to be transgressive sand rippled over highly reduced mud. The distinct sand/reduced mud banding at Stations 41 and 57 suggest seasonal or annual changes in benthic energy regimes and regional deposition/erosion patterns. Scale: width of SPI images = 14.4 cm.

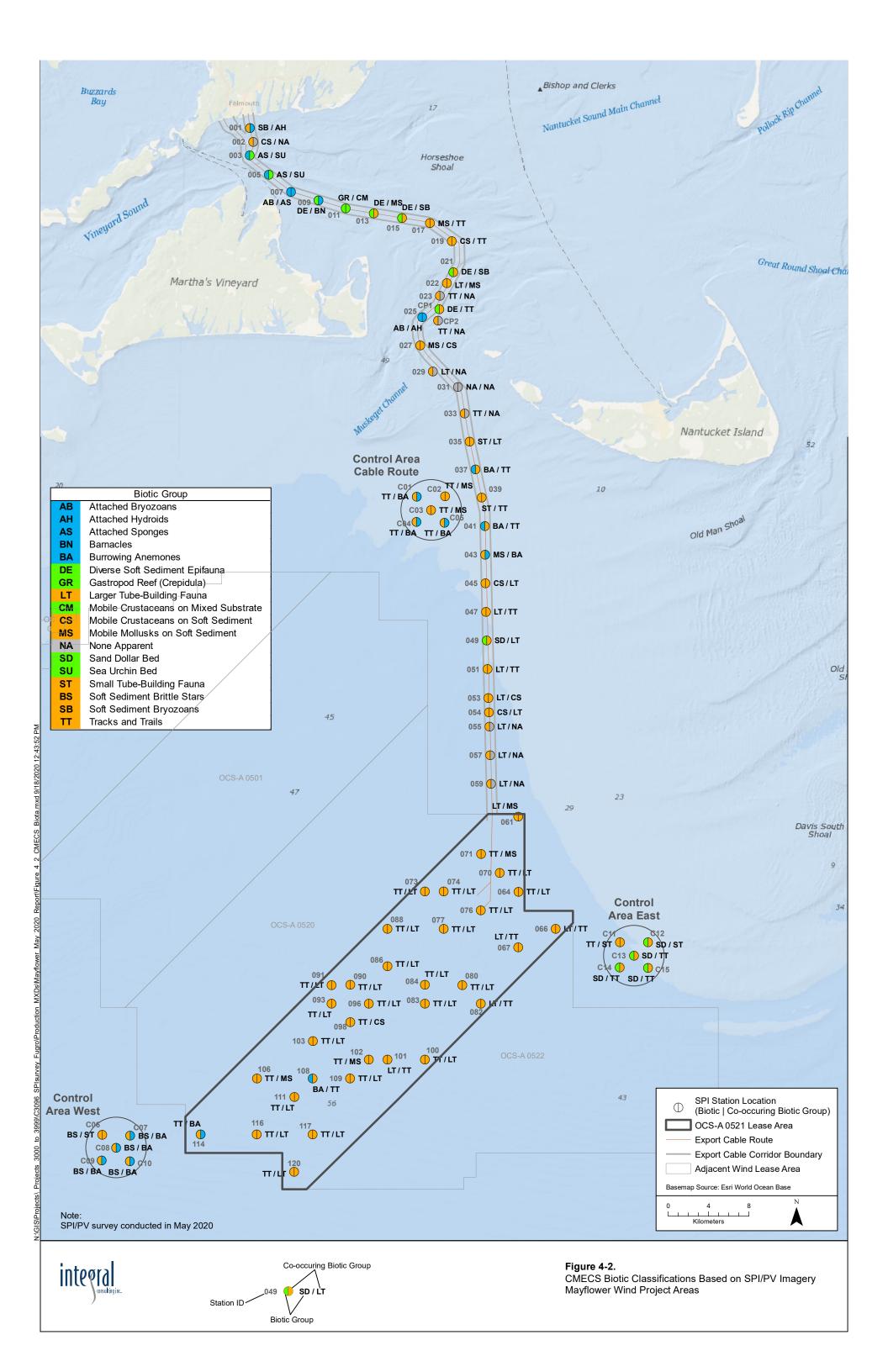




Three SPI/PV image pairs (Stations 011, C04, and 084). Station 011-1 shows the Mollusk (*Crepidula*) reef overlying reduced mud with methane bubbles in the sediment shear cracks. Station C04-4 is a Stage 1 successional sere rippled sand overlying highly reduced mud from the Control Area west of the ECR. The image from Station 084 was designated as a Stage 2 on Stage 3 sere based on the surface amphipod tubes and feeding voids and worms at depth. Scale: width of SPI images = 14.4 cm; width of PV 011-1 = 92 cm, C04-4 = 62 cm, 084-5 = 79 cm.







Tables

Table 3-1. SPI Physical Parameters Summarized by Station

Station_ID 20SP-MW0521-001	Penetration (cm)	Station Average Roughness (cm)	Station Average aRPD (cm)	Coarsest Grain Size Major Mode	Descriptor Code	Presence and Size
	1.9	1.4	, ,	-2 to -3	Gr	
20SP-MW0521-002	8.7	0.9		1-0	cS	RI
20SP-MW0521-003	2.3	1.7		2-1	mS	
20SP-MW0521-005	1.1	1.3		-4 to -5	Gr	
20SP-MW0521-007	0.0			Ind	Ind	
20SP-MW0521-009	6.9	1.5	3.7	2-1	mS	Ri
20SP-MW0521-011	11.9	3.5	1.7	>4	St	
20SP-MW0521-013	4.8	0.9	1.2	2-1	mS	Rs
20SP-MW0521-015	2.3	1.0		3-2	fS	
20SP-MW0521-017	6.3	0.9		3-2	fS	Rm
20SP-MW0521-019	6.5	0.9	1.8	3-2	fS	Rs
20SP-MW0521-021	2.9	2.0		3-2	fS	Rm
20SP-MW0521-022	2.5	1.4		3-2	fS	
20SP-MW0521-023	5.0	3.8		3-2	fS	RI
20SP-MW0521-025	1.2	1.0		-3 to -4	Gr	
20SP-MW0521-027	2.1	1.3		3-2	fS	Rs
20SP-MW0521-029	0.0	1.0		Ind	Ind	Ri
20SP-MW0521-031	5.3	1.3		2-1	mS	RI
20SP-MW0521-033	4.2	1.5		4-3	vfS	Rm
20SP-MW0521-035	6.2	1.5		2-1	mS	RI
20SP-MW0521-037	7.4	1.9		3-2	fS	Rx
20SP-MW0521-039	4.8	3.0		3-2	fS	RI
20SP-MW0521-041	7.0	1.2	1.8	>4	St	Rm
20SP-MW0521-043	7.1	2.8	1.0	2-1	mS	RI
20SP-MW0521-045	5.4	1.8	2.1	3-2	fS	Rm
20SP-MW0521-047	6.4	0.8	1.4	4-3	vfS	Rm
20SP-MW0521-049	5.2	1.6	2.6	4-3	vfS	Rm
20SP-MW0521-051	6.7	0.8	1.5	>4	St	Rm
20SP-MW0521-053	5.6	1.0	1.5	4-3	vfS	Rs
20SP-MW0521-054	6.8	0.9	1.6	4-3	vfS	Rs
20SP-MW0521-055	9.1	1.2	1.6	>4	St	Rs
20SP-MW0521-057	12.7	1.5	1.4	4-3	vfS	Rs
20SP-MW0521-059	7.6	1.5	2.2	4-3	vfS	Rm
20SP-MW0521-061	5.8	1.0	1.6	4-3	vfS	Rm
20SP-MW0521-064	17.8	1.1	2.6	>4	St	
20SP-MW0521-066	8.3	0.8	1.7	4-3	vfS	
20SP-MW0521-067	16.7	1.3	3.1	>4	St	
20SP-MW0521-070	18.2	0.6	2.0	>4	St	
20SP-MW0521-071	18.9	1.0	2.1	>4	St	
20SP-MW0521-073	20.0	0.9	2.3	>4	St	
20SP-MW0521-074	15.0	0.6	4.0	>4	St	
20SP-MW0521-076	17.6	0.9	3.6	>4	St	
20SP-MW0521-077	16.7	2.1	3.0	>4	St	
20SP-MW0521-080	12.2	1.0	2.9	>4	St	
20SP-MW0521-082	12.7	0.5	3.1	>4	St	
20SP-MW0521-083	12.3	1.3	3.4	>4	St	
20SP-MW0521-084	10.4	2.0	2.3	>4	St	
20SP-MW0521-086	12.4	2.2	1.8	>4	St	
20SP-MW0521-088	13.0	0.6	4.4	>4	St	
20SP-MW0521-090	16.4	1.0	3.5	>4	St	
20SP-MW0521-091	17.0	0.6	3.4	>4	St	
20SP-MW0521-093	16.5	0.4	3.5	>4	St	
20SP-MW0521-096	12.7	0.8	3.6	>4	St	
20SP-MW0521-098	3.0	2.3	0.8	2-1	mS	RI

Table 3-1. SPI Physical Parameters Summarized by Station

Station ID	Station Average Penetration (cm)	Station Average Roughness (cm)	Station Average aRPD (cm)	Coarsest Grain Size Major Mode	Grain Size Descriptor Code	Ripple Presence and Size
20SP-MW0521-100	14.0	0.6	4.0	>4	St	
20SP-MW0521-101	15.8	1.0	3.6	>4	St	
20SP-MW0521-102	16.1	0.7	3.6	>4	St	
20SP-MW0521-103	19.0	1.5	2.0	>4	St	
20SP-MW0521-106	16.8	1.1	2.3	>4	St	
20SP-MW0521-108	16.2	1.2	2.7	>4	St	
20SP-MW0521-109	15.4	1.0	2.7	>4	St	Rs
20SP-MW0521-111	16.8	0.7	2.1	>4	St	
20SP-MW0521-114	14.8	2.1	2.5	>4	St	
20SP-MW0521-116	15.7	1.1	2.5	>4	St	
20SP-MW0521-117	14.8	1.7	2.5	>4	St	
20SP-MW0521-120	18.1	0.9	2.9	>4	St	
20SP-MW0521-C01	5.0	1.6		2-1	mS	Rm
20SP-MW0521-C02	4.8	2.0		2-1	mS	Rm
20SP-MW0521-C03	5.3	1.4		3-2	fS	Rm
20SP-MW0521-C04	7.1	2.1	2.6	2-1	mS	RI
20SP-MW0521-C05	5.8	1.5		3-2	fS	Rm
20SP-MW0521-C06	16.9	0.6	4.2	>4	St	
20SP-MW0521-C07	17.1	8.0	3.1	>4	St	
20SP-MW0521-C08	16.7	0.8	4.2	>4	St	
20SP-MW0521-C09	17.3	0.7	3.3	>4	St	
20SP-MW0521-C10	16.6	0.9	3.2	>4	St	
20SP-MW0521-C11	3.4	1.8	1.9	3-2	fS	Rm
20SP-MW0521-C12	4.5	1.9	2.1	3-2	fS	Rm
20SP-MW0521-C13	2.7	2.1	1.5	3-2	fS	
20SP-MW0521-C14	2.7	1.4		3-2	fS	Rm
20SP-MW0521-C15	3.1	1.9	2.0	3-2	fS	
20SP-MW0521-CP1	3.1	1.0		2-1	mS	
20SP-MW0521-CP2	6.4	0.7		1-0	cS	Ri

	Station Average Penetration (cm)	Station Average Roughness (cm)	Station Average aRPD (cm)
N (measured)	83	81	57
Min	0	0	1
Mean	9.6	1.3	2.6
Median	7.4	1.2	2.5
Max	20.0	3.8	4.4

Notes:

aRPD = apparent redox potential discontinuity

cS = coarse sand

fS = fine sand

Gr = gravel

Ind = indeterminate

mS = medium sand

Ri = size indeterminate

RI = large (21-30 cm)

Rm = medium (11-20 cm)

Rs = small (0-10 cm)

Rx = extra large (>30 cm)

St = silt or finer

vfS = very fine sand

Table 4-1. CMECS Substrate and Biotic Classifications for each SPI/PV Image Pair

_			S Substrate Components	3			CMECS Bio	tic Components						
Station ID	Replicate	Water Depth (m)	Habitat Type	Substrate Class	Substrate Subclass	Substrate Group	Substrate Subgroup	Biotic Subclass	Co-occurring Biotic Subclass	Biotic Group	Co-occurring Biotic Group	Complex Habitat (Y/N) per NMFS 2020	Epifauna/Infauna Types and Counts	Comments
20SP-MW0521-001	3	10.5	Hard bottom substrate with macroalgae		Coarse unconsolidated	Gravels	Gravel pavement	Soft Sediment Fauna	Inferred Fauna	Soft Sediment Bryozoans	Attached Hydroids	Y	Hydroids, bryozoans	High concentration of particulates in water column. Some macroalgae and shell fragments.
20SP-MW0521-001	5	10.6	Hard bottom substrate with macroalgae	Unconsolidated mineral	Coarse unconsolidated	Gravels	Gravel pavement	Soft Sediment Fauna	Inferred Fauna	Soft Sediment Bryozoans	Attached Sponges	Υ	Sponge, hydroids, bryozoans	Some macroalgae. Primarily gravels (90%) with 10% sand.
20SP-MW0521-001	8	10.4	Hard bottom substrate with macroalgae	Unconsolidated mineral	Coarse unconsolidated	Gravels	Gravel pavement	Soft Sediment Fauna	Inferred Fauna	Soft Sediment Bryozoans	Mobile Crustaceans on Mixed Substrate	Y	Hydroids, bryozoans, shrimp (1)	Some macroalgae, and some shell fragments. Particulates in water column.
20SP-MW0521-002	5	23.2	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Medium sand	Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediment	None	N	Crustacean (1)	Shell fragments in troughs. Crustacean/shrimp at left.
20SP-MW0521-002	6	23.9	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Very coarse/coarse sand	Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediment	None	N	Hermit crabs (4)	Sand ripples with shell fragment deposits in troughs.
20SP-MW0521-002	7	23.7	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Very coarse/coarse sand	Soft Sediment Fauna	Inferred Fauna	on Soft	s None	N	Snail (1)	Rippled sand with shell fragment deposits in troughs.
20SP-MW0521-003	2	17.5	Hard bottom substrate with macroalgae and	Unconsolidated mineral	Coarse unconsolidated	Gravels	Gravel pavement	Attached Fauna	Inferred Fauna	Sediment Attached Sponges	Sea Urchin Bed	Υ	Urchin (2), sponge	Gravelly substrate with sponge, macroalgae and some bivalve shells.
20SP-MW0521-003	3	17.7	enifauna Hard bottom substrate with macroalgae and		Coarse unconsolidated	Gravels	Gravel pavement	Attached Fauna	Inferred Fauna	Attached Sponges	Sea Urchin Bed	Υ	Urchin (1), sponge	Sponges covering 30% of substrate.
20SP-MW0521-003	4	17.8	epifauna Hard bottom substrate with macroalgae and epifauna		Coarse unconsolidated	Gravels	Gravel pavement	Attached Fauna	Inferred Fauna	Attached Sponges	Attached Mussels	Υ	Urchin (2), mussels (5), sponge	Sponge covers 70% of surface, live mussel bed (5%), gravels with some sand.
20SP-MW0521-005	2	27.0	Hard bottom substrate with macroalgae and epifauna		Coarse unconsolidated	Gravels	Gravel pavement	Attached Fauna	Inferred Fauna	Attached Sponges	Sea Urchin Bed	Υ	Urchin (3), sponge	Boring sponge 10% of substrate, macroalgae 5%.
20SP-MW0521-005	3	26.8	Hard bottom substrate with macroalgae and epifauna		Coarse unconsolidated	Gravels	Gravel pavement	Attached Fauna	Inferred Fauna	Attached Sponges	Sea Urchin Bed	Υ	Urchin (4), sponge	Boring sponge 15%, sponge 20%.
20SP-MW0521-005	4	26.9	Hard bottom substrate with macroalgae and epifauna		Coarse unconsolidated	Gravels	Gravel pavement	Attached Fauna	Inferred Fauna	Attached Sponges	Sea Urchin Bed	Υ	Urchin (1), sponge	Boring sponge 10%, Sponge 30%, Gravel/cobble/sand.
20SP-MW0521-007	7	24.8	Hard bottom substrate with macroalgae	Unconsolidated mineral	Coarse unconsolidated	Gravel mixes	s Sandy gravel	Attached Fauna	Inferred Fauna	Attached Bryozoans	Attached Sponges	Υ	Bryozoans, tunicates	Sheath tunicates, yellow and orange. Bryozoans 5% of surface area.
20SP-MW0521-007	8	25.3	Hard bottom substrate with macroalgae and epifauna		Coarse unconsolidated	Gravel mixes	s Sandy gravel	Attached Fauna	Inferred Fauna	Attached Bryozoans	Mobile Crustaceans on Mixed Substrate	Y	Hermit crab (1), bryozoans sponge	Bryozoans evident on coarser substrate. Sheath tunicate (yellow).
20SP-MW0521-007	9	25.2	Hard bottom substrate with macroalgae	Unconsolidated mineral	Coarse unconsolidated	Gravel mixes	s Sandy gravel	Attached Fauna	Inferred Fauna	Attached Bryozoans	Attached Tunicates	Y	Bryozoans, tunicates	Numerous bryozoans, a few sheath tunicates.
20SP-MW0521-009	1	20.2	Sand and gravel	Unconsolidated mineral	Coarse unconsolidated	Gravelly	Gravelly sand	Soft Sediment Fauna	Inferred Fauna	Diverse Soft Sediment Epifauna	Barnacles	Υ	Barnacles, bryozoans	High energy environment, subtle ripples, mobile granules/pebbles and shell fragments.
20SP-MW0521-009	2	21.9	Sand and gravel	Unconsolidated mineral	Coarse unconsolidated	Gravelly	Gravelly sand	Soft Sediment Fauna	Inferred Fauna	Diverse Soft Sediment Epifauna	Barnacles	Υ	Barnacles, bryozoans	Medium sand with some gravels. High energy environment with mobile granules/pebbles and shell fragments.
20SP-MW0521-009	5	22.2	Sand and gravel	Unconsolidated mineral	Coarse unconsolidated	Gravelly	Gravelly sand	Soft Sediment Fauna	Inferred Fauna	Diverse Soft Sediment Epifauna	Barnacles	Y	Barnacles, bryozoans, hydroid	s Imprint is an artifact of the SPI frame. High energy environment with mobile granules/pebbles and shell fragments.

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Table 4-1. CMECS Substrate and Biotic Classifications for each SPI/PV Image Pair

_			CMECS	S Substrate Components	3			CMECS Bio	otic Components					
Station ID	Replicate	Water Depth (m)	Habitat Type	Substrate Class	Substrate Subclass	Substrate Group	Substrate Subgroup	Biotic Subclass	Co-occurring Biotic Subclass	Biotic Group	Co-occurring Biotic Group	Complex Habitat (Y/N) per NMFS 2020	Epifauna/Infauna Types and Counts	Comments
20SP-MW0521-011	1	16.7	Shell reef	Shell	Shell Reef	Crepidula	NA	Mollusk Reef	none	Gastropod Ree	f Mobile	Y	Crepidula, spider crab (1),	Entire surface covered with crepidula shells with silt on surface.
						reef		Biota		(Crepidula)	Crustaceans on Mixed Substrate		hydroids	
20SP-MW0521-011	3	19.2	Shell reef	Shell	Shell Reef	Crepidula reef	NA	Mollusk Reef Biota	none	Gastropod Ree (Crepidula)	f Mobile Crustaceans on Mixed Substrate	Y	Spider crabs (2), Crepidula, hydroids	Entire surface covered with Crepidula shells with thin layer of silt on surface. Mud clast is an artifact from the SPI frame.
20SP-MW0521-011	4	17.8	Shell reef	Shell	Shell Reef	Crepidula reef	NA	Mollusk Reef Biota	none	Gastropod Ree (Crepidula)	f Mobile Crustaceans on Mixed Substrate	Y	Spider crab (2), Crepidula, hydroids	Entire surface covered with Crepidula shell, silt covering surface.
20SP-MW0521-013	1	20.5	Sand	Unconsolidated mineral	Coarse unconsolidated	Gravelly	Gravelly sand	Soft Sediment Fauna	Inferred Fauna	Diverse Soft Sediment Epifauna	None	Υ	Barnacles	Medium sand with some gravel and shell fragments.
20SP-MW0521-013	2	20.4	Rippled sands	Unconsolidated mineral	Coarse unconsolidated	Sand	Fine sand	Soft Sediment Fauna	Inferred Fauna	Diverse Soft Sediment Epifauna	Mobile Mollusks on Soft Sediment	N	Moon snail (1), hydroids	Sand ripples with gravel and shell fragments.
20SP-MW0521-013	5	20.0	Sand	Unconsolidated mineral	Fine unconsolidated	Sand	Medium sand	Soft Sediment Fauna	Inferred Fauna	•	None	N	N	Sand ripples with small shell fragments in troughs.
20SP-MW0521-015	1	23.2	Hard bottom substrate with macroalgae	Unconsolidated mineral	Coarse unconsolidated	Gravel mixes	Sandy gravel	Soft Sediment Fauna	Inferred Fauna		Soft Sediment Bryozoans	Υ	Bryozoans, hydroids	Sandy gravel with crepidula and bivalve shells. Macroalgae on larger substrate particles.
20SP-MW0521-015	2	23.2	Hard bottom substrate with macroalgae	Unconsolidated mineral	Coarse unconsolidated	Gravel mixes	Sandy gravel	Soft Sediment Fauna	Inferred Fauna		Soft Sediment Bryozoans	Υ	Bryozoans, hydroids	Granules/Pebbles with crepidula and bivalve shells and sand. Macroalgae on larger particles.
20SP-MW0521-015	3	23.2	Hard bottom substrate with macroalgae	Unconsolidated mineral	Coarse unconsolidated	Gravel mixes	Sandy gravel	Soft Sediment Fauna	Inferred Fauna		Soft Sediment Bryozoans	Υ	Bryozoans, hydroids	Crepidula and bivalve shells, with granules/pebbles and sand. Macroalgae on larger particles.
20SP-MW0521-017	1	23.7	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Medium sand	Soft Sediment Fauna	Inferred Fauna	Mobile Mollusks on Soft Sediment	Tracks and Trails	N	Snails (2)	Sand with some gravel. Macroalgae attached to gravel. Minor ripple wavelength not measureable.
20SP-MW0521-017	2	23.7	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Medium sand	Soft Sediment Fauna	Inferred Fauna	Mobile Mollusks on Soft Sediment	Tracks and Trails	N	Snails (5), Hermit crab (1)	Macroalgae on gravel pieces, shell fragments.
20SP-MW0521-017	3	23.7	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Medium sand	Soft Sediment Fauna	Inferred Fauna		Mobile Mollusks on Soft Sediment	N	Snail (1)	Subtle bedforms.
20SP-MW0521-019	3	21.9	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans or Soft Sediment	Tracks and	N	Hermit crab (19), snail (3), bryozoans	Subtle ripples, with scour or biogenic depressions.
20SP-MW0521-019	4	21.9	Sand	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans or Soft Sediment	Tracks and Trails	N	Hermit crabs (8)	Piece of cobble with barnacles. Crab shell. Piece of macroalgae.
20SP-MW0521-019	5	21.8	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans or Soft Sediment	Tracks and Trails	N	Hermit crabs (15), snails (18)	Some macroalgae. Very subtle ripples.
20SP-MW0521-021	2	17.9	Sand and gravel	Unconsolidated mineral	Coarse unconsolidated	Gravel mixes	Sandy gravel	Soft Sediment Fauna	Inferred Fauna	Diverse Soft Sediment Epifauna	Soft Sediment Bryozoans	Υ	Bryozoans	Medium sand with gravel and shell fragments. A few bryozoans.
20SP-MW0521-021	4	18.2	Sand and gravel	Unconsolidated mineral	Coarse unconsolidated	Gravelly	Gravelly sand	Soft Sediment Fauna	Inferred Fauna	•	Soft Sediment Bryozoans	Υ	Crepidula (4), snail (1), bryozoans, tunicate, sponge	Bryozoans attached to cobble/gravel substrate. Tunicate evident. High energy environment with mobile granules/pebbles and shell fragments, macroalgae.
20SP-MW0521-021	5	17.9	Rippled sands with gravel and shells	Unconsolidated mineral	Coarse unconsolidated	Gravelly	Gravelly sand	Soft Sediment Fauna	Inferred Fauna	•	Mobile Mollusks on Soft Sediment	Υ	Snails (~40), Crepidula (5)	Macroalgae and bryozoans attached to cobble and boulder. Crepidula shells and bivalve shells.

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Table 4-1. CMECS Substrate and Biotic Classifications for each SPI/PV Image Pair

·				CMECS	S Substrate Components	5			CMECS Bio	tic Components				
Station ID	Replicate	Water Depth (m)	Habitat Type	Substrate Class	Substrate Subclass	Substrate Group	Substrate Subgroup	Biotic Subclass	Co-occurring Biotic Subclass	Biotic Group	Co-occurring Biotic Group	Complex Habitat (Y/N) per NMFS 2020	Epifauna/Infauna Types and Counts	Comments
20SP-MW0521-022	3	17.1	Sand and gravel	Unconsolidated mineral	Fine unconsolidated	Sand	Medium sand	Soft Sediment Fauna	Inferred Fauna	Larger Tube- Building Fauna		N	Diopatra (~200), snail (2), hermit crab (1)	High concentration of Diopatra worm tubes. Some pebbles.
20SP-MW0521-022	5	17.2	Sand and gravel	Unconsolidated mineral	Coarse unconsolidated	Gravelly	Gravelly sand	Soft Sediment Fauna	Inferred Fauna	Larger Tube- Building Fauna	Sediment Mobile Mollusks on Soft Sediment	Υ	Snails (2), Diopatra ~200	Few calcareous worm tubes.
20SP-MW0521-022	6	17.2	Sand and gravel	Unconsolidated mineral	Coarse unconsolidated	Gravelly	Gravelly sand	Soft Sediment Fauna	Inferred Fauna	Larger Tube- Building Fauna	Mobile Mollusks	Y	Snails (3), Diopatra (50)	One cobble, primarily medium sand with gravel. Green algae.
20SP-MW0521-023	1	12.3	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Very coarse/coarse sand	Soft Sediment Fauna	Inferred Fauna	Mobile Mollusks on Soft Sediment		N	Snails (2)	Rippled sand with shell fragment deposits in troughs.
20SP-MW0521-023	2	12.8	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Very coarse/coarse sand	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	None	N	N	Rippled sand with shell fragment deposits in troughs.
20SP-MW0521-023	3	12.9	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Very coarse/coarse sand	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	None	N	N	Rippled sand with shell fragment deposits in troughs. Red algae.
20SP-MW0521-025	1	17.1	Gravel substrate	Unconsolidated mineral	Coarse unconsolidated	Gravel mixes	Sandy gravel	Attached Fauna	Inferred Fauna	Attached Sponges	Attached Hydroids	Υ	Orange Sponge, hydroids	Gravelly sand with some cobble, Crepidula and bivalve shells.
20SP-MW0521-025	3	16.9	Gravel substrate	Unconsolidated mineral	Coarse unconsolidated	Gravels	Gravel pavement	Attached Fauna	Inferred Fauna	Attached Bryozoans	Mobile Crustaceans on Mixed Substrate	Υ	Barnacles, Hermit Crab (1), bryozoans	Gravelly sand with some cobble, Crepidula and bivalve shells, barnacles on cobble.
20SP-MW0521-025	4	17.0	Gravel substrate	Unconsolidated mineral	Coarse unconsolidated	Gravels	Gravel pavement	Attached Fauna	Inferred Fauna	Attached Bryozoans	Attached Hydroids	Υ	Bryozoans, hydroids	Some cobble, primarily gravel with sand and shell fragments.
20SP-MW0521-027	1	12.0	Sand and gravel	Unconsolidated mineral	Coarse unconsolidated	Gravelly	Gravelly sand	Soft Sediment Fauna	Inferred Fauna	Sea Urchin Bed	I None	Υ	Urchin (1)	Deposition of mobile sand around larger gravel pieces. Macroalgae on larger gravel.
20SP-MW0521-027	2	12.0	Sand and gravel	Unconsolidated mineral	Fine unconsolidated	Gravelly	Gravelly sand	Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediment	Mobile Mollusks on Soft Sediment	Υ	Sand dollar (1), snails (2) hermit crab (2)	Conglomerates of gravel and macroalgae. Mobile sand evident by deposition around gravels. Isolated eelgrass.
20SP-MW0521-027	3	12.0	Rippled sands with gravel and shells	Unconsolidated mineral	Coarse unconsolidated	Gravelly	Gravelly sand	Soft Sediment Fauna	Inferred Fauna	Mobile Mollusks on Soft Sediment	Mobile Crustaceans on Soft Sediment	Υ	Snails (~50), hermit crabs (10),	Barnacles on large pebbles. Some macroalgae. Shell fragments in troughs of sand ripples.
20SP-MW0521-029	1	7.0	Sand and gravel with macroalgae	Unconsolidated mineral	Coarse unconsolidated	Gravelly	Gravelly sand	Soft Sediment Fauna	Inferred Fauna	Larger Tube- Building Fauna	None	Υ	Diopatra (5)	Diopatra polychaete tubes on surface. Macroalgae attached to larger substrate pieces.
20SP-MW0521-029	3	7.0	Sand and gravel with macroalgae	Unconsolidated mineral	Coarse unconsolidated	Gravel mixes	Sandy gravel	Soft Sediment Fauna	Inferred Fauna	Attached Hydroids	Barnacles	Υ	Barnacles, hydroids	Sandy substrate with granules/pebbles. Macroalgae growth on large gravel pieces. Bedforms visible, wavelength not measureable.
20SP-MW0521-029	4	7.0	Sand and gravel with macroalgae	Unconsolidated mineral	Coarse unconsolidated	Gravelly	Gravelly sand	Soft Sediment Fauna	Inferred Fauna	Larger Tube- Building Fauna	None	Υ	Diopatra (1)	High energy environment, sand and granule/pebble mix with shell fragments. Macroalgae on larger particles.
20SP-MW0521-031	1	8.0	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Very coarse/coarse sand	Soft Sediment Fauna	Inferred Fauna	None	None	N	N	Sand ripples with shell fragment deposits in troughs.
20SP-MW0521-031	4	8.0	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Very coarse/coarse sand	Soft Sediment Fauna	Inferred Fauna	None	None	N	N	Sand ripples with shell fragments deposits in troughs.
20SP-MW0521-031	5	8.0	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Very coarse/coarse sand	Soft Sediment Fauna	Inferred Fauna	None	None	N	N	Rippled sands with some shell fragment deposits in trough.
20SP-MW0521-033	1	9.0	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	None	N	N	Rippled sand. Stick in upper part of image. Macroalgae fragment. Fish may be sand lance.
20SP-MW0521-033	3	9.0	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	None	N	N	Rippled sand with trace shell fragments.

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Table 4-1. CMECS Substrate and Biotic Classifications for each SPI/PV Image Pair

				CMECS	Substrate Components	1			CMECS Bio	tic Components				
Station ID 20SP-MW0521-033	Replicate 4	Water Depth (m) 9.0	Habitat Type Rippled sands	Substrate Class Unconsolidated	Substrate Subclass Fine unconsolidated	Substrate Group	Substrate Subgroup Fine/very fine sand	Biotic	Co-occurring Biotic Subclass ferred Fauna	Biotic Group Tracks and	Co-occurring Biotic Group	2020	Epifauna/Infauna Types and Counts	Comments Rippled sand with trace shell fragments.
2001 1000	7	5.0	Trippica sarius	mineral	i ine unconsolidated	Garia	Tille/very fille salid	Fauna	icirca i adila	Trails	None	11	· ·	Toppied saind with adde shell hagineries.
20SP-MW0521-035	12	20.3	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Very coarse/coarse sand	Soft Sediment Inf Fauna	ferred Fauna	Small Tube- Building Fauna	Mobile Mollusks on Soft Sediment	N	Snail (1)	Deposition of finer particles in troughs of ripples.
20SP-MW0521-035	13	20.4	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Very coarse/coarse sand	Soft Sediment Inf Fauna	ferred Fauna	Small Tube- Building Fauna	Larger Tube- Building Fauna	N	Diopatra (1)	Sand ripples with finer particles in troughs. Scale of image too small to measure sand ripple wavelength.
20SP-MW0521-035	14	20.5	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Very coarse/coarse sand	Soft Sediment Inf Fauna	ferred Fauna	Small Tube- Building Fauna	Larger Tube- Building Fauna	N	Diopatra (1)	Finer particles and shell fragments in troughs.
20SP-MW0521-037	1	26.9	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Medium sand	Soft Sediment Inf Fauna	ferred Fauna	Mobile Crustaceans on Soft Sediment	Tracks and Trails	N	Hermit crab (4)	Numerous biogenic depressions.
20SP-MW0521-037	2	24.2	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Medium sand	Soft Sediment Inf Fauna	ferred Fauna	Burrowing Anemones	Tracks and Trails	N	Crab (1), anemone (1)	Stick in upper part of image. Some flocculent material.
20SP-MW0521-037	3	21.9	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Medium Sand	Soft Sediment Inf Fauna	ferred Fauna	Burrowing Anemones	Tracks and Trails	N	Anemone (2)	Crab shell, few shell fragments. Some flocculent material.
20SP-MW0521-039	7	22.8	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Inf Fauna	ferred Fauna	Mobile Crustaceans on Soft Sediment	Small Tube- Building Fauna	N	Anemone (1), hermit crabs (6)	Numerous tubes.
20SP-MW0521-039	8	28.0	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Inf Fauna	ferred Fauna	Small Tube- Building Fauna	Tracks and Trails	N	Snail (1)	Numerous tubes on surface.
20SP-MW0521-039	9	28.3	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Inf Fauna	ferred Fauna	Small Tube- Building Fauna	Tracks and Trails	N	N	Some flocculent material on surface. Many small tubes.
20SP-MW0521-041	1	29.7	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Inf Fauna	ferred Fauna	Burrowing Anemones	Tracks and Trails	N	Anemone (16)	Numerous anemones.
20SP-MW0521-041	3	29.3	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Inf Fauna	ferred Fauna	Mobile Crustaceans on Soft Sediment	Tracks and Trails	N	Hermit crab (1)	Few diopatra on surface. Very few shell fragments. Very subtle ripples.
20SP-MW0521-041	4	29.7	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Inf Fauna	ferred Fauna	Burrowing Anemones	Tracks and Trails	N	Anemone (15)	Long tubes or fecal casts on surface.
20SP-MW0521-043	6	30.5	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Medium sand	Soft Sediment Inf Fauna		Mobile Crustaceans on Soft Sediment	Burrowing Anemones	N	Anemone (1), hermit crab (4)	High levels of turbidity in water column. Ripples are very subtle.
20SP-MW0521-043	8	30.3	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Medium sand	Soft Sediment Inf Fauna	ferred Fauna	on Soft	none	N	Snail (3); Diopatra (1)	High turbidity in the water column.
20SP-MW0521-043	9	29.8	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Medium sand	Soft Sediment Inf Fauna	ferred Fauna	on Soft	Burrowing Anemones	N	Anemone (2); Snail (5)	High turbidity in water column.
20SP-MW0521-045	2	33.8	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Inf Fauna	ferred Fauna	Sediment Sand Dollar Bed	Larger Tube- Building Fauna	N	Sand Dollar (6), hermit crab	Numerous Diopatra on surface.
20SP-MW0521-045	3	32.9	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Inf Fauna	ferred Fauna	Mobile Crustaceans on Soft Sediment	Larger Tube- Building Fauna	N	Hermit crab (5)	Numerous tubes on surface.

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Table 4-1. CMECS Substrate and Biotic Classifications for each SPI/PV Image Pair

					S Substrate Component	S			CMECS Bio	tic Components		<u>-</u>		_
Station ID	Replicate	Water Depth (m)	Habitat Type	Substrate Class	Substrate Subclass	Substrate Group	Substrate Subgroup	Biotic	o-occurring Biotic Subclass	Biotic Group	Co-occurring Biotic Group	Complex Habitat (Y/N) per NMFS 2020	Epifauna/Infauna Types and Counts	Comments
20SP-MW0521-045	5	32.9	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Info Fauna	erred Fauna	Mobile Crustaceans on Soft Sediment	Larger Tube- Building Fauna	N	Hermit crab (1); anemone (1)	Few Diopatra tubes on surface.
20SP-MW0521-047	1	33.5	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Infe Fauna	erred Fauna	Larger Tube- Building Fauna	Tracks and Trails	N	Diopatra (1)	Numerous worm tubes on surface. Ripples are very subtle.
20SP-MW0521-047	2	33.1	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Infe Fauna	erred Fauna	Burrowing Anemones	Tracks and Trails	N	Anemone (1)	High turbidity in water column. Subtle ripples on surface.
20SP-MW0521-047	3	33.5	Rippled soft bottom	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Info Fauna	erred Fauna	Mobile Crustaceans on Soft Sediment	Tracks and Trails	N	Hermit crab (1)	High turbidity in the water column.
20SP-MW0521-049	1	33.9	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Infe Fauna	erred Fauna	Mobile Crustaceans on Soft Sediment	Larger Tube- Building Fauna	N	Hermit crab (2)	Few diopatra tubes on surface. Irregular ripple wavelength, very subtle.
20SP-MW0521-049	2	34.0	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Info Fauna	erred Fauna	Sand Dollar Bed	Larger Tube- Building Fauna	N	Sand Dollar (4); hermit crab (1) Turbidity in water column. Tubes concentrated in troughs between ripples.
20SP-MW0521-049	3	34.1	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Infe Fauna	erred Fauna	Larger Tube- Building Fauna	none	N	N	Turbidity in the water column. A few Diopatra.
20SP-MW0521-051	1	35.5	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine sand	Soft Sediment Infe Fauna	erred Fauna	Larger Tube- Building Fauna	Tracks and Trails	N	N	Sand ripples are subtle.
20SP-MW0521-051	2	35.6	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine sand	Soft Sediment Infe Fauna	erred Fauna	Larger Tube- Building Fauna	Tracks and Trails	N	N	Sand ripples are subtle.
20SP-MW0521-051	3	35.6	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine sand	Soft Sediment Infe Fauna	erred Fauna	Larger Tube- Building Fauna	Mobile Crustaceans on Soft Sediment	N	Hermit crab (1); Diopatra (10+)	Very subtle sand ripple. Wave length indeterminate.
20SP-MW0521-053	6	36.3	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Infe Fauna	erred Fauna		Mobile Crustaceans on Soft Sediment	N	Hermit crab (1)	Particulates in water column. Some tubes and burrows.
20SP-MW0521-053	7	35.3	Sand with worm reef	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Infe Fauna	erred Fauna	Larger Tube- Building Fauna	Soft Sediment Bryozoans	N	Bryozoans	Subarea with high density of tubes, possibly amphipods. Possible bryozoan in middle of image.
20SP-MW0521-053	11	36.5	Sand with dense worm tubes	unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Infe Fauna	erred Fauna	Larger Tube- Building Fauna	Mobile Crustaceans on Soft Sediment	N	Hermit crab (1)	60% of surface area with tubes, possibly Ampelisca (amphipods). Imprint artifact of SPI frame.
20SP-MW0521-054	1	39.6	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Infe Fauna	erred Fauna	Larger Tube- Building Fauna	none	N	N	Particulates in water column. Tubes in troughs of ripples.
20SP-MW0521-054	3	37.0	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Infe Fauna		Mobile Crustaceans on Soft Sediment	Larger Tube- Building Fauna	N	Hermit crab (1)	Particulates in water column. Tubes in troughs of ripples.
20SP-MW0521-054	5	39.2	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Info Fauna	erred Fauna	Mobile Crustaceans on Soft Sediment	Larger Tube- Building Fauna	N	Jonah Crab (1); hermit crab (1	Numerous worm tubes in troughs of ripples. Particulates in water column.
20SP-MW0521-055	2	39.7	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine sand	Soft Sediment Info	erred Fauna	Larger Tube- Building Fauna	none	N	N	High concentration of particulates in water column.

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Table 4-1. CMECS Substrate and Biotic Classifications for each SPI/PV Image Pair

				CMECS	S Substrate Components	3			CMECS Bio	tic Components				
Station ID	Replicate	Water Depth (m)	Habitat Type	Substrate Class	Substrate Subclass	Substrate Group	Substrate Subgroup	Biotic Subclass	Co-occurring Biotic Subclass	Biotic Group	Co-occurring Biotic Group	Complex Habitat (Y/N) per NMFS 2020	Epifauna/Infauna Types and Counts	Comments
20SP-MW0521-055	3	39.8	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine sand	Soft Sediment Fauna	Inferred Fauna	Larger Tube- Building Fauna	none		N	High concentration of particulates in water column. Worm and amphipod tubes in troughs between ripples.
20SP-MW0521-055	4	40.1	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine sand	Soft Sediment Fauna	Inferred Fauna	Larger Tube- Building Fauna	none	N	N	High concentration of particulates in water column. Large bivalve shell (~6 cm).
20SP-MW0521-057	3	41.2	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Fauna	Inferred Fauna	Larger Tube- Building Fauna	none	N	N	High concentration of particulates in water column. Tubes in troughs of ripples.
20SP-MW0521-057	4	41.2	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Fauna	Inferred Fauna	Larger Tube- Building Fauna	none	N	N	High concentration of particulates in water column. Tubes in troughs of ripples.
20SP-MW0521-057	5	41.3	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Fauna	Inferred Fauna	Larger Tube- Building Fauna	Mobile Crustaceans on Soft Sediment	N	Hermit crab (1)	High concentration of particulates in water column. Tubes in troughs of ripples.
20SP-MW0521-059	1	40.7	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Fauna	Inferred Fauna	Larger Tube- Building Fauna	none	N	N	High concentration of particulates in water column. Tubes in troughs of ripples.
20SP-MW0521-059	2	40.6	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Fauna	Inferred Fauna	Larger Tube- Building Fauna	none	N	N	High concentration of particulates in water column. Tubes predominantly in troughs of ripples.
20SP-MW0521-059	3	40.7	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Fauna	Inferred Fauna	Larger Tube- Building Fauna	none	N	N	High concentration of particulates in water column. Tubes in troughs of ripples.
20SP-MW0521-061	1	40.2	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Fauna	Inferred Fauna	Larger Tube- Building Fauna		N	Snail (1), Diopatra (1)	Diopatra worm tube on surface. Ripples are subtle.
20SP-MW0521-061	3	40.0	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Fauna	Inferred Fauna	Larger Tube- Building Fauna		N	Snail (1), Diopatra (28) skate egg case (1)	Diopatra tubes on surface. Ripples are subtle, low wave height. Skate Egg Case.
20SP-MW0521-061	5	40.0	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Fauna	Inferred Fauna	Larger Tube- Building Fauna		N	Snail (1), Diopatra (5)	Ripples are subtle. Stick and bird feather.
20SP-MW0521-064	2	45.3	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Sandy mud	NA	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Sediment Larger Tube- Building Fauna	N	Nudibranch(1)	Possible squid egg case attached to bryozoan colony. Biogenic depressions, burrow openings.
20SP-MW0521-064	3	45.3	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Sandy mud	NA	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	Nudibranch (1)	Biogenic depressions and burrows, some tubes.
20SP-MW0521-064	5	45.2	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Sandy mud	NA	Soft Sediment Fauna	Inferred Fauna	Larger Tube- Building Fauna	Tracks and Trails	N	Hermit Crab (2)	High concentration of Ampelisca tubes on surface.
20SP-MW0521-066	1	44.4	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Sandy mud	NA	Soft Sediment Fauna	Inferred Fauna	Larger Tube- Building Fauna		N	Fish (1); gastropod (2); hermit crab (1)	Bryozoans and hydroids. A few bird feathers. High concentration of Ampelisca tubes.
20SP-MW0521-066	3	43.0	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Sandy mud	NA	Soft Sediment Fauna	Inferred Fauna	Larger Tube- Building Fauna	Tracks and Trails	N	Nudibranch (2); fish (1)	Fish is half buried in sediment. Dense area of Ampelisca tubes.
20SP-MW0521-066	4	43.1	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Sandy mud	NA	Soft Sediment Fauna	Inferred Fauna	Larger Tube- Building Fauna	Tracks and Trails	N	Snail (1); fish (1)	Partial image of fish. High concentration of Ampelisca tubes.
20SP-MW0521-067	1	46.6	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Larger Tube- Building Fauna	Tracks and Trails	N	Diopatra (5); hermit crabs (2)	Biogenic depressions, from foraging fish.
20SP-MW0521-067	2	46.9	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Larger Tube- Building Fauna	Tracks and Trails	N	Snail (1)	Many tracks, and biogenic depression from fish foraging.
20SP-MW0521-067	3	46.7	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Larger Tube- Building Fauna	Tracks and Trails	N	N	Many tracks and worms tubes.

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Table 4-1. CMECS Substrate and Biotic Classifications for each SPI/PV Image Pair

Table 4-1. CIVILOS S	CMECS Substrate Components								CMECS Biot	tic Components				
Station ID 20SP-MW0521-070	Replicate	Water Depth (m) 45.5	Habitat Type Soft bottom	Substrate Class Unconsolidated	Substrate Subclass Fine unconsolidated	Substrate Group	Substrate Subgroup	Biotic Subclass	Co-occurring Biotic Subclass	Biotic Group Tracks and	Co-occurring Biotic Group	Complex Habita (Y/N) per NMFS 2020 N	Epifauna/Infauna Types and Counts	Comments Moderate amount of tubes, burrows and tracks.
2037-101000321-070	'	45.5	Soft bottom	mineral	Fille unconsolidated	Muu	INA	Fauna	inieneu Fauna	Trails	Larger Tube- Building Fauna	IN	Diopatra (8)	widerate amount of tubes, bullows and tracks.
20SP-MW0521-070	2	45.4	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment I Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	Hermit Crab (1); Diopatra (10)	Many tracks, evidence of recent burrow excavation.
20SP-MW0521-070	5	45.5	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment I Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	Hermit crab (1); Diopatra (5)	Numerous worm and Ampelisca tubes.
20SP-MW0521-071	1	45.8	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment I Fauna	Inferred Fauna	Tracks and Trails	Mobile Mollusks on Soft Sediment	N	Snails (6); Diopatra tubes (4)	Many worm tubes, some ampelisca tubes.
20SP-MW0521-071	3	45.8	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment I Fauna	Inferred Fauna	Tracks and Trails	Mobile Mollusks on Soft Sediment	N	Snail (2); Diopatra (2)	Many tubes, biogenic depressions, very few shell fragments. Possible Skate imprint, lower right corner.
20SP-MW0521-071	4	45.8	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment I Fauna	Inferred Fauna	Tracks and Trails	Mobile Mollusks on Soft Sediment	N	Snails (3); hermit crab (1); Diopatra (2)	Many biogenic depressions, tubes and tracks.
20SP-MW0521-073	1	51.4	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment I Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	Nudibranch (1); snail (2)	Biogenic depressions, many tubes along margins of depressions.
20SP-MW0521-073	3	51.3	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment I Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	Snail (2)	Many worm tubes and Ampelisca tubes. Biogenic depressions with dense concentration of tubes along margins.
20SP-MW0521-073	5	51.4	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment I Fauna	Inferred Fauna	Larger Tube- Building Fauna	Mobile Mollusks on Soft Sediment	N	Snails (10)	Many worm tubes, biogenic depressions with dense clusters of tubes along margins.
20SP-MW0521-074	1	50.0	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment I Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	Nudibranch (1); snail (1)	Biogenic depressions with dense tube clusters along margins. Many Tracks.
20SP-MW0521-074	2	50.0	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment I Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	Hermit crabs (3); snail (1)	Sediment kicked up by fish. Many tracks and tubes. Biogenic depressions with dense clusters of worm tubes and ampelisca tubes.
20SP-MW0521-074	5	50.0	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment I Fauna		Tracks and Trails	Larger Tube- Building Fauna	N	Snails (3)	Many tracks and tubes. Biogenic depressions with dense clusters of worm tubes and some Ampelisca tubes.
20SP-MW0521-076	5	47.1	Soft bottom	Unconsolidated mineral	Fine unconsolidated		NA	Soft Sediment I Fauna		Tracks and Trails	Larger Tube- Building Fauna	N	Snail (4); shrimp (1)	Many tracks, tubes and burrows. Biogenic depressions with dense clusters of worm tubes and Ampelisca tubes.
20SP-MW0521-077	1	50.2	Soft bottom	Unconsolidated mineral	Fine unconsolidated		NA	Soft Sediment I Fauna		Tracks and Trails	Larger Tube- Building Fauna	N	Snail (2)	Imprint of fish on sediment, with ampelisca tubes in depression. Many tracks, tubes and burrows. Bivalve shell.
20SP-MW0521-077	2	50.3	Soft bottom	Unconsolidated mineral	Fine unconsolidated		NA	Soft Sediment I Fauna		Tracks and Trails	Larger Tube- Building Fauna	N	Juvenile shrimp (~100)	Many worm tubes, burrow and tracks. Ampelisca tubes in biogenic depression.
20SP-MW0521-077	8	50.2	Soft bottom	Unconsolidated mineral	Fine unconsolidated	·		Soft Sediment I Fauna		Larger Tube- Building Fauna		N	Snail (2)	Many tubes, burrows and tracks. Ampelisca tubes.
20SP-MW0521-080	1	50.3	Soft bottom	Unconsolidated mineral	Fine unconsolidated		NA	Soft Sediment I Fauna		Tracks and Trails	Larger Tube- Building Fauna	N	N	High concentration of tubes, burrows and tracks. Bivalve shell.
20SP-MW0521-080	3	50.3	Soft bottom	Unconsolidated mineral	Fine unconsolidated		NA	Soft Sediment I Fauna		Tracks and Trails	Larger Tube- Building Fauna	N	N	Many tubes, burrows and tracks.
20SP-MW0521-080	5	50.2	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment I Fauna		Larger Tube- Building Fauna	Tracks and Trails	N	Hermit crab (2)	Many tracks, burrows and tubes. Biogenic depressions with high concentration of tubes.
20SP-MW0521-082	1	49.6	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment I Fauna	Inferred Fauna	Larger Tube- Building Fauna	Tracks and Trails	N	Nudibranch (1); shrimp (2); bivalve siphons (10)	High concentration of tubes, tracks and burrows. Dense clusters of tubes in biogenic depressions.

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Table 4-1. CMECS Substrate and Biotic Classifications for each SPI/PV Image Pair

					S Substrate Components	3		CMECS Biotic Components						
Station ID 20SP-MW0521-082	Replicate 3	Water Depth (m) 49.6	Habitat Type Soft bottom	Substrate Class Unconsolidated	Substrate Subclass Fine unconsolidated	Substrate Group Mud	Substrate Subgroup	Biotic Subclass Soft Sediment I		Biotic Group Larger Tube-	Co-occurring Biotic Group	Complex Habita (Y/N) per NMFS 2020	t S Epifauna/Infauna Types and Counts Anemone (1)	Comments Many tubes, burrows and tracks. Biogenic depressions with higher
20SP-MW0521-082	5	49.6	Soft bottom	mineral Unconsolidated mineral	Fine unconsolidated	Mud	NA	Fauna Soft Sediment I Fauna		Building Fauna Tracks and Trails	Trails Larger Tube- Building Fauna	N	Snails (2), bivalve siphons (8)	concentration of Ampelisca tubes. Bivalve siphons. Biogenic depressions, with higher concentration of ampelisca tubes in depressions. Many tracks, tubes and burrows.
20SP-MW0521-083	1	51.3	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Sandy mud	NA	Soft Sediment I Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	N	High concentration of tubes, burrows and tracks. Few biogenic depressions.
20SP-MW0521-083	2	51.3	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment I Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	Juvenile shrimp (1)	~26cm Hake in depression. Other depressions evident with high concentration of tubes. Many burrows and tracks.
20SP-MW0521-083	5	51.2	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Sandy mud	NA	Soft Sediment I Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	Hermit crab (1)	High concentration of ampelisca tubes in biogenic depressions. Many burrows, tubes and tracks.
20SP-MW0521-084	3	52.2	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Sandy mud	NA	Soft Sediment I Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	N	Biogenic depressions, with dense concentration of tubes. Many tracks, tubes and burrows. Very few shell fragments.
20SP-MW0521-084	4	52.2	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Sandy mud	NA	Soft Sediment I Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	Hermit crab (1)	Many biogenic depressions, with dense concentration of tubes. Many tracks, tubes and burrows. Fish in depression.
20SP-MW0521-084	5	52.3	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Sandy mud	NA	Soft Sediment I Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	N	Many tracks, burrows and tubes. Dense clusters of tubes in biogenic depressions.
20SP-MW0521-086	1	54.3	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Sandy mud	NA	Soft Sediment I Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	Jonah crab (1)	Many tracks and burrow. Some tubes associated primarily in biogenic depressions.
20SP-MW0521-086	3	54.1	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Sandy mud	NA	Soft Sediment I Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	N	Many burrow, tracks. Tubes mostly associated with biogenic depressions. Sediment kicked up by quickly departing fish.
20SP-MW0521-086	5	54.3	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Sandy mud	NA	Soft Sediment I Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	Jonah crab (1); shrimp (3)	Many large biogenic depressions. Few tubes evident. Very few shell fragments.
20SP-MW0521-088	1	51.2	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Sandy mud	NA	Soft Sediment I Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	Snail (1)	Egg case. Many tracks, burrows and tubes.
20SP-MW0521-088	2	51.1	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Sandy mud	NA	Soft Sediment I Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	Crab (1); shrimp (1)	Many burrows and tracks. Lower concentration of tubes. Dense clusters of tubes in deeper biogenic depressions.
20SP-MW0521-088	5	51.2	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Sandy mud	NA	Soft Sediment I Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	N	High concentration of burrows, tubes associated with biogenic depressions, many tracks.
20SP-MW0521-090	1	53.8	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment I Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	Hermit crab (1)	Many tubes, burrows and tracks.
20SP-MW0521-090	2	53.7	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment I Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	Snail (1)	Many tubes, burrows and tracks. Egg Case, by left laser.
20SP-MW0521-090	7	53.7	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment I Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	N	Many tubiculous isopods and amphipods. Many tubes, burrows and tracks. Evidence of biogenic depressions.
20SP-MW0521-091	1	54.4	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment I Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	Worm (1)	Many tubes, tracks and burrows. One worm on surface.
20SP-MW0521-091	3	54.3	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment I Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	Snail (1)	Moderate amount of tubes, burrows and tracks.

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Table 4-1. CMECS Substrate and Biotic Classifications for each SPI/PV Image Pair

- Tubio 1 1. Gin2000	aboliato ana	Diono Giao	Silications for each SF		S Substrate Component	S			CMECS Bio	tic Components		_		
Station ID 20SP-MW0521-091	Replicate		Habitat Type	Substrate Class	Substrate Subclass	Substrate Group	Substrate Subgroup	Biotic Subclass	Co-occurring Biotic Subclass	Biotic Group	Co-occurring Biotic Group	2020	Epifauna/Infauna Types and Counts	Comments Magnetization and hyrous
205P-MW0521-091	5	54.3	Soft bottom	Unconsolidated mineral	Fine unconsolidated	iviua	NA	Soft Sediment I Fauna	interred Fauna	Tracks and Trails	Larger Tube- Building Fauna		crab (1)	Many tracks, tubes and burrows.
20SP-MW0521-093	1	55.4	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Sandy mud	NA	Soft Sediment I Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	Anemone (1)	Large biogenic excavation. High concentration of tubes along edge of depression. Many tubes, burrows and tracks.
20SP-MW0521-093	2	55.4	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment I Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	N	Clusters of isopod tubes. Moderate amount of burrows, tubes and tracks.
20SP-MW0521-093	4	53.7	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment I Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	Snail (3), red worms (2)	Many burrows and tracks, moderate amount of tubes. Biogenic depression with high concentration of tubes along margins.
20SP-MW0521-096	1	53.8	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Sandy mud	NA	Soft Sediment I Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	Hermit crab (1)	Many long tubes, tracks and burrows.
20SP-MW0521-096	3	53.7	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Sandy mud	NA	Soft Sediment I Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	N	Egg Case top left. Biogenic depressions with higher concentration of tubes along margins. Many tubes, burrows and tracks.
20SP-MW0521-096	4	53.5	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Sandy mud	NA	Soft Sediment I Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna		Isopods (~10)	Large biogenic depression, with high concentration of tubes along margins. Many tubes, burrows and tracks.
20SP-MW0521-098	1	55.3	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sandy mud	NA	Soft Sediment I Fauna	Inferred Fauna	Tracks and Trails	Mobile Crustaceans on Soft Sediment	N	Hermit crabs (2)	Some tubes, burrows and moderate amount of tracks. One crest of a bedform visible.
20SP-MW0521-098	4	55.2	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sandy mud	NA	Soft Sediment I Fauna	Inferred Fauna	Tracks and Trails	Mobile Crustaceans on Soft Sediment		Hermit crab (1); shrimp (1); snail (1)	Large bivalve shell (5 cm). A few tubes and burrows, many tracks. Very subtle ripple, not measureable.
20SP-MW0521-098	5	55.3	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sandy mud	NA	Soft Sediment I Fauna	Inferred Fauna	Tracks and Trails	Mobile Crustaceans on Soft Sediment	N	Hermit crab (1)	Moderate amount of tracks, some burrow and tubes. Relatively large period between ripple crests.
20SP-MW0521-100	1	49.4	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Sandy mud	NA	Soft Sediment I Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	Diopatra (1), worms (2)	2 worms on surface. Many tubes, burrows and tracks.
20SP-MW0521-100	2	49.5	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Sandy mud	NA	Soft Sediment I Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	N	Biogenic depressions with high concentration of tubes within. Many tubes, burrows and tracks.
20SP-MW0521-100	3	49.5	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Sandy mud	NA	Soft Sediment I Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	Sand dollar (1)	Large biogenic depressions with many tubes within. Many tracks, tubes and burrows.
20SP-MW0521-101	1	54.6	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment I Fauna	Inferred Fauna	Larger Tube- Building Fauna	Tracks and Trails	N	Anemone (1)	Hake in depression. Depression contain high concentration of tubes. Many tubes, burrows and tracks.
20SP-MW0521-101	2	54.4	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment I Fauna	Inferred Fauna	Larger Tube- Building Fauna	Tracks and Trails	N	Hermit crabs (2)	Biogenic depressions with high. concentration of tubes. Many tubes, tracks and burrows.
20SP-MW0521-101	4	54.5	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment I Fauna	Inferred Fauna	Larger Tube- Building Fauna	Tracks and Trails	N	N	High concentration of tubes in biogenic depressions. Many tubes, burrows and tracks.
20SP-MW0521-102	1	55.3	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment I Fauna	Inferred Fauna	Larger Tube- Building Fauna	Mobile Mollusks on Soft Sediment	N	Snail (1)	Many tubes, burrows and tracks. Higher concentration of tubes in biogenic depressions.
20SP-MW0521-102	3	52.9	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment I Fauna	Inferred Fauna	Tracks and Trails	Burrowing Anemones	N	Hermit crab (1); anemone (1)	Unidentifiable juvenile fish.
20SP-MW0521-102	5	55.3	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment I Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	N	Biogenic depression with high concentration of tubes. Many burrows, tracks and tubes.

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Table 4-1. CMECS Substrate and Biotic Classifications for each SPI/PV Image Pair

				CMECS	S Substrate Component	ts		-	CMECS Bio	tic Components				
Station ID	Replicate	Water	Habitat Type	Substrate Class	Substrate Subclass	Substrate Group	Substrate Subgroup	Biotic Subclass	Co-occurring Biotic Subclass	Biotic Group	Co-occurring Biotic Group	Complex Habitat (Y/N) per NMFS 2020		Comments
20SP-MW0521-103	1	56.8	Soft bottom	Unconsolidated	Fine unconsolidated		NA		Inferred Fauna	Tracks and	Burrowing	N	Anemone (1)	Large biogenic depressions with high concentration of tubes.
	•			mineral				Fauna		Trails	Anemones		(.,	gg
20SP-MW0521-103	2	56.8	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	N	Higher concentration of Ampelisca Tubes in biogenic depressions.
20SP-MW0521-103	3	56.7	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	Anemone (1), shrimp (1)	Biogenic excavations. Moderate to High concentration of tubes. Low amount of burrow and moderate tracks. Anemone bottom right in image.
20SP-MW0521-106	6	57.1	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Mobile Mollusks on Soft Sediment	N	Snails (4); anemone (1)	Moderate amount of tracks, tubes and burrows. Ripples are subtle.
20SP-MW0521-106	8	56.9	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Burrowing Anemones	N	Anemone (4); hermit crab (1); unidentifiable org. (1)	Large biogenic depression, left side of image. Moderate amount of tubes, burrows and tracks.
20SP-MW0521-106	9	57.1	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	Shrimp (1); anemone (2); bivalve siphon (1)	High concentration of tracks. Moderate amount of burrows and tubes.
20SP-MW0521-108	1	54.7	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Burrowing Anemones	Tracks and Trails	N	Anemone (9)	Low amount of tracks, burrows and tubes.
20SP-MW0521-108	6	55.2	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Burrowing Anemones	Tracks and Trails	N	Anemone (13)	Mud clast is an artifact from the SPI frame. Low amount of burrows, moderate amount of tracks and tubes. Tubes concentrated between ripple crests.
20SP-MW0521-108	9	55.0	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	Anemone (1)	Extensive biogenic depressions. Higher concentration of tubes in depressions. Moderate amount of burrows and tracks.
20SP-MW0521-109	1	53.6	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Larger Tube- Building Fauna	Tracks and Trails	N	N	Two large biogenic depressions, with high concentration of tubes within. Moderate amount of burrows, tubes and tracks.
20SP-MW0521-109	3	54.0	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	Anemone (3)	High concentration of tracks, low to moderate amount of tubes and burrows.
20SP-MW0521-109	4	53.9	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	Anemone (1)	Moderate amount of tracks, low to moderate amount of tubes and burrows.
20SP-MW0521-111	1	57.4	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	Anemone (1)	Portion of fish captured in image. Moderate amount of tracks. Low amount of tubes and burrows. Biogenic depression in top left corner, with higher concentration of tubes.
20SP-MW0521-111	3	57.3	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	Anemone (2)	Large biogenic depression top left, with higher concentration of tubes along margins. A few tracks, and moderate amount of tubes and some burrows.
20SP-MW0521-111	5	57.3	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	N	Moderate amount of tracks. Some tubes and burrows. Higher concentration of tubes in biogenic depressions.
20SP-MW0521-114	1	62.2	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	Sea stars (2); Jonah crab (1)	Portion of fish in image, not identifiable. Many tracks, some tubes and burrows.
20SP-MW0521-114	2	62.0	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Soft Sediment Brittle Stars	N	Sea star (1), brittle star (5)	High concentration of tracks, some tubes and burrows. Sea stars partially submerged in sediment.
20SP-MW0521-114	4	62.1	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Burrowing Anemones	N	Burrowing anemone (24); sea star (1); bivalve siphons	Numerous bivalve siphons and burrowing anemones. A few tracks. Numerous tubes and burrows.
20SP-MW0521-116	1	60.9	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	Sea stars (6)	Moderate amount of tracks, burrows and tubes.
20SP-MW0521-116	2	60.9	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	Sea stars (6); burrowing anemone (1)	Biogenic depressions with higher concentration of tubes along margins. Moderate amount of tracks, burrows and tubes.

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Table 4-1. CMECS Substrate and Biotic Classifications for each SPI/PV Image Pair

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Station ID	Replicate	Water Depth (m)	Habitat Type	Substrate Class	Substrate Subclass	Substrate Group	Substrate Subgroup	Biotic Subclass	Co-occurring Biotic Subclass	Biotic Group	Co-occurring Biotic Group	Complex Habitat (Y/N) per NMFS 2020	t Epifauna/Infauna Types and Counts	Comments
20SP-MW0521-116	5	60.9	Soft bottom	Unconsolidated	Fine unconsolidated	Mud	NA	Soft Sediment	Inferred Fauna	Tracks and	Larger Tube-	N	Sea star (7); burrowing	Biogenic depression with higher concentration of tubes along margins.
				mineral				Fauna		Trails	Building Fauna		anemone (1)	Moderate amount of tubes and tracks, low amount of burrows.
20SP-MW0521-117	1	59.8	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	N	Biogenic depressions with slightly higher concentration of tubes along margins. Moderate amount of tracks, low amount of burrows and tubes.
20SP-MW0521-117	2	59.8	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	N	Image partially obscured by suspended sediment, possibly from startled fish. Higher concentration of tubes in biogenic depressions. Moderate amount of tracks and tubes, low amount of burrows.
20SP-MW0521-117	4	59.8	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	N	Low amount of tubes and burrows, moderate amount of tracks.
20SP-MW0521-120	1	62.5	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	Sea star (8)	Higher concentrations of tubes in biogenic depressions. Moderate to high amount of tubes and tracks, moderate to low amount of burrows.
20SP-MW0521-120	2	62.4	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Clam Bed	N	Sea stars (11), burrowing anemone (2), bivalve siphons, red worms	Bivalve siphons, high concentration of tubes and moderate amount of track and burrows. Numerous red worms on surface.
20SP-MW0521-120	4	62.6	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Larger Tube- Building Fauna	N	Sea stars (9)	Large biogenic depression, appears recent. No tubes along margins. Moderate amount of tubes and burrows. High concentration of tracks.
20SP-MW0521-C01	2	31.8	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Medium sand	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Burrowing Anemones	N	Anemone (2); gastropods (2)	Moderate amount of tracks, low amount of burrows and tubes.
20SP-MW0521-C01	3	31.8	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Medium sand	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Burrowing Anemones	N	Anemone (1); gastropods (1)	Very low amount of tubes and burrows. Moderate amount of tracks.
20SP-MW0521-C01	4	31.7	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Medium sand	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Mobile Mollusks on Soft Sediment	N	Gastropods (11)	Very few tracks and tubes.
20SP-MW0521-C02	2	28.9	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Very coarse/coarse sand	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Mobile Crustaceans on Soft Sediment	N	Hermit crab (1)	Moderate amount of tracks, small scale biogenic depressions with higher amount of tubes in depressions. Ripple wavelength not measureable at this scale.
20SP-MW0521-C02	3	28.9	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Very coarse/coarse sand	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Mobile Mollusks on Soft Sediment	N	Gastropods (3)	Ripple wavelength not measureable at this scale. High amount of tracks and small scale biogenic depressions. A few tubes.
20SP-MW0521-C02	4	29.0	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Very coarse/coarse sand	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Mobile Mollusks on Soft Sediment	N	Gastropod (2), hermit crab (1)	Silt and shell fragments in troughs of ripples.
20SP-MW0521-C03	1	30.7	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Mobile Mollusks on Soft Sediment	N	Gastropod (4)	Moderate amount of tracks. Very low amount of tubes and burrows. Ripples well defined.
20SP-MW0521-C03	2	31.0	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Mobile Mollusks on Soft Sediment	N	Anemone (1); gastropod (2)	Low amount of tracks and tubes.
20SP-MW0521-C03	3	30.9	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Mobile Mollusks on Soft Sediment	N	Gastropods (4)	Low amount of tubes, moderate to high amount of tracks.
20SP-MW0521-C04	1	32.9	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Medium sand	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Burrowing Anemones	N	Anemone (1), gastropod (1)	A few tubes and tracks. Relatively long period between ripple crests. Higher concentration of tubes in trough between ripples.
20SP-MW0521-C04	2	33.0	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Muddy sand	NA	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Burrowing Anemones	N	Anemone (8); gastropod (2)	Anemones clustered together. Moderate amount of tracks, low amount of tubes.
20SP-MW0521-C04	4	32.8	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Medium sand	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Mobile Mollusks on Soft Sediment	N	Gastropods (2)	A few tubes and tracks. Ripples are unevenly spaced.
20SP-MW0521-C05	1	30.5	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Medium sand	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Burrowing Anemones	N	Anemone (1)	Moderate amount of tracks and low amount of tubes.

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Table 4-1. CMECS Substrate and Biotic Classifications for each SPI/PV Image Pair

			_	CMECS	S Substrate Component	S			CMECS Bio	tic Components				
Station ID	Replicate	Water Depth (m)	Habitat Type	Substrate Class	Substrate Subclass	Substrate Group	Substrate Subgroup	Biotic Subclass	Co-occurring Biotic Subclass	Biotic Group	Co-occurring Biotic Group	Complex Habitat (Y/N) per NMFS 2020	Epifauna/Infauna Types and Counts	Comments
20SP-MW0521-C05	2	30.4	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Medium sand	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Burrowing Anemones		Anemone (3); sand dollar (1); gastropods (2)	Moderate amount of tracks, low amount of tubes.
20SP-MW0521-C05	3	30.6	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Medium sand	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Mobile Mollusks on Soft Sediment	N	Gastropods (4)	Moderate amount of tracks and low amount of tubes.
20SP-MW0521-C06	1	63.8	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Soft Sediment Brittle Stars	Small Tube- Building Fauna		Brittle stars; burrowing anemones (10)	Very high concentration of brittle stars, some bivalve siphons. High concentration of tubes and burrows, few tracks.
20SP-MW0521-C06	2	63.8	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Soft Sediment Brittle Stars	Small Tube- Building Fauna		Brittle stars; burrowing anemones	High concentration of brittle stars. High concentration of tubes, moderate amount of burrows and tracks.
20SP-MW0521-C06	5	63.7	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Soft Sediment Brittle Stars	Small Tube- Building Fauna		Sea star (1); brittle stars; burrowing anemones (~15)	High concentration of brittle stars, tubes and moderate amount of burrows. Low amount of tracks.
20SP-MW0521-C07	1	63.6	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Soft Sediment Brittle Stars	Burrowing Anemones		Sea stars (3); bivalve siphons (10), burrowing anemone (6)	High concentration of brittle stars and tubes. Moderate amount of burrows and tracks.
20SP-MW0521-C07	2	64.2	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Soft Sediment Brittle Stars	Burrowing Anemones		Sea star (2); burrowing anemone (13); brittle stars	High concentration of brittle stars. Unidentifiable flat fish, partially in image. High concentration of tubes. moderate amount of burrows and tracks.
20SP-MW0521-C07	4	63.7	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Soft Sediment Brittle Stars	Burrowing Anemones		Sea star (2); burrowing anemone (10); brittle stars; bivalve siphons (4)	High concentration of brittle stars and tubes. Moderate amount of burrows and low amount of tracks.
20SP-MW0521-C08	1	62.8	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Soft Sediment Brittle Stars	Burrowing Anemones	N	Bivalve siphons (10); burrowing anemone (13); sea star (1); brittle stars	High concentration of brittle stars and tubes.
20SP-MW0521-C08	3	63.1	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Soft Sediment Brittle Stars	Burrowing Anemones	N	Burrowing anemone (~30); bivalve siphons (8); sea star (1)	High concentration of brittle stars, tubes and tracks. Moderate amount of burrows.
20SP-MW0521-C08	4	62.9	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Soft Sediment Brittle Stars	Burrowing Anemones		· /	High concentration of brittle stars, tubes and tracks. Low amount of burrows.
20SP-MW0521-C09	1	64.9	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Soft Sediment Brittle Stars	Burrowing Anemones		Sea pen (2), brittle stars; bivalve siphons (8); burrowing anemones (~40) red worm (1)	High concentration of brittle stars, tubes. Moderate amount of tracks and some burrows.
20SP-MW0521-C09	4	64.8	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Soft Sediment Brittle Stars	Burrowing Anemones	N	. , , , , ,	, , ,
20SP-MW0521-C09	6	64.9	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Soft Sediment Brittle Stars	Burrowing Anemones		Sea star (2); brittle stars; burrowing anemones (~30+)	Mud clasts are an artifact from the SPI frame. High concentration of brittle stars and burrowing anemones.
20SP-MW0521-C10	1	64.1	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Soft Sediment Brittle Stars	Burrowing Anemones		Sea star (2), brittle stars; burrowing anemones (~40); bivalve siphons (14)	High concentration of brittle stars. Moderate amount of tubes and tracks. Some burrows.
20SP-MW0521-C10	6	64.2	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Soft Sediment Brittle Stars	Burrowing Anemones	N	Brittle stars; burrowing anemone (~40+); bivalve	High concentration of Brittle Stars. Mud clasts may be an artifact from the SPI frame.
20SP-MW0521-C10	11	64.3	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Soft Sediment Brittle Stars	Burrowing Anemones		siphon (6) Brittle stars; sea stars (2); burrowing anemones (~40); bivalve siphons (5)	High concentration of Brittle Stars. Moderate amount of burrows, tubes and tracks.
20SP-MW0521-C11	1	38.0	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Fauna	Inferred Fauna	Sand Dollar Bed	Tracks and Trails		Hermit crab (2); sand dollar (2)	A few tubes and burrows. Moderate amount of tracks. Shell fragments very small particles.
20SP-MW0521-C11	2	37.7	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Small Tube- Building Fauna	N	Nudibranch (1); hermit crab	A few tracks and burrows. Moderate amount of tubes.

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October 7, 2020
Mayflower Wind Farm, May 2020

Table 4-1. CMECS Substrate and Biotic Classifications for each SPI/PV Image Pair

			_	CMECS	S Substrate Components			CMECS	Biotic Components	3	=.		
Station ID	Replicate	Water Depth (m)	Habitat Type	Substrate Class	Substrate Subclass	Substrate Group	Substrate Subgroup	Co-occurrin Biotic Biotic Subclass Subclass	g Biotic Group	Co-occurring Biotic Group	Complex Habita (Y/N) per NMFS 2020	t Epifauna/Infauna Types and Counts	Comments
20SP-MW0521-C11	4	37.8	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Inferred Fau Fauna	na Tracks and Trails	Small Tube- Building Fauna	N	N	Imprint and mud clast are artifacts from the SPI frame. Moderate amount of tubes and tracks. A few burrows.
20SP-MW0521-C12	1	34.6	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Inferred Fau Fauna	na Sand Dollar Bed	Tracks and Trails	N	Sand dollar (35)	High concentration of sand dollars. A few tube clusters.
20SP-MW0521-C12	2	34.6	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Inferred Fau Fauna	na Sand Dollar Bed	Small Tube- Building Fauna	N	Sand dollar (20)	High concentration of Sand Dollars, tracks and tubes.
20SP-MW0521-C12	3	34.6	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Inferred Fau Fauna	na Sand Dollar Bed	Small Tube- Building Fauna	N	Sand dollar (20)	Frame imprint from SPI camera system. High concentration of tracks and moderate amount of tubes.
20SP-MW0521-C13	1	37.5	Sand	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Inferred Fau Fauna	na Sand Dollar Bed	Tracks and Trails	N	Sand dollar (43); crab (1)	High concentration of Sand Dollars. Portion of crab caught in image, Not Identifiable. Ripples difficult to discern due to reworked substrate by sand
20SP-MW0521-C13	2	37.5	Sand	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Inferred Fau Fauna	na Sand Dollar Bed	Tracks and Trails	N	Sand dollar (50); burrowing anemones	dollars. High concentration of sand dollars. Moderate amount of burrowing anemones. Shell fragments very fine. Ripples difficult to discern due to
20SP-MW0521-C13	5	37.5	Sand	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Inferred Fau Fauna	na Sand Dollar Bed	Tracks and Trails	N	Sand dollar (17)	reworked substrate by sand dollars. Moderate amount of sand dollars, a few tubes. Fine shell fragments.
20SP-MW0521-C14	1	40.0	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Inferred Fau Fauna	na Sand Dollar Bed	Tracks and Trails	N	Shrimp (1); sand dollar (8)	High amount of tracks, low amount of tubes and burrows. Shell fragments fine particles.
20SP-MW0521-C14	2	40.1	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Inferred Fau Fauna	na Sand Dollar Bed	Tracks and Trails	N	Nudibranch (1); sand dollar (12)	High concentration of tracks. Shell fragments are very fine. A few tubes.
20SP-MW0521-C14	3	40.2	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Inferred Fau Fauna	na Sand Dollar Bed	Tracks and Trails	N	Sand dollar (10); Nudibranch (1)	Moderate amount of Sand Dollars. Fine shell fragment particles.
20SP-MW0521-C15	3	37.4	Sand	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Inferred Fau Fauna	na Sand Dollar Bed	Tracks and Trails	N	Sand dollar (67); Bushy Bryozoa (1); hermit crab (1)	Very high concentration of sand dollars. Fine particles of shell fragments. Imprint is an artifact of the SPI frame.
20SP-MW0521-C15	4	37.3	Sand	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Inferred Fau Fauna	na Sand Dollar Bed	Tracks and Trails	N	Sand dollar (42); hermit crab (1)	Very high concentration of sand dollars. Shell fragments fine particles. Very few tubes. Imprint is and artifact from the SPI frame.
20SP-MW0521-C15	5	37.3	Sand	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft Sediment Inferred Fau Fauna	na Sand Dollar Bed	Tracks and Trails	N	Sand Dollar (62); Hermit crab (1)	Very high concentration of sand dollar. Shell fragments are very fine.
20SP-MW0521-CP1	1	15.0	Sand	Unconsolidated mineral	Coarse unconsolidated	Gravelly	Gravelly sand	Soft Sediment Inferred Fau Fauna	Sediment	Tracks and Trails	Υ	Bryozoans, Snail (2), Hermit crab (1), Macroalgae	Evidence of a high energy location with mobile granules/pebbles. Few strands of algae.
20SP-MW0521-CP1	2	15.0	Sand	Unconsolidated mineral	Coarse unconsolidated	Gravelly	Gravelly Sand	Soft Sediment Inferred Fau Fauna	Sediment	Tracks and Trails	Y	Macroalgae, bryozoans	High energy with mobile granules/pebbles and shell fragments.
20SP-MW0521-CP1	3	15.0	Sand	Unconsolidated mineral	Coarse unconsolidated	Gravelly	Gravelly Sand	Soft Sediment Inferred Fau Fauna	Epifauna na Diverse Soft Sediment Epifauna	Tracks and Trails	Υ	Macroalgae, Hermit crab (1), Bryozoans	High energy area, with mobile pebbles/granules.

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Sediment Profile and Plan View Imaging Survey October 7, 2020 Mayflower Wind Farm, May 2020

Table 4-1. CMECS Substrate and Biotic Classifications for each SPI/PV Image Pair

				CMECS	CS Substrate Components				CMECS Bio	ic Components		-		
Station ID	Replicate	Water Depth (m)	Habitat Type	Substrate Class	Substrate Subclass	Substrate Group	Substrate Subgroup	Biotic Subclass	Co-occurring Biotic Subclass	Biotic Group	Co-occurring Biotic Group	Complex Habitat (Y/N) per NMFS 2020	Epifauna/Infauna Types and Counts	Comments
20SP-MW0521-CP2	1	12.0	Sand	Unconsolidated mineral	Fine unconsolidated	Sand	Very coarse/coarse sand	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	None	N	N	High energy area with mobile granules/pebbles.
20SP-MW0521-CP2	2	12.0	Sand	Unconsolidated mineral	Coarse unconsolidated	Sand	Very coarse/coarse sand	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	None	N	N	High energy area, with mobile granules.
20SP-MW0521-CP2	3	12.0	Sand	Unconsolidated mineral	Coarse unconsolidated	Gravelly	Gravelly Sand	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	None	Y	N	High energy area with mobile granules/pebbles.

Notes: CMECS = Coastal and Marine Ecological Classification Standard

N = no

NA = not applicable SPI/PV = sediment profile imaging and plan view

Y = yes

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Appendix A

SPI/PV Stations Sampled, Field Log, and Field Forms

- Appendix A1. Stations Sample
- Appendix A2. Field Notebook
- Appendix A3. SPI/PV Collection Forms

Appendix A1

Stations Sample	Replicate	Image Collection	Image Collection	Water		
Station Number	Number	Date	Time (UTC)	Depth (m)	Easting (m)	Northing (m)
20SP-MW0521-009	1	5/12/2020	19:40	20	374011.115	4592067.787
20SP-MW0521-009	2	5/12/2020	19:42	22	374006.612	4592068.383
20SP-MW0521-009	3	5/12/2020	19:44	23	374006.762	4592069.613
20SP-MW0521-009	4	5/12/2020	19:45	22	374009.054	4592066.915
20SP-MW0521-009	5	5/12/2020	19:46	22	374009.884	4592067.962
20SP-MW0521-007	1	5/12/2020	21:53	26	371287.613	4592890.839
20SP-MW0521-007	2	5/12/2020	21:55	26	371290.581	4592890.01
20SP-MW0521-007	3	5/12/2020	21:56	25	371293.417	4592891.253
20SP-MW0521-007	4	5/12/2020	21:57	25	371296.555	4592890.794
20SP-MW0521-007	5	5/12/2020	21:59	26	371295.893	4592889.645
20SP-MW0521-007	6	5/12/2020	23:44	24	371291.324	4592892.521
20SP-MW0521-007	7	5/12/2020	23:46	25	371297.547	4592891.642
20SP-MW0521-007	8	5/12/2020	23:48	25	371300.186	4592889.362
20SP-MW0521-007	9	5/12/2020	23:50	25	371304.216	4592888.187
20SP-MW0521-005	1	5/13/2020	2:12	25	369062.102	4594603.176
20SP-MW0521-005	2	5/13/2020	2:15	27	369060.142	4594603.541
20SP-MW0521-005	3	5/13/2020	2:19	27	369059.65	4594604.366
20SP-MW0521-005	4	5/13/2020	2:21	27	369055.626	4594603.224
20SP-MW0521-003	1	5/13/2020	4:29	18	367182.559	4596520.584
20SP-MW0521-003	2	5/13/2020	4:31	17	367180.46	4596521.389
20SP-MW0521-003	3	5/13/2020	4:32	18	367180.746	4596521.952
20SP-MW0521-003	4	5/13/2020	4:36	18	367178.648	4596522.06
20SP-MW0521-002	1	5/13/2020	6:18	24	367531.225	4597864.996
20SP-MW0521-002	2	5/13/2020	6:21	24	367529.141	4597861.978
20SP-MW0521-002	3	5/13/2020	6:24	23	367526.379	4597863.746
20SP-MW0521-002	4	5/13/2020	6:27	25	367524.737	4597863.539
20SP-MW0521-002	5	5/13/2020	7:29	23	367524.165	4597859.829
20SP-MW0521-002	6	5/13/2020	7:31	24	367522.78	4597863.56
20SP-MW0521-002	7	5/13/2020	7:34	24	367518.713	4597861.622
20SP-MW0521-002	8	5/13/2020	7:36	23	367517.247	4597861.035
20SP-MW0521-001	1	5/13/2020	8:22	11	367214.279	4599238.099
20SP-MW0521-001	2	5/13/2020	8:24	11	367211.443	4599240.595
20SP-MW0521-001	3	5/13/2020	8:26	11	367208.698	4599240.032
20SP-MW0521-001	4	5/13/2020	8:27	11	367207.795	4599241.695
20SP-MW0521-001	5	5/13/2020	9:10	11	367208.435	4599241.161
20SP-MW0521-001	6	5/13/2020	9:12	11	367205.84	4599241.749
20SP-MW0521-001	7	5/13/2020	9:14	11	367203.971	4599240.327
20SP-MW0521-001	8	5/13/2020	9:16	10	367202.466	4599241.605
20SP-MW0521-011	1	5/13/2020	12:43	17	376695.716	4591232.65
20SP-MW0521-011	2	5/13/2020	12:45	17	376695.558	4591232.748
20SP-MW0521-011	3	5/13/2020	12:46	19	376695.466	4591234.564
20SP-MW0521-011	4	5/13/2020	12:47	18	376701.899	4591234.364
20SP-MW0521-011	5	5/13/2020	12:48	18	376699.325	4591235.176

Stations Sample	Danliaata	Imaga Callaction	Imaga Callaction	Water		
Otation Number	Replicate Number	Image Collection Date	Image Collection Time (UTC)	Depth (m)	[a a tim a: (ma)	Nia utla i a a (ua)
Station Number					Easting (m)	Northing (m)
20SP-MW0521-013	1	5/13/2020	14:10	20	379460.112	4590754.219
20SP-MW0521-013	2	5/13/2020	14:11	20	379465.472	4590752.326
20SP-MW0521-013	3	5/13/2020	14:13	20	379464.265	4590753.364
20SP-MW0521-013	4	5/13/2020	14:15	22	379467.377	4590753.718
20SP-MW0521-013	5	5/13/2020	14:16	20	379471.352	4590752.924
20SP-MW0521-061	1	5/14/2020	12:05	40	393797.557	4530927.079
20SP-MW0521-061	2	5/14/2020	12:06	40	393798.362	4530928.042
20SP-MW0521-061	3	5/14/2020	12:08	40	393801.735	4530929.996
20SP-MW0521-061	4	5/14/2020	12:09	40	393802.213	4530929.621
20SP-MW0521-061	5	5/14/2020	12:11	40	393802.597	4530930.73
20SP-MW0521-071	1	5/14/2020	15:20	46	390103.808	4527231.262
20SP-MW0521-071	2	5/14/2020	15:21	46	390103.498	4527231.516
20SP-MW0521-071	3	5/14/2020	15:22	46	390106.07	4527230.673
20SP-MW0521-071	4	5/14/2020	15:24	46	390110.103	4527231.749
20SP-MW0521-071	5	5/14/2020	15:25	46	390109.786	4527231.444
20SP-MW0521-070	1	5/14/2020	16:08	45	391959.416	4525379.085
20SP-MW0521-070	2	5/14/2020	16:10	45	391960.92	4525377.315
20SP-MW0521-070	3	5/14/2020	16:11	46	391959.876	4525378.474
20SP-MW0521-070	4	5/14/2020	16:12	46	391959.252	4525380.366
20SP-MW0521-070	5	5/14/2020	16:13	45	391962.137	4525379.365
20SP-MW0521-064	1	5/14/2020	17:53	45	393817.381	4523510.267
20SP-MW0521-064	2	5/14/2020	17:55	45	393815.305	4523507.264
20SP-MW0521-064	3	5/14/2020	17:56	45	393814.015	4523506.032
20SP-MW0521-064	4	5/14/2020	17:58	45	393814.033	4523505.451
20SP-MW0521-064	5	5/14/2020	18:00	45	393813.493	4523502.359
20SP-MW0521-066	1	5/14/2020	20:23	44	397509.982	4519818.162
20SP-MW0521-066	2	5/14/2020	20:24	44	397507.765	4519816.477
20SP-MW0521-066	3	5/14/2020	20:26	43	397506.338	4519814.412
20SP-MW0521-066	4	5/14/2020	20:27	43	397503.197	4519813.498
20SP-MW0521-066	5	5/14/2020	20:28	43	397498.83	4519811.718
20SP-MW0521-C11	1	5/14/2020	21:42	38	403884.329	4518514.795
20SP-MW0521-C11	2	5/14/2020	21:43	38	403884.841	4518513.573
20SP-MW0521-C11	3	5/14/2020	21:45	38	403884.696	4518514.066
20SP-MW0521-C11	4	5/14/2020	21:46	38	403884.82	4518515.05
20SP-MW0521-C11	5	5/14/2020	21:48	38	403884.693	4518513.858
20SP-MW0521-C12	1	5/14/2020	22:34	35	406638.302	4518473.352
20SP-MW0521-C12	2	5/14/2020	22:35	35	406636.764	4518473.426
20SP-MW0521-C12	3	5/14/2020	22:37	35	406637.566	4518472.921
20SP-MW0521-C12	4	5/14/2020	22:38	35	406636.04	4518471.474
20SP-MW0521-C12	5	5/14/2020	22:40	35	406635.646	4518471.732
20SP-MW0521-C15	1	5/14/2020	23:23	37	406655.814	4515946.079
20SP-MW0521-C15	2	5/14/2020	23:25	37	406654.773	4515945.267
20SP-MW0521-C15	3	5/14/2020	23:26	37	406654.048	4515944.795
20SP-MW0521-C15	4	5/14/2020	23:27	37	406651.724	4515943.187
20SP-MW0521-C15	5	5/14/2020	23:29	37	406650.57	4515943.485
20SP-MW0521-C15	6	5/14/2020	23:30	37	406649.153	4515942.76

Stations Sample	Replicate	Image Collection	Image Collection	Water		
Station Number	Number	Date	Time (UTC)	Depth (m)	Easting (m)	Northing (m)
20SP-MW0521-C14	1	5/15/2020	2:39	40	403837.783	4515987.487
20SP-MW0521-C14	2	5/15/2020	2:40	40	403834.652	4515987.423
20SP-MW0521-C14	3	5/15/2020	2:42	40	403833.965	4515987.092
20SP-MW0521-C14	4	5/15/2020	2:43	40	403832.434	4515984.259
20SP-MW0521-C14	5	5/15/2020	2:45	40	403831.332	4515984.251
20SP-MW0521-067	1	5/15/2020	4:30	47	393800.004	4517966.772
20SP-MW0521-067	2	5/15/2020	4:34	47	393796.911	4517962.5
20SP-MW0521-067	3	5/15/2020	4:35	47	393796.429	4517960.757
20SP-MW0521-067	4	5/15/2020	4:37	47	393798.35	4517959.451
20SP-MW0521-067	5	5/15/2020	4:39	47	393795.067	4517957.813
20SP-MW0521-C13	1	5/15/2020	12:04	38	405261.185	4517168.457
20SP-MW0521-C13	2	5/15/2020	12:05	37	405258.473	4517167.541
20SP-MW0521-C13	3	5/15/2020	12:08	37	405256.89	4517168.021
20SP-MW0521-C13	4	5/15/2020	12:10	38	405256.278	4517167.274
20SP-MW0521-C13	5	5/15/2020	12:12	38	405253.423	4517166.308
20SP-MW0521-077	1	5/15/2020	12:49	50	386411.596	4519813.548
20SP-MW0521-077	2	5/15/2020	12:51	50	386410.524	4519811.375
20SP-MW0521-077	3	5/15/2020	12:52	50	386408.61	4519807.392
20SP-MW0521-077	4	5/15/2020	12:54	50	386406.529	4519805.144
20SP-MW0521-077	5	5/15/2020	12:55	50	386404.495	4519803.235
20SP-MW0521-077	6	5/15/2020	13:28	50	386389.944	4519800.841
20SP-MW0521-077	7	5/15/2020	13:29	50	386387.271	4519798.1
20SP-MW0521-077	8	5/15/2020	13:32	50	386392.749	4519800.75
20SP-MW0521-076	1	5/15/2020	14:28	47	390095.151	4521660.291
20SP-MW0521-076	2	5/15/2020	14:31	47	390093.769	4521657.017
20SP-MW0521-076	3	5/15/2020	14:33	47	390093.657	4521653.383
20SP-MW0521-076	4	5/15/2020	14:35	47	390091.064	4521649.206
20SP-MW0521-076	5	5/15/2020	14:38	47	390095.032	4521650.639
20SP-MW0521-033	1	5/15/2020	19:22	9	388494.785	4570927.569
20SP-MW0521-033	2	5/15/2020	19:24	9	388495.558	4570922.379
20SP-MW0521-033	3	5/15/2020	19:25	9	388495.343	4570919.919
20SP-MW0521-033	4	5/15/2020	19:27	9	388494.74	4570917.731
20SP-MW0521-033	5	5/15/2020	19:28	9	388495.912	4570913.176
20SP-MW0521-031	1	5/15/2020	20:39	8	387823.657	4573566.019
20SP-MW0521-031	2	5/15/2020	20:40	8	387820.524	4573563.135
20SP-MW0521-031	3	5/15/2020	20:43	8	387821.859	4573563.084
20SP-MW0521-031	4	5/15/2020	20:45	8	387819.756	4573562.297
20SP-MW0521-031	5	5/15/2020	20:46	8	387821.434	4573558.995
20SP-MW0521-029	1	5/15/2020	22:29	7	385338.272	4575062.452
20SP-MW0521-029	2	5/15/2020	22:31	7	385341.609	4575062.39
20SP-MW0521-029	3	5/15/2020	22:32	7	385344.559	4575061.676
20SP-MW0521-029	4	5/15/2020	22:33	7	385346.284	4575062.172
20SP-MW0521-029	5	5/15/2020	22:35	7	385346.832	4575061.127

Stations Sample	Replicate	Image Collection	Image Collection	Water		
Station Number	Number	Date	Time (UTC)	Depth (m)	Easting (m)	Northing (m)
20SP-MW0521-027	1	5/16/2020	1:37	12	384081.968	4577660.258
20SP-MW0521-027	2	5/16/2020	1:40	12	384082.47	4577663.129
20SP-MW0521-027	3	5/16/2020	1:42	12	384082.726	4577664.094
20SP-MW0521-027	4	5/16/2020	1:43	12	384082.604	4577664.762
20SP-MW0521-027	5	5/16/2020	1:44	12	384081.784	4577666.626
20SP-MW0521-015	1	5/16/2020	5:43	23	382267.18	4590296.214
20SP-MW0521-015	2	5/16/2020	5:45	23	382265.784	4590294.788
20SP-MW0521-015	3	5/16/2020	5:49	23	382264.936	4590291.972
20SP-MW0521-015	4	5/16/2020	5:52	23	382262.537	4590291.179
20SP-MW0521-017	1	5/16/2020	10:43	24	385057.03	4589789.678
20SP-MW0521-017	2	5/16/2020	10:47	24	385055.604	4589790.589
20SP-MW0521-017	3	5/16/2020	10:48	24	385053.009	4589791.322
20SP-MW0521-017	4	5/16/2020	10:50	24	385048.82	4589790.635
20SP-MW0521-017	5	5/16/2020	10:51	24	385048.121	4589790.65
20SP-MW0521-019	1	5/16/2020	12:33	22	387219.752	4588009.096
20SP-MW0521-019	2	5/16/2020	12:35	22	387217.486	4588011.346
20SP-MW0521-019	3	5/16/2020	12:36	22	387215.618	4588013.439
20SP-MW0521-019	4	5/16/2020	12:38	22	387214.798	4588015.128
20SP-MW0521-019	5	5/16/2020	12:40	22	387213.812	4588017.19
20SP-MW0521-021	1	5/16/2020	14:26	18	387349.142	4584941.756
20SP-MW0521-021	2	5/16/2020	14:27	18	387354.809	4584943.537
20SP-MW0521-021	3	5/16/2020	14:29	18	387362.656	4584944.483
20SP-MW0521-021	4	5/16/2020	14:30	18	387366.323	4584946.898
20SP-MW0521-021	5	5/16/2020	14:31	18	387367.407	4584950.932
20SP-MW0521-022	1	5/16/2020	15:48	18	386713.104	4583845.359
20SP-MW0521-022	2	5/16/2020	16:16	17	386716.417	4583849.008
20SP-MW0521-022	3	5/16/2020	16:18	17	386718.037	4583850.726
20SP-MW0521-022	4	5/16/2020	16:19	17	386720.064	4583851.162
20SP-MW0521-022	5	5/16/2020	16:21	17	386722.206	4583853.264
20SP-MW0521-022	6	5/16/2020	16:22	17	386723.486	4583854.064
20SP-MW0521-023	1	5/16/2020	17:02	12	386040.14	4582562.005
20SP-MW0521-023	2	5/16/2020	17:03	13	386042.082	4582564.327
20SP-MW0521-023	3	5/16/2020	17:04	13	386042.988	4582565.91
20SP-MW0521-023	4	5/16/2020	17:05	13	386044.565	4582568.373
20SP-MW0521-023	5	5/16/2020	17:06	13	386045.686	4582569.105
20SP-MW0521-025	1	5/16/2020	18:37	17	384285.109	4580461.757
20SP-MW0521-025	2	5/16/2020	18:38	17	384285.981	4580459.046
20SP-MW0521-025	3	5/16/2020	18:39	17	384284.145	4580457.861
20SP-MW0521-025	4	5/16/2020	18:41	17	384284.383	4580456.513
20SP-MW0521-025	5	5/16/2020	18:42	17	384284.304	4580456.899
20SP-MW0521-073	1	5/17/2020	6:45	51	384546.98	4523522.502
20SP-MW0521-073	2	5/17/2020	6:48	51	384545.523	4523520.062
20SP-MW0521-073	3	5/17/2020	6:50	51	384546.451	4523518.642
20SP-MW0521-073	4	5/17/2020	6:52	51	384551.122	4523516.27
20SP-MW0521-073	5	5/17/2020	6:55	51	384549.181	4523516.409

Stations Sample	Danlianta	Image Callastian	Image Callagian	\/\/ata=		
Otation Newsbar	Replicate Number	Image Collection Date	Image Collection Time (UTC)	Water Depth (m)	- + i ()	NI = mtle (m av /ma)
Station Number					Easting (m)	Northing (m)
20SP-MW0521-074	1	5/17/2020	9:20	50	386406.152	4523530.74
20SP-MW0521-074	2	5/17/2020	9:21	50	386407.752	4523529.681
20SP-MW0521-074	3	5/17/2020	9:23	50	386409.277	4523528.521
20SP-MW0521-074	4	5/17/2020	9:25	50	386410.346	4523526.467
20SP-MW0521-074	5	5/17/2020	9:27	50	386410.663	4523524.901
20SP-MW0521-080	1	5/17/2020	12:03	50 50	388245.35	4514250.375
20SP-MW0521-080	2	5/17/2020	12:05	50 50	388247.087	4514249.141
20SP-MW0521-080	3	5/17/2020	12:06	50 50	388250.459	4514247.201
20SP-MW0521-080	4	5/17/2020	12:08 12:10	50 50	388251.265	4514244.694
20SP-MW0521-080 20SP-MW0521-082	5 1	5/17/2020	13:39	50	388254.709	4514243.217 4512400.84
		5/17/2020			390095.896	
20SP-MW0521-082	2	5/17/2020	13:41	50 50	390098.014	4512398.042
20SP-MW0521-082	3	5/17/2020	13:42	50 50	390098.301	4512395.05
20SP-MW0521-082	4 5	5/17/2020	13:44	50 50	390099.908	4512392.972
20SP-MW0521-082		5/17/2020	13:46	50 51	390100.987 384543.4	4512390.467
20SP-MW0521-083	1	5/17/2020	14:48			4512415.287
20SP-MW0521-083	2 3	5/17/2020	14:50	51 51	384544.979	4512413.87
20SP-MW0521-083 20SP-MW0521-083		5/17/2020	14:51	51 51	384546.328 384548.879	4512411.412 4512409.398
	4	5/17/2020	14:53			
20SP-MW0521-083	<u>5</u> 1	5/17/2020	14:55	51 52	384550.576	4512406.191 4514264.908
20SP-MW0521-084	2	5/17/2020 5/17/2020	15:59	52 52	384535.535	
20SP-MW0521-084			16:01	52 52	384539.968	4514265.419
20SP-MW0521-084	3	5/17/2020	16:02		384542.454	4514265.787
20SP-MW0521-084	4	5/17/2020	16:04	52 52	384546.093 384548.998	4514265.692 4514265.563
20SP-MW0521-084	<u> </u>	5/17/2020	16:05	52 51	380841.868	4519816.748
20SP-MW0521-088		5/17/2020	17:43	51 51		
20SP-MW0521-088	2 3	5/17/2020	17:44	51 51	380844.902	4519816.335 4519817.194
20SP-MW0521-088 20SP-MW0521-088	3 4	5/17/2020 5/17/2020	17:46 17:47	51 51	380845.365 380847.553	4519816.783
20SP-MW0521-088	5	5/17/2020	17.47 17:49	51 51	380849.421	4519816.053
20SP-MW0521-086	1	5/17/2020	19:36	54	380840.9	4516114.871
20SP-MW0521-086	2	5/17/2020	19:38	5 4	380842.617	4516111.629
20SP-MW0521-086	3	5/17/2020	19:40	5 4	380842.846	4516111.029
20SP-MW0521-086	4	5/17/2020	19:41	5 4	380843.32	4516111.154
20SP-MW0521-086	5	5/17/2020	19:43	5 4	380845.899	4516108.139
20SP-MW0521-096	<u>5</u> 1	5/17/2020	21:01	54	378998.278	4512407.315
20SP-MW0521-096	2	5/17/2020	21:02	5 4	378998.533	4512404.812
20SP-MW0521-096	3	5/17/2020	21:04	54	378999.048	4512402.269
20SP-MW0521-096	4	5/17/2020	21:05	5 4	379000.464	4512399.535
20SP-MW0521-096	5	5/17/2020	21:07	5 4	379000.404	4512397.931
20SP-MW0521-098	1	5/17/2020	22:03	55	377143.228	4510565.372
20SP-MW0521-098	2	5/17/2020	22:04	55	377145.613	4510563.406
20SP-MW0521-098	3	5/17/2020	22:06	55	377147.273	4510561.068
20SP-MW0521-098	4	5/17/2020	22:07	55	377149.188	4510560.951
20SP-MW0521-098	5	5/17/2020	22:09	55	377151.472	4510557.409
200F - WIVV 002 F - 080	J	3/11/2020	22.03	JJ	311131.412	7010001. 1 08

Stations Sample	Dankasta	lassa o Osllastia a	los e os Osllestias	10/-4		-
Otatian Number	Replicate Number	Image Collection Date	Image Collection Time (UTC)	Water Depth (m)	□ a stira a: (ma)	No who is as (see)
Station Number					Easting (m)	Northing (m)
20SP-MW0521-090	1	5/18/2020	1:47	54 54	377142.5	4514261.415
20SP-MW0521-090	2	5/18/2020	1:49	54 54	377141.716	4514258.138
20SP-MW0521-090	3	5/18/2020	1:50	54 54	377140.268	4514257.572
20SP-MW0521-090	4	5/18/2020	1:52	54 54	377140.244	4514254.946
20SP-MW0521-090	5	5/18/2020	1:53	54	377139.678	4514253.017
20SP-MW0521-090	6	5/18/2020	2:29	54 54	377138.876	4514255.46
20SP-MW0521-090	7 1	5/18/2020	2:30	54	377137.844 375287.623	4514252.679
20SP-MW0521-091		5/18/2020 5/18/2020	4:52 4:54	54 54	375287.862	4514253.264 4514250.67
20SP-MW0521-091 20SP-MW0521-091	2 3	5/18/2020	4:56	5 4 54	375288.015	4514249.017
20SP-MW0521-091	3 4	5/18/2020	4:58	5 4 54	375288.399	4514249.017
20SP-MW0521-091	5	5/18/2020	5:01	5 4 54	375289.444	4514243.37
20SP-MW0521-093	<u> </u>	5/18/2020	7:12	55	375289.444	4512415.902
20SP-MW0521-093	2	5/18/2020	7:12 7:15	55 55	375289.835	4512415.805
20SP-MW0521-093	3	5/18/2020	7:13 7:17	56	375292.288	4512416.77
20SP-MW0521-093	4	5/18/2020	7:17 7:18	54	375292.200	4512416.145
20SP-MW0521-093	5	5/18/2020	7:10	55	375298.939	4512416.143
20SP-MW0521-102	<u>3</u> 1	5/18/2020	8:57	55	378988.931	4506860.018
20SP-MW0521-102	2	5/18/2020	8:59	55	378991.068	4506861.188
20SP-MW0521-102	3	5/18/2020	9:01	53	378995.168	4506864.905
20SP-MW0521-102	4	5/18/2020	9:03	55	378993.274	4506861.85
20SP-MW0521-102	5	5/18/2020	9:05	55	378997.874	4506866.717
20SP-MW0521-101	1	5/18/2020	9:48	55	380839.799	4506846.289
20SP-MW0521-101	2	5/18/2020	9:50	54	380842.189	4506846.345
20SP-MW0521-101	3	5/18/2020	9:54	55	380846.503	4506847.873
20SP-MW0521-101	4	5/18/2020	9:56	55	380848.302	4506847.758
20SP-MW0521-101	5	5/18/2020	9:58	54	380852.256	4506849.122
20SP-MW0521-035	1	5/21/2020	17:32	23	388988.9	4568122.018
20SP-MW0521-035	2	5/21/2020	17:33	23	388988.247	4568119.68
20SP-MW0521-035	3	5/21/2020	17:34	24	388987.962	4568119.816
20SP-MW0521-035	4	5/21/2020	17:36	23	388987.137	4568116.728
20SP-MW0521-035	5	5/21/2020	17:37	23	388987.075	4568113.968
20SP-MW0521-035	6	5/21/2020	18:01	23	388967.851	4568118.972
20SP-MW0521-035	7	5/21/2020	18:03	23	388969.171	4568121.55
20SP-MW0521-035	8	5/21/2020	18:05	23	388968.539	4568121.734
20SP-MW0521-035	9	5/21/2020	18:07	23	388971.015	4568124.838
20SP-MW0521-035	10	5/21/2020	18:09	23	388970.857	4568126.845
20SP-MW0521-039	1	5/21/2020	20:33	31	390159.844	4562567.773
20SP-MW0521-039	2	5/21/2020	20:34	31	390160.471	4562571.559
20SP-MW0521-039	3	5/21/2020	20:36	31	390159.806	4562572.367
20SP-MW0521-039	4	5/21/2020	20:37	31	390159.793	4562575.673
20SP-MW0521-039	5	5/21/2020	20:39	32	390159.848	4562577.951
20SP-MW0521-043	1	5/21/2020	23:21	34	390524.098	4556919.521
20SP-MW0521-043	2	5/21/2020	23:26	34	390528.941	4556922.457
20SP-MW0521-043	3	5/21/2020	23:27	34	390529.509	4556927.865
20SP-MW0521-043	4	5/21/2020	23:29	30	390530.399	4556929.45
20SP-MW0521-043	5	5/21/2020	23:31	34	390530.976	4556932.709
20SP-MW0521-053	1	5/22/2020	5:30	38	390861.986	4542722.006
20SP-MW0521-053	2	5/22/2020	5:32	39	390859.637	4542720.893
20SP-MW0521-053	3	5/22/2020	5:34	39	390858.541	4542720.695
20SP-MW0521-053	4	5/22/2020	5:36	39	390855.494	4542717.406
20SP-MW0521-053	5	5/22/2020	5:38	39	390852.033	4542714.686

Stations Sample	Replicate	Image Collection	Image Collection	Water		
Station Number	Number	Date	Time (UTC)	Depth (m)	Easting (m)	Northing (m)
20SP-MW0521-054	1	5/22/2020	6:30	40	390901.927	4541295.834
20SP-MW0521-054	2	5/22/2020	6:32	35	390899.855	4541295.513
20SP-MW0521-054	3	5/22/2020	6:34	37	390897.404	4541293.342
20SP-MW0521-054	4	5/22/2020	6:36	40	390895.218	4541293.624
20SP-MW0521-054	5	5/22/2020	6:38	39	390893.412	4541291.939
20SP-MW0521-055	1	5/22/2020	7:19	40	390942.353	4539877.909
20SP-MW0521-055	2	5/22/2020	7:21	40	390937.676	4539875.657
20SP-MW0521-055	3	5/22/2020	7:24	40	390936.186	4539875.724
20SP-MW0521-055	4	5/22/2020	7:26	40	390932.119	4539875.72
20SP-MW0521-055	5	5/22/2020	7:28	40	390932.53	4539872.328
20SP-MW0521-057	1	5/22/2020	9:24	41	391010.708	4537057.589
20SP-MW0521-057	2	5/22/2020	9:26	41	391009.63	4537055.766
20SP-MW0521-057	3	5/22/2020	9:29	41	391009.301	4537053.211
20SP-MW0521-057	4	5/22/2020	9:31	41	391012.995	4537050.344
20SP-MW0521-057	5	5/22/2020	9:33	41	391012.277	4537048.233
20SP-MW0521-059	1	5/22/2020	10:57	41	391107.698	4534219.933
20SP-MW0521-059	2	5/22/2020	10:58	41	391107.051	4534216.823
20SP-MW0521-059	3	5/22/2020	11:00	41	391104.52	4534213.151
20SP-MW0521-059	4	5/22/2020	11:02	41	391102.763	4534210.764
20SP-MW0521-059	5	5/22/2020	11:03	41	391102.097	4534208.836
20SP-MW0521-117	1	5/22/2020	11:53	60	373425.84	4499451.936
20SP-MW0521-117	2	5/22/2020	11:56	60	373427.598	4499448.844
20SP-MW0521-117	3	5/22/2020	11:57	60	373428.951	4499444.201
20SP-MW0521-117	4	5/22/2020	11:59	60	373428.78	4499442.424
20SP-MW0521-117	5	5/22/2020	12:01	60	373432.293	4499437.122
20SP-MW0521-103	1	5/22/2020	15:02	57	373449.618	4508697.232
20SP-MW0521-103	2	5/22/2020	15:05	57	373447.311	4508694.317
20SP-MW0521-103	3	5/22/2020	15:06	57	373445.363	4508691.596
20SP-MW0521-103	4	5/22/2020	15:07	54	373446.588	4508694.667
20SP-MW0521-103	5	5/22/2020	15:09	54	373445.588	4508691.634
20SP-MW0521-106	1	5/22/2020	17:21	57	367893.458	4504986.983
20SP-MW0521-106	2	5/22/2020	17:22	57	367893.125	4504991.257
20SP-MW0521-106	3	5/22/2020	17:24	57	367893.043	4504992.906
20SP-MW0521-106	4	5/22/2020	17:25	57	367892.545	4504994.576
20SP-MW0521-106	5	5/22/2020	17:26	57	367889.671	4505000.076
20SP-MW0521-106	6	5/22/2020	18:08	57	367885.479	4504992.601
20SP-MW0521-106	7	5/22/2020	18:10	57	367886.095	4504995.347
20SP-MW0521-106	8	5/22/2020	18:12	57	367886.012	4504998.065
20SP-MW0521-106	9	5/22/2020	18:14	57	367884.482	4505001.274
20SP-MW0521-106	10	5/22/2020	18:15	57	367884.397	4505004.295

	Replicate	Image Collection	Image Collection	Water		
Station Number	Number	Date	Time (UTC)	Depth (m)	Easting (m)	Northing (m)
20SP-MW0521-108	1	5/22/2020	19:44	55	373424.671	4505004.872
20SP-MW0521-108	2	5/22/2020	19:46	54	373424.311	4505003.484
20SP-MW0521-108	3	5/22/2020	19:48	55	373425.658	4505001.296
20SP-MW0521-108	4	5/22/2020	19:49	55	373429.462	4504998.614
20SP-MW0521-108	5	5/22/2020	19:50	54	373430.813	4504997.363
20SP-MW0521-108	6	5/22/2020	20:09	55	373429.472	4504995.944
20SP-MW0521-108	7	5/22/2020	20:11	55	373431.36	4504994.436
20SP-MW0521-108	8	5/22/2020	20:12	55	373435.581	4504992.545
20SP-MW0521-108	9	5/22/2020	20:14	55	373438.334	4504989.46
20SP-MW0521-108	10	5/22/2020	20:15	55	373440.423	4504986.733
20SP-MW0521-111	1	5/22/2020	20:48	57	371587.775	4503138.211
20SP-MW0521-111	2	5/22/2020	20:50	57	371589.456	4503140.744
20SP-MW0521-111	3	5/22/2020	20:52	57	371592.642	4503143.592
20SP-MW0521-111	4	5/22/2020	20:54	57	371593.455	4503147.285
20SP-MW0521-111	5	5/22/2020	20:55	57	371597.696	4503150.148
20SP-MW0521-116	1	5/22/2020	23:24	61	367883.533	4499443.267
20SP-MW0521-116	2	5/22/2020	23:26	61	367883.591	4499439.539
20SP-MW0521-116	3	5/22/2020	23:28	61	367883.544	4499434.762
20SP-MW0521-116	4	5/22/2020	23:30	61	367882.875	4499433.334
20SP-MW0521-116	5	5/22/2020	23:33	61	367882.477	4499429.677
20SP-MW0521-114	1	5/23/2020	1:22	62	362329.212	4499443.237
20SP-MW0521-114	2	5/23/2020	1:24	62	362326.589	4499442.864
20SP-MW0521-114	3	5/23/2020	1:27	62	362323.236	4499441.042
20SP-MW0521-114	4	5/23/2020	1:29	62	362321.726	4499439.515
20SP-MW0521-114	5	5/23/2020	1:32	62	362318.723	4499437.33
20SP-MW0521-C07	1	5/23/2020	2:35	64	355340.112	4499301.976
20SP-MW0521-C07	2	5/23/2020	2:37	64	355341.094	4499296.902
20SP-MW0521-C07	3	5/23/2020	2:40	64	355343.968	4499296.637
20SP-MW0521-C07	4	5/23/2020	2:42	64	355346.085	4499291.958
20SP-MW0521-C07	5	5/23/2020	2:44	64	355346.015	4499289.892
20SP-MW0521-C06	1	5/23/2020	3:29	64	352554.916	4499405.579
20SP-MW0521-C06	2	5/23/2020	3:32	64	352552.391	4499403.642
20SP-MW0521-C06	3	5/23/2020	3:35	64	352550.957	4499402.31
20SP-MW0521-C06	4	5/23/2020	3:38	64	352547.788	4499400.64
20SP-MW0521-C06	5	5/23/2020	3:41	64	352546.201	4499397.668
20SP-MW0521-C09	1	5/23/2020	4:55	65	352519.609	4496842.188
20SP-MW0521-C09	2	5/23/2020	4:58	65	352516.398	4496839.597
20SP-MW0521-C09	3	5/23/2020	5:01	65	352514.762	4496838.776
20SP-MW0521-C09	4	5/23/2020	5:03	65	352513.056	4496836.452
20SP-MW0521-C09	5	5/23/2020	5:06	65	352509.748	4496834.552
20SP-MW0521-C09	6	5/23/2020	5:26	65	352510.86	4496834.618
20SP-MW0521-C09	7	5/23/2020	5:29	65	352507.365	4496832.587
20SP-MW0521-C09	8	5/23/2020	5:33	65	352504.875	4496829.009

Stations Sample	Replicate	Image Collection	Image Collection	Water		-
Station Number	Number	Date	Time (UTC)	Depth (m)	Easting (m)	Northing (m)
20SP-MW0521-C08	1	5/23/2020	6:08	63	353948.964	4498137.667
20SP-MW0521-C08	2	5/23/2020	6:12	63	353946.46	4498136.04
20SP-MW0521-C08	3	5/23/2020	6:15	63	353943.685	4498132.59
20SP-MW0521-C08	4	5/23/2020	6:18	63	353941.669	4498131.266
20SP-MW0521-C08	5	5/23/2020	6:21	63	353940.917	4498129.044
20SP-MW0521-C10	1	5/23/2020	7:06	64	355308.511	4496789.598
20SP-MW0521-C10	2	5/23/2020	7:08	63	355306.483	4496787.726
20SP-MW0521-C10	3	5/23/2020	7:12	64	355304.557	4496785.068
20SP-MW0521-C10	4	5/23/2020	7:15	64	355303.294	4496783.785
20SP-MW0521-C10	5	5/23/2020	7:18	64	355300.705	4496781.059
20SP-MW0521-C10	6	5/23/2020	7:35	64	355300.403	4496781.074
20SP-MW0521-C10	7	5/23/2020	7:39	64	355303.284	4496780.576
20SP-MW0521-C10	8	5/23/2020	7:42	64	355303.865	4496777.254
20SP-MW0521-C10	9	5/23/2020	7:48	64	355295.002	4496784.678
20SP-MW0521-C10	10	5/23/2020	7:51	64	355293.822	4496787.876
20SP-MW0521-C10	11	5/23/2020	8:07	64	355300.888	4496797.231
20SP-MW0521-120	1	5/23/2020	10:22	62	371570.689	4495742.302
20SP-MW0521-120	2	5/23/2020	10:24	62	371573.325	4495739.416
20SP-MW0521-120	3	5/23/2020	10:27	62	371575.596	4495737.046
20SP-MW0521-120	4	5/23/2020	10:28	63	371577.968	4495732.928
20SP-MW0521-120	5	5/23/2020	10:28	63	371581.693	4495729.798
20SP-MW0521-109	1	5/23/2020	14:06	54	377132.988	4505007.543
20SP-MW0521-109	2	5/23/2020	14:09	54	377132.134	4505003.462
20SP-MW0521-109	3	5/23/2020	14:11	54	377129.131	4504996.068
20SP-MW0521-109	4	5/23/2020	14:13	54	377131.74	4504997.373
20SP-MW0521-109	5	5/23/2020	14:16	54	377132.496	4504990.55
20SP-MW0521-100	1	5/23/2020	15:25	49	384549.107	4506862.701
20SP-MW0521-100	2	5/23/2020	15:27	49	384548.171	4506861.603
20SP-MW0521-100	3	5/23/2020	15:29	49	384546.513	4506855.696
20SP-MW0521-100	4	5/23/2020	15:30	50	384544.081	4506851.899
20SP-MW0521-100	5	5/23/2020	15:32	49	384542.989	4506849.992
20SP-MW0521-053	6	5/23/2020	20:22	36	390838.46	4542710.634
20SP-MW0521-053	7	5/23/2020	20:23	35	390839.84	4542710.639
20SP-MW0521-CP1	1	5/24/2020	17:52	15	385977.37	4581254.083
20SP-MW0521-CP1	2	5/24/2020	17:54	15	385977.552	4581257.305
20SP-MW0521-CP1	3	5/24/2020	17:56	15	385978.506	4581258.312
20SP-MW0521-CP1	4	5/24/2020	17:58	15	385980.447	4581257.677
20SP-MW0521-CP1	5	5/24/2020	17:59	15	385983.181	4581259.51
20SP-MW0521-CP2	1	5/24/2020	19:48	12	385838.085	4580103.901
20SP-MW0521-CP2	2	5/24/2020	19:50	12	385840.834	4580106.316
20SP-MW0521-CP2	3	5/24/2020	19:51	12	385842.67	4580107.727
20SP-MW0521-CP2	4	5/24/2020	19:53	12	385846.701	4580109.779
20SP-MW0521-CP2	5	5/24/2020	19:54	12	385847.181	4580111.357

Stations Sample	5 " .			101		
	Replicate	Image Collection	Image Collection	Water		
Station Number	Number	Date	Time (UTC)	Depth (m)	Easting (m)	Northing (m)
20SP-MW0521-035	11	5/24/2020	22:51	20	388972.001	4568131.221
20SP-MW0521-035	12	5/24/2020	22:54	20	388975.413	4568131.253
20SP-MW0521-035	13	5/24/2020	22:56	20	388977.889	4568132.825
20SP-MW0521-035	14	5/24/2020	22:59	21	388981.835	4568132.894
20SP-MW0521-035	15	5/24/2020	23:01	21	388984.304	4568134.185
20SP-MW0521-037	1	5/24/2020	23:37	27	389558.208	4565353.074
20SP-MW0521-037	2	5/24/2020	23:39	24	389560.953	4565353.918
20SP-MW0521-037	3	5/24/2020	23:41	22	389563.867	4565354.571
20SP-MW0521-037	4	5/24/2020	23:43	22	389568.319	4565354.718
20SP-MW0521-037	5	5/24/2020	23:45	27	389570.236	4565355.769
20SP-MW0521-039	6	5/25/2020	0:23	28	390167.77	4562576.212
20SP-MW0521-039	7	5/25/2020	0:25	23	390169.157	4562578.755
20SP-MW0521-039	8	5/25/2020	0:28	28	390173.678	4562577.048
20SP-MW0521-039	9	5/25/2020	0:30	28	390176.618	4562577.86
20SP-MW0521-039	10	5/25/2020	0:33	28	390178.961	4562578.686
20SP-MW0521-C02	5	5/25/2020	1:10	29	386555.416	4562693.19
20SP-MW0521-C02	1	5/25/2020	2:01	29	386542.095	4562691.402
20SP-MW0521-C02	2	5/25/2020	2:03	29	386545.565	4562690.584
20SP-MW0521-C02	3	5/25/2020	2:05	29	386547.862	4562691.497
20SP-MW0521-C02	4	5/25/2020	2:08	29	386550.575	4562692.484
20SP-MW0521-C01	1	5/25/2020	3:01	32	383722.765	4562661.486
20SP-MW0521-C01	2	5/25/2020	3:03	32	383728.824	4562662.961
20SP-MW0521-C01	3	5/25/2020	3:06	32	383730.269	4562666.132
20SP-MW0521-C01	4	5/25/2020	3:08	32	383731.571	4562666.143
20SP-MW0521-C01	5	5/25/2020	3:11	32	383734.695	4562666.704
20SP-MW0521-C03	1	5/25/2020	3:53	31	385153.993	4561350.355
20SP-MW0521-C03	2	5/25/2020	3:55	31	385156.247	4561350.693
20SP-MW0521-C03	3	5/25/2020	3:58	31	385159.291	4561351.239
20SP-MW0521-C03	4	5/25/2020	4:00	31	385162.094	4561354.192
20SP-MW0521-C03	5	5/25/2020	4:02	31	385165.028	4561353.845
20SP-MW0521-C04	1	5/25/2020	4:43	33	383709.179	4560163.612
20SP-MW0521-C04	2	5/25/2020	4:45	33	383711.707	4560165.363
20SP-MW0521-C04	3	5/25/2020	4:48	33	383714.297	4560165.32
20SP-MW0521-C04	4	5/25/2020	4:50	33	383714.832	4560167.94
20SP-MW0521-C04	5	5/25/2020	4:53	33	383718.801	4560170.435
20SP-MW0521-C05	1	5/25/2020	5:38	31	386491.618	4560090.508
20SP-MW0521-C05	2	5/25/2020	5:41	30	386496.415	4560091.627
20SP-MW0521-C05	3	5/25/2020	5:45	31	386500.582	4560095.034
20SP-MW0521-C05	4	5/25/2020	5:47	30	386501.739	4560096.088
20SP-MW0521-C05	5	5/25/2020	5:50	31	386504.115	4560099.287
20SP-MW0521-041	1	5/25/2020	6:50	30	390473.293	4559760.716
20SP-MW0521-041	2	5/25/2020	6:53	29	390476.685	4559761.041
20SP-MW0521-041	3	5/25/2020	6:55	29	390478.713	4559761.933
20SP-MW0521-041	4	5/25/2020	6:58	30	390483.866	4559762.513
20SP-MW0521-041	5	5/25/2020	7:01	30	390486.133	4559762.781

	Replicate	Image Collection	Image Collection	Water		
Station Number	Number	Date	Time (UTC)	Depth (m)	Easting (m)	Northing (m)
20SP-MW0521-043	6	5/25/2020	7:50	30	390509.872	4556918.636
20SP-MW0521-043	7	5/25/2020	7:52	30	390511.991	4556917.114
20SP-MW0521-043	8	5/25/2020	7:55	30	390515.398	4556919.141
20SP-MW0521-043	9	5/25/2020	7:57	30	390518.197	4556919.146
20SP-MW0521-043	10	5/25/2020	7:59	30	390521.826	4556918.607
20SP-MW0521-045	1	5/25/2020	11:02	30	390542.005	4554087.372
20SP-MW0521-045	2	5/25/2020	11:10	34	390548.781	4554088.361
20SP-MW0521-045	3	5/25/2020	11:13	33	390551.115	4554089.609
20SP-MW0521-045	4	5/25/2020	11:14	33	390557.989	4554090.835
20SP-MW0521-045	5	5/25/2020	11:15	33	390557.726	4554090.285
20SP-MW0521-047	1	5/25/2020	12:10	34	390577.884	4551245.732
20SP-MW0521-047	2	5/25/2020	12:11	33	390581.894	4551245.994
20SP-MW0521-047	3	5/25/2020	12:13	34	390584.693	4551245.197
20SP-MW0521-047	4	5/25/2020	12:14	34	390587.228	4551245.293
20SP-MW0521-047	5	5/25/2020	12:16	34	390591.865	4551245.157
20SP-MW0521-049	1	5/25/2020	13:02	34	390666.455	4548415.853
20SP-MW0521-049	2	5/25/2020	13:04	34	390669.91	4548415.463
20SP-MW0521-049	3	5/25/2020	13:05	34	390672.363	4548415.716
20SP-MW0521-049	4	5/25/2020	13:07	34	390675.762	4548415.202
20SP-MW0521-049	5	5/25/2020	13:09	34	390679.876	4548413.033
20SP-MW0521-051	1	5/25/2020	13:56	35	390751.638	4545572.987
20SP-MW0521-051	2	5/25/2020	13:58	36	390754.847	4545570.694
20SP-MW0521-051	3	5/25/2020	14:00	36	390757.5	4545569.533
20SP-MW0521-051	4	5/25/2020	14:02	36	390759.729	4545569.497
20SP-MW0521-051	5	5/25/2020	14:03	36	390761.765	4545569.59
20SP-MW0521-053	8	5/25/2020	15:04	36	390842.488	4542742.526
20SP-MW0521-053	9	5/25/2020	15:06	37	390844.673	4542741.765
20SP-MW0521-053	10	5/25/2020	15:07	36	390847.446	4542738.553
20SP-MW0521-053	11	5/25/2020	15:09	37	390848.428	4542738.258
20SP-MW0521-053	12	5/25/2020	15:10	36	390851.971	4542736.708

Notes:

UTC = Coordinated Universal Time

EPSG code is 26919. Coordinate system is NAD 83 UTM Zone 19N.

Appendix A2 Field Notebook

Mayflower - SPIPV-Survey C3096-0101 05/10/2020 7 5/26/2020 Field Notebook Rite in the Rain Scale: 1 square =

5. Wolzicki, F. Spada 5/10/20 -All times are in Eastern inthis boson 10:30 Papartal hotel in New Bed Cord Arrived of GO Liberty Ship orientation. Loider SPIPV equipment on board Began assembling SPI/PU ougstern 1130 Spare W/ Daniel Dos little regarding opcoming sorry the was Plan view settings will begin with 3 Ft trigger length. F16, 1/20 ISO 640. Calibrated lesers 26cm Test Fired PU Plan, W/PU trigger All setup. 2080 Will instal SPI canels tomorod All times for SPI JPV .. images are in UTC Clocks on PU +SPI cample and Computers will be in UTC: Scale: 1 square =_ Rete in the Rain

5/11/2020 Heelth & S. Fety meeting 0700 Performed QA checks Using blue comerci Settings F10, 1/250, 150648 SPIPP all set up. Wanting For dutilled water to writer before installing Enlag. 1245 took ted shot, Pecus looks good, color love good, Flash slower, slight shadow at top of image. Will adjust after Kick-off Pre-cruse Kick-off, moeting. 1330 SPJ/PV Stations 1-2 km Stations, 25 m Station total come \$ 3 good SPJ / 3 good PV (5) rops inchesty 3 deplicated expet co-local of SPI > 3 Deplical (50) Leans gray co-locate w/set Using 3 16 weight on trigger 1900 3 Ft trigger line length.
Plan is to depart in 1000 on 5/12/06/26 Scale: 1 square =_ Rite in the Rain.

5/12/2020	5/13/2020
	Odis Station &a
0400 Departed Jack in New BedPard, MA	0246 New to swip out stroke
1200 Arrive a station 10 for seinestyrb	battery No PV shots.
Meetings & prep For Sumpling	Changing out Nicol bettery.
1540 Al clot 9	0820 Swapped of battery,
took 5 uplicates	0345 Took 4 PVs, got three god
5 9000 501	PV image of 02.
5 good set Lighting locks god	at station ok, good SPI, PU signify
slightly out of focus adjusted	ext of Focar Re-do PV shots
slightly out of focus adjusted trigger length, to 3,5 Pt.	w 3ft tripps live.
The a slight adjustment to	0500 3 good Pl. Water column
light shield engle,	continues to be turbid (Marine Snow)
1750 At stylen 007	0530 Enroste to 04 to re-do
the out of tocoo	sediments 10 b.
*Pulked PV adjusted Facus to a3.5PE	
Based SPI	08:45 at Station 11
W. M. ce-do	5 500d 5PT/PV
Rodd PV+587 It 007 4900 587	Removed second splice
4 dual PV Lots of organic	From which line
mother in water columns:	
1030 At Station 005	09:15 Station 12 Sediment grab.
Rax/grave/collie, epifamel	
Rak/grate/cobble, epitamal	10:00 Station 13
commented sponeer	5 good SPI/PV
0010 Station 03 51B/2020	
Shorted trigger line to PV, Good focus.	10:40 Station 14 Std grab,
Scale: 1 square =	Scale: 1 square = Rete in the Rain.

5/13/2020	5/14/20 5/18/2020
11:40 transit from 19 to 00	1850 Adjusted Plack angle a bit
	For PV. Focus looks wood (19)
12:40 Weather delay	2000 C13 SSPZ, 5 PV
Wind gust to 35 mpl	ca-located w/ Gray.
1800 S. Woldick, on shift,	Lots of send dollers et
Still on weather delact	C11, C12, C13, C14, C15
Running another netterns in lease:	Firmer pand, fine to ufs.
SIMILORD area. Whither portfeins in lease	w/fes silté.
0500 USBL pole being lowered into:	2230 C14
position. Day philt will attempt	558I - 5 RV
to depty Salingst Ger (SPILPV.	0030 C 67 5/18(2020)
Sens have calmed down	558I, 48V
Will head to Station black	0315 Novige tion 10500 melfontioned
	Fosto team troubleshooting posses.
0800 Sample Station 61	SPI come was in water of
5 good SPI	station 77 Took one reprodut
5 good PV	of water now on Secking
	0545 Still froubleshoothy. Swapper out
11:20 Station 71 good Shortened	Strabe buttery with Freshly charged
	one Took Color Cord snot w/
12:08 Station 70 good	SPI & trouble Shoot until
	8:45
13,53 Station 64 good	845 Station 77 only 2 good
17 90 Setton 66 Soed	PU increase Sample location
1740 Stron Station CII 100	distance to 4 m. Deto
1840 C12 all good, Adjusted	Second drop has 3 pogos.
Scale: 1 square =	Scale: 1 square = Rete in the Rain.

Nonethers quality good.

Minimal SPI peretition. Very nord

substrate. 5/16/2028 5/16/20 5/15/2000 1 of the 3 PV's are good so we have 3 good out of 8. 10:48 Station 076 0100 Status 15 4 5PZ ,4PV Stock with 4 m spicad (800 Anchora) off count of Maithe's on locations. There are alot of Fish in the PV Vineyorg * Change PV bettings to F18, 150320 mages. I believe that the Fish are getting spooked by Foto remains at 1/20. Shitter speed the camera and Storring * Will change F Stop on SPI up the sediment just Before the picture fires. Camera to FII From FIO 5/17/2020 15.15 Station 33 good sundy picturas for SPI 0230 Changed F stop on SPI PV are good but siguite carera to FII from F10. bright in the lower portion ISO remains 640 + /250 suffed the strobe light up Color Card image factor. a bit 0231 Station 73 [Adjohn, ISO From 640 to 400 1736 0315 3597 C1 close to of but FIG & 1/20 will reman the same PV sethings SWI evident) Stehan 28. Shallow ~ 7 m 2 Over perefrotion 1830 Ship held station side ses 5 PV Good heave on comera creation Will remove I weight from each rock slight bloss effect on PVimage. 4 on each side stop Height 13% Rete in the Rain Scale: 1 square = Scale: I square =

5 17/2020 0500 Station 74 Stop Height of 13", 4 whs. co-located w/ benthic grab. 2135 90 5 SPI 2 PU 3 PU toibid Returned to 90 get 2BU, ZSBT [F18 1/20 150 320 on PUT For Reps F, G. For Reps A-E F16, Y20 150390 1100 Changel PV setting to F16 1/30 150 400 Change book to FIS 420 150 320 0345 475 rep at 93 (PV) turbid wait I minute between rep. 0515 102 3 PV 5 5PI
2 rep & PV Libry although analyzable Station couple Will want full minute between (195) Completed 101 3 PV, 55PI 0600 2 July PV. 1083 good PV's perhally absented Heading to New Bookers Jack in anticipation of high sees.

Scale: 1 square =_

5/18/2020 1965 Dack in New Balfal of Jack. ships in post antil waster improves 5/19/2920 0000 At Jakin NeiBelford. Laheled Staying in port and weather/peastike Improves. 5/20/2020 1800 Al dock in New Belford provided overview of imprainsize Coun station sampled to N. Rebuck-And distilled water. Took color card shot u/SPE +PV Confirmed loses remain at 26cm Anticipate heading out to work gives wt 0700 on 5/21/2020 5/21/2020 430 At Station: 035 + 039 PV may qually negatively impacted by exceptile water column to bid to trigger length was at 3 Pt bottom Act dogs Partially visibile. Shortened PU trigger line to 2 Pt and adjusted focus Rete in the Rain. cale: 1 square =_____

5/22/2020 5/21/2020 horisas not esident in PU many 1900, Agold fows in PU camero Excernit parties in water column to a feet cone settings Place torbilly not allowing for remain the same. Finished with semonthy eV clou incom 32" trigge line. No difference between Camera. F18, 1/20, 150 320 32" and 24" trigge line. Going to chilin 43 Stoken 54 - colocated w B.G. not 5 God SPI at 43, 0 4000 0230 PV. Water clarity is still very 55PI 4 God PV Bitton Carlos evident, worm tobes port, Connet see better we creb herent crob burross. will continue of penthic Still marine snow perticulates in grabs. Video on grab is poor water column but much better and will maniful when it improves we will attempt SPIPV egain. visibility. Loses visible in PV. No difference between PU 0350 Station 55 inage w/ 3Pt trigger and 2Pt Lased visible in PV Still perhivition in wester colonn 5/22/2020 higger line. Changed focus buck to 3A 0545 Station 53 0045 At statu 052 video shill particulates in with column Beller visibility looked more clear than previous stations. Will attempt spypul as PV images are analyzable lusers visible : 053 olas 5 good 502 A 063 Worm labor or surface in SPI image PV image still not clear Features like werens topes Rite in the Rain ale: 1 square ≃ Scale: 1 square =

5/23/2020 0430 Completed CIO. Took 3 aprist Deployments to get 3 good fundly zink Primages Very soft top larger easily resuspended. Button cornect did not class at cloud between reps Eve CO9. Took two separate deployments to get 3 graly 20618 PV images Attempted at 53, per state friends 1630 have deto increased treading into normal at Martha's Uneyard to wait weather clear. Ranning weather patterns tes windy to munor 35 Knots (+) 5/24/2020 1700 Changel PV Focas + 2.0 Pl F 16, 1/30 150 400 for station: 35 For statum 37 F18 1/30 150 320 400 Strong wrest lot of women line being payed out to maintain stark Imago (PV) clearly show buttom , slightly out of Forms. Must be due to ball weight withing see Plan it in ablique engle 1400 Changed to F18 130 150 320 Scale: 1 square =

5/25/2026 The olen - Control sites Experiencing boot house . From time to time Complete must likely hitting after (trigge line) ablique engle. CO1- COS Christian often needy to adjust Vight engle doe to chattering which and SPI Frame holling A. Frame daing SPI retrieved ORs. Sons at 4-6 Ph Otto Completed 43. Sec state increasing; bottom clarity deteriordry Pulmages still analyzable places visible. Will have to stand losa die to weethe see state Will check next station and wisers. All stop , die to high sear unsefe APTIPU correro deployment cond. him. Heading into port Completed souled + suffere sed met survey Will arrive evening of 5/25/2020 demote equipment on 5/26/2020 Rite in the Rain ale: 1 square =_

Appendix A3
SPI/PV Collection Forms

Project Name: May Plower wind

Date: 5/12/2020 Ship: GO Liberty

Project No.: C3096-Crew: F. Speda, S. Wodzcki

Station ID	Replicate (A,B,C)	UTC Time (hh:mm)	Water Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
9	~ A	19:40	22 m	5	15	5	36" trigger line
	18	19:42	1	5		1	slight blur
	, C	19:44		*			5 good SPI
	/ D	19:45	1				5 good PV
	1 E	19:46	22 m	9			
耳	· A	2153	25m	10			add 6" to PV trigger. 42" trigger Ine
,	1 B	2155	1	3			42" Trigger Ine
	, C	2 156					7)
	vO	2157					
	16	2159					-
	1 F	23BH					
	v G	2346		±1			
	, H	2348			4		
7	1]	2350	25m	18 ·	15	5	
05	A	0213	24	19	1	1	3582,300
	, B	0215					
	v C	0220	V	-			
	1 D	0221	24	29			
ø3	10	0429	18	23			35PI, 3PV (36" Hickory
	v B	0431		24			Clarath
	1 C	0433		25			
	N D	0436	18	76			
Ø2	' A	0619	18.4	27	4	4	Strove battery Batdied
	v B	0621		28	15	5	No PV A,B,C,D.

5/13/2020

Project Name: Mayflower Wind Project No.: 23096

Date: 5/13/2020 Ship: M/V GO Liberty Crew: 5. Wedzicki, F. Spada

			T				
Station ID	Replicate (A,B,C)	UTC Time (hh:mm)	Water Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
02	16	0624	18.4	25	15	5	
	1 D	0628	18.4				3 god SPI Strate battery died, no PU replaced bettery
	1 F	6729	23				3 good PU
	/ F	0731					2 9001
1	19 -	0734		(#			
02	14	0737	23				X.
61	/ A	0823	10				3.5ft PV triggel
	18	0824	1				87
	, .						
	v 0	08 28					3 good SPI 3 maginal 10
	v E	0910					2. \ 011
	VF	0912					3500 PV 3500 SPJ
4	16	0914	1				300
01	/ H	0916	11				QA Kodek Color Shot.
DY	~ A	12:43	18				5 . / < DT
	1 B	17:45	1	2			5 good SPI 5 good PV
	VC	12:46					29000 10
	v D	12:47	V	-			
	, E	12:48	18	:•:			
13 1	- A	19:10	20				500 0 SPY
	B	14:11	1	8	1		55000 SPI 55000 PV
L.	10	14:13		2.			2 9000 11
	v D 1	4:14	\bigvee	*	4		(I work shot .
	V E 1	4:16	20	54	15	5	(Moor 2, rol

Note: Number of lead weights on each side x 53 lb = total weight on both racks

then (bad weather.)

End of Jay.

Project Name: May Flower Wind

Date: 5/4/2028 Ship: M/V GO Liberty

Project No.: 603 C3096-0101

Crew: S. Wolzick, C. Spedy

Station ID	Replicate (A,B,C)	UTC Time (hh:mm)	Water Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
061	1A	12:05	35	55	15	5	5 good SPI/PV
	v B	12:06	40				
	, C	12:08	Ÿ				
	v D	12:09					·
	VE	12:11	48				
071	v A	15:20	46				Shortened DILtono
	V B	15:21	i				and shots
	v C	15:22					Shortoned PUtrager good shots. to 32".
	v D	15.23	4				10 30 0
	した	15:25	46				
070	v A	16:08	45	65			50-15DT
	· B	16:10	ĺ				3 good PV
	rC	16:11					3 gear (
	v D	16:12	4		1		-
	JE	16:13	45				
064	/ A	17:53	45				good shots
	v B	1754					9000 340/1
	1 C	1756					
	/ D	1758					
	VE	18 00	45				
066	v A	20:97	43				Good Shots
	V B	20:24	1				O OCO JULIO
5		20.95	4		,		
	v 1)	2027	43		15	5	

Project Name: 63096 - May Plower Wind Project No.: 63096-6101

Date: 5/14/2020 Ship: M/V GO Liberty Crew: S. Wadzicki, F. Speda.

	Station ID	Replicate (A,B,C)	UTC Time (hh:mm)	Water Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
٥	66	1E	20:28	43		15	5	
	CII	/ A	21:41	38	80		ſ	good shots
		13	21:42					SPI Frame imprint
		10	21.44					SPI Frame imprint
		10	21:45	\downarrow				PV muzzy
		1E	21:47	-38				
	C12	VA	2234	35				Adjuste Flood ungle
		VB	a a 35					slight bright spoten
		/ C	2237					Pulmage 5 good SPIAPU
		0	2238					0
		/ E	2240	35	-			
	(5	A	-	37				No GES CIX
		1B	2325					No GRS Rix 5 SRI, SPU
	P	10	2326					,,
		10	2327					
		/ B	2329	1				
		1 =	2330	37				
W	C13	_ A	0004	3.7				5 SPI, 5 PV
		В	0005					
		V (0008					
		√ D	0010	1				
-		1 E	6012	37				
-	214	V A	0339	39		4	4	
		b	0240	35		15	5	

5/14/2020

Project Name: May Flower Wind

Date: 5 15 2020 Ship: M/V 60 Liberty

Project No.: C3096 - 0161

Crew: R. Spade, S. Wedzick,

Station ID	Replicate (A,B,C)	Time (hh:mm)	Water Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
4	10	0142	39		15	5	
	V 0	0243.			1	7	
	VE	0245	39				5 SPI, PV
067	VA	0430	46				5 SPI PV
	VB.	0434					
	10	0435					
	10	0437					n
	VE	0439	46				Stove no Hay
077	~ A	12:48	50			9	RPV good
	V B	12151	1				8 PV soud 3 soul DI
	v C	12152		-		1.	PV dost 8 good SPI
	v D	12153					PV dust
	VE	12:54					Pudust
	VE	13:28					PVOK
	16	13:29	V				PV dust
	14	13:32	50				PV500d
076	V A	14:28	47m				3 good PV
	18	14:31	,				
	10	14:32					S good SPI
	10	14:35					
	18	14:35 14:38					
33	A	19:17	9 m				2 1
	B	1924			1		300d
13		1925			15	5	trying to adjust the

Project Name: May Flower Wind Project No.: (3096-dol.)

Date: 5/15/20 Ship: M/V GO Liberty Crew: F. Spada S. Wodzick;

Station ID	Replicate (A,B,C)	Time (hh:mm)	Water Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
033	V D	1927	9 m		15	5	Strong carrent
	IF	1928		n.	f		Likely 316 trainer weight not nitting straight
03/	ı A	2039	Sm				still abit bright.
	13	2040					good sugger
	, (2043					
	1 D	2044	-		-	×	
	1 =	2046					
029	/A	2227	7		2		Adjusted PV camping
	B	2231				¥i	good pics. H
	VC	2232					
	10	2233		-			
×	16	2235	7				
027	/ A	0137	12		-		Minimal SPI pers.
	13	0140					5 SPI 5 PV
	/ c	0142					· · · · · · · · · · · · · · · · · · ·
	/ 0	0143					
	16	0144	12				
15	AX	0543	23	148		NogEix	4 587,480
	18A	0543					1st SPI sep no Nav (b)
	V EB	0545					Pic Sottenpts, but
	1 Ø c	0549					9 w/ 615.
	170	0552	23				
					7	4	
					15	5	

Project Name: May Flower Wind

Date: 5/16/20 Ship: M/V GO Liberty Crew: F. Spada S. Wodzick:

Station ID	Replicate (A,B,C)	Time (hh:mm)	Water Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
017	1 A	1042	23		15	5	All good.
	v B	1046				1	
	, c	10 48					
	v D	10 49					
	1 E	10 51					
019	v A	1233	22				Good Shots
	JB	1235			2		good Shots 4good PV 1 dask
	1 C	1236					1 dark
	v P	1238		Th			
	, E	1240	-	3			
021	v A	1426	17				5 good PV
	, B	1427		2			4 good SPI (INP)
	, C	1428					DP problem
	v D	1429					5 good PV 4 good SPI (INP) DP problem Live boat by Rudy
	IE	1430					
922	A	1548	17.				Discord 1990
	BI	1616					all shots at
	/ C /	1617					20200516_1550XX
	V D V	1619					UJBL was out
	, E	1620					
	1 FJ	1621					
23	1 A	1701	12				
	v B	1703			4	4	
	v C	1704			15	5	

Project Name: May Flower Wind

Date: 5/16/2020 Ship: M/V Liberty

Project No.: C3096-9101

Crew: F. Spada S. wod z. ct.

Station ID	Replicate (A,B,C)	Time (hh:mm)	Water Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
023	D	1705	12	180	15	5	good Shots
	1 E	1706			1		good Shots very rocky.
025	V A	1836	17				*
	v B	1838				_	
	/ C	1839					
	v D	1841	4				
	1 E	1842	17	186			4
073	Α	045	51	187			5 PV
	B	0648	1				3 SPI (2 OP)
	C	0650					
	0	0652	V		1		
	E	0655	51		15	5	
074	A	0920	50		13"	4	558I, 40V
	В	0921				1	,
	C	0923					
	0	0925	1				
	E	0927	50				
080	A	1202	50				5 good SPI
	В	1204					3 good PV
	C	1206					
	D	1208					
	E	1210					
087	A	1339	50		4	4	
	B	1340			13"	4	

3117/2020

Project Name: May Flower Wad

Date: 5/17/20 Ship: MV Liberty

Project No.: (3096-0101

Crew: F. Spaden Swedzick:

Station ID	Replicate (A,B,C)	Time (hh:mm)	Water Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
082	C	1342	50		13	4	good shots
	D	1344			1		
	E	1345	50				
083	A	1447	51				
	B	1449	-			-*	
	C	1451					
	D	1453					
	E	1454	51				
084	A	1559	52				good shots
	B	1601					
=	C	1602					
	D	1604					
	E	1605	52				good Shots
088	<i>A</i>	1742	51				
	B	1744					
	C	1746					
	D	1747					
	E	1749	51				good Shots
086	A	1936					
	В	1937					
	C	1939					
	D	1941					
	E	1942	51		1		
096	A	2(00	53		13	4	

Project Name: May Flower Wind Project No.: (3096-0101)
Date: 5/17/20 Ship: MV Go Liberty Crew: F. Spada S Woodzick:

Station ID	Replicate (A,B,C)	Time (hh:mm)	Water Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
096	В	2102	53		13	4	s.17/ufs
	C	2103					collère had stops ed 14"
	D	2/05			1		and or 5 whs
	E	2/06	53		13	4	
098	А	2202	55		15	4	\$ 5
	В	2204	1				sand
	- 6	2205			2		
	P	2207					
	Ç.	2209	55		15	4	Changed strate betters
090	A	0147	54		14.45	5	Changed strate betters
	В	0149			14	5	
	C	0150					ZPU 5 SPI
	D	0159					
	E	0153					
	F	0229			4	9	1PV 28PI
	G	0230	54		14	5	"IRV had SPI imprint"
091	Α	0452	54		ila	5	1 PV 2 8PI "IRV had SPI imprint" 5 SPI, 5 PV
	B	0454					
	C	0456					
	0	0458			\forall	Ψ.	
	E	0501	54		14	5	
43	Α	0712	55		141	5	5 SPZ 3 PV
	В	0715					
	e	0717			14	5	

3/18/2020

Project Name: Mayfore Wind Project No.: C3096

Date: 5/18/2020 Ship: M/V GO Liberty Crew: S.W + F.S.

Station ID	Replicate (A,B,C)	Time (hh:mm)	Water Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
93	D	0718	55	F	14	5	
	E	0720	55				
102	A	0838	53				3PV, 5SPI
	В	0857	1				
	(0901					
	0	0903					
	F	0905	53				
101	A	0948	55				3PV, 5SPI
	В	0950					*
	C	0954					No C Rep For PV
	0	0956			4	4	F 102
	E	0958	55		14	5	

Project Name: C3096-0101 Project No.: May Flower Wind Orew: F. Spada S. Wodzicki

1.7	Station ID	Replicate (A,B,C)	Time (hh:mm)	Water Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
X	035	+	1731	23		15"	5	Stop @ 15"
		В	1733	1 man		1)	5 good SPI
		C	1734			V		PV has lots of
	_	D	1735			V	W	' Sed in Water,
		E	1736					Second drop -
		F	1801					5 good SPI
		G	1803					Dood PV
		14	1804					11 sec. Swell 4 Peak
		I	1807					Ebb tide Making
		J	1809	V		15"	5	For Sand Storm
								May Return to Loc.
¥	039	A	2033	30		15"	5	5 good SPI
		B	2034	1				5 and storm PV
		C	2035					
		D	2037					
		E	2038	V				
X	043	A	2321	34				5 Sood SPJ
		В	2326					Very hibid
		C	2327					O clear Buinage
		D	2325					Zft trigger
X		E	2331	34				
X	053	А	0530	39		- \		5 Good SP]
		B	6534	b		\$	4	5 Good SPJ 32" trigger line
		C	6536	35		15	5	O Clev BV images.
	* =	A AM	8 01)					U

Project Name: Magloser Wind Project No.: 63096

Date: 5/22/2020 Ship: Goldberty Crew: 5. Windzuki, F. Spada

Station ID	Replicate (A,B,C)	Time (hh:mm)	Water Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
053	D	0536	39		5	5	& Clear PV
	5	05 38	39				better but bottom features
054	A	0630	40		15	5	notclear.
	В	0632	1				5 SPZ 4 EV (Gas)
	C	0634					5 SPZ 4 PV (Good) better goods
	ρ	0636	1				bottom cutors visible
	6	0638	40		15	5	Analyzade, lases visible
্ চ্চ	0	0720	40		-		S SPT, 4 PU
	_B	6722					Same FU notes as about
	C	0724					lasers visible
	0	0726					
	F	0728	40				
057	Α	0924	41				3PU, 5 SPI en above far PV
	В	0926					es above far PV
	C	0929					
	0	0931			-		
	F	0933	41		X	4	1 (0)
059	A	1057	40		15	5	5 500d 5PI
	B	1058				1	5 good PV
	C	1100				1-1-	
	D	1107			1	4	
	E	1103			l E	5	
					-		

Project Name: May Flower Wind

Date: 5/22/20 Ship: MV Go Liberty

Project No.: C3096-0101

Crew: F. Spada Swodz: ck;

Station ID	Replicate (A,B,C)	Time (hh:mm)	Water Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
103	A	1502	56m		15	5	5 good SPI 5 good PV
	B	1505			х	,	5 good PV
	C	1506			*-		
	D	1507	_				
	E	1509				5.	
106	A	1721	57		14	5	5 good SPI
	B C	1722					Dead batt on PV
	C	1724	_				change out PV
	D	1725					5 good SPI Dead batt on PV Change out PV Battery
	E	1726					
	F	1808	57		14	5	Sgood SPI. 4 good PV
	G	1810					4 good PV
	H	1812					
	I	1814					
	5	1815					
108	A	1944	54		14	5	5 good SPI
	В	1946					1 good PV
	C	1948					Dust up. adjust
	D	1949					drop spacing to 4m
	F	1950	55		14	5	<u></u>
	F	7009					2 good SPI 2 good PV
	G	2011					
	1-14	9019					More dust up.
	士	3014					

Project Name: Nay Flower Wind

Date: 5/22/20 Ship: MV Go Liberty Crew: F. Spada S Wodzick!

Station ID	Replicate (A,B,C)	Time (hh:mm)	Water Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
108	J	2012	55		14	5	
111	A	2048	57		14	5	5 good SPT
	В	2050					5 good SPI 4 good PV * 4m spacing *10+m 1: Ft off
	C	2052					* 4m sache
	P	2054					*10+m lift off
	E.	2055	57				bottom
116	Α	2324	61				5 PV, 3 good SPI
	B	2326					2 SPI soul but
	C	2328					modelast on SwI on
	0	2330	1				Z seps.
	G	8333	61				10,000
114	A	0122	62				5 PV, 35PI
	В	0125					2 distanced SWI w/
	(0127					mudelasto.
	0	0130	4				. 10-0-10-7
	E	0132	62				
(07	A	0235	64				5 PV, 3 GalsPZ
	В	6237					2 distribed 5 WI
	C	0240					w/ modeloute.
	0	0242	1				
	E	0245	64				
C06	A	0329	64				4587 5 PV
		0332	6		J	7	1 distribed SUI of
	(0335	by		14	5	modelast

5 23 2020

Project Name: May Class Wind Project No.: C3096

Date: 5/23/2020 Ship: M/V GO Liberty Crew: S, W. & R.S.

Station ID	Replicate (A,B,C)	Time (hh:mm)	Water Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
CO6	0	0338	64		14	5	
	E	0341	64		1		
09	А	0455	65				2 PU SSPI
	В	0458					
	C	0501					
	0	0503					
	Ē	0507					
	F	0526					1PV 35PI
	ca	0529					,
	F1	0533	65				
608	Α	0608	63		e-		4 PV, 5 SPI
	В	0612					*
	(0615					
	0	0618					
	E	0621	63				
CIO	A	0106	69				55PT , 1PV
_	B	0709					
	С	0712					
	0	075					
	E	0718					
	F	0735					1PV,55P]
	C)	0739					
	H	0743			Ä	1	
	Ī	0748	64		14	5	

Project Name: Mayflower Wise Date: 5/23/2020 Ship: M/U GO Liberty

Project No.: 03096-0101 Crew: S. Wolzack, F. Spada

Station ID	Replicate (A,B,C)	Time (hh:mm)	Water Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
C10	2	0751	64		14	5	
	K	6807	64				ISPINOV C3 tot QU Comco
120	A	1022	62		14	5	1597, PV (3 tot SP) (trum co) 5 good SPI 5 good PV
	B	1024					5 good PV
	C	1026					
	P	1028					
	E	1030					
117	A	1153	59		14	5	5 good SPI
	В	1155	_				5 good SPI 4 good PV
	C	1157					
	D	1159			4		
	E	1201					
109	A	1406	55		14	5	5 good SPI
	B	1408					Sgood SPI 3 \$ good PV
	C	1410					
	D	1413					
	E	14/6					No image.
100	A	1525	49		14	5	5 good 5PI
	B	1527					41 sod PV
	<	1529					
	D	1530					
	E	1532					55
53	F	2021	35.				2 good SPI 2 DK DV Very windy, call off after
	6	2023			Des	5	Very windy, call off after

2 drops.

Project Name: May flower Wind Project No.: C 3096-0101

Date: 5/20/20 Ship: MV GO Liberty Crew: F Spada 5 Wodzick!

Station ID	Replicate (A,B,C)	Time (hh:mm)	Water Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
CPI	A	1752	15		15	5	5 good SPI
	В	1754				*	5 good SPI 5 good PV
	С	1756					
	D	1758					
	E	1759			_		
CPZ	A	1948	12		15	5	5 good SPI
	B	1950			1		5 good PV
	C	1951				1	
	D	1953					
	E	1954					
035	K	2252	20		2# ·		4PV, 5SPI
	L	2254					Strong bottom correct
	М	2256					lob of winon line let
	N	2259					est to maintain slow.
_	0	2301					USBL heightedok la
037	Α	2337	27			=	SPV, SSPI
	В	2335					
		2341					
	D	2343					
	E	3345					
035	AF	0023	28				5 PV, 5 8 P.J
	6	0026					
	H	0038			¥	4	
	7	0031			15	_5	

Project Name: May Flave Wind

Date: 5/25/2028 Ship: M/V GO Liberty

Project No.: C3096-0101

Crew: S.W. & P.S.

Station ID	Replicate (A,B,C)	Time (hh:mm)	Water Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
039	J	€033	28		15	5	
602	A	0201	29		*		5 PU, 58P2
	B	0203	Í				
	C	0205					
	D	0 208	J				
	F	0210	29				
COL	A	0301	37				581, 5587
	В	0303					
	C	0306					
	0	6308	1				
	F	0311	32		+)		*
C03	A	0353	31				SPV, SSPI
	B	0355					300
	(0358					
	D	0400	1			=	
	E	0402	31				
C04	А	0443	33				SPV, SSPI
	а	0445					,
	6	0448					Mayer of silt below sand
	0	0450	B		4	1	GEP P.)
	E	0453	33		15	5	
COS	A	0539	31		17	5	SPU, 5 SPZ
	<u> </u>	6541			4	t	-
	C	0545			17	5	

Project Name: May Flour Wind

Date: 5/25/2020 Ship: M/U GO Liberty

Project No.: 63096-0101

Crew: SW. & R.S

E 0550 31 41 A 0651 30 B 0653 C 0655 O 0658 E 0701 30 H3 AF F 0750 30 BY G 0757 E J 0757 30 H10A 33 B 1110 C 1113 D 11/4 E 1117 33 D 12/4 E 1110 33 D 12/4 E 1117 33 D 12/4 E 1110 33 D 12/4 E 1117 33 D 12/4 E 1110 33 D 12/4 E 1110 33 D 12/4 E 1117 33	Station ID	Replicate (A,B,C)	Time (hh:mm)	Water Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
H A 0651 30 5PV, 55PT B 0653 Boot house, Pen base C 0655 PV reps between reps. D 0658 F 0701 30 H3 AF 0750 30 SSPI, HRV B 0757 30 Rimages analyzable C H 0755 Larces visible. What D 0757 30 Sees increasing. E 0759 30 Still turbed water C 1113 Still turbed water C 1173 Still turbed water E 117 33 Wast out but good Still turbed out E 117 33 Sgood PV C 1213 Sgood PV C 1214 Still turbed water C 1213 Sgood PV C 1213 Sgood PV C 1213 Sgood PV C 1214 Still turbed water C 1213 Sgood PV C 1214 Still turbed water C 1213 Sgood PV C 1213 Sgood PV C 1214 Still turbed water C 1213 Sgood PV C 1214 Still turbed water C 1214 Still turbed water C 1215 Sgood PV C 1217 Still turbed water C 1218 Sgood PV C 1219 Still turbed water C 1219 Still turbed water C 1213 Sgood PV C 1219 Still turbed water C 1219 Still turbed water	<u>C05</u>	D	0548			17	5	5 PU SSPI
B 0653 C 0655 C 0655 D 0658 E 0701 30 H3 AF 0750 30 BY 0755 CH 0755 CH 0755 CH 0755 CH 0755 CH 0757 CH 0757 B 1110 C 1113 D 1114 E 1117 33 H3 1311 C 1213 D 1214 C 1213 D 1214 C 1213	111		10141					,
B 0653 Boot house, Pen buse PV 18ps between reps. D 0658 PV 18ps between reps. D 0658 E 0701 30 H3 AF 0750 30 SSPI, 48U B 0750 30 PV 18ps between reps. H3 AF 0750 30 PV 18ps between reps. H3 AF 0750 30 SSPI, 48U H4 0755 Walton wisher with water H4 0755 Walton wisher water H5 0757 30 Sem increases. H5 A 110d 33 SSPI, 5PV B 1110 Still turbed water H4 15tdop, USB Walton water H4 15tdop, USB Walton water H5 A 1810 33 Sgood PV C 1213 D 1214 Still 3 3 D 1214 Still Still 3 D 1214				30				Jev, 5 spi
13			0653					Bost herve, Pew burg
13			0655		_			PUTEPS hatreen reps.
43		0_	0658					
# 6 0559 E H 0755 B J 0757 E J 0759 30 45 A 1102 33 B 1110 C 1113 D 114 E 1117 33 D 1214 D 1214 D 1219 D 1214 D 1219			0701	30				
Plings and grable Plings	43	AF	0750	30				5 SPI . 48U
# 5 0759 30 # 5 0759 30 # 5 Non increasing. # 5 A 1102 33 # 5 SPI, 5PV # 1110 # 5 Still turbed water # 11 14 # 14 15 drop, USBL IN # 12 10 33 # 5 good SPI # 12 13 # 12 13 # 12 14 # 12 13 # 12 14 # 13 13 14 # 13 14 # 13 14 # 14 13 15 # 15 good SPI # 15 good SPI # 15 good SPI # 15 good SPI # 16 13 14 # 17 A 12 14 # 18 12 14 # 1		84	0757					Pliman Goslazible
# 5 0759 30 # 5 0759 30 # 5 Non increasing. # 5 A 1102 33 # 5 SPI, 5PV # 1110 # 5 Still turbed water # 11 14 # 14 15 drop, USBL IN # 12 10 33 # 5 good SPI # 12 13 # 12 13 # 12 14 # 12 13 # 12 14 # 13 13 14 # 13 14 # 13 14 # 14 13 15 # 15 good SPI # 15 good SPI # 15 good SPI # 15 good SPI # 16 13 14 # 17 A 12 14 # 18 12 14 # 1		e H	0755					Justi willow Wiles
45 A 1102 33 B 1110 C 1113 D 1114 E 1117 33 United by Sept increasing. Sem increasing. 5 SPI, 5PV Still turbed water but 0K shots. The 1st drop, USBL in and out but good should be specified as a specified specified by the specified spec		ØŢ	0757			4		chan chat dependent
5 SPI 5PV 5 SP		EJ	0759	30				
E 1117 33 E 1117 33 Want out but good Sh B 1211 C 1213 D 1214 D 1214	45	A	1102	33				5 SPT 5PV
E 1117 33 E 1117 33 Want out but good Sh B 1211 C 1213 D 1214 D 1214		B	1110					Still turbuly
E 1117 33 E 1117 33 Want out but good Sh B 1211 C 1213 D 1214 D 1214		C	1113					but ax slate
47 A 1210 33 want out but good Sh B 1211 3 3000 PV C 1213 3 3000 PV		D	1114					the 15t Jah 11-R1 103
47 A 1810 33 5 good 5PI B 1811 3 good PV C 1813 4 4		E	1117	33				want out but ald t
B 1211 C 1213 D 1214	47	A	1910					5 - 1 5DT
D 12/4		B	1211					3 9000 514
D 12/4								3 9000 FV
		D				1		
11 0		E		33		12	(
						17	J	

Project Name: May Flower Wind

Date: 5/25/20 Ship:

Project No.: C3096-0101 Crew: F Spada S. WodEick,

Station ID	Replicate (A,B,C)	Time (hh:mm)	Water Depth (m)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
49	A	1302	34		17	5	5 good SPI
	В	1304			1	1	PV Ox but
	C	1305					some sed floating
	D	1307					
	E	1309					
51	A	1356	35				5 Good SPI
	В	1358					5 good SPI 5 good PV
	C	1400					
	D	1402					
	E	1403					
53	H	1504	36		-		55000 SPI.
	I	1506					55000 SPI.
	J	1507					
	X	1509			4	4	
	L	1510			17	5	
					_		
					_		
						_	
				_			

Appendix B

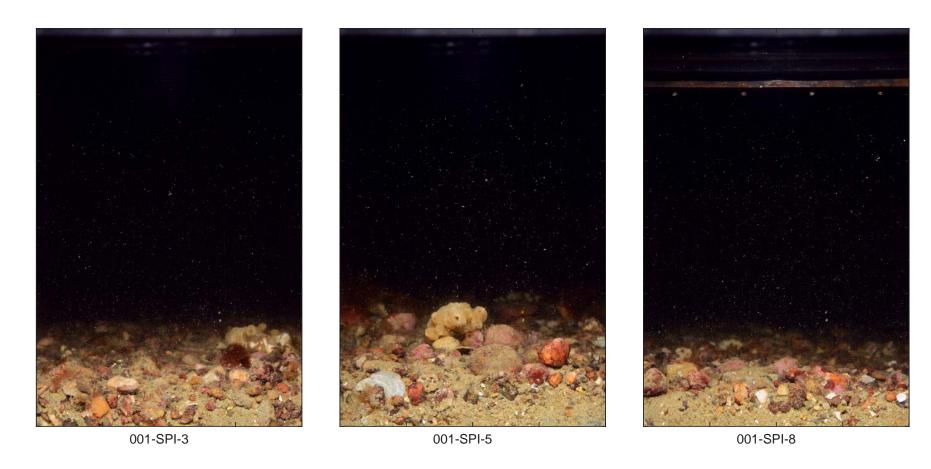
Sediment Profile Imaging and Plan View Image Library

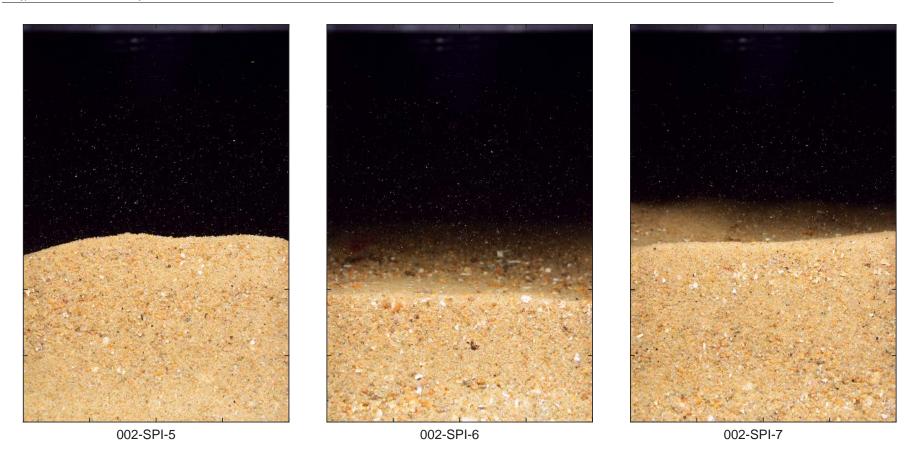
- Appendix B1. Sediment Profile Images
- Appendix B2. Plan View Images

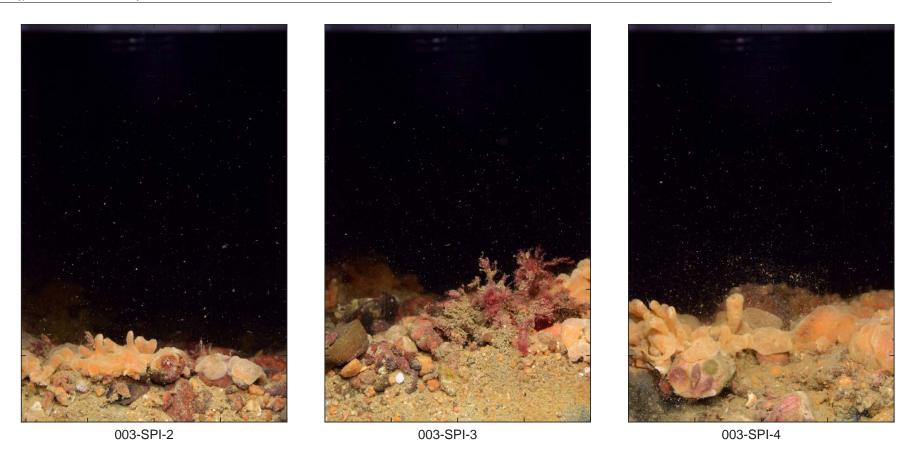
Appendix B1

Sediment Profile Images

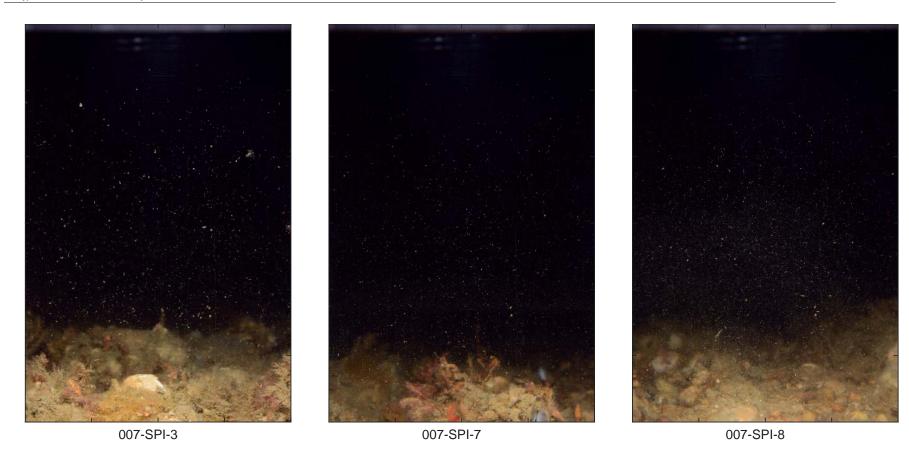
Scale: Width of SPI Images = 14.42 cm

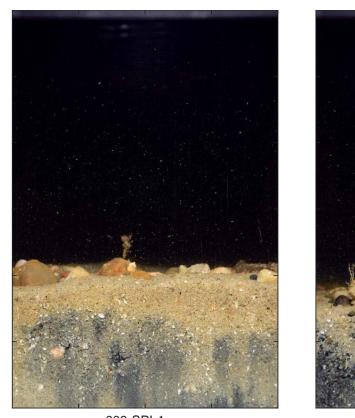
















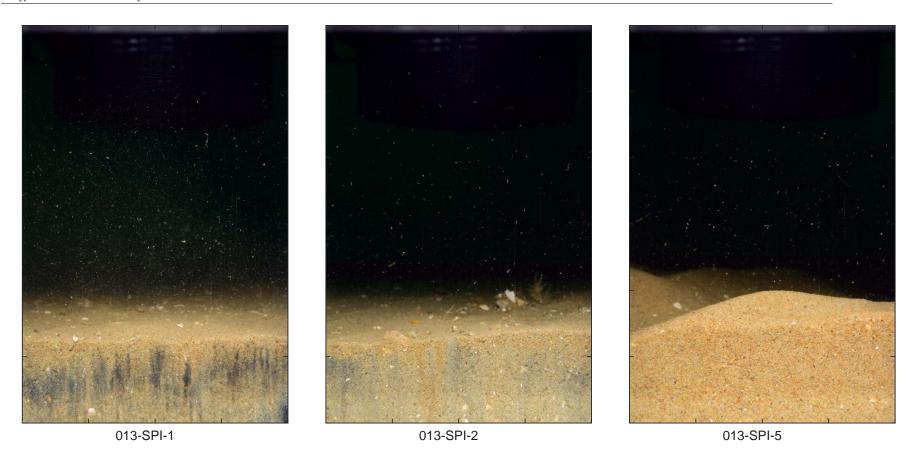
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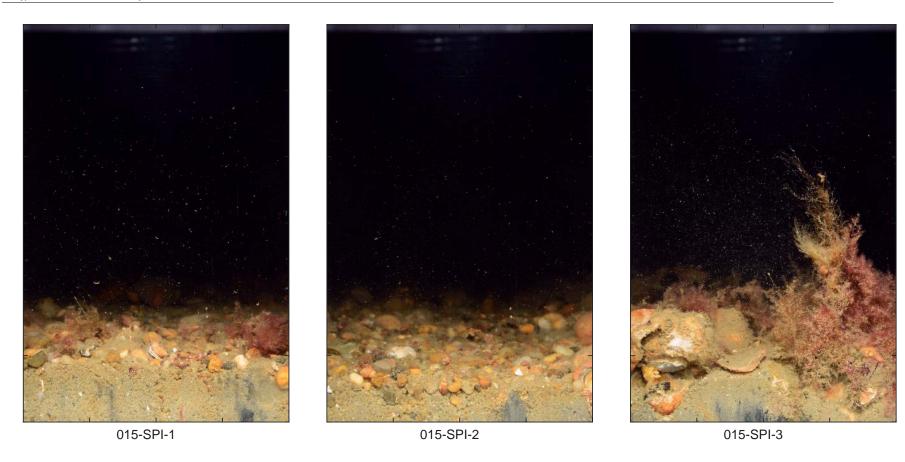


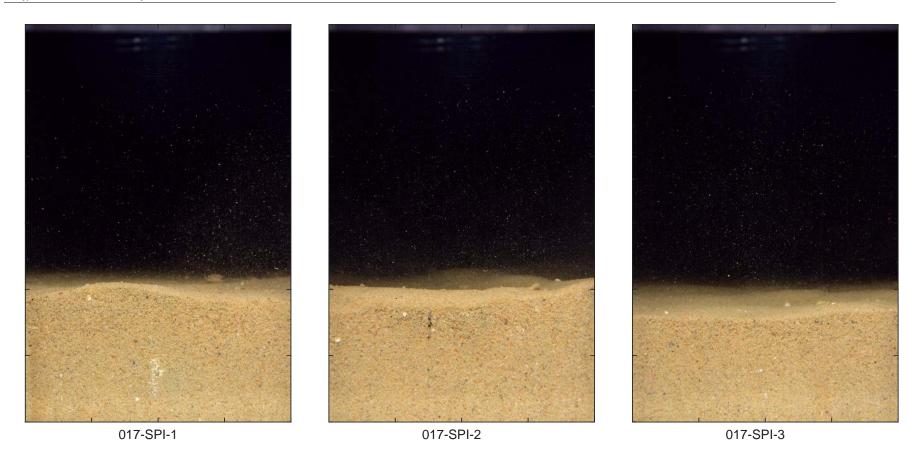


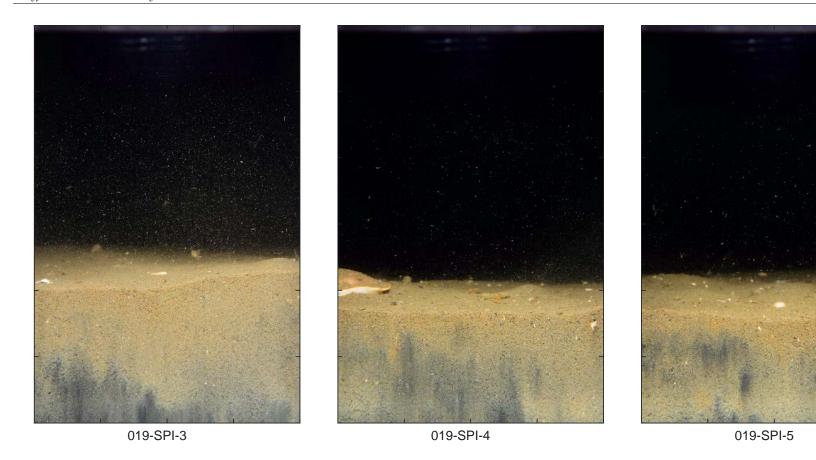


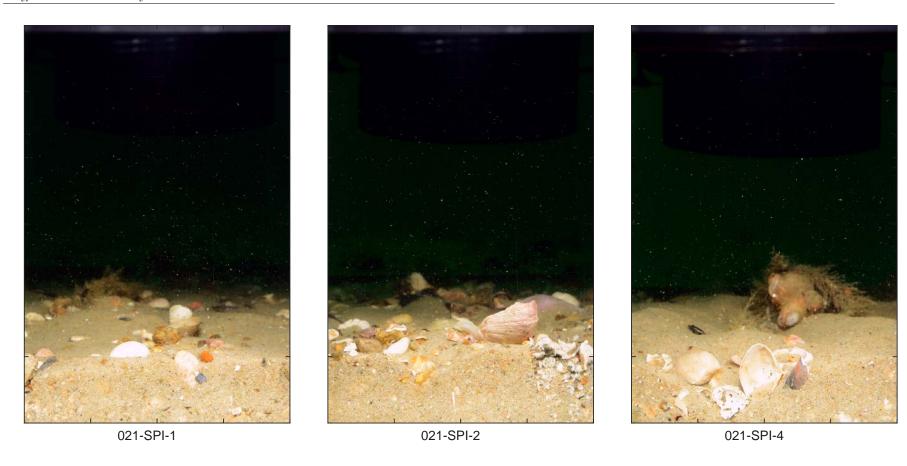
011-SPI-1 011-SPI-3 011-SPI-4

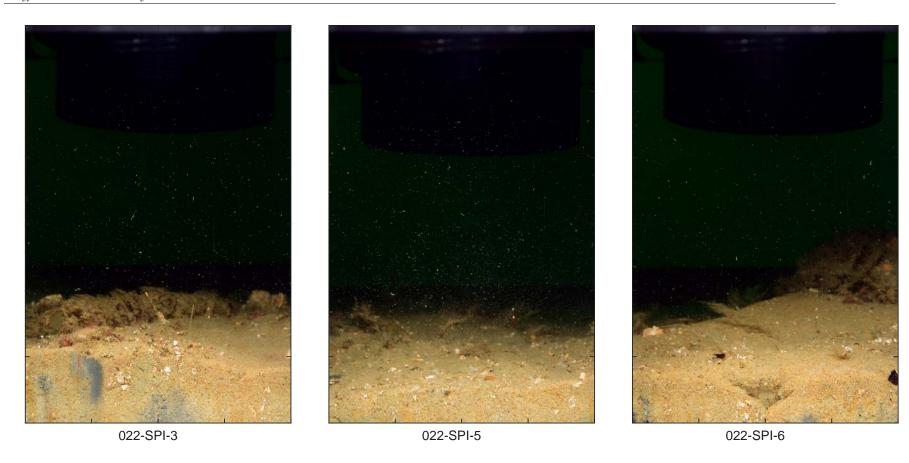


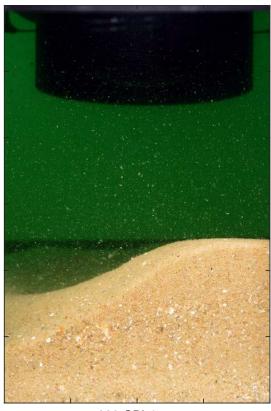




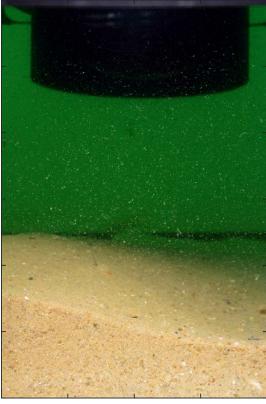




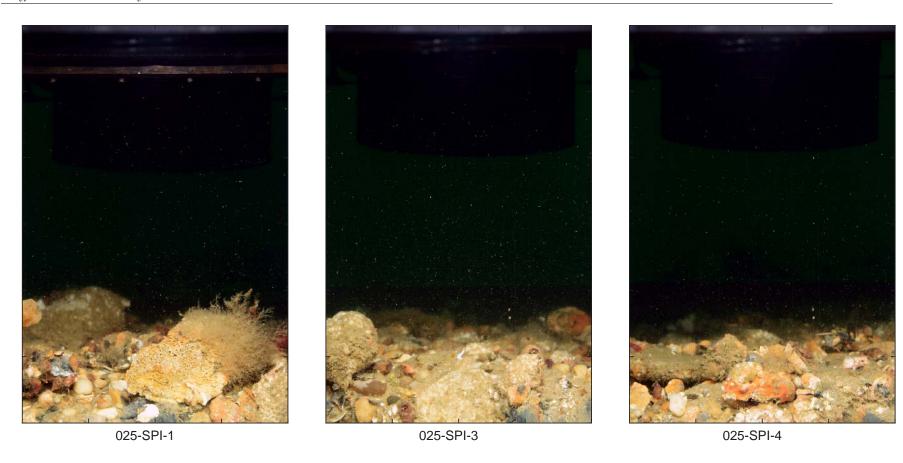




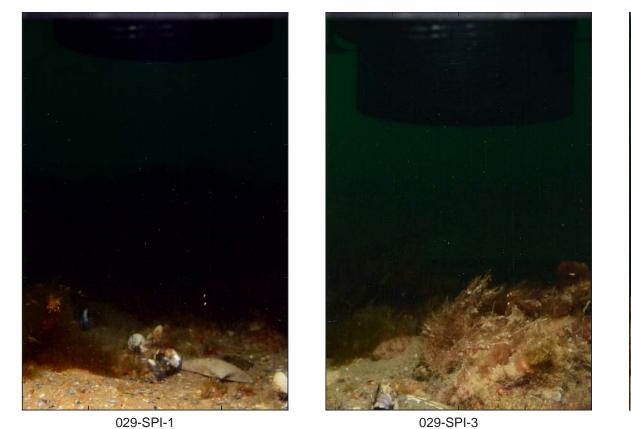




023-SPI-1 023-SPI-2 023-SPI-3



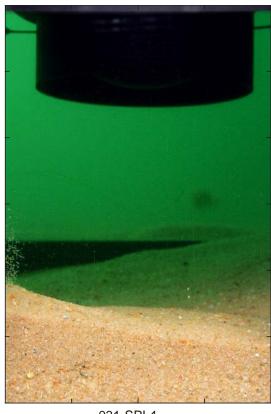






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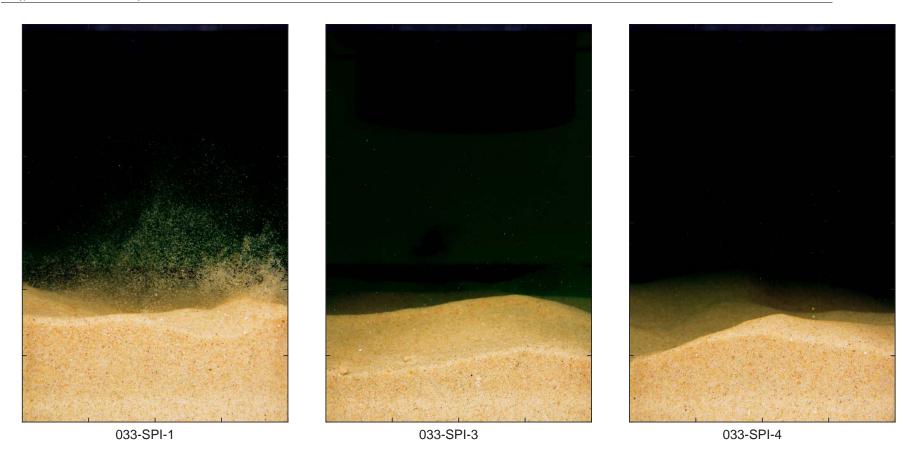
Integral Consulting Inc.

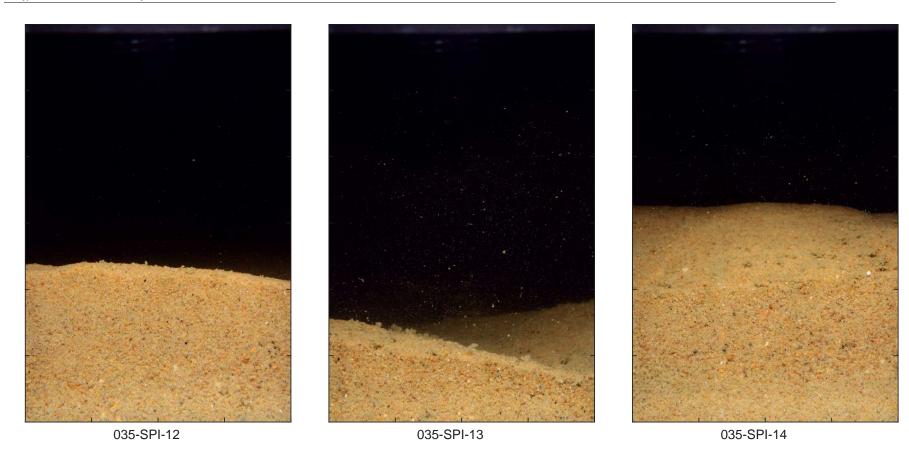


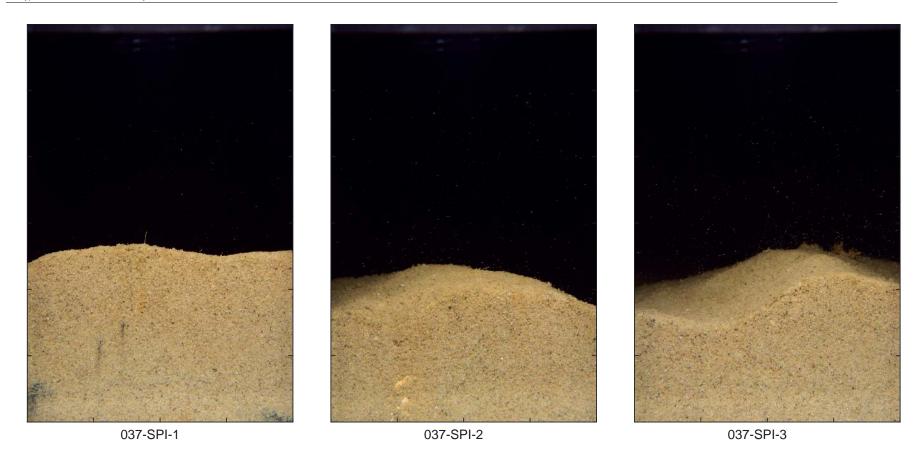


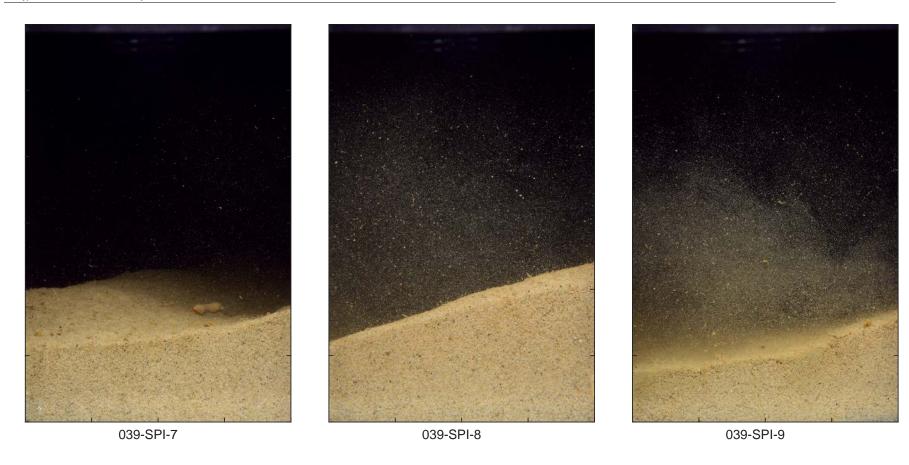


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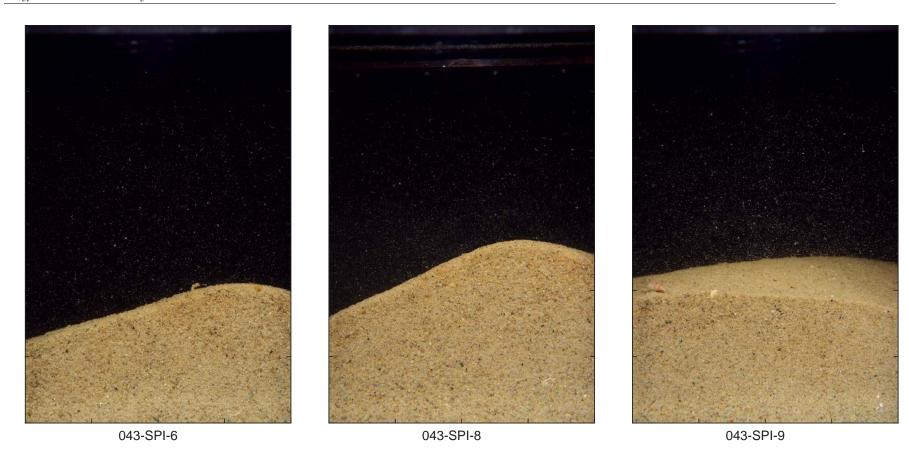








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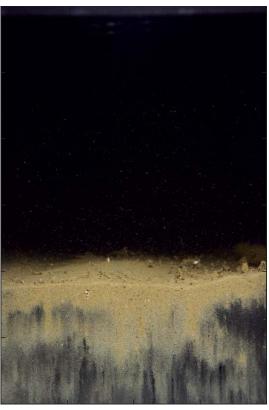






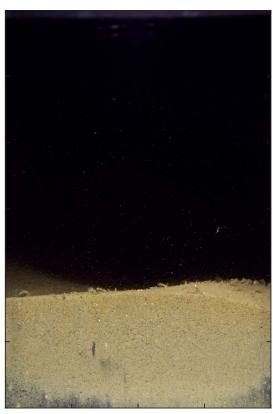
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047-SPI-1 047-SPI-2 047-SPI-3







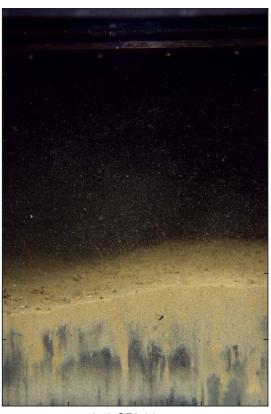
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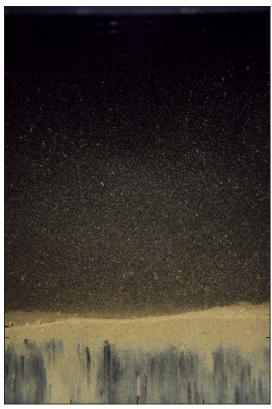




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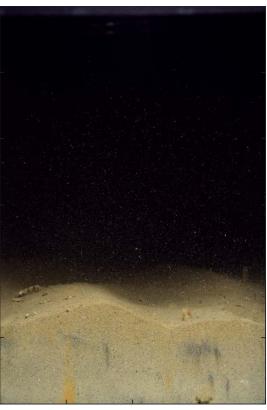


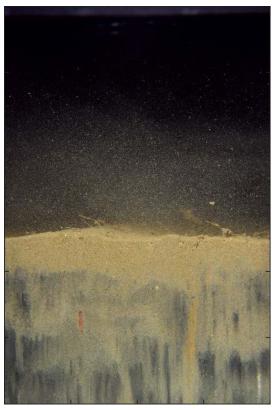




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054-SPI-1 054-SPI-3 054-SPI-5







055-SPI-2 055-SPI-3 055-SPI-4







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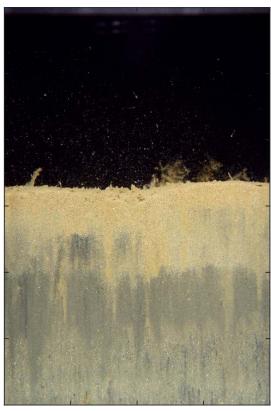
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064-SPI-5







066-SPI-1 066-SPI-3 066-SPI-4







067-SPI-2

067-SPI-3







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071-SPI-3

071-SPI-4







073-SPI-1 073-SPI-3 073-SPI-5



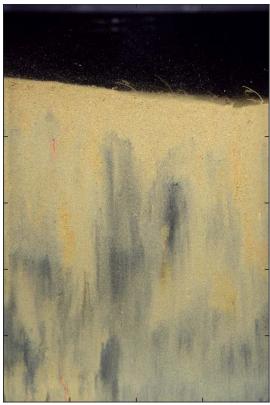




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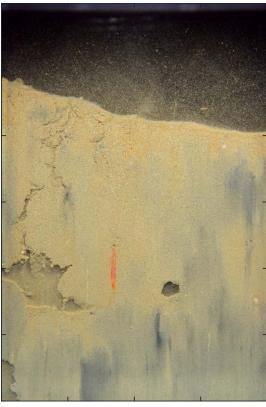




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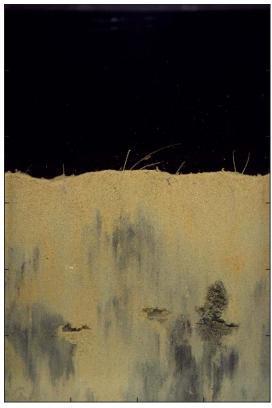


077-SPI-2

077-SPI-8







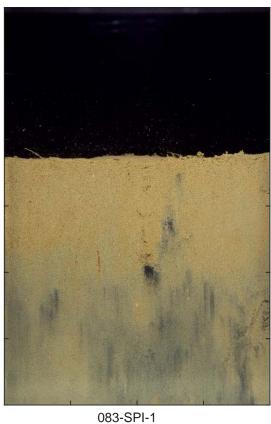
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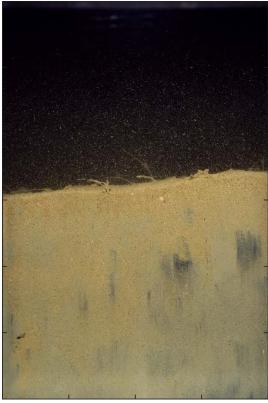




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084-SPI-3 084-SPI-4 084-SPI-5



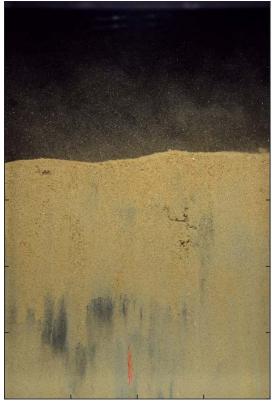




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088-SPI-2

088-SPI-5







090-SPI-1 090-SPI-2 090-SPI-7











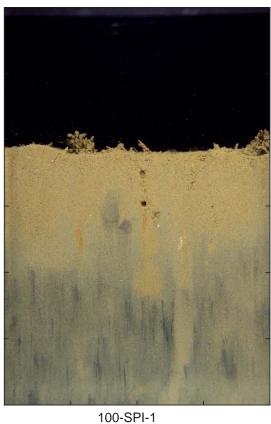






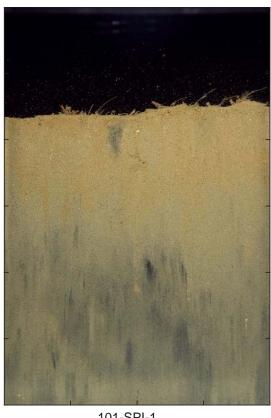
















101-SPI-1 101-SPI-2 101-SPI-4







102-SPI-3







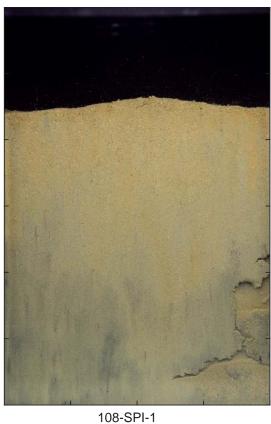
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106-SPI-6 106-SPI-8 106-SPI-9













109-SPI-1

109-SPI-3

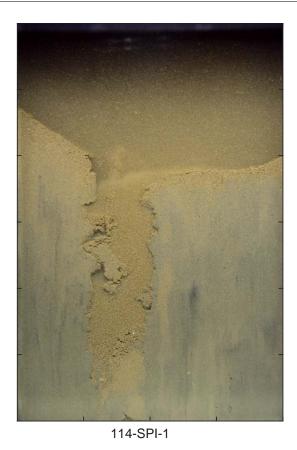
109-SPI-4







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114-SPI-2

114-SPI-4







Integral Consulting Inc.







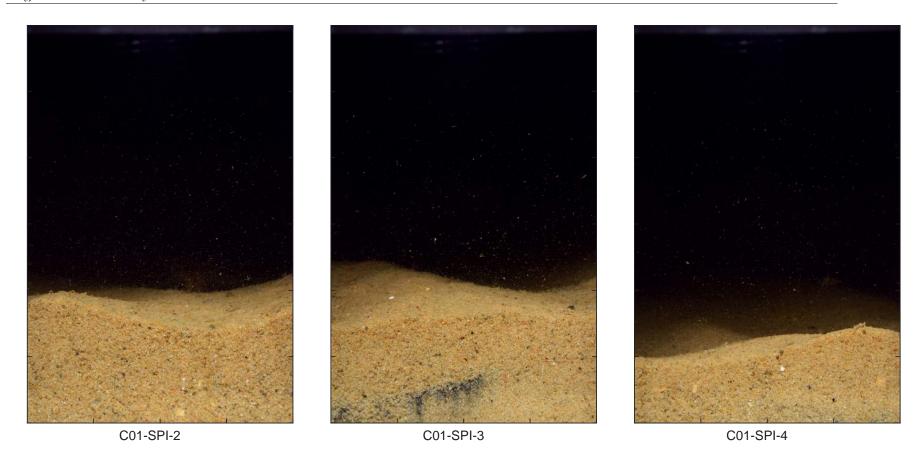
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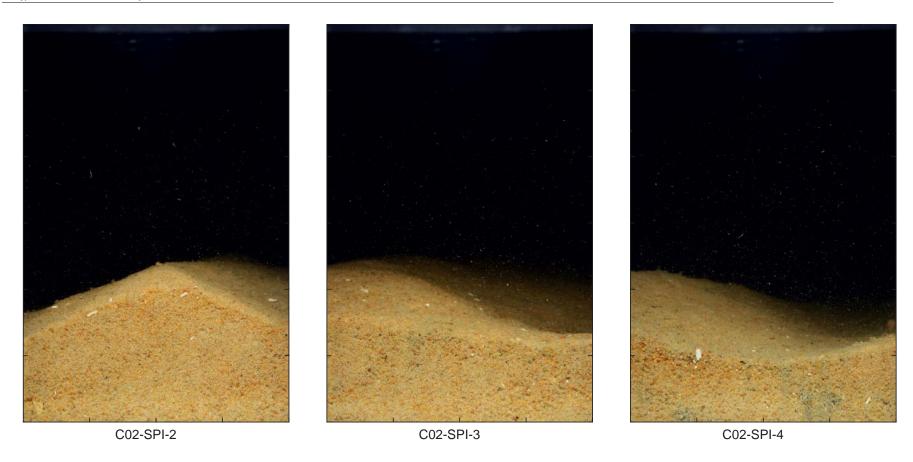


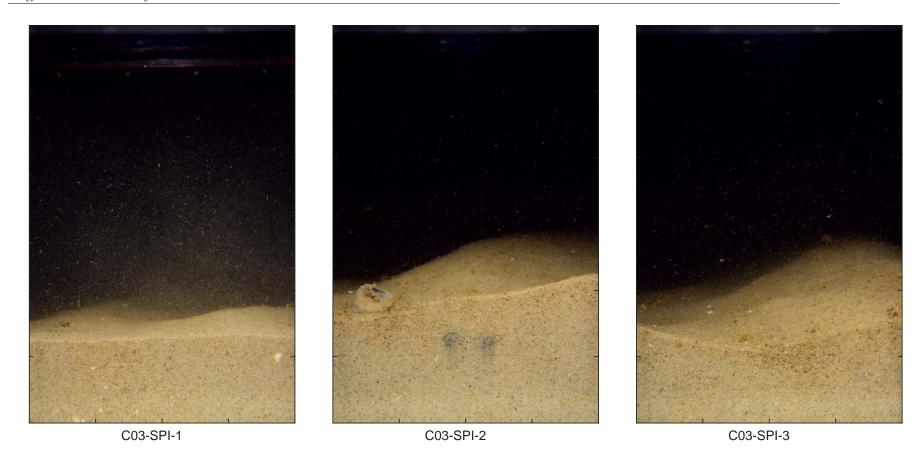


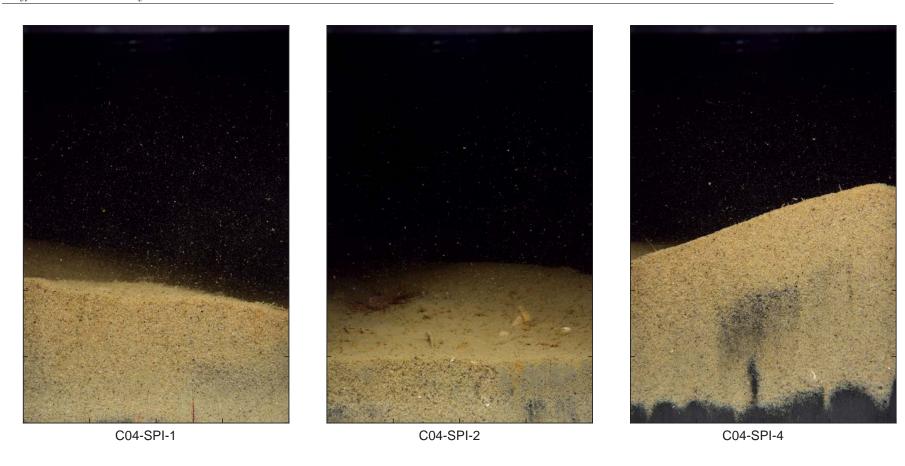


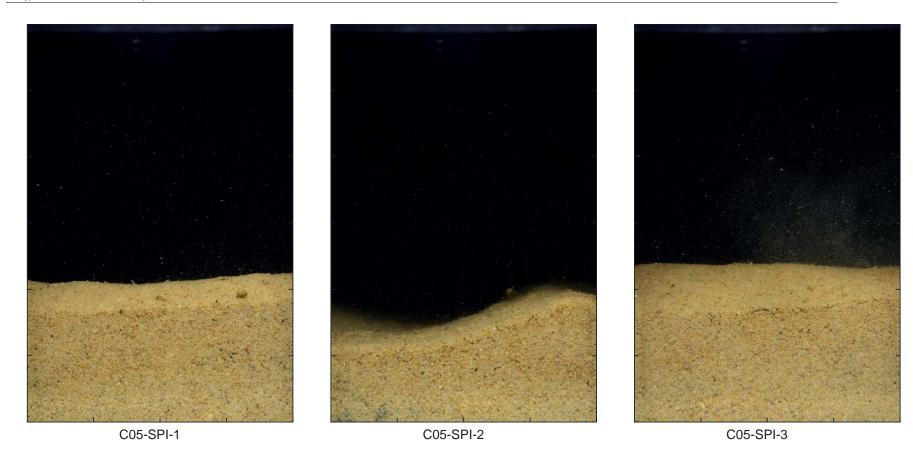
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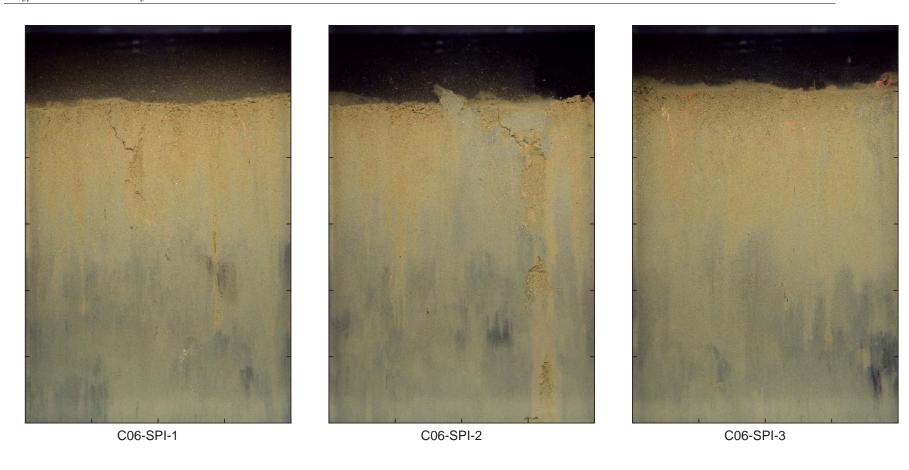


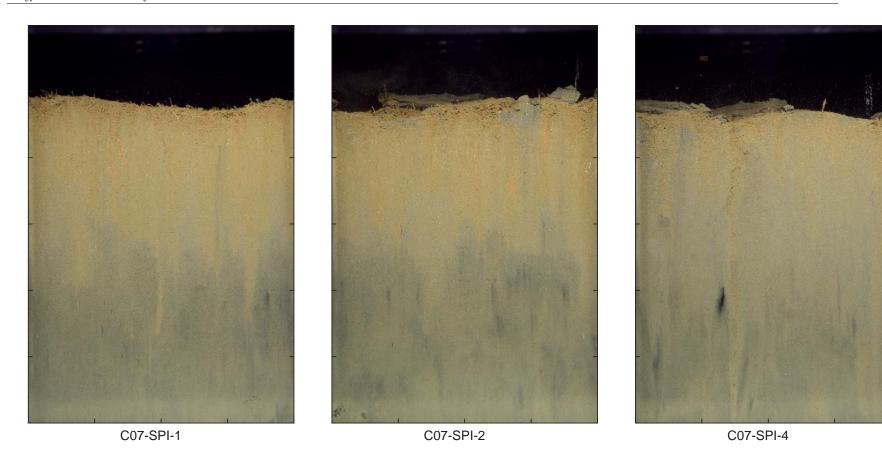










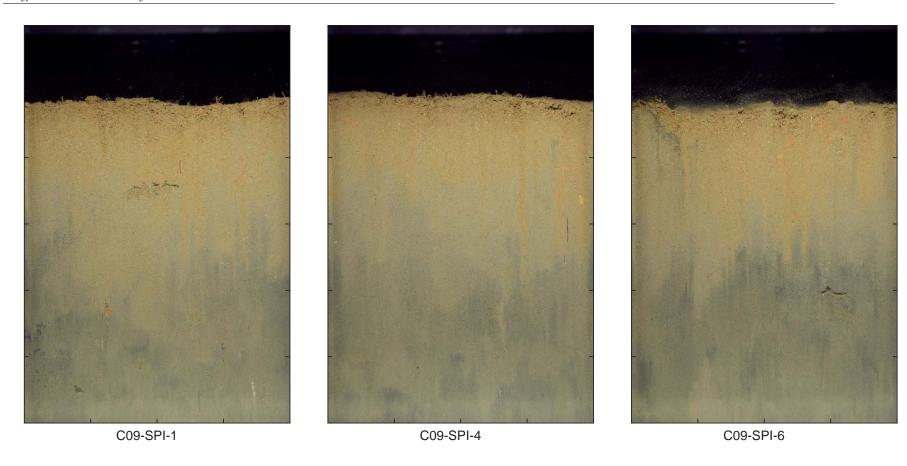


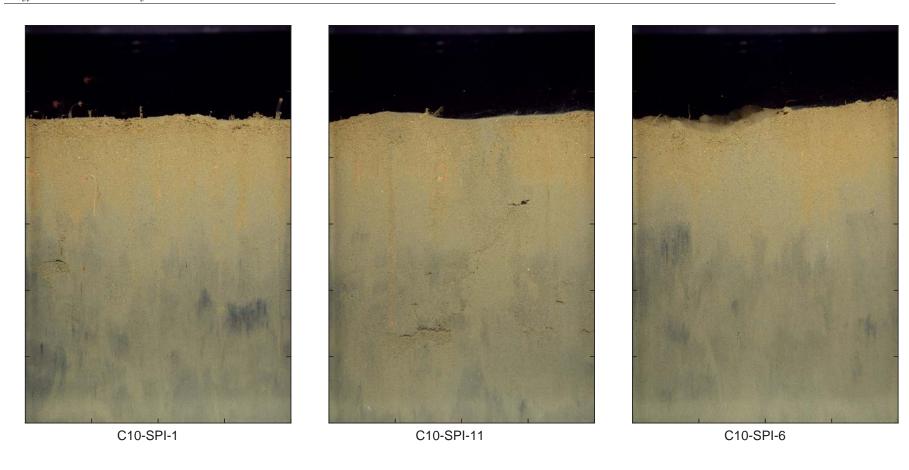


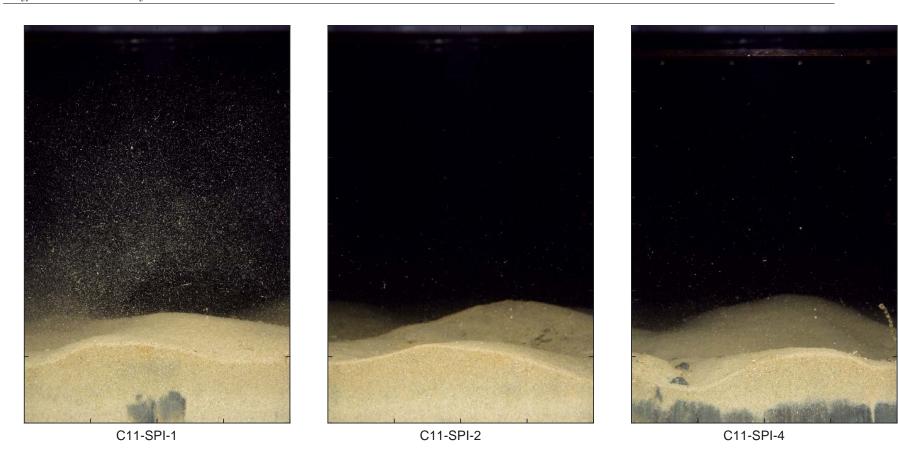


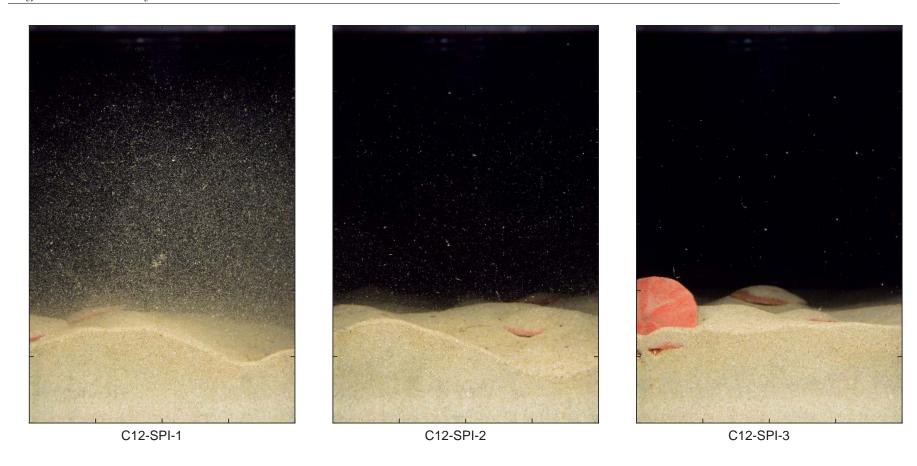


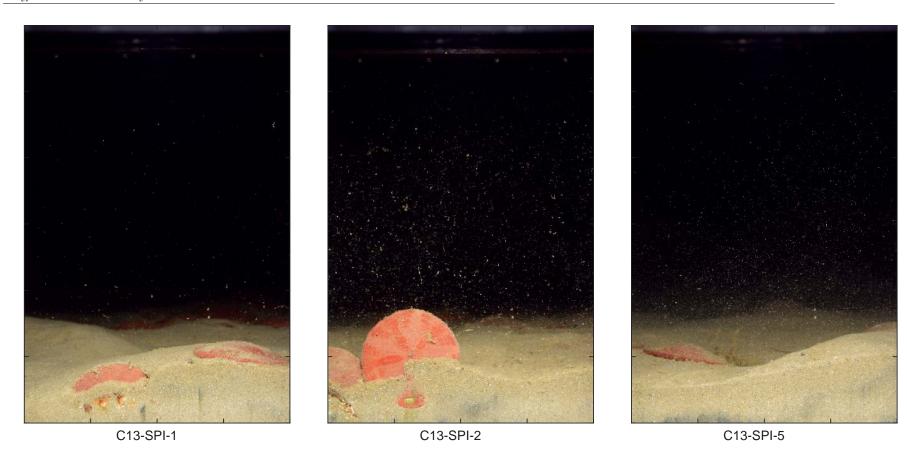
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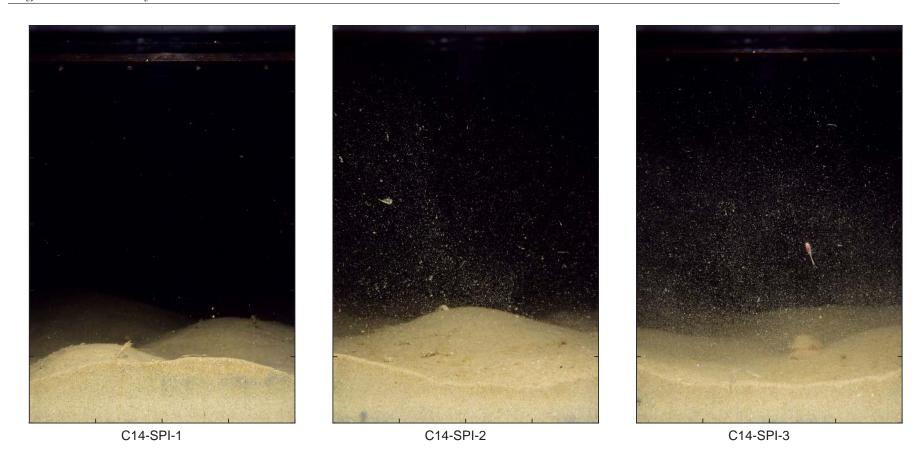


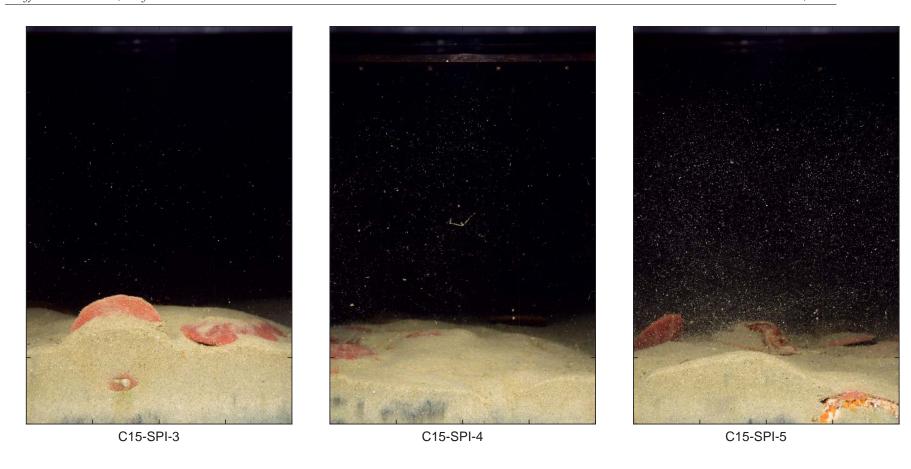


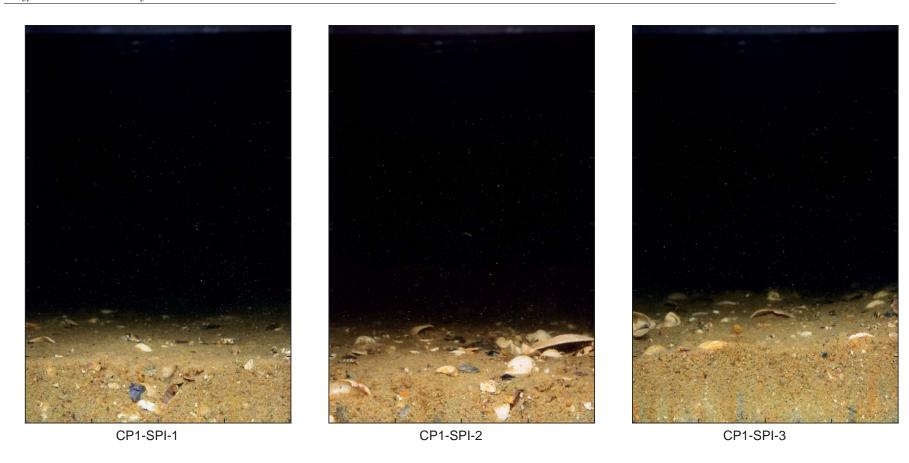


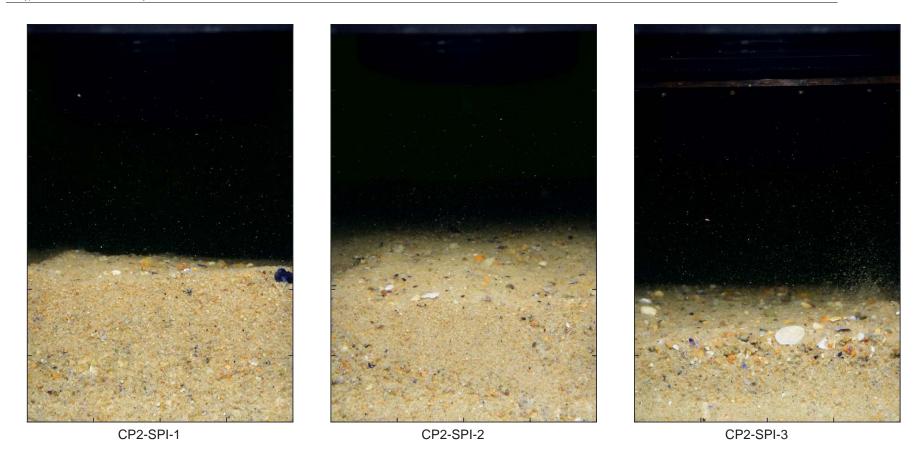








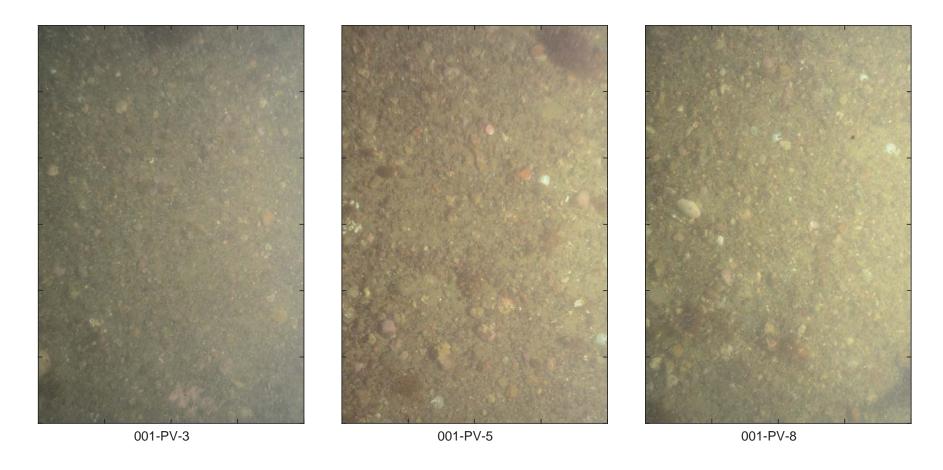


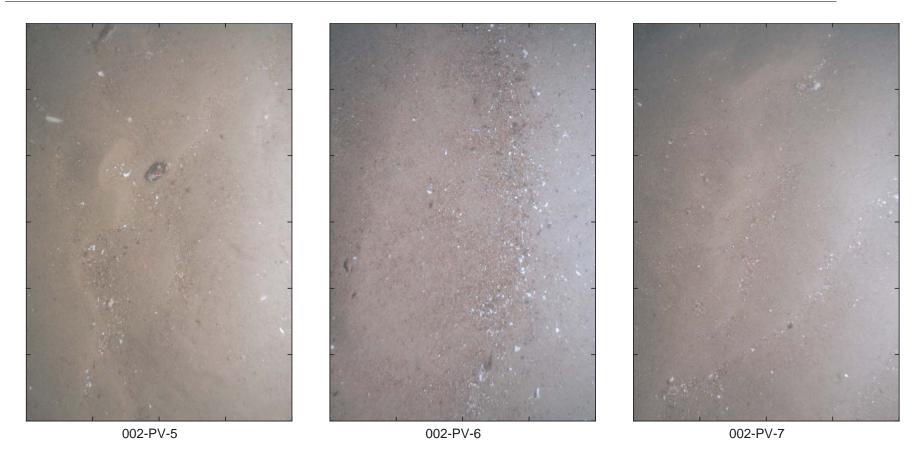


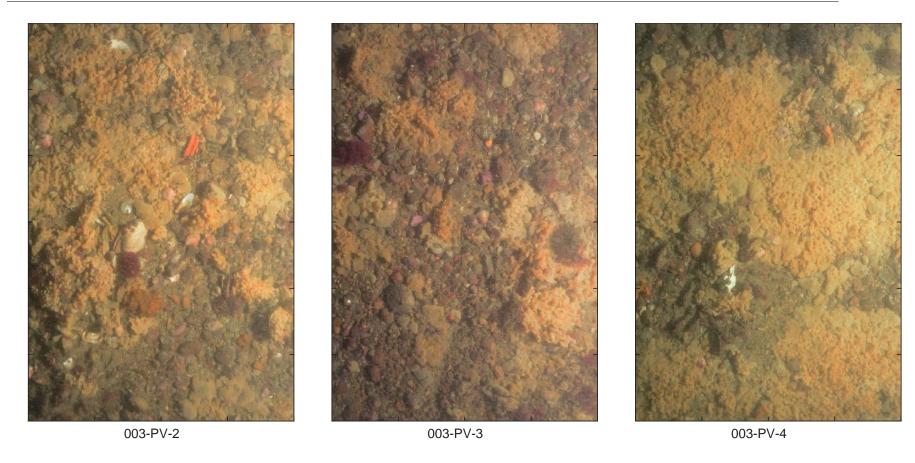
Appendix B2

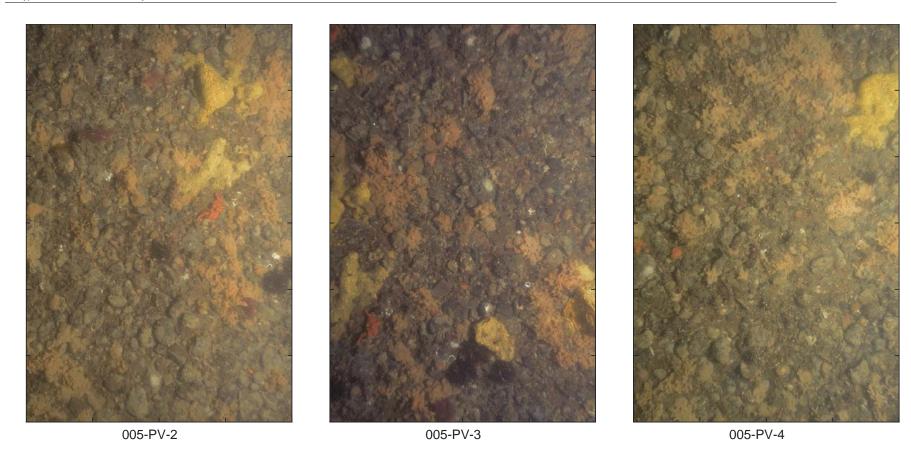
Plan View Images

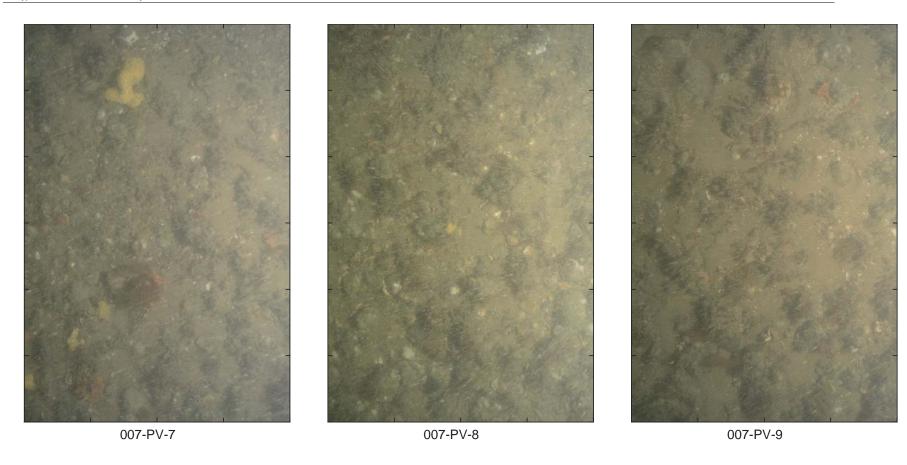
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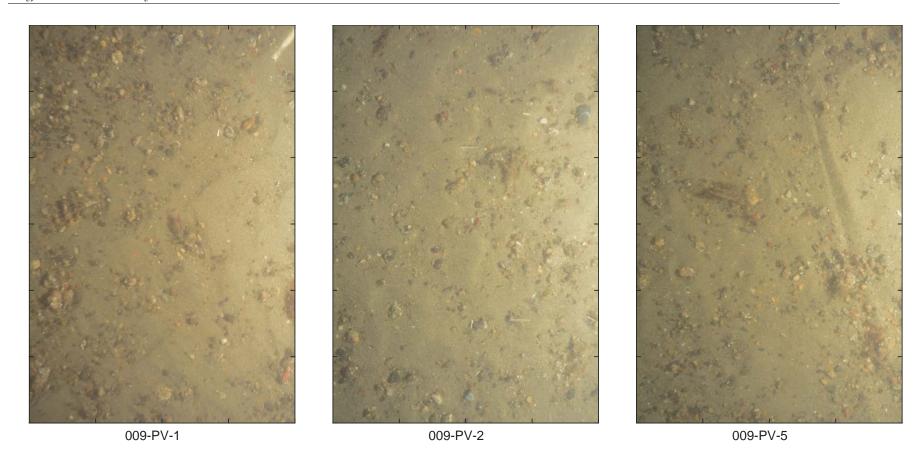


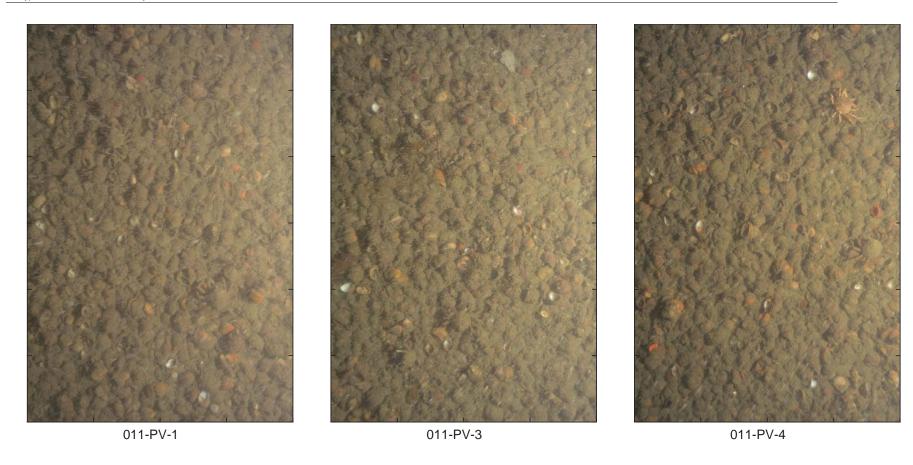


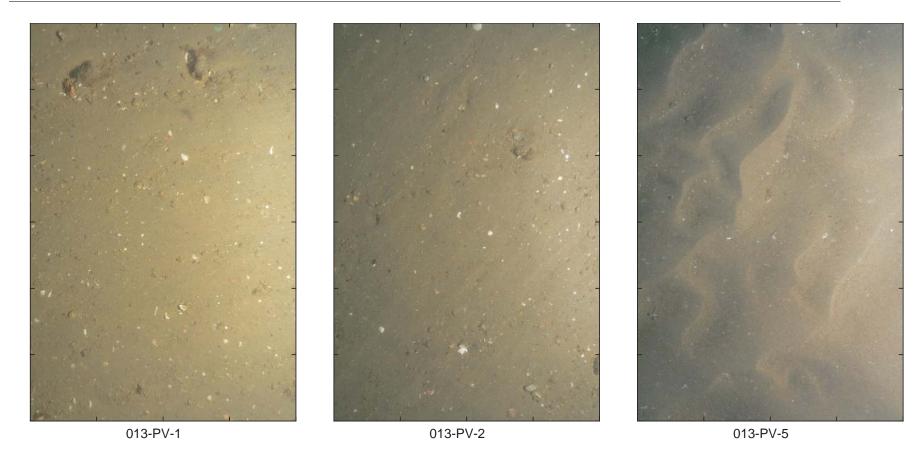


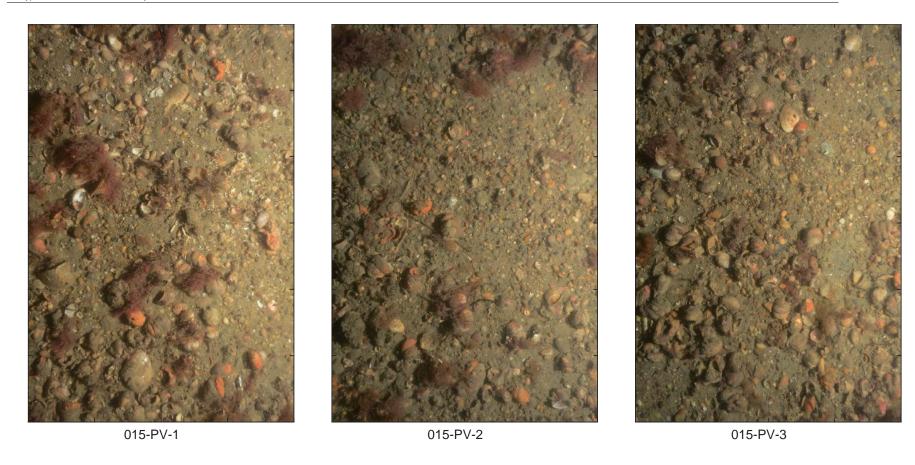


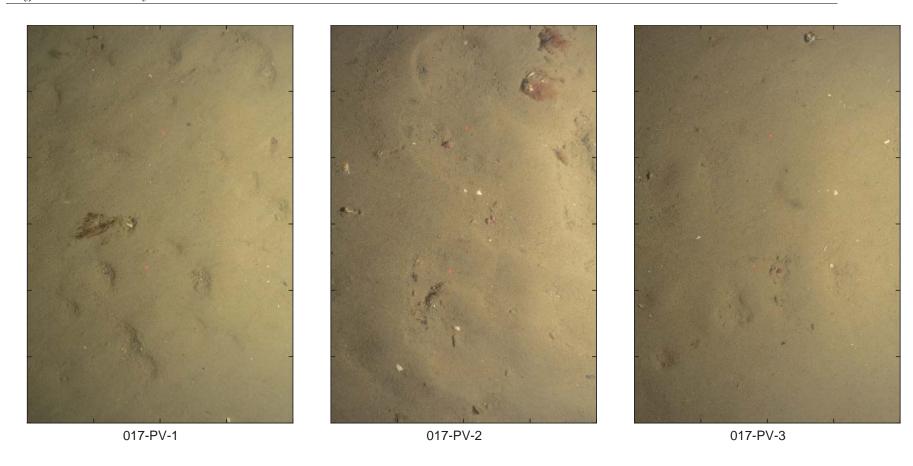






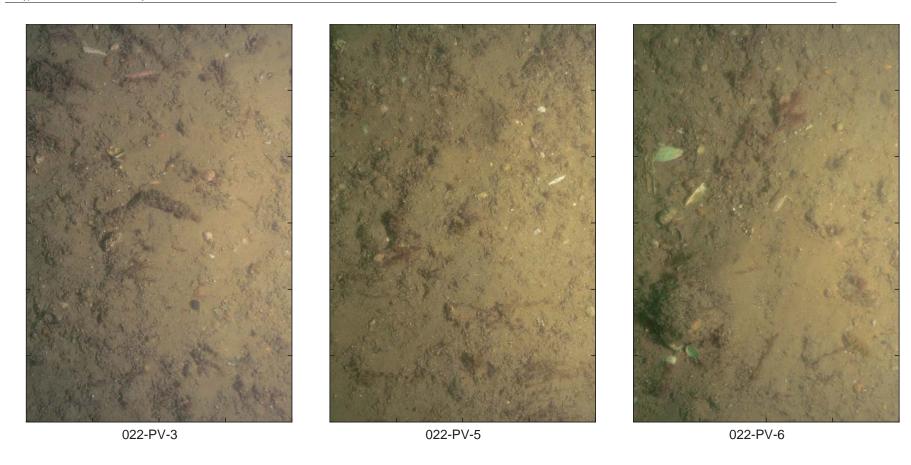


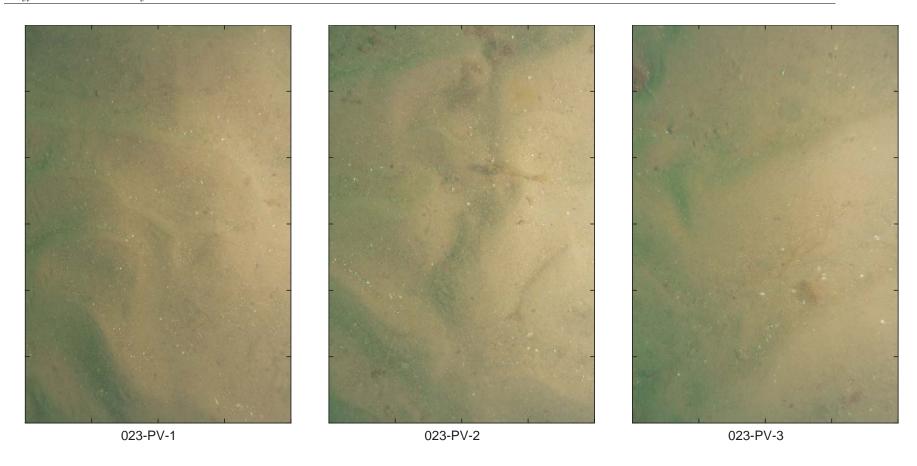


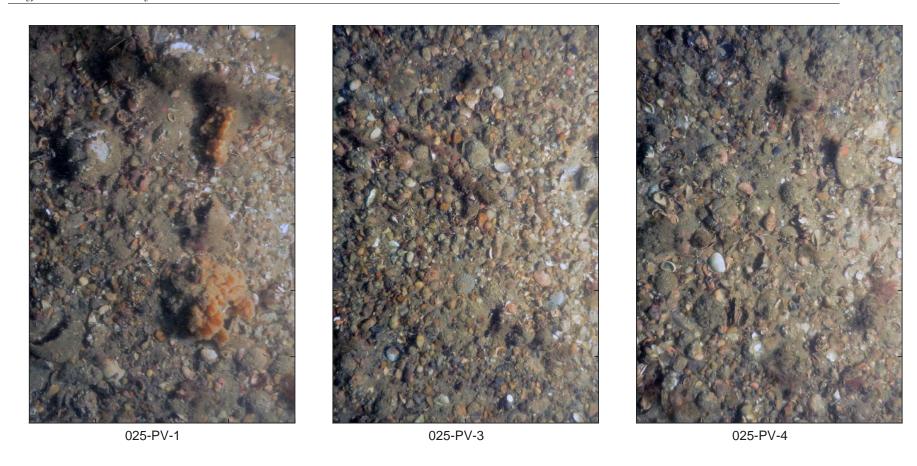


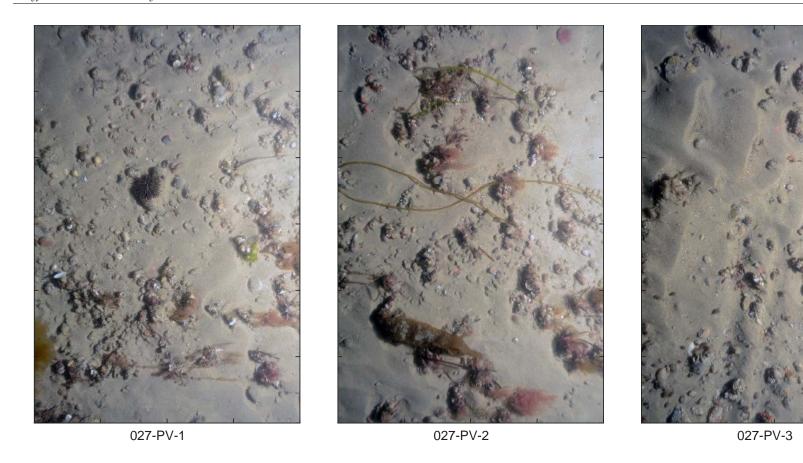


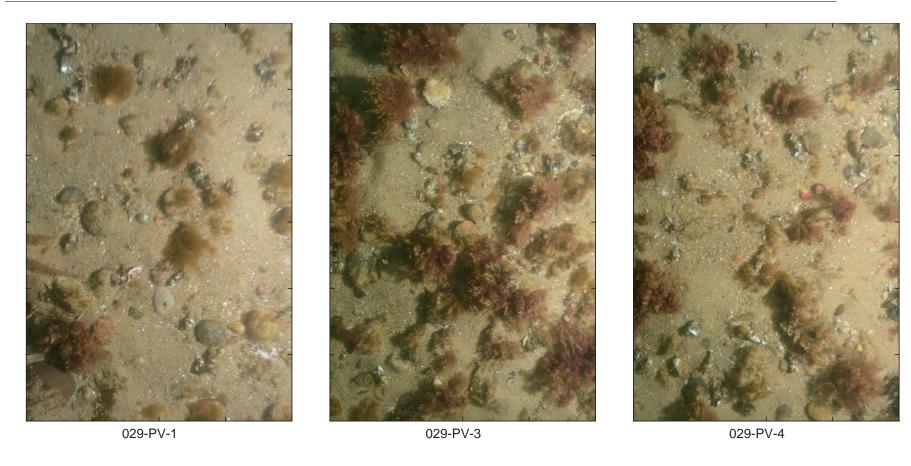


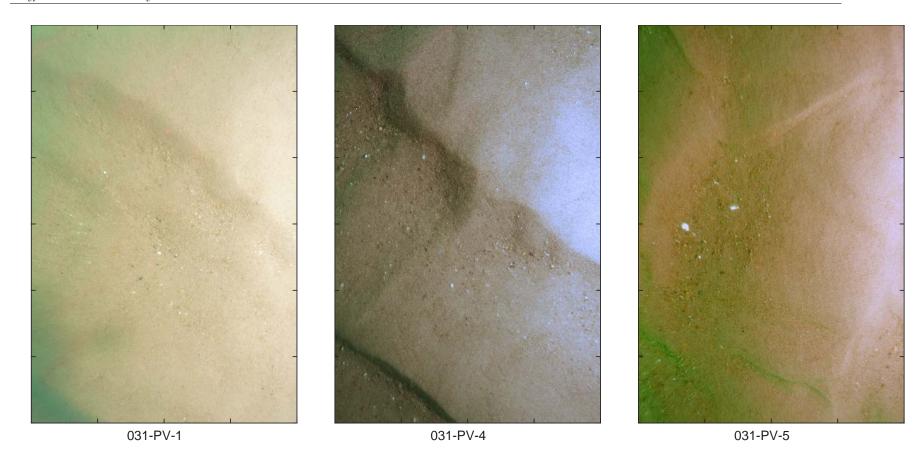


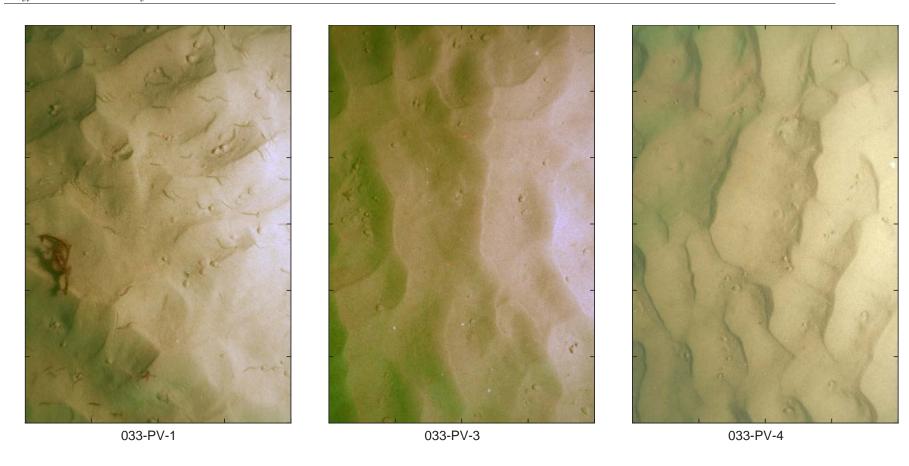


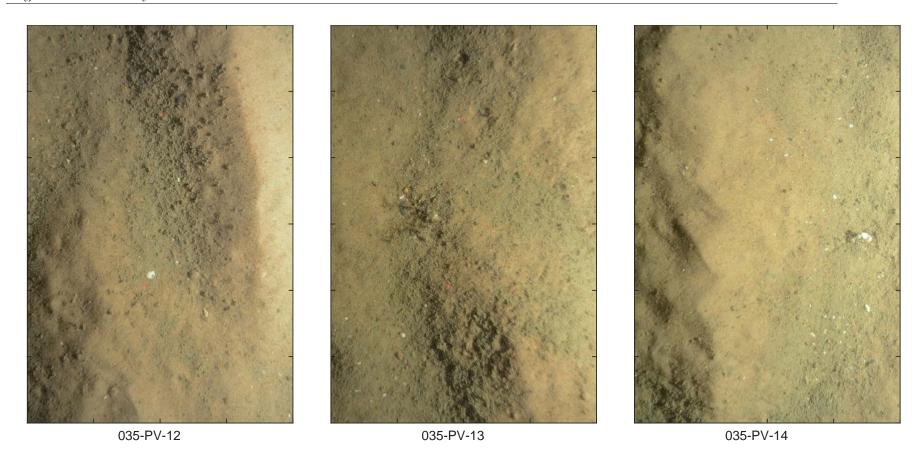


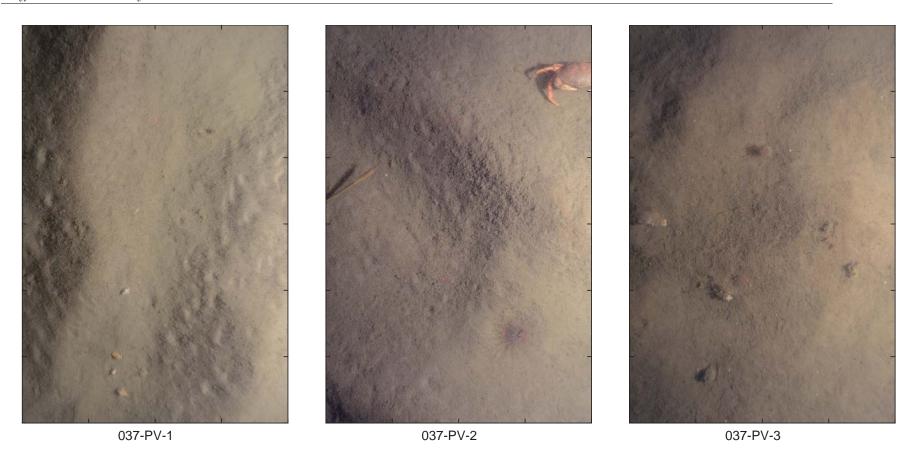


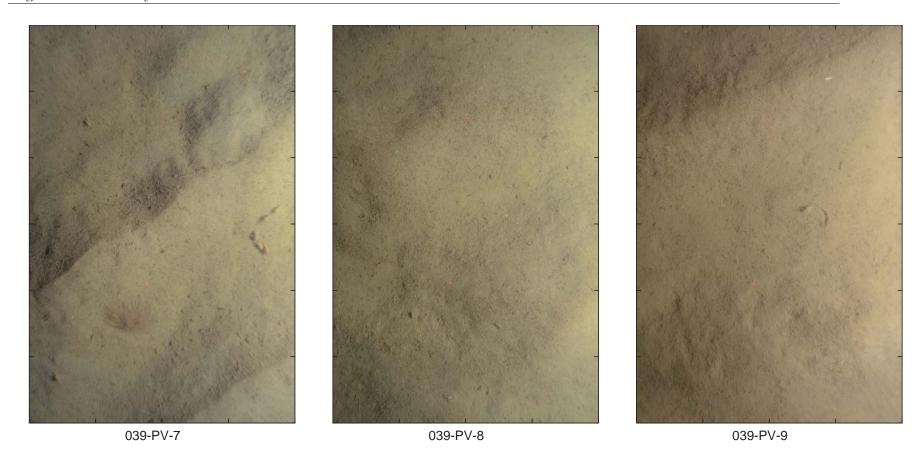


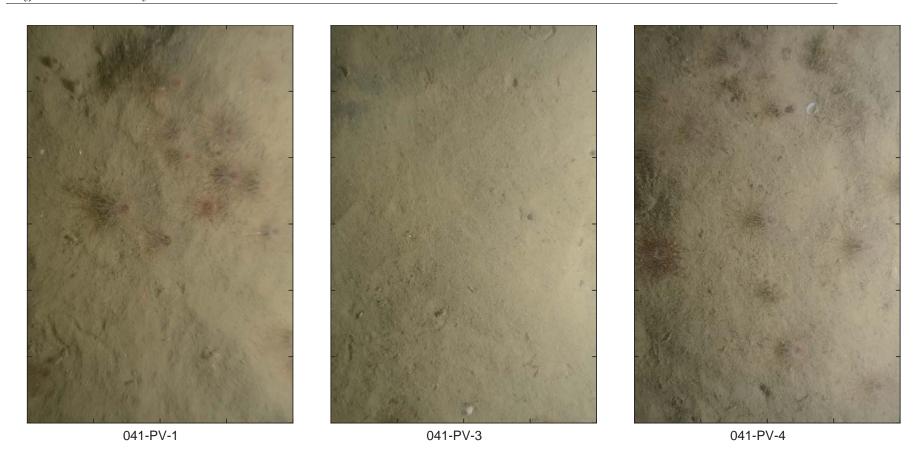


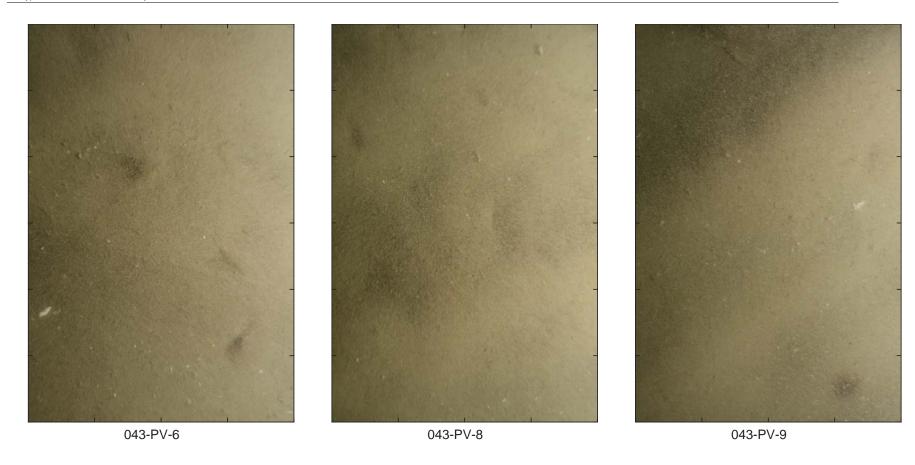


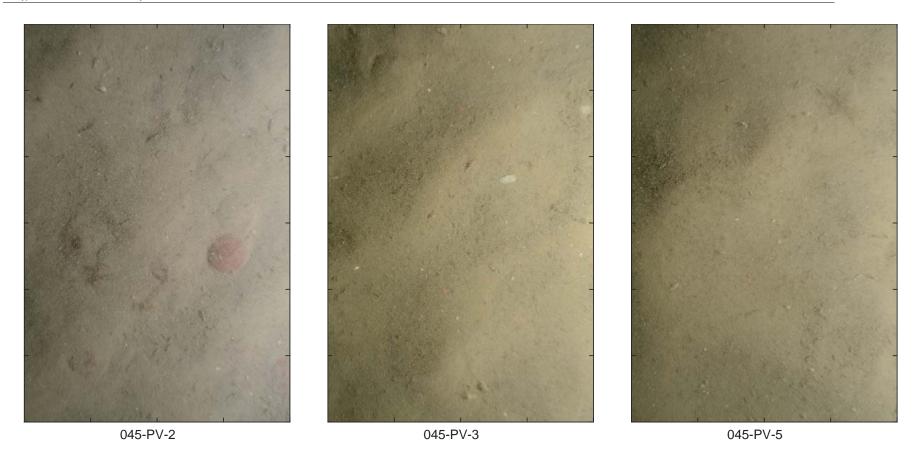


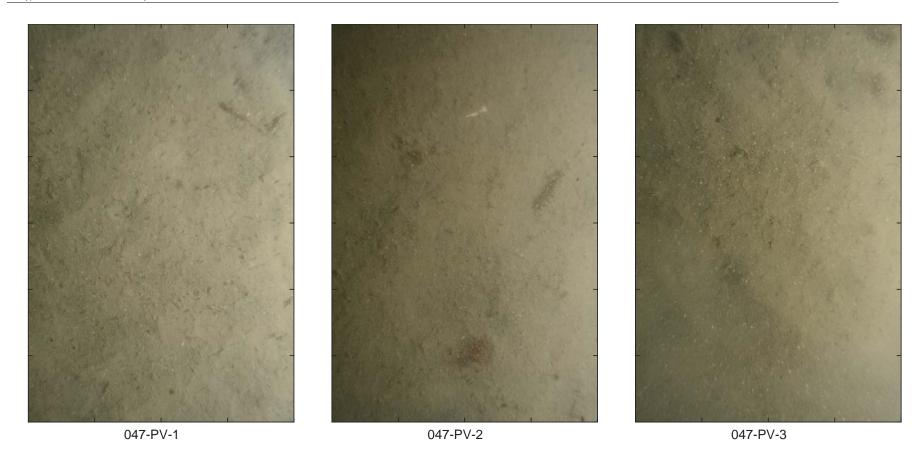


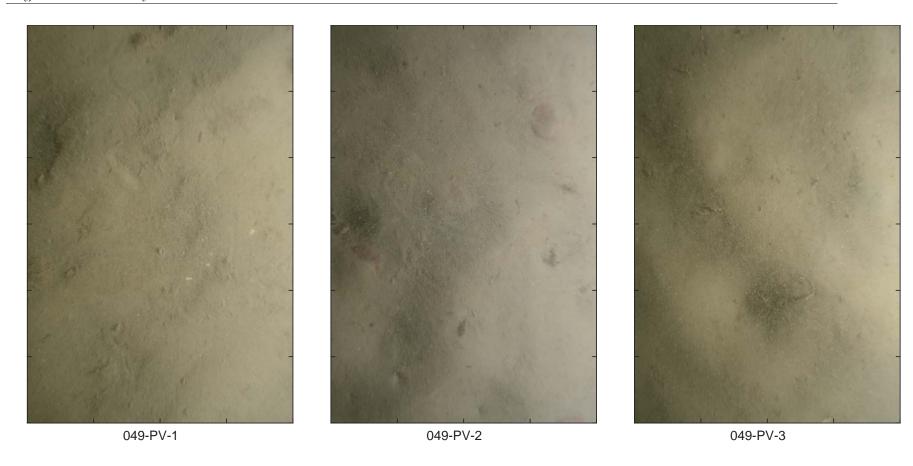


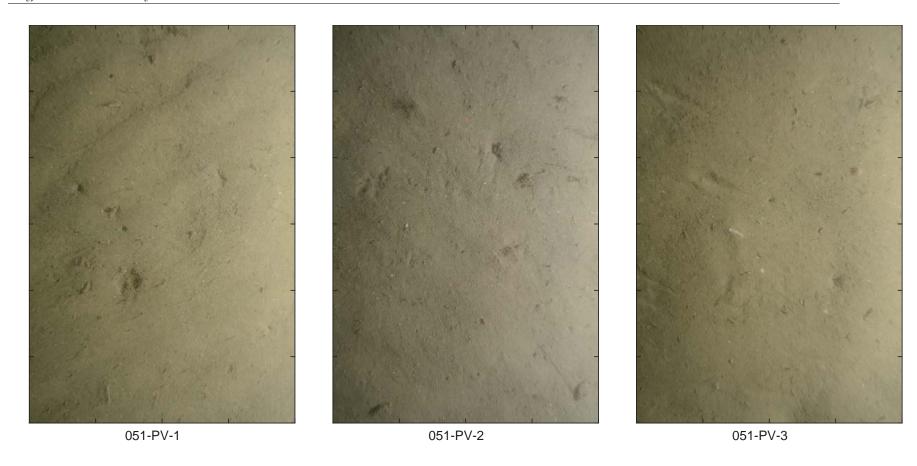






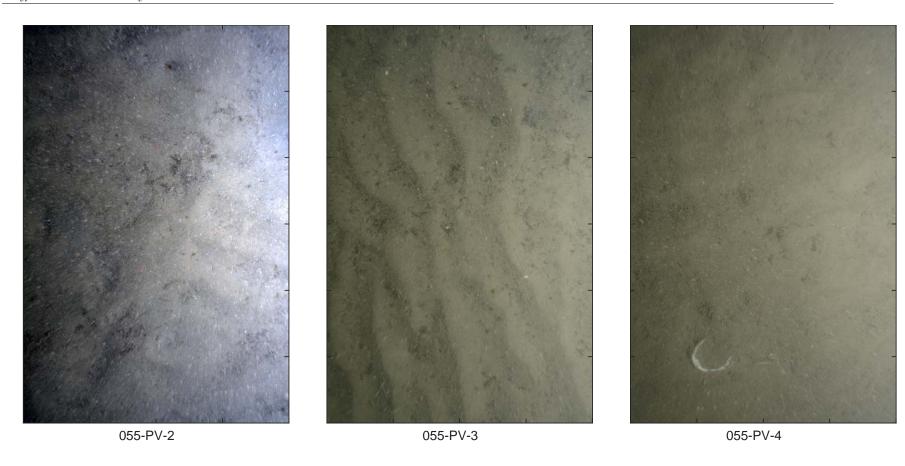


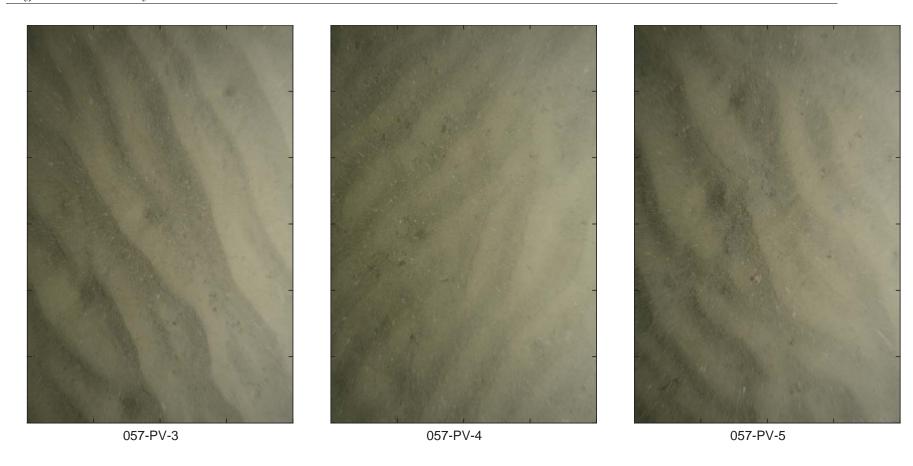


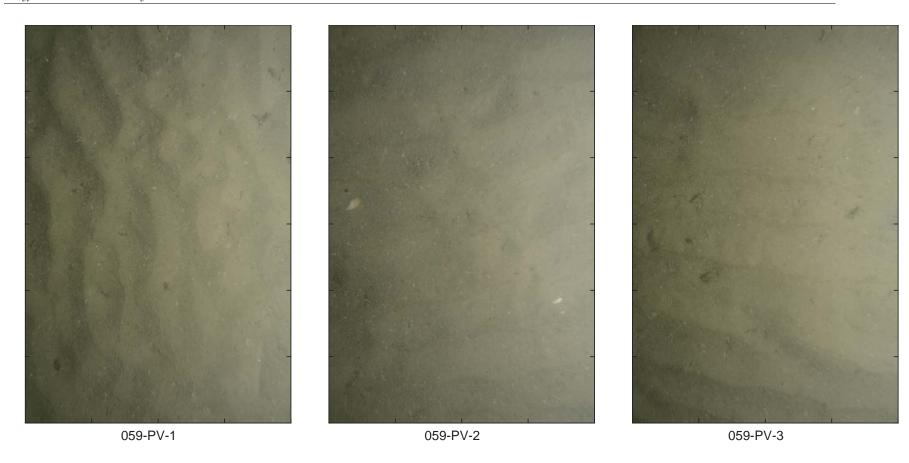


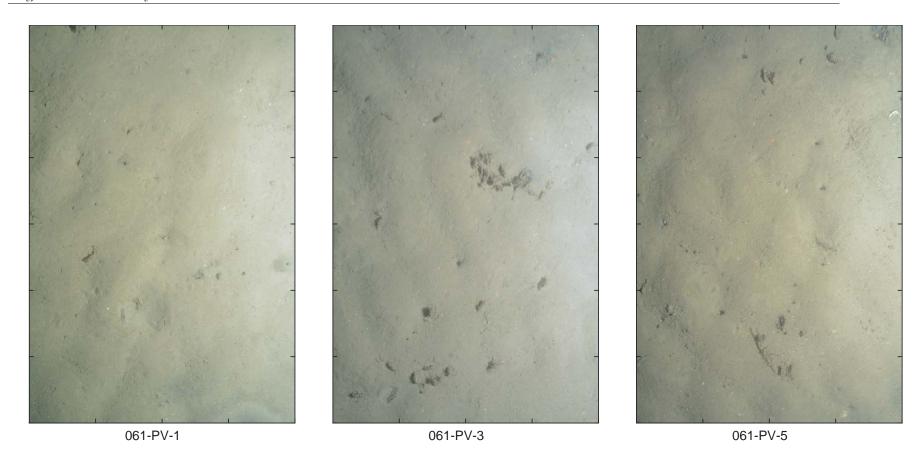








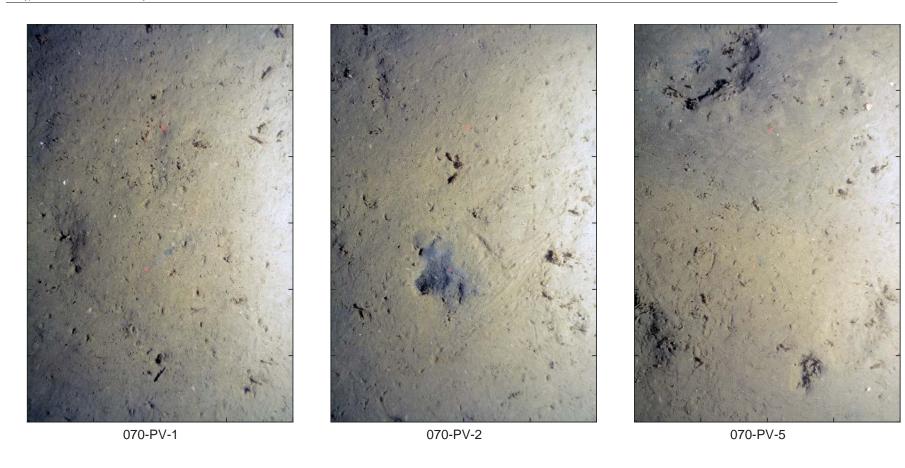


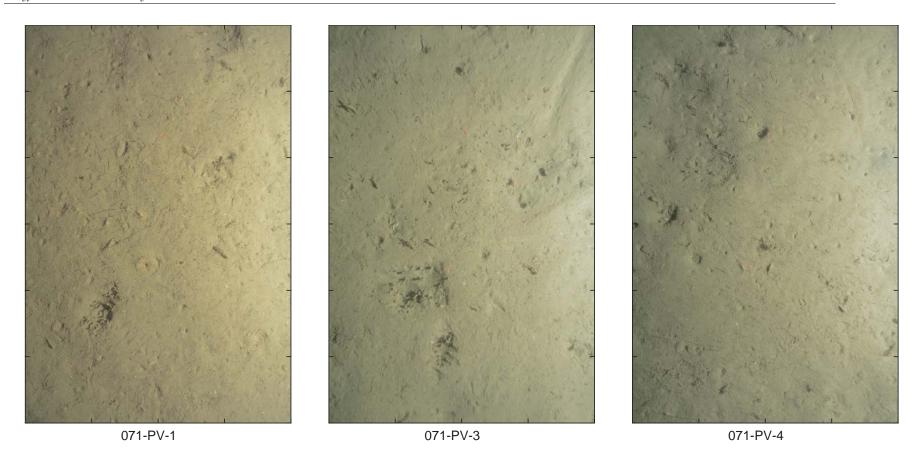




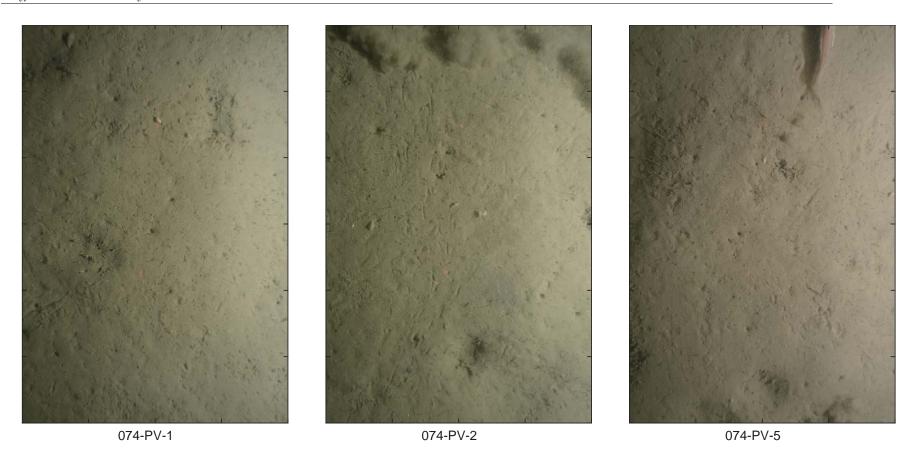


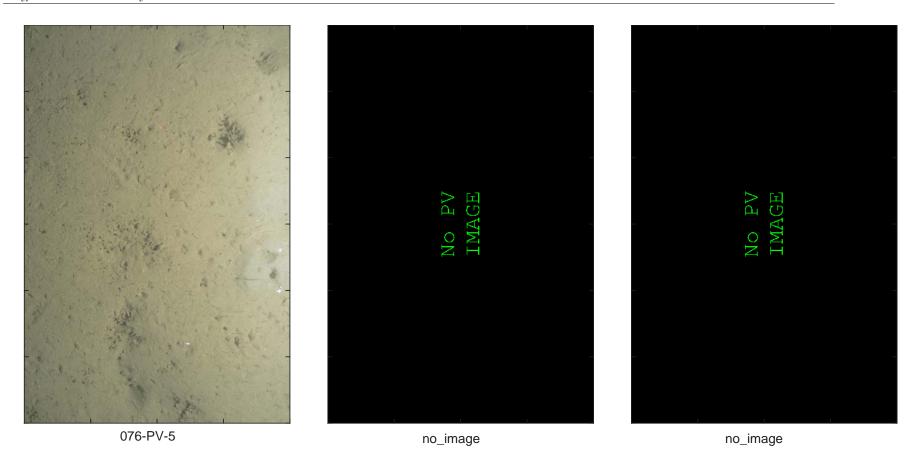




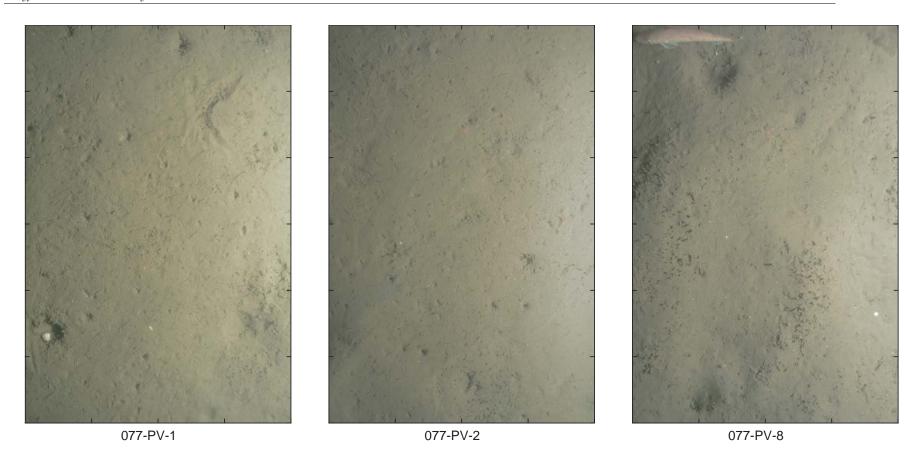








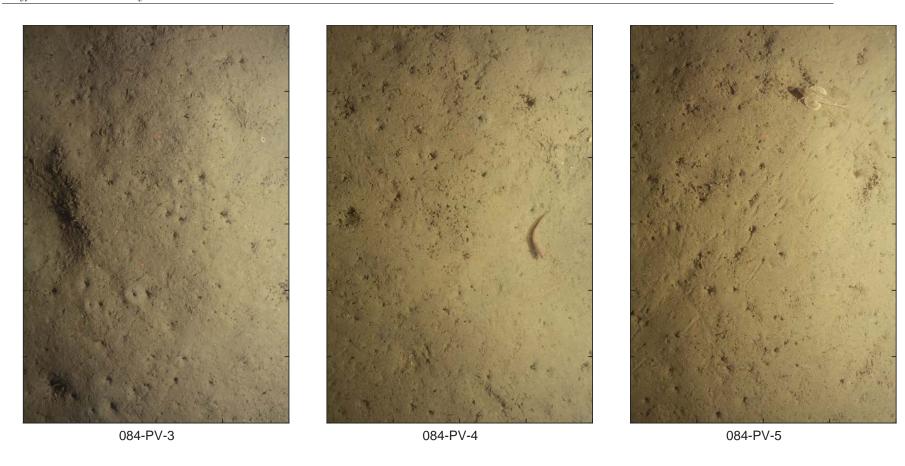
As noted in Section 2.1, at Station 76 only one PV image was acquired. At this location, the PV camera did not trigger on four of the five drops, and the missing replicate images were inadvertently not noticed during the at-sea image review.

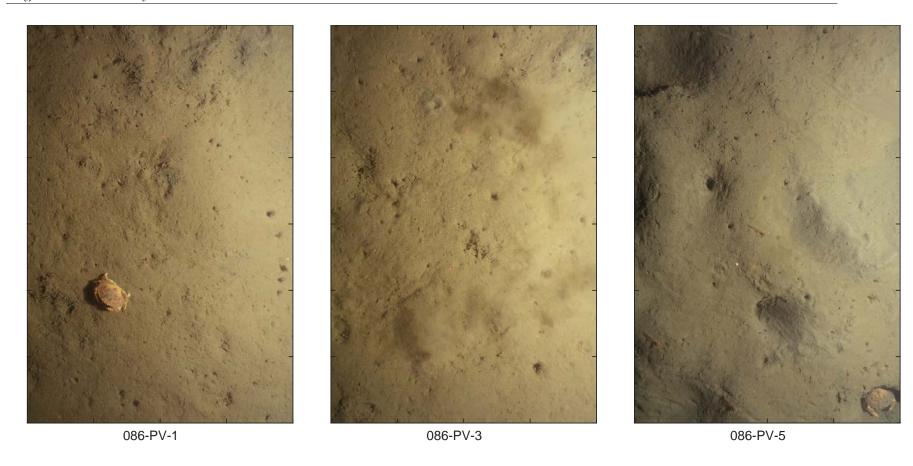






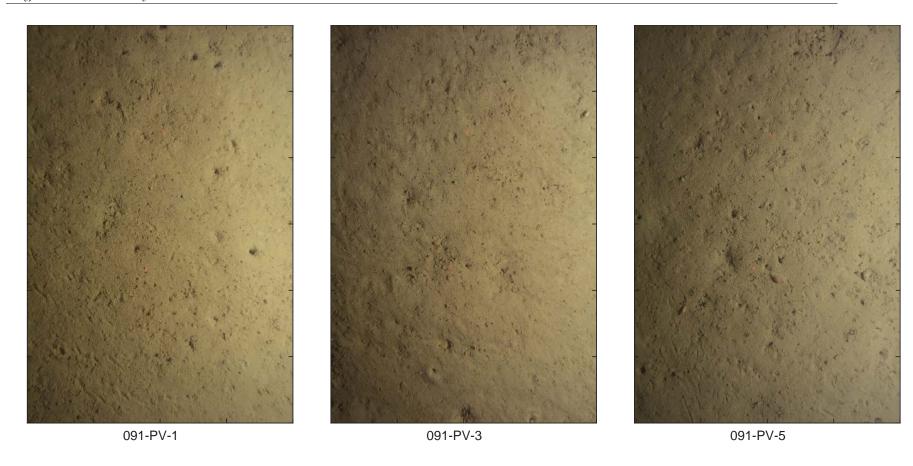




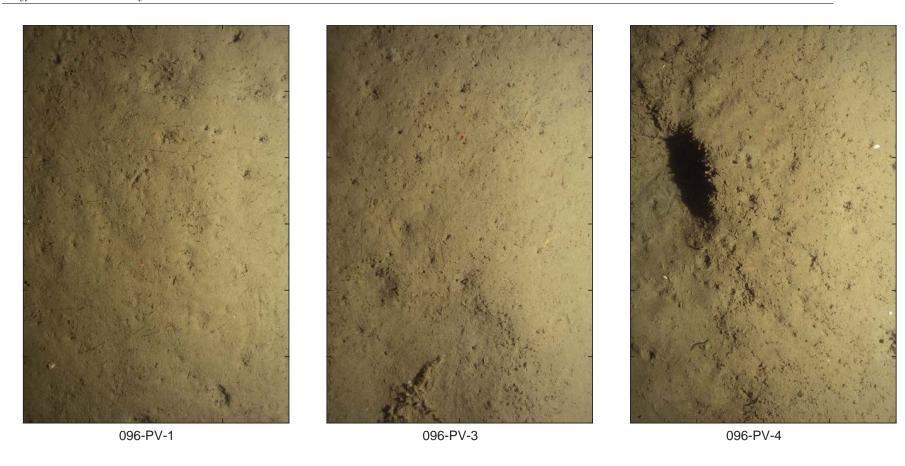




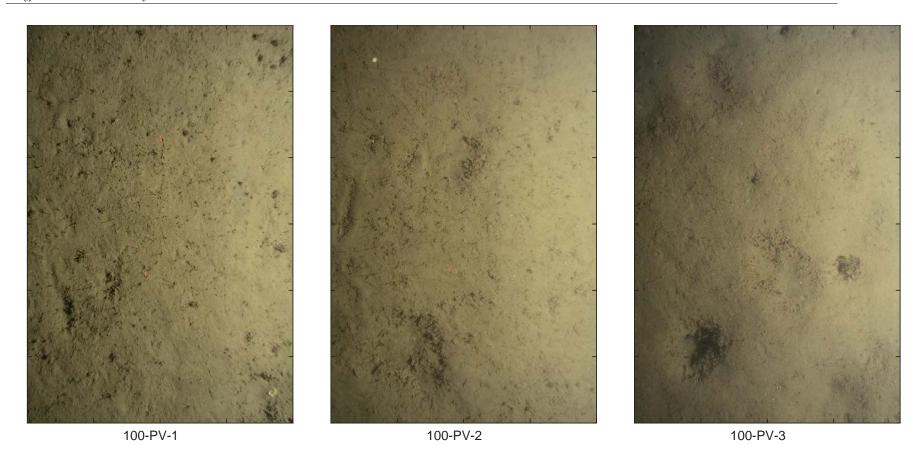




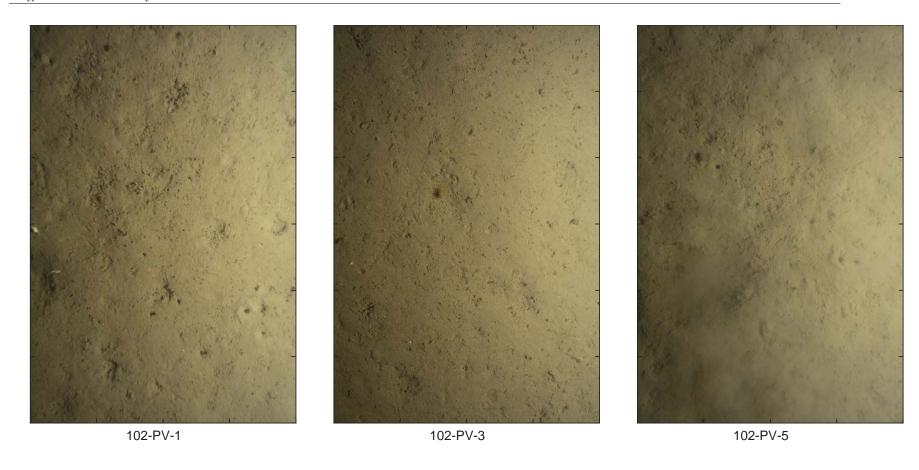


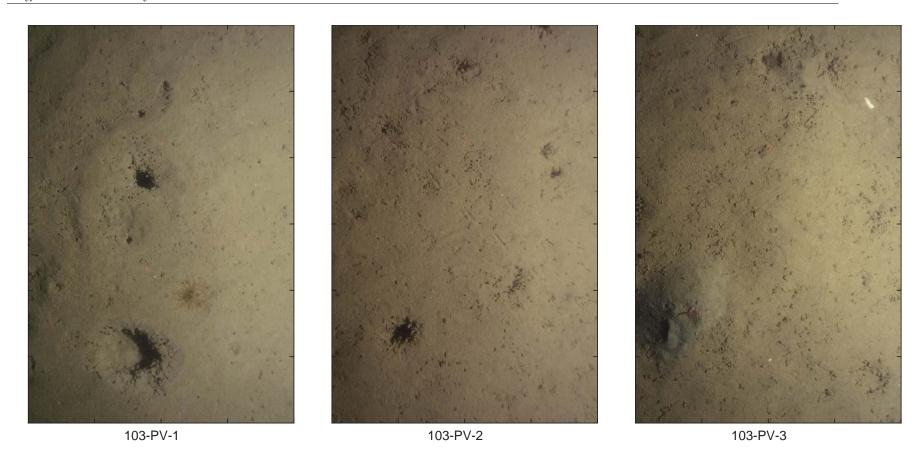


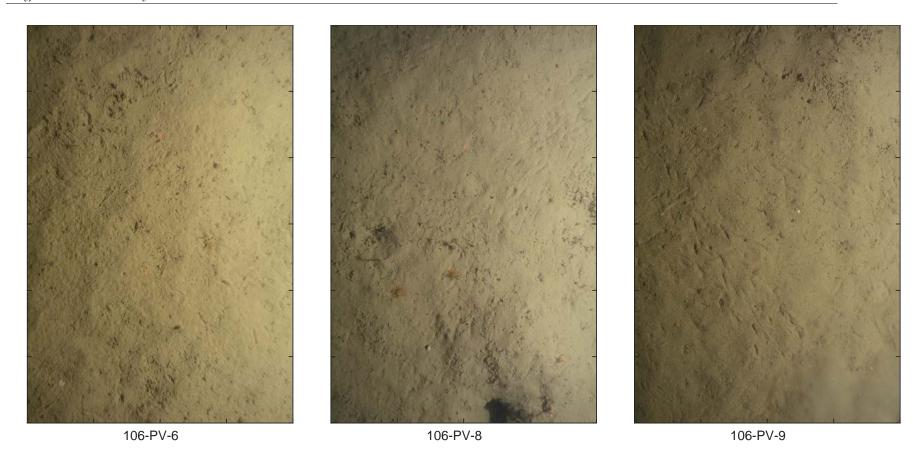


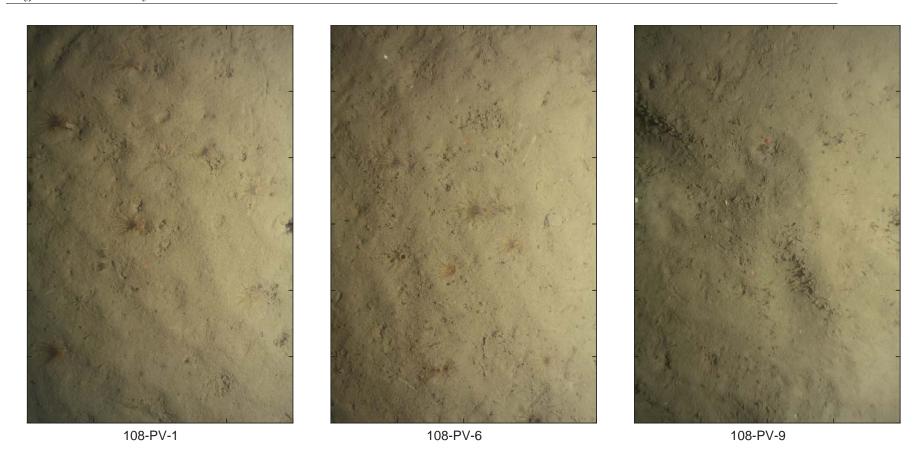






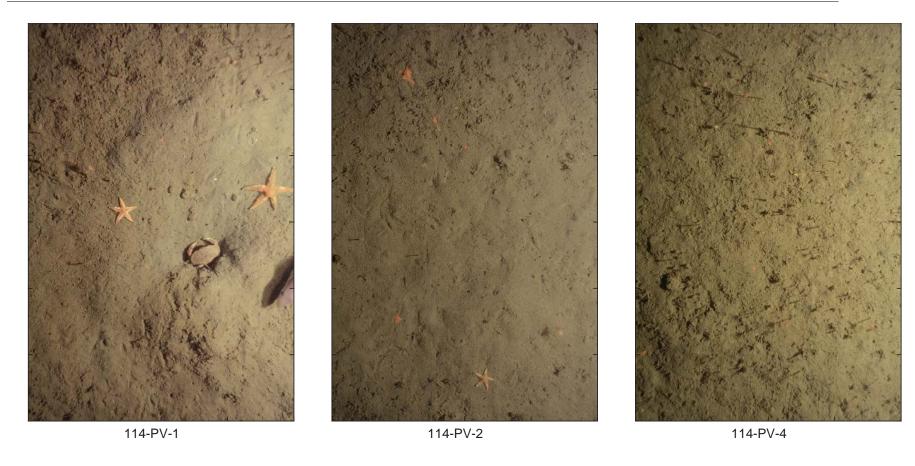


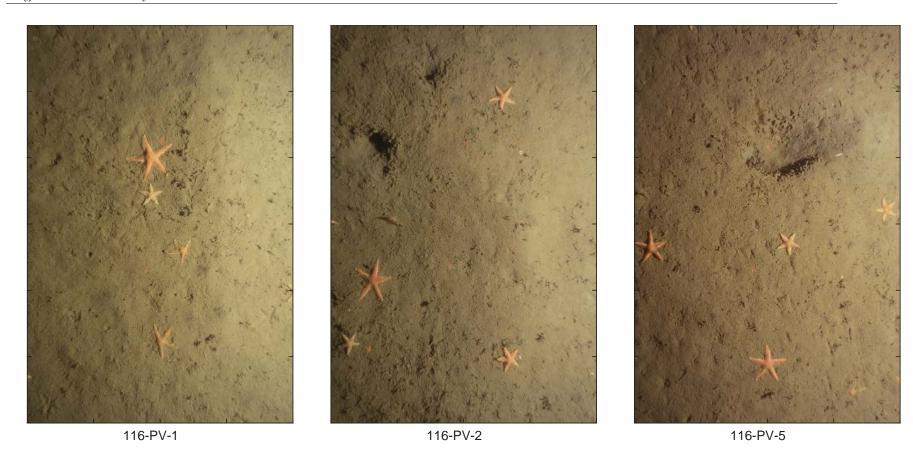






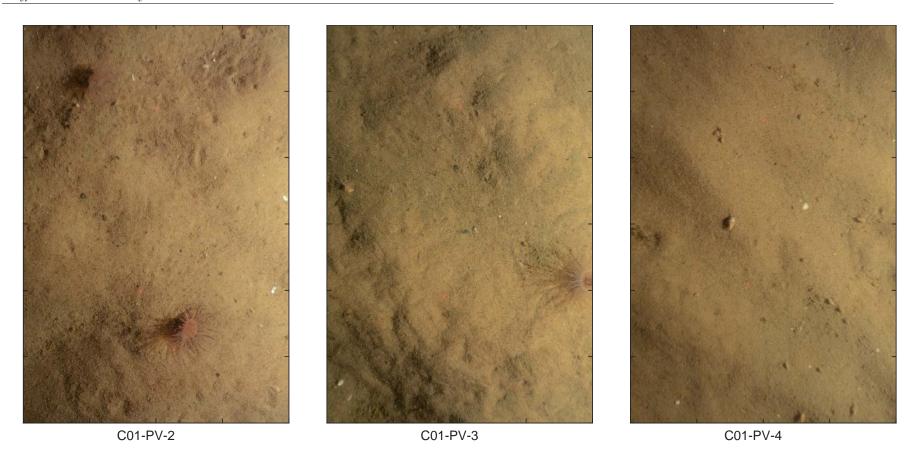


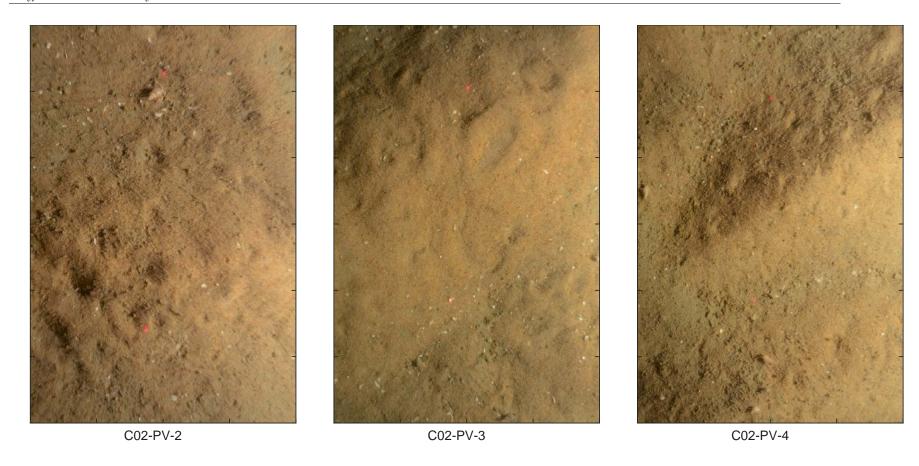




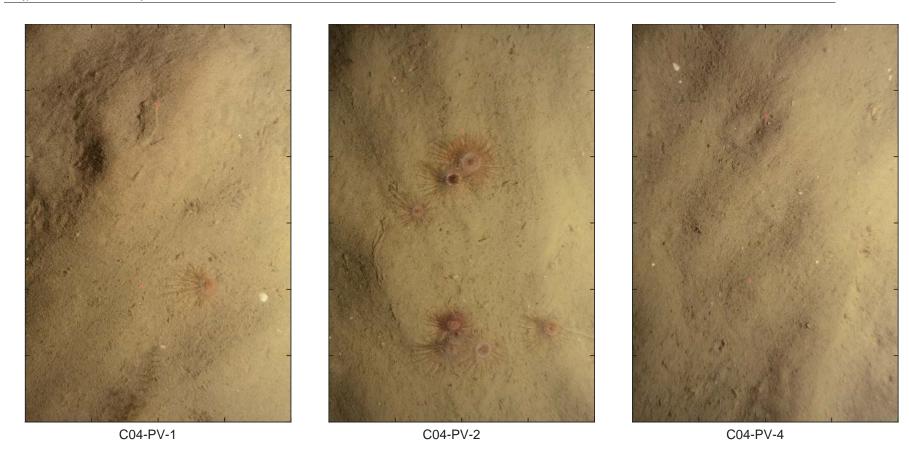


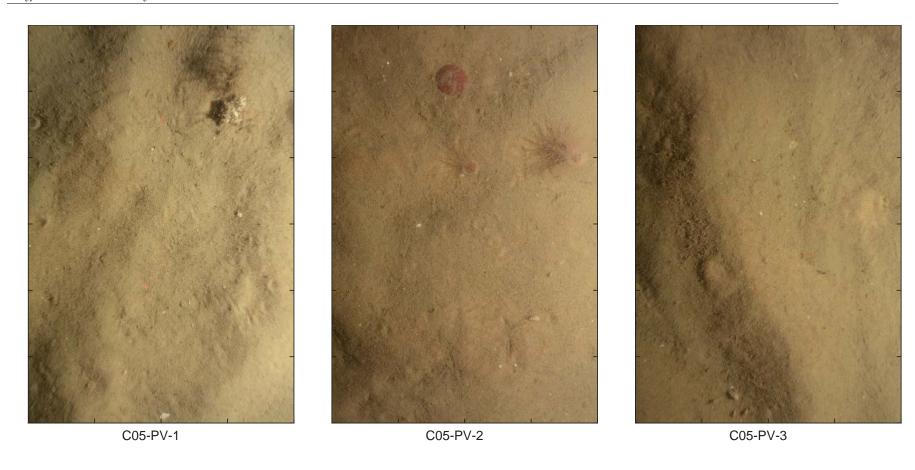


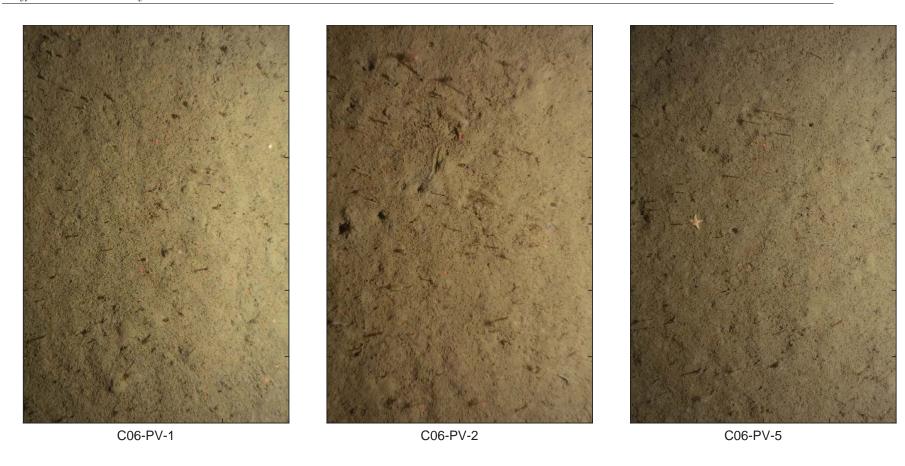


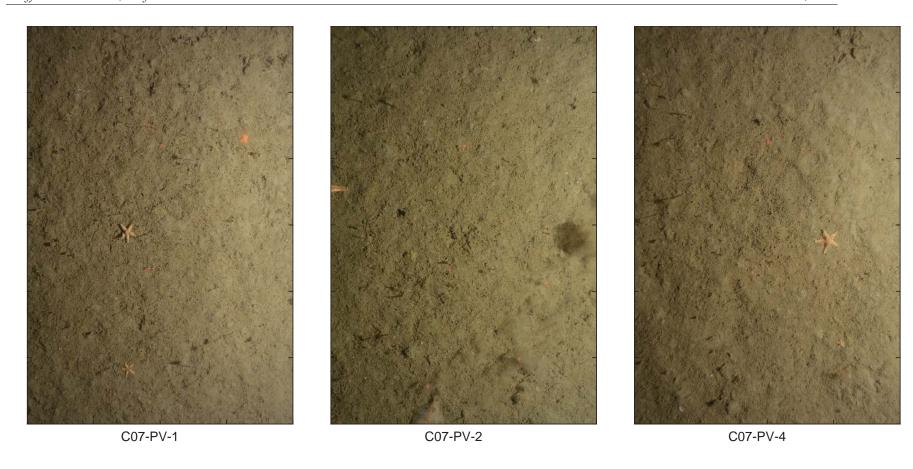




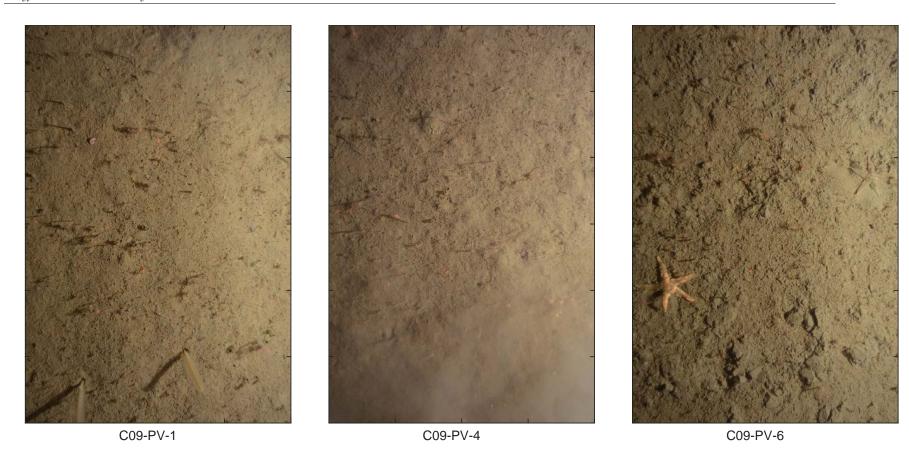






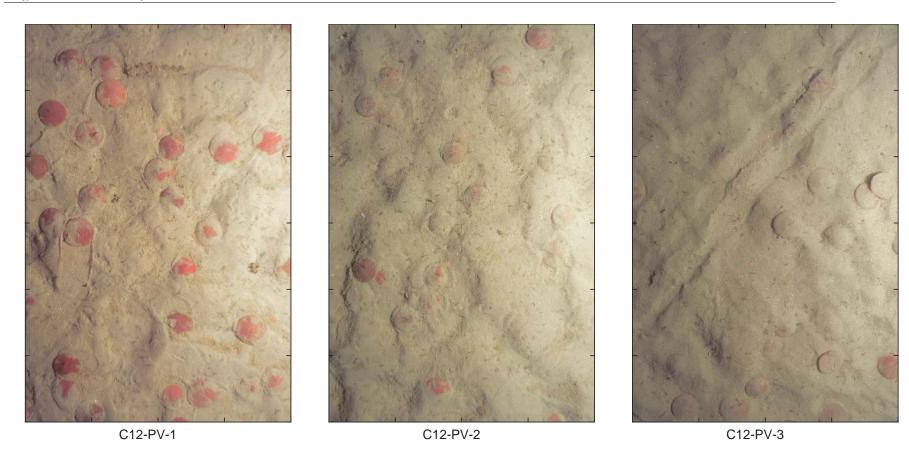


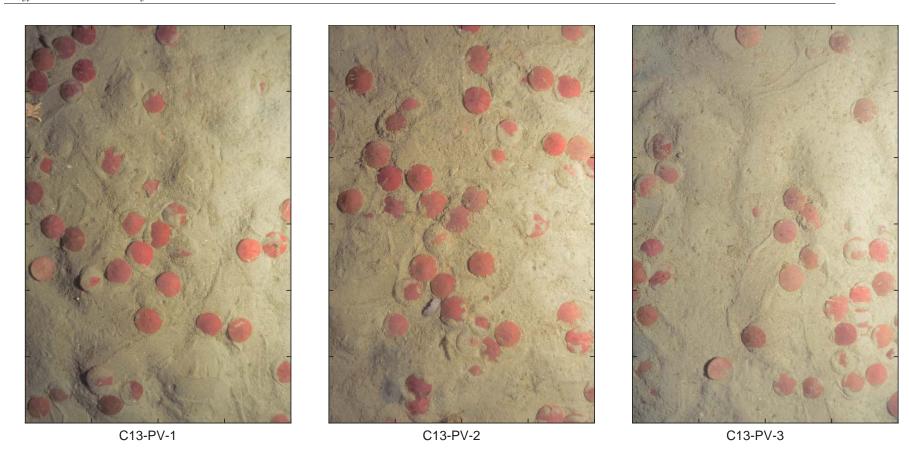


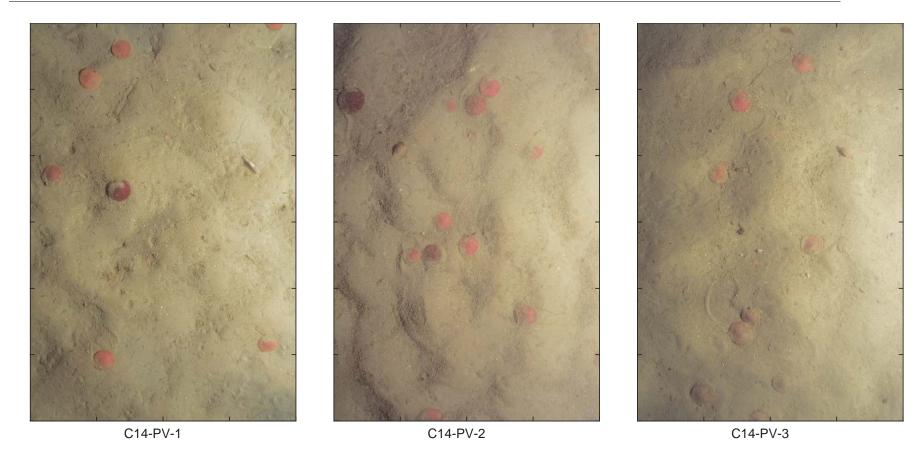


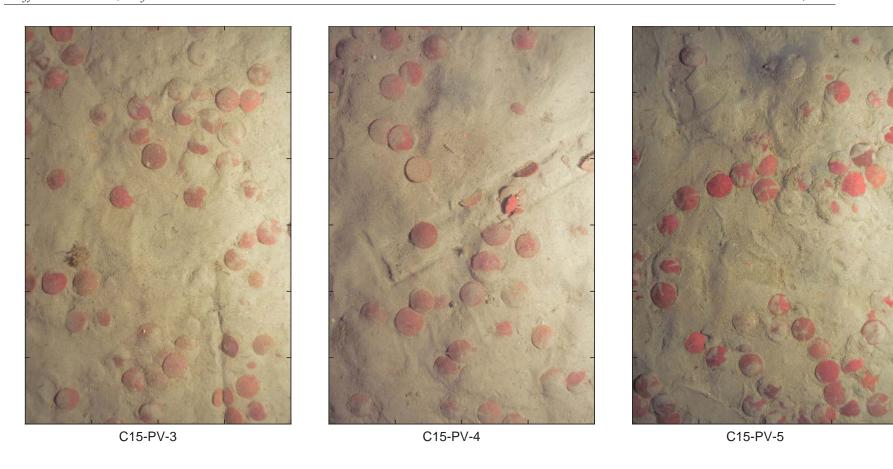


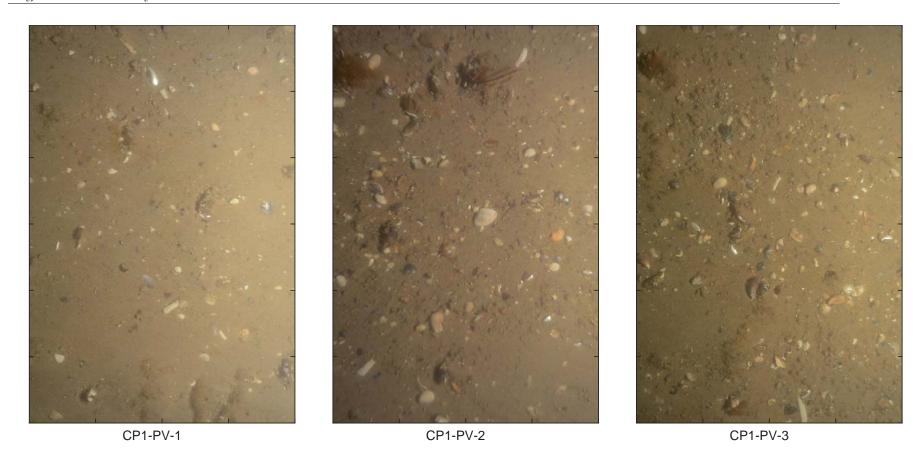


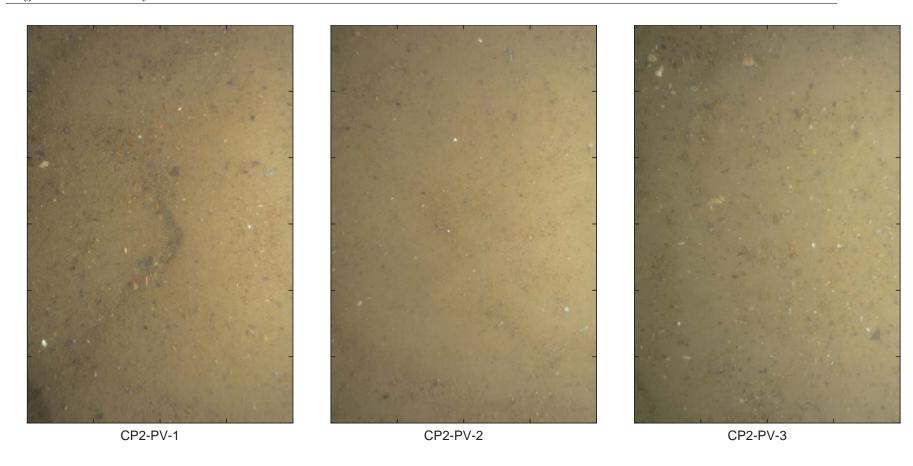












Appendix C

Sediment Profile Imaging and Plan View Data

- Appendix C1. SPI Data Set
- Appendix C2. PV Image Data Set

Appendix C1 SPI Data Set

Appendix C1: SPI Data Set Sediment Profile and Plan View Imaging Survey Mayflower Wind Farm, May 2020

				Boundary				Grain Size	Grain Size	Methane			Infaunal				
		Water Depth	Penetration	Roughness	Roughness	aRPD Depth	Grain Size Major Mode	Minimum	Maximum	Present?/		Epifauna Observed in SPI	Successional	Feeding S	Subsurface	Brittle Sta	r
tation ID	Replicate	(m)	Depth (cm)	(cm)	Origin	(cm)	(phi units)	(phi units)	(phi units)	# of Voids E	Beggiatoa	or PV	Stage	Void Count W	Vorm Count	Count	Comments
yflower Proposed	Export Cable	e Route (SPI/	PV Stations 00	01-059)													
SP-MW0521-001	3	10.5	1.9	0.7	Р	Ind	-2 to -3	3	-5	N	N	Hydroids or bryozoans,	Ind				Pebbles and fine sand mix.
SP-MW0521-001	5	10.6	2	2	Р	Ind	1-0	3	-5	N	N	brown algae Sponge, hydroids, algae	Ind				Pebbles on very coarse/coarse sand.
SP-MW0521-001	8	10.4	1.8	1.4	Р	Ind	2-1	3	-5	N	N	fragments Hydroids	Ind				Pebbles on coarse to medium sand.
SP-MW0521-002	5	23.2	9.8	1.2	Р	Ind	1-0/3-2	3	-1	N	N	None	Ind				Coarse sand (7 cm) over fine sand.
SP-MW0521-002	6	23.9	6.5	0.6	Р	Ind	1-0	3	-1	N	N	None	Ind				Coarse sand and shell hash.
SP-MW0521-002	7	23.7	9.7	0.9	Р	Ind	1-0	3	-1	N	N	None	Ind				Rippled coarse to medium sand.
SP-MW0521-003	2	17.5	2.1	1.5	Р	Ind	2-1	3	-5	N	N	Sponges, hydroids	Ind				Fine to coarse pebbles on medium sand.
SP-MW0521-003	3	17.7	3.3	1.8	Р	Ind	2-1	3	-5	N	N	Sponges, red algae	Ind				Fine to coarse pebbles on medium sand.
SP-MW0521-003	4	17.8	1.6	1.8	Р	Ind	2-1	3	-5	N	N	Sponges, chitons	Ind				Pebbles on medium sand.
SP-MW0521-005	2	27.0	0.8	0.9	Р	Ind	-4 to -5	0	-6	N	N	Sponges, hydroids, hard tube worms	Ind				Pebble to cobble bottom; minimal penetration.
SP-MW0521-005	3	26.8	1.4	1.8	Р	Ind	-3 to -4	3	-5	N	N	Sponges	Ind				Pebbles on sand; minimal penetration.
SP-MW0521-005	4	26.9	1.1	1.3	Р	Ind	- 2 to -3	2	-6	N	N	Sponges, hydroids	Ind				Coarse pebbles on coarse sand.
SP-MW0521-007	3	25.5	0	Ind	Ind	Ind	Ind	Ind	Ind	Ind	Ind	hydroids, bryozoans	Ind				Pebbles, cobbles; no penetration.
SP-MW0521-007	7	24.8	0	Ind	Ind	Ind	Ind	Ind	Ind	Ind	Ind	hydroids/bryozoans, gastropods	Ind				Pebbles, cobbles; no penetration.
SP-MW0521-007	8	25.3	0	Ind	Ind	Ind	Ind	Ind	Ind	Ind	Ind	hydroids, bryozoans, crabs	Ind				Pebbles, cobbles; no penetration.
SP-MW0521-009	1	20.2	6.5	0.7	Р	1.9	2-1	>4	-5	N	N	Hydroids	2			1	Macoma @ 3 cm; coarse sand grading to fine sand with depth. Scattered pebbles on surface.
SP-MW0521-009	2	21.9	5.1	0.9	Р	1.8	2-1	>4	-5	N	N	Hydroids, barnacle- encrusted pebble	Ind				Scattered pebbles on coarse to fine sand.
SP-MW0521-009	5	22.2	9	2.9	Р	7.5	2-1	>4	-5	N	N	Hydroids	2				Sand over reduced mud; physical aRPD depth defined by 7 cm sand layer
SP-MW0521-011	1	16.7	10.1	3.7	В	2.4	>4	>4	2	Y/2	N	Crepidula (slipper shells) cover the surface	3	3	1		Crepidula carpet over mud; roughness and aRPD are estimates due to shells pushed down by prism. Epifauna on shells; methane in mud shear
SP-MW0521-011	3	19.2	14.2	2.2	В	Ind	>4	>4	2	Y/3	N	Crepidula	3	2			cracks. Numerous fecal pellets at SWI. aRPD = Ind due to disturbance by prism; Crepidula covered surface;
SP-MW0521-011	4	17.8	11.3	4.6	В	0.9	>4	>4	3	Y/5	N	Crepidula	1				epifauna on shells; small methane pockets. Crepidula over mud; methane; aRPD and roughness estimate due to disturbance.
SP-MW0521-013	1	20.5	4.5	0.3	Р	1.2	3-2	>4	1	N	N	None	Ind				Well-sorted fine to medium sand; thin, subsurface, reduced layer defines aRPD; possible stage 2 but penetration minimal.
SP-MW0521-013	2	20.4	4.6	0.7	Р	1.1	3-2	4	0	N	N	Hydroids	Ind				Fine sand with shell lag; PV image shows rippled sands.
SP-MW0521-013	5	20.0	5.2	1.7	P	Ind	2-1	3	0	N	N	None	Ind				Well-sorted, rippled medium sand, prism transected ripple crest.
SP-MW0521-015	1	23.2	3.1	0.6	P	Ind	3-2	>4	P	N	N	Red algae	Ind		1		Pebbles, shell on fine sand.
SP-MW0521-015	2	23.2	2.1	0.6	Р	Ind	3-2	>4	Р	N	N	Red algae, hydroids in PV	Ind				Pebbles, shell on medium to fine sand.
SP-MW0521-015	3	23.2	1.8	1.8	Р	Ind	3-2	>4	Р	N	n	Algae, bryozoa, slipper	Ind				Pebbles, slipper shells, bryozoa, algae on medium to fine sand.
												shells					·
SP-MW0521-017	1	23.7	6.9	0.8	P	Ind	3-2	4	1	N	N	Hermit crab	Ind				Well-sorted fine to medium sand.
SP-MW0521-017	2	23.7	6.4	1.2	Р	Ind	3-2	4	0	N	N	None	Ind				Well-sorted, rippled fine sand.
SP-MW0521-017	3	23.7	5.6	0.7	Р	Ind	3-2	4	1	N	N	None	Ind				Very well-sorted fine sand.
SP-MW0521-019	3	21.9	7.6	1.2	Р	2.4	3-2	>4	1	N	N	Hermit crabs	2				Well-sorted fine sand, organic input.
SP-MW0521-019	4	21.9	5.9	0.6	Р	1.6	3-2	>4	0	N	N	Crab carapace	2				Fine and very fine sand; some organics.
SP-MW0521-019	5	21.8	5.9	0.9	Р	1.3	3-2	>4	0	N	N	Algae, hermit crab, gastropods in PV	2				Fine sand with reduced fines bands.
SP-MW0521-021	1	17.8	2.9	1.1	Р	Ind	3-2	4	1	N	N	Hydroids	Ind			<u>-</u>	Shell and pebbles on fine sand.
SP-MW0521-021	2	17.9	3.6	1.6	Р	Ind	3-2	4	1	N	N	None	Ind				Shell hash on fine to medium sand.
SP-MW0521-021	4	18.2	2.1	3.4	Р	Ind	3-2	4	1	N	N	Hydroids	Ind				Shell hash on fine sand.
SP-MW0521-022	3	17.1	3.5	1.2	Р	Ind	3-2	4	1	N	N	Hydroids, algae	Ind				Diopatra; shell, algae on fine sand.
SP-MW0521-022	5	17.2	1.8	1.1	Р	Ind	3-2	4	1	N	N	Hydroids, algae	Ind				Fine shell hash on sand. Possible, large worm tube at SWI.
0SP-MW0521-022	6	17.2	2.1	1.8	Р	Ind	3-2	4	1	N	N	Hydroids, algae	Ind				Fine shell hash on fine sand; aRPD = Ind, but appears to be just below penetration depth.

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Appendix C1: SPI Data Set Sediment Profile and Plan View Imaging Survey Mayflower Wind Farm, May 2020

SPI Image Analysis R	esuits, iviayilo	wei Suivey, it	lay 2020													
		Water Depth	Donotration	Boundary	Poughnoss	aRPD Depth	Crain Siza Major Mada	Grain Size	Grain Size			Epifauna Observed in SPI	Infaunal	Fooding Subourf	Drittle Ct	
Station ID	Replicate	(m)	Penetration Depth (cm)	Roughness (cm)	Roughness Origin	(cm)	Grain Size Major Mode (phi units)	Minimum (phi units)	Maximum (phi units)	Present?/ # of Voids	Beggiato	·	Stage	Feeding Subsurf Void Count Worm C		
	- Trophodio	. ,			P				(ртп аттьо)		33	-		Volu Count Wollin C	- Count	
0SP-MW0521-023	1	12.3	6.1	5.7	P	Ind	3-2	0	1	N	N	None	Ind			Rippled sand.
0SP-MW0521-023	2	12.8	5	2.6	P	Ind	3-2	4	1	IN N	N	None	Ind			Rippled sand with fine shell hash.
0SP-MW0521-023	3	12.9	3.8	3	<u> </u>	Ind	3-2	4	1	N N	N N	None	Ind			Rippled sand with fine shell hash.
0SP-MW0521-025	1	17.1	0.8	0.8	P -	Ind	-3 to -4	3	-5	N	N	Gastropod; hydroids	Ind			Pebbles, shell hash on sand.
20SP-MW0521-025	3	16.9	1.8	1.5	Р	Ind	-3 to -4	3	-6	N	N	Hermit crabs; hydroids	Ind			Large pebbles, shell hash on sand.
0SP-MW0521-025	4	17.0	1.1	0.7	Р	Ind	-3 to -4	3	-5	N	N	Hydroids, barnacles	Ind			Pebbles, shells on sand.
0SP-MW0521-027	1	12	2.7	1.5	Р	Ind	3-2	4	-4	N	N	Gastropod, algae	Ind			Pebbles, algae on sand.
20SP-MW0521-027	2	12	2.5	0.9	Р	Ind	3-2	3	-5	N	N	Algae	Ind			Pebbles, shell on sand; biogenic sand clumps at SWI.
0SP-MW0521-027	3	12	1.2	1.5	P	Ind	3-2	4	-5	N	N	None	Ind			Rippled fine sand with pebbles.
0SP-MW0521-029	1	7	0	Ind	Ind	Ind	Ind	Ind	Ind	Ind	Ind	Algae	Ind			No penetration; fine and large shell hash on sand.
0SP-MW0521-029	3	7	0	Ind	Ind	Ind	Ind	Ind	Ind	Ind	Ind	Algae	Ind			No penetration; pebbles, cobbles with algae on sand.
20SP-MW0521-029	4	7	0	Ind	Ind	Ind	Ind	Ind	Ind	Ind	Ind	Algae	Ind			No penetration; pebbles/cobbles with algae on sand; eelgrass green algae at SWI; Diopatra.
0SP-MW0521-031	1	8	3.7	2.2	Р	Ind	2-1	3	-1	N	N	None	Ind			Rippled medium sand.
0SP-MW0521-031	4	8	5.4	0.7	Р	Ind	2-1	3	-1	N	N	None	Ind			Rippled medium sand.
0SP-MW0521-031	5	8	6.7	0.9	Р	Ind	2-1	3	-1	N	N	None	Ind			Rippled medium sand.
0SP-MW0521-033	1	9	5.1	1.2	Р	Ind	4-3	4	1	N	N	None	Ind			Rippled very fine and fine sand.
0SP-MW0521-033	3	9	3.2	1.4	Р	Ind	4-3	4	1	N	N	None	Ind			Rippled very fine and fine sands.
0SP-MW0521-033	4	9	4.2	1.8	P	Ind	4-3	4	2	N	N	None	Ind			Very fine and fine sand ripples.
0SP-MW0521-035	12	20.3	8.1	1.2	Р	Ind	3-2	4	<u>-</u> -1	N	N	None	Ind			Fine to medium sand.
0SP-MW0521-035	13	20.4	3.3	2.6	Р	Ind	2-1	3	-1	N	N	Encrusted small tube	Ind			Fine to coarse rippled sand; mud? encrusted small tubes on SWI.
0SP-MW0521-035	14	20.5	7.2	0.6	, D	Ind	2-1/3-2	4	-1	N	N	Encrusted tubes	Ind			Medium sand (5 cm) over fine sand.
0SP-MW0521-037	1	26.9	9.2	1	P	Ind	3-2	> 4	0	N N	N	None	2			Fine sand, ripple; tubes at SWI; some organic input.
	1			•	г В			> 4 4	0	N N	N		2			
20SP-MW0521-037	2	24.2	6.6	1.9	P	Ind	3-2	•	0			None	2			Rippled fine sand.
0SP-MW0521-037	3	21.9	6.4	2.9	P P	Ind	3-2	4	0	N	N N	Encrusted tubes	2			Rippled fine sand; tubes at SWI.
0SP-MW0521-039	7	22.8	4.7	2.2	P	Ind	3-2	4	0	N	N	Gastropods	2			Rippled fine sand; worm tubes @ SWI.
20SP-MW0521-039	8	28.0	6	3.7	P -	Ind	3-2	4	0	N	N	None	2			Fine sand; tubes at SWI.
0SP-MW0521-039	9	28.3	3.6	3.1	Р	Ind	3-2	4	1	N	N	None	2			Ripple fine sand; dense worm tubes at SWI.
0SP-MW0521-041	1	29.7	5	1.8	В	1.7	>4	>4	1	N	N	Anemones in PV	2 -> 3			Diverse surface tube assemblage; likely stage 3; Reduced sediment below
0SP-MW0521-041	3	29.3	7.7	0.9	В	1.6	>4	>4	1	N	N	None	2			cm; dark sand grains in silt matrix. Distinct, reduced mud band/deposit (3 cm thick). Relict aRPD? below that
20SP-MW0521-041	4	29.7	8.3	1	В	2.1	> 4	> 4	1	N	N	Anemones in PV	2 -> 3			layer. Dark sand grains mixed throughout silt matrix. Two reduced mud bands; dark grains in silt; macoma in top cm; large worm
0SP-MW0521-043	6	30.5	6.3	3.3	P	Ind	2-1	3	0	N	N	None	Ind			at 8 cm. Rippled well-sorted fine to medium sand.
0SP-MW0521-043	0	30.3	8.4	3.3 4.1	P D	Ind	2-1	3	0	N	N	None	Ind			Rippled, well-sorted medium sand.
20SP-MW0521-043	0				P				0							
	9	29.8	6.7	1.1	'	Ind	3-2	4	0	N	N	Gastropod	Ind			Rippled fine sand (in trough versus medium sand on crests in replicates).
0SP-MW0521-045	2	33.8	7.4	1.3	Р	2.1	3-2/>4	> 4	1	N	N	Gastropod; sand dollar in PV	2	2		1 to 3 cm layer of very fine and fine sand over reduced mud; worms in mud diopatra at SWI.
0SP-MW0521-045	3	32.9	4.9	2.6	Р	1.1	4-3	> 4	0	N	N	Gastropods in PV	2	0		Very fine and fine sand in rippled sand trough; subtle redox contrast; worm at SWI.
0SP-MW0521-045	5	32.9	3.9	1.6	P	3.2	3-2	> 4	1	N	N	Gastropods in PV	2			Rippled fine sand with mud at bottom of frame; diverse tubes at SWI.
0SP-MW0521-047	1	33.5	5.9	0.9	Р	1.5	>4-3	> 4	2	N	N	None	2			Very fine and fine sand in silt matrix; rippled; diverse tubes as SWI; diopatra
0SP-MW0521-047	2	33.1	6.5	1.1	В	1.4	>4-3	> 4	1	N	N	Anemone in PV	2	1		Sand in silt matrix; diopatra and other tubes at SWI; bands of reduce sediment at depth.
0SP-MW0521-047	3	33.5	6.8	0.4	В	1.3	>4-3	> 4	1	N	N	Possible hydroid in distance	2 -> 3	1		Fine sand in silt matrix; burrows, worm at depth; diverse surface tubes; banded dark/light sediment layers.
0SP-MW0521-049	1	33.9	6	1	Р	4.1	4-3	> 4	1	N	N	Gastropod in PV	2			Very fine rippled sand; diverse surface tubes; deep aRPD is likely physical.
0SP-MW0521-049	2	34.0	3.2	2.9	Þ	Ind	4-3	> 4	1	N	N	Sand dollar	Ind			Rippled very fine sand; possible terebellid polychaete.
	4				F D				1	N N	N N		2			Rippled very fine sand; fine sand and silt layering.
20SP-MW0521-049	4	33.8	6.4	0.9	٢	1.1	4-3	> 4	ı	IN	IN	Sand dollar in PV	2			ruppieu very iirie sariu, iirie sariu ariu siit layering.

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Appendix C1: SPI Data Set Sediment Profile and Plan View Imaging Survey Mayflower Wind Farm, May 2020

Seminary Part			Water Depth	Donotrotion	Boundary	Doughnoon	aDDD Danth	Crain Siza Majar Mada	Grain Size	Grain Size			Eniforms Observed in CD	Infaunal	Fooding	Cubaurfaaa	Drittle Cto	_
See	Station ID	Replicate	Water Depth (m)		Roughness (cm)	Roughness Origin	aRPD Depth (cm)	Grain Size Major Mode (phi units)	Minimum (phi units)	Maximum (phi units)	Present?/ # of Voids	Beggiato			Feeding Void Count	Subsurface Worm Count	Brittle Star Count	
SPANNING 1	0SP-MW0521-051	1	35.5	6.8	0.6	В	1.2	> 4	> 4	2	N	N	None	2				Silt with fine sand subfraction; dark/light bands; stick amphipod? small wor and burrow down to 3 cm.
SERMINISTRATION OF 1 S. 1	0SP-MW0521-051	3	35.6	7.7	0.9	В	1.7	> 4	> 4	2	N	N	Hermit crab in PV	2 - > 3	1	1		Silt with sand subfraction; small void or burrow; worm to 6 cm.
See Non-Victable 1	0SP-MW0521-051	4	35.6	5.7	0.8	В	1.6	> 4	> 4	2	N	N	None	2 -> 3		1		Silt with some sand; errant polychaete at 6 cm, diopatra.
See Property See 15 15 15 15 15 15 15	0SP-MW0521-053	6	36.3	6.5	0.4	Р	1.5	>4-3	> 4	1	N	N	None	2				Fine sand and silt mix; diopatra.
Second	0SP-MW0521-053	7	35.3	4.5	0.9	В	1.3	4-3	> 4	1	N	N	None	2		1		Fine sand and silt mixture; errant polychaete.
SREPAMENTS-FLOCK 5 5 32 6 7 1 1 P 1 4 43 54 1 N N N REPAIR SET	0SP-MW0521-053	11	36.5	5.9	1.6	Р	1.7	4-3	> 4	2	N	N	Gastropod in PV	2		1		Fine sand and silt; diverse tube assemblage on surface; small polychaete and burrow at 1-2 cm.
Septimized 1985 2 2 2 4 2 4 4 1 N N N N N N N N N	OSP-MW0521-054	1	39.6	6.8	1.1	Р	1.3	4-3	> 4	1	N	N	None	2				Rippled very fine and fine sand; diopatra, ampelisca tubes.
SPEANWOOTH Column	OSP-MW0521-054	3	37.0	4.7	1.1	Р	1.4	4-3	> 4	1	N	N	Hermit crab in PV	2 -> 3				Rippled very fine and fine sand; diopatra, possible void.
SEP AMVISION 1.05	0SP-MW0521-054	5	39.2	8.9	0.5	В	2	> 4	> 4	1	N	N		2 -> 3		4		Rippled very fine and fine sand; stick amphipods, worms at depth, burrow.
SEP MANNOSCI 05	OSP-MW0521-055	2	39.7	9.4	1	В	1.7	>4	>4	2	N	N	None	3	1	7		Silt with sand subfraction; many large worms at depth; small feeding void.
Separation Sep	0SP-MW0521-055	3	39.8	7.4	1.8	В	1.5	> 4	> 4	1	N	N	None	2 -> 3		1		Silt with fine sand subfraction. Banded light sand/dark fines layers. Divers surface tubes.
Separation Sep	OSP-MW0521-055	4	40.1	10.5	0.9	В	1.7	>4	> 4	1	N	N	None	2 -> 3		2		Silt with fine sand subfraction; Fine sand/dark silt layers.
Septembro Sept	OSP-MW0521-057	3	41.2	12.9	1.5	Р	1.7	4-3	>4	2	N	N	None	1 on 3	1			Rippled very fine sand; large void at 10 cm; some dark/light banding.
SPH-MV0251-055 1	0SP-MW0521-057	4	41.2	13.6	1.5	Р	1.4	4-3	> 4	1	N	N	None	1 on 3		3	1	Rippled very fine sand and silt. Dark/light silt/fine sand bands. Large clam 10 cm.
SP-MW0521-089 2 40.6 8 1.2 P 2.3 4.3 2.4 1 N N None 2 Rippled very fine and fine sand; etick amphipods.	0SP-MW0521-057	5	41.3	11.5	1.4	Р	1.1	> 4	> 4	2	N	N	Hermit crab in PV	2				Rippled silt and very fine sand; nice cross-section of ripple; banded silt/sand; diverse surface tubes.
SPE-MMV0521-069 3 40 61 22 P 22 43 34 2 N N None 2 Rippled vary fine and fine sand: ripple height = 2 cm, wavelet SPE-MMV0521-061 3 40 5 6 6 P 1.2 4.3 5.4 2 N N N None 2 SPE-MMV0521-061 SPE-MMV0521-061 3 40.0 5.4 5 5 5 5 5 5 5 5 5	OSP-MW0521-059	1	40.7	8.7	1	Р	2.2	4-3	> 4	1	N	N	None	2		1		Rippled very fine sand; banded silt/sand below well-defined redox bounda
SP-MW0521-061 1 40.2 5.7 6.6 P 1.2 4.3 5.4 2 N N None 2 Sighty ripes and and sit, slighty popled. Sp-MW0521-061 3 40.0 6.4 1.8 P 2.1 4.3 5.4 4 1 N N None 2 Sighty ripes and and sit, slighty popled. Sp-MW0521-061 5 40.0 5.4 0.5 B 1.6 4.3 5.4 1 N N None 2 Sighty ripes and and sit. Sighty ripps and sight sighty	0SP-MW0521-059	2	40.6	8	1.2	Р	2.3	4-3	> 4	1	N	N	None	2				Rippled very fine and fine sand; stick amphipods.
SPAMW0521-081 1 40,2 5.7 0.6 P 1,2 4.3 3.4 2 N N None 2 Very fine sand affisit slightly rippoled.	0SP-MW0521-059	3	40.7	6.1	2.2	Р	2.2	4-3	> 4	2	N	N	None	2				Rippled very fine and fine sand; ripple height = 2 cm, wavelength = 10.5 cm
1		ase Area (SPI/																
Sep-AMV0521-06f 5 40.0 5.4 0.5 B 1.6 4.3 5.4 1 N N None 2 Slight ripples in PV; large tube at surface; faint reduced mudicath.		1				•				2				2				, , , , , , , , , , , , , , , , , , , ,
SPP-MW0521-064 2 45.3 18.6 0.8 B 1.9 3.4 3.4 2 N N None 3 1 Silt bottom; medium gray and dark gray reduced sediment bands per sediment bands and sediment bands. Silt bottom; medium gray and dark gray reduced sediment bands. Silt bottom; medium gray and dark gray reduced sediment bands. Silt bottom; medium gray and dark gray reduced sediment bands. Silt bottom; medium gray and dark gray reduced sediment bands. Silt bottom; medium gray and dark gray reduced sediment bands. Silt bottom; medium gray and dark gray reduced sediment bands. Silt bottom; medium gray and dark gray reduced sediment bands. Silt bottom; medium gray and dark gray reduced sediment bands. Silt bottom; medium gray and dark gray reduced sediment bands. Silt bottom; medium gray and dark gray reduced sediment bands. Silt bottom; medium gray and dark gray reduced sediment bands. Silt bottom; medium gray and dark gray reduced sediment bands. Silt bottom; medium gray and dark gray reduced sediment bands. Silt bottom; medium gray and dark gray reduced sediment bands. Silt bottom; medium gray and dark gray reduced sediment bands. Silt bottom; medium gray and dark gray reduced sediment bands. Silt bottom; medium gray and dark gray reduced sediment bands. Silt bottom; surface bands and gray reduced sediment bands. Silt bottom; surface salts of the surface bands. Silt bottom; sediment bands. Silt bottom.		3				•				1				2				
SP-MW0521-064 3	OSP-MW0521-061	5	40.0	5.4	0.5	В	1.6	4-3	> 4	1	N	N	None	2				
SP-MW0521-064 5 45.2 15.7 1.2 B 1.7 34 34 2 N N None 2 on 3 1 1 Extensive ampelisor mats in PV. SP-MW0521-066 1	0SP-MW0521-064	2	45.3	18.6	8.0	В	1.9	>4	>4	2	N	N	None	3	1			Silt bottom; medium gray and dark gray reduced sediment bands.
SP-MW0521-066 1	0SP-MW0521-064	3	45.3		1.3	В	4.2	>4	>4	2	N	N	Gastropod in PV	3		1		Undisturbed silt bottom; extensive burrow systems, large worm tubes at surface.
SP-MW0521-066		5	45.2						>4	2	N	N	None	2 on 3	1	1		Extensive ampelisca mats in PV.
tubes, worms at depth. SP-MW0521-066)SP-MW0521-066	1	44.4	11.8	0.7	В	2.1	4-3/>4/3-2	>4	1	N	N		2		1		Very fine sand 9 (4 cm) over silt (3 cm) over fine sand (4+ cm). Diverse surface tubes, ampelisca.
Penetration	OSP-MW0521-066	3	43.0	7.2	0.7	В	1.5	4-3	>4	2	N	N	Gastropod, fish in PV	2 -> 3		3		Very fine sand/silt bottom. Dense ampelisca mats in PV, diverse surface tubes, worms at depth.
DSP-MW0521-067 2 46.9 17.9 0.7 B 3.3 >4 54 >4 2 N N Fish in PV, surface 3 2 2 Silt bottom, very fine sand subfraction. Unidentified organism feature? DSP-MW0521-067 3 46.7 15.6 0.3 B 2.5 >4 4 4 2 N N N Tubiculous 3 2 1 Silt bottom; isopods at SWI. Worm at 13 cm. DSP-MW0521-070 1 45.5 18.7 0.3 B 1.5 >4 54 54 54 54 54 54 54 54 54 54 54 54 54	0SP-MW0521-066	4	43.1	6	1	Р	1.4	4-3/>4	> 4	1	N	N	None	2				Very fine sand (ripple) over reduced silt, sandier at depth and likely below penetration.
OSP-MW0521-067 2 46.9 17.9 0.7 B 3.3 >4 >4 >4 2 N N Fish in PV, surface 3 2 2 Silt bottom, very fine sand subfraction. Unidentified organism feature? OSP-MW0521-067 3 46.7 15.6 0.3 B 2.5 >4 >4 2 N N Tubiculous 3 2 1 Silt bottom; isopods at SWI. Worm at 13 cm. OSP-MW0521-070 1 45.5 18.7 0.3 B 1.5 >4 >4 2 N N N None 1 on 3 2 2 Silt bottom. OSP-MW0521-070 2 45.4 17.6 1 B 3.2 >4 >4 2 N N N None 1 on 3 3 Silt bottom with very fine/fine sand subfraction; two reduced organism feature? OSP-MW0521-070 5 45.5 18.2 0.4 B 1.4 >4 >4 2 N N N None 1 on 3 1 2 Predimantly silt but 4 cm silt-vfs-fs over silt over 4 cm silt-vfs-fs-form and 13 cm; ampelisca	0SP-MW0521-067	1	46.6	16.7	2.9	В	3.6	>4	>4	2	N	N	None	1 on 3		2		Silt bottom, large surface tubes and burrows, worms at depth; redox boundary subtle.
DSP-MW0521-067 3 46.7 15.6 0.3 B 2.5 >4 >4 >4 2 N N N Tubiculous isopods/amphipods at SWI. DSP-MW0521-070 1 45.5 18.7 0.3 B 1.5 >4 >4 2 N N N None 1 on 3 2 2 S Silt bottom; isopods at SWI. Worm at 13 cm. DSP-MW0521-070 2 45.4 17.6 1 B 3.2 >4 >4 2 N N N None 1 on 3 3 Silt bottom with very fine/fine sand subfraction; two reduced r SWI. DSP-MW0521-070 5 45.5 18.2 0.4 B 1.4 >4 2 N N N None 1 on 3 1 2 Predominantly silt but 4 cm silt-vfs-fs over silt over 4 cm silt-vfs-fs ove	OSP-MW0521-067	2	46.9	17.9	0.7	В	3.3	>4	>4	2	N	N		3	2	2		Silt bottom, very fine sand subfraction. Unidentified organism? at SWI.
OSP-MW0521-070 1 45.5 18.7 0.3 B 1.5 >4 >4 2 N N N None 1 on 3 2 2 Silt bottom. OSP-MW0521-070 2 45.4 17.6 1 B 3.2 >4 >4 2 N N N None 1 on 3 3 Silt bottom with very fine/fine sand subfraction; two reduced r SWI. OSP-MW0521-070 5 45.5 18.2 0.4 B 1.4 >4 >4 2 N N N None 1 on 3 1 2 Predominantly silt but 4 cm silt-vfs-fs over silt over 4 cm silt-vfs-fs	OSP-MW0521-067	3	46.7	15.6	0.3	В	2.5	>4	>4	2	N	N	isopods/amphipods at	3	2	1		Silt bottom; isopods at SWI. Worm at 13 cm.
OSP-MW0521-070 2 45.4 17.6 1 B 3.2 >4 >4 >4 2 N N N None 1 on 3 3 Silt bottom with very fine/fine sand subfraction; two reduced r SWI. OSP-MW0521-070 5 45.5 18.2 0.4 B 1.4 >4 >4 2 N N N None 1 on 3 1 2 Predominantly silt but 4 cm silt-vfs-fs over silt over 4 cm silt-v OSP-MW0521-071 1 45.8 19.5 0.8 B 2.6 >4 >4 >4 2 N N N Gastropods in PV 1 on 3 1 3 Silt with some sand in top few cm. OSP-MW0521-071 3 45.8 19.1 1 B 0.9 >4 >4 2 N N N None 1 on 3 1 2 3-4 cm thick reduced silt layers at 1 cm and 13 cm; ampelisca	0SP-MW0521-070	1	45.5	18.7	0.3	В	1.5	>4	>4	2	N	N		1 on 3	2	2		Silt bottom.
0SP-MW0521-070 5 45.5 18.2 0.4 B 1.4 >4 >4 2 N N None 1 on 3 1 2 Predominantly silt but 4 cm silt-vfs-fs over silt over 4 cm silt-v 0SP-MW0521-071 1 45.8 19.5 0.8 B 2.6 >4 >4 2 N N Gastropods in PV 1 on 3 1 3 Silt with some sand in top few cm. 0SP-MW0521-071 3 45.8 19.1 1 B 0.9 >4 >4 2 N N None 1 on 3 1 2 3-4 cm thick reduced silt layers at 1 cm and 13 cm; ampelisca		2														_		Silt bottom with very fine/fine sand subfraction; two reduced mud clasts at
0SP-MW0521-071 3 45.8 19.1 1 B 0.9 >4 >4 2 N N None 1 on 3 1 2 3-4 cm thick reduced silt layers at 1 cm and 13 cm; ampelisca	0SP-MW0521-070	5	45.5	18.2	0.4	В	1.4	>4	>4	2	N	N	None	1 on 3	1	2		Predominantly silt but 4 cm silt-vfs-fs over silt over 4 cm silt-vfs-fs over silt.
OSP-MW0521-071 3 45.8 19.1 1 B 0.9 >4 >4 2 N N None 1 on 3 1 2 3-4 cm thick reduced silt layers at 1 cm and 13 cm; ampelisca	OSP-MW0521-071	1	45.8	19.5	0.8	В	2.6	>4	>4	2	N	N	Gastropods in PV	1 on 3	1	3		Silt with some sand in top few cm.
0SP-MW0521-071 4 45.8 18.2 1.2 B 2.9 >4 >4 2 N N Gastropod in PV 3 1 3 Silt bottom; diverse community at SWI, stick amphipods, tube		3											•		1			3-4 cm thick reduced silt layers at 1 cm and 13 cm; ampelisca at SWI.
	0SP-MW0521-071	4	45.8	18.2	1.2	В	2.9	>4	>4	2	N	N	Gastropod in PV	3	1	3		Silt bottom; diverse community at SWI, stick amphipods, tubes.

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Appendix C1: SPI Data Set Sediment Profile and Plan View Imaging Survey Mayflower Wind Farm, May 2020

SPI Image Analysis R			-	Boundary				Grain Size	Grain Size	Methane			Infaunal				
		Water Dept	th Penetration	Roughness	Roughness	aRPD Depth	Grain Size Major Mode	Minimum	Maximum	Present?/		Epifauna Observed in SPI		Feeding	Subsurface	Brittle Star	
Station ID	Replicate	(m)	Depth (cm)	(cm)	Origin	(cm)	(phi units)	(phi units)	(phi units)	# of Voids	Beggiato		Stage		Worm Count	Count	Comments
OSP-MW0521-073	1	51.4	19	0.9	В	2.3	>4	>4	2	N	N	Moon snail, hake? in PV	1 on 3	3			Silt bottom; large feeding voids; small, reduced mud clast at SWI.
0SP-MW0521-073	3	51.3	20.2	0.8	В	2.3	>4	>4	2	N	N	Gastropods in PV	1 on 3	2	1		Silt bottom, large feeding voids and burrow.
0SP-MW0521-073	5	51.4	20.7	Ind	Ind	Ind	>4	>4	2	N	N	Gastropods in PV	3	3	2		Over penetration.
0SP-MW0521-074	1	50.0	13.3	0.5	В	1.9	>4	>4	2	N	N	Gastropods in PV	3	2			Silt bottom, many stick amphipods.
0SP-MW0521-074	2	50.0	15.5	0.6	В	5.4	>4	>4	2	N	N	Hermit crab and gastropod in PV	1 on 3	3	1		Silt bottom, undisturbed.
0SP-MW0521-074	5	50.0	16.3	0.7	В	4.7	>4	>4	2	N	N	Gastropod, fish in PV	3	2	3		Silt bottom, large worms to 14 cm.
0SP-MW0521-076	1	47.0	18.3	0.2	В	3.7	>4	>4	2	N	N	None	1 on 3	3			Silt bottom, undisturbed. No PV image.
0SP-MW0521-076	2	47.1	18.1	1	В	4.5	>4	>4	2	N	N	None	1 on 3	2	3		Silt bottom. Large cavity/burrow opened by prism penetration.
20SP-MW0521-076	5	47.1	16.5	1.5	В	2.6	>4	>4	2	N	N	Gastropod in PV	2 -> 3				Silt bottom; worm at 16 cm, stick amphipods.
20SP-MW0521-077	1	50.2	18	0.4	В	4.1	>4	>4	2	N	N	Many small shrimp in PV	1 on 3	3	2		Silt bottom, undisturbed; stick amphipods.
0SP-MW0521-077	2	50.3	16.5	2.9	В	3	>4	>4	2	N	N	Shrimp	3	1	1		Silt bottom; prism tilted so BR is artifact; diverse surface tubes.
0SP-MW0521-077	8	50.2	15.5	2.9	В	2	>4	>4	2	N	N	Fish in PV	3	1	1		Silt bottom.
20SP-MW0521-080	1	50.3	12.2	0.9	В	3.2	>4	>4	2	N	N	None	2 -> 3		2		Silt bottom; worm at 12 cm; ampelisca.
0SP-MW0521-080	3	50.3	12.2	1.5	В	2.7	>4	>4	2	N	N	None	3	4			Silt bottom with extensive feeding voids and large tubes at surface.
20SP-MW0521-080	5	50.2	12.3	0.5	В	2.9	>4	>4	2	N	N	None	3	3			Silt bottom, undisturbed; stick amphipods.
20SP-MW0521-082	1	49.6	12.4	0.3	В	4.4	>4	>4	2	N	N	Gastropod in PV	1 on 3	2	1	1	Silt bottom, undisturbed; stick amphipods.
20SP-MW0521-082	3	49.6	12.6	0.7	В	2	>4	>4	2	N	N	None	1 on 3	1	2		Silt bottom; tubiculous amphipods at SWI - cluster of round tubes.
20SP-MW0521-082	5	49.6	13.2	0.6	В	2.9	>4	>4	2	N	N	Gastropod in PV	3	2	3		Silt bottom.
20SP-MW0521-083	1	51.3	13.4	0.4	В	4	>4	>4	2	N	N	Brittle star, shrimp in PV	1 on 3	3	2		Silt bottom; diverse surface tubes.
0SP-MW0521-083	2	51.3	12.1	2.2	В	4	>4	>4	2	N	N	Hake in PV	3	1	1		Silt bottom, slightly sandier in top few cm; stick amphipods; mud clast.
20SP-MW0521-083	5	51.2	11.4	1.3	Р	2.2	>4	>4	2	N	N	None	1 on 3	1	1		Silt bottom, sandier in top few cm; one small void, stick amphipods.
20SP-MW0521-084	3	52.2	13.9	2.5	В	2.8	>4	>4	2	N	N	None	3	7			Silt bottom, sand subfraction greater in top 7 cm; many feeding voids.
0SP-MW0521-084	4	52.2	5.3	2.7	Р	1.3	>4	>4	2	N	N	Fish in PV	2		1		Disturbed bottom, unlike station replicates. Lower penetration, roughness suggests artifact of previous drop? But PV does not show that.
20SP-MW0521-084	5	52.3	12	0.9	В	2.8	>4	>4	2	N	N	Sculpin in PV; bryozoan on SWI	2 on 3	1	2		Silt bottom; ampelisca tubes at SWI.
0SP-MW0521-086	1	54.3	14.3	1.4	В	0.9	>4	>4	2	N		Jonah Crab in PV	3	3	1		Silt bottom with biogenic? mound; voids expanded by prism penetration; worm at 14 cm.
20SP-MW0521-086	3	54.1	12.9	1.5	В	1.9	>4	>4	3	N	N	None	3	5	1		Silt bottom, roughness may be ripple; diverse surface tubes.
20SP-MW0521-086	5	54.3	10.1	3.6	В	2.5	>4	>4	2	N	N	Crab and shrimp in PV	3	2			Silt bottom with biogenic depressions from crab possibly.
20SP-MW0521-088	1	51.2	12.6	0.7	В	5.4	>4	>4	2	N	N	Egg case in PV	1 on 3	4	1		Silt bottom, undisturbed; scattered black sand grains throughout.
20SP-MW0521-088	2	51.1	13.5	0.6	В	4.2	>4	>4	2	N	N	None	1 on 3	2	1		Silt bottom, undisturbed; diverse surface tubes; black sand grains
20SP-MW0521-088	5	51.2	13	0.5	В	3.6	>4	>4	2	N	N	Fish in PV	3	2	1		throughout. Silt bottom, undisturbed; oxidized mud clast on SWI; large worm at depth
20SP-MW0521-090	1	53.8	16.5	0.9	В	4.5	>4	>4	2	N	N	Hermit crab, egg case,	1 on 3	1			Silt bottom, diverse surface tube assemblage.
20SP-MW0521-090	2	53.7	16.2	0.5	В	2.1	>4	>4	2	N	N	shrimp in PV Gastropods, possible egg	1 on 3	1	1		Silt bottom; diverse surface tubes.
20SP-MW0521-090	7	53.7	16.6	1.5	В	3.8	>4	>4	2	N	N	case in PV None	1 on 3	2			Silt bottom (fine sand subfraction > top 5 cm); diverse surface assembla
20SP-MW0521-091	1	54.4	16.9	0.6	В	3.3	>4	>4	2	N	N	None	1 on 3	3	1		Silt bottom with large feeding voids.
0SP-MW0521-091	3	54.3	16.9	0.6	В	3	>4	>4	2	N	N	Gastropod in PV	1 on 3	3			Silt bottom; reduced sediment patch at depth.
0SP-MW0521-091	5	54.3	17.1	0.6	В	3.9	>4	>4	2	N	N	Gastropod in PV	3	1			Silt bottom; void is edge of structure.
20SP-MW0521-093	1	55.4	16	0.3	В	3.6	>4	>4	2	N	N	Burrowing anemone in PV	3	2	2		Silt bottom, undisturbed.
20SP-MW0521-093	2	55.4	17.1	0.6	В	3.5	>4	>4	2	N	N	None	3	4	1	1	Silt bottom; band of feeding voids at 7 to 10 cm.
0SP-MW0521-093	4	53.7	16.3	0.4	В	3.3	>4	>4	2	N	N	Gastropod in PV	2 -> 3	1	1		Silt bottom; diverse surface tubes.
0SP-MW0521-096	1	53.8	12.5	1.3	В	2.9	>4	>4	2	N N	N	Hermit crab in PV	1 on 3	1	<u> </u>		Silt bottom; diverse surface tubes (amphipods).
20SP-MW0521-096	3	53.7	12.2	0.8	В	3.6	>4	>4	2	N	N	Egg sack in PV	3	4	3		Silt bottom; thin reduced, fluidized plume of reduced sediment at SWI like
20SP-MW0521-096	4	53.5	13.5	0.4	В	4.2	>4	>4	2	N	N	None	1 on 3	2			·
20SP-MW0521-096	4	53.5	13.5	0.4	В	4.2	>4	>4	2	N	N	None	1 on 3	2			artifact of prism penetration. Silt bottom; stick amphipods on surface.

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Appendix C1: SPI Data Set Sediment Profile and Plan View Imaging Survey Mayflower Wind Farm, May 2020

				Boundary				Grain Size				_ ,, _ ,, ,, _,,	Infaunal				
Station ID	Replicate	Water Dept (m)	n Penetration Depth (cm)	Roughness (cm)	Roughness Origin	aRPD Depth (cm)	Grain Size Major Mode (phi units)	Minimum (phi units)	Maximum (phi units)	Present?/ # of Voids	Beggiato	Epifauna Observed in SPI oa or PV	Successional Stage	Feeding Void Count	Subsurface Worm Count	Brittle Sta Count	Comments
20SP-MW0521-098	1	55.3	3.7	0.5	Р	0.8	3-2/>4	>4	0	N	N	Hermit crab in PV	Ind				Thin layer of fine sand over silt.
20SP-MW0521-098	4	55.2	3.7	2.9	Р	Ind	2-1/>4	>4	0	N	N	Hermit crab, shrimp in PV	Ind				Sand (1+ cm) over silt; possible ripples.
20SP-MW0521-098	5	55.3	1.7	3.5	Р	Ind	2-1	>4	0	N	N	Hermit crab in PV	Ind				Medium and fine sand.
20SP-MW0521-100	1	49.4	13.7	0.5	В	4.1	>4	>4	2	N	N	None	1 on 3	1			Silt bottom; colonial tube amphipods.
20SP-MW0521-100	2	49.5	14.5	0.5	В	4.2	>4	>4	2	N	N	None	1 on 3	2	2		Silt bottom; diverse surface tubes; small voids.
20SP-MW0521-100	3	49.5	13.8	0.8	В	3.7	>4	>4	1	N	N	None	2 -> 3				Silt bottom; material slumped in front of prism appears to artifact.
20SP-MW0521-101	1	54.6	15.9	0.9	В	4.2	>4	>4	2	N	N	Anemone, hake in PV	2 ->3				Silt bottom; diverse surface tubes.
20SP-MW0521-101	2	54.4	15.8	0.4	В	4.6	>4	>4	2	N	N	Hermit crab in PV	1 on 3	1	2		Silt bottom; edge of feeding void sectioned.
20SP-MW0521-101	4	54.5	15.8	1.6	В	2.1	>4	>4	1	N	N	Anemone in PV	3	4	1		Silt bottom; large feeding voids.
20SP-MW0521-102	1	55.3	15.3	0.6	В	4.4	>4	>4	2	N	N	Gastropods in PV	1 on 3	1	1		Silt bottom.
20SP-MW0521-102	3	52.9	15.7	0.7	В	1.8	>4	>4	2	N	N	Anemone in PV	1 on 3	2			Silt bottom; black organic patch at depth.
20SP-MW0521-102	5	55.3	17.2	0.7	В	4.5	>4	>4	2	N	N	None	1 on 3	4	0		Silt bottom.
20SP-MW0521-103	1	56.8	19	0.6	В	2.3	>4	>4	2	N	N	Anemone in PV	1 on 3	2	1		Silt bottom, relatively soft.
20SP-MW0521-103	2	56.8	18.8	1.7	В	1.4	>4	>4	2	N	N	Anemone in PV	1 on 3	2			Silt bottom, soft.
20SP-MW0521-103	3	56.7	19.3	2.2	В	2.3	>4	>4	1	N	N	Shrimp in PV	1 on 3	2	2		Silt bottom; large worm tubes at SWI; fine sand layer at 15-18 cm.
20SP-MW0521-106	6	57.1	15.8	0.6	В	2.2	>4	>4	2	N	N	Anemone in PV	2		1		Silt bottom.
20SP-MW0521-106	8	56.9	18.8	1.7	Р	Ind	>4	>4	0	N	N	Anemone in PV	3	1			Partial pullout, sediment slumping down window; fine/medium sand subfraction; oxidized mud clasts.
0SP-MW0521-106	9	57.1	15.8	0.9	В	2.4	>4	>4	2	N	N	Anemone in PV	3	1	2		Silt bottom; possibly disturbed by previous drop, angular mud clasts are artifacts.
20SP-MW0521-108	1	54.7	16.3	0.7	В	3.6	>4	>4	2	N	N	Many anemone in the PV	1 on 3	2	1		Silt bottom with fine sand subfraction; rippled bottom in PV.
20SP-MW0521-108	6	55.2	15.1	1.2	В	2.2	>4	>4	1	N	N	Many anemones in PV	1 on 3	1			Silt with fine sand subfraction.
20SP-MW0521-108	9	55.0	17.2	1.7	В	2.4	>4	>4	1	N	N		1 on 3	3			Silt with fine sand subfraction.
20SP-MW0521-109	1	53.6	16.1	1.1	В	3.1	>4	>4	1	N	N	None	2 -> 3		1		Silt with fine sand subfraction; amphipod tubes at surface, worm at depth.
20SP-MW0521-109	3	54.0	14.5	0.8	В	2.6	>4	>4	2	N	N	Anemone in PV	1 on 3	1			Silt bottom; diverse surface tubes.
20SP-MW0521-109	4	53.9	15.5	1	В	2.4	>4	>4	2	N	N	Anemone in PV	1 on 3	1	1		Silt with some sand.
20SP-MW0521-111	1	57.4	15.9	0.6	В	1	>4	>4	2	N	N	Anemone, fish in PV	1 on 3	1	1		Silt; thin, high contrast aRPD; large worm, small void; reduced sediment patch at 1 cm.
20SP-MW0521-111	3	57.3	18.2	1	В	2.7	>4	>4	1	N	N	Anemones in PV	3	2			Silt; large voids and burrow.
20SP-MW0521-111	5	57.3	16.2	0.6	В	2.5	>4	>4	1	N	N	None	2				Silt; diverse surface tubes; reduce mud clasts (artifacts) pulled down over aRPD.
20SP-MW0521-114	1	62.2	13.9	5	В	1.3	>4	>4	2	N	N	Crab, sea stars, shrimp, shrimp in PV	3	1			Silt; large burrow possibly opened by prism.
20SP-MW0521-114	2	62.0	12	0.7	В	1.4	>4	>4	2	Ν	N	Sea stars, brittle star, shrimp? in PV	1 on 3	1			Silt; mud clast pulled down partially obscures aRPD which is estimated.
20SP-MW0521-114	4	62.1	18.5	0.5	В	4.8	>4	>4	2	N	N	Anemones, shrimp in PV	1 on 3	1	3		Silt; reduced, angular mud clast on surface is artifact of previous drop.
20SP-MW0521-116	1	60.9	16.9	1.6	В	2.1	>4	>4	1	N	N	Sea stars in PV	1 on 3	1			Silt with minor sand subfraction in top 3 cm; diverse surface tubes.
0SP-MW0521-116	2	60.9	15.4	0.9	В	2.7	>4	>4	1	N	N	Sea stars, shrimp in PV	1 on 3	2			Silt with some sand in top few cm; diverse surface tubes.
0SP-MW0521-116	5	60.9	14.9	0.8	В	2.8	>4	>4	1	N	N	Sea stars in PV	3	1	1		Silt; mud clasts are artifacts of previous drop.
20SP-MW0521-117	1	59.8	15.8	3.4	В	2.4	>4	>4	2	N	N	None	1 on 3	3	1		Silt; diverse surface tubes.
20SP-MW0521-117	2	59.8	16	0.7	В	3.3	>4	>4	2	N	N	None	1 on 3	1	1		Silt bottom. Void edge at 16 cm.
20SP-MW0521-117	5	59.8	12.7	1	В	1.9	>4	>4	2	N	N	None	3	2	1		Silt bottom; stick amphipods.
20SP-MW0521-120	1	62.5	17.8	1.2	В	2.1	>4	>4	1	N	N	Sea stars in PV; crustacean at SWI	3	3	3		Silt; large voids, fecal pellets and diverse tubes on SWI.
20SP-MW0521-120	2	62.4	16.9	0.5	В	3.7	>4	>4	2	N	N	Sea stars in PV	1 on 3	5	2		Silt bottom, undisturbed.
20SP-MW0521-120	4	62.6	19.7	1	В	3	>4	>4	2	N	N	Sea stars in PV	2 -> 3		2		Silt bottom; very small void at 3 cm, many small burrows in top cm.

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Appendix C1: SPI Data Set Sediment Profile and Plan View Imaging Survey Mayflower Wind Farm, May 2020

		W D II	December	Boundary	B	. DDD D	O colo Olo Mala Mala	Grain Size		Methane		F.'' Ol I'. OD	Infaunal	F	0.1	D. int. Or	
Station ID	Replicate		n Penetration Depth (cm)	Roughness (cm)	Roughness Origin	aRPD Depth (cm)	Grain Size Major Mode (phi units)	Minimum (phi units)	Maximum (phi units)	Present?/ # of Voids	Reggiatos		Successional Stage	Feeding Void Count	Subsurface Worm Count		Comments
Mayflower Wind Lea		. ,	. ,	(- /	- 3	(- /	u · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	u/		Doggiatot	•					
20SP-MW0521-C01	2	31.8	5.6	1.6	Р	Ind	2-1	3	-1	N	N	Anemones, gastropod in	Ind				Rippled medium sand; dense, small polychaete tubes at SWI.
20SP-MW0521-C01	3	31.8	5.6	1.1	Р	Ind	2-1/3-2	>4	-1	N	N	PV Anemone, gastropod in PV	Ind				Rippled medium sand over fine sand (at 3-4 cm); dense polychaete tubes at SWI; small patch of reduced fines at 4 cm.
20SP-MW0521-C01	4	31.7	3.7	2.1	Р	Ind	2-1	4	-1	N	N	Gastropods in PV	Ind				Rippled fine to medium sand.
20SP-MW0521-C02	2	28.9	6	2.4	Р	Ind	2-1	4	-1	N	N	Hermit crab in PV	Ind				Rippled medium sand.
20SP-MW0521-C02	3	28.9	4.6	1.6	Р	Ind	3-2	4	-1	N	N	Gastropod in PV	Ind				Rippled fine and medium sand.
20SP-MW0521-C02	4	29.0	3.7	2	Р	Ind	2-1	>4	-1	N	N	Gastropod and hermit crab in PV	Ind				Rippled coarse to fine sand.
20SP-MW0521-C03	1	30.7	4.5	0.4	Р	Ind	3-2	4	0	N	N	Gastropod in PV	Ind				Rippled fine sand.
20SP-MW0521-C03	2	31.0	6.6	2.2	Р	Ind	3-2	4	0	N	N	Gastropods and anemone in PV	Ind				Rippled fine sand.
20SP-MW0521-C03	3	30.9	4.7	1.6	Р	Ind	3-2	4	0	N	N	Gastropod in PV	Ind				Rippled fine and medium sand, MS in rippled trough.
20SP-MW0521-C04	1	32.9	6.8	1.8	Р	Ind	2-1/3-2	>4	0	N	N	Anemone in PV	1 -> 2		2		Medium sand grading to fine sand 2 5 cm, rippled; dense worm tube at SWI worm at depth.
20SP-MW0521-C04	2	33.0	3.3	0.5	Р	Ind	2-1	>4	0	N	N	Anemone, gastropods	Ind				Fine to medium sand with some reduced fines; large surface tubes, many Cerianthids in PV.
20SP-MW0521-C04	4	32.8	11.1	4	Р	2.6	2-1	>4	0	N	N	Gastropods in PV	1				Rippled medium sand (9.5 cm) over reduced fines; aRPD physical; surface tubes, no subsurface infauna evident.
20SP-MW0521-C05	1	30.5	6.2	0.9	Р	Ind	3-2	4	-1	N	N	None	Ind				Fine sand, ripples in PV; low density of surface tubes.
20SP-MW0521-C05	2	30.4	4.9	2.5	Р	Ind	3-2	4	-1	N	N	Anemones, sand dollar, gastropod in PV	Ind				Rippled fine sand; small surface tubes.
20SP-MW0521-C05	3	30.6	6.4	1.2	Р	Ind	3-2	4	0	N	N	Gastropod in PV	Ind				Rippled fine sand; low density of surface tubes.
20SP-MW0521-C06	1	63.8	17.3	0.7	В	4.1	>4	>4	2	N	N	Numerous brittle stars, gastropod in PV	3	2	8		Silt bottom; many brittle stars.
20SP-MW0521-C06	2	63.8	17.2	0.4	В	4.1	>4	>4	2	Ν	N	Many brittle stars, anemones in PV	1 on 3	3		1	Silt; reduced mud clasts are artifacts and partly obscure aRPD.
20SP-MW0521-C06	5	63.7	16.1	0.8	В	4.4	>4	>4	2	N	N	Sea star, anemones, many brittle stars in PV	1 on 3	1	2	2	Silt; brittle stars, anemone at SWI, diverse surface tubes.
20SP-MW0521-C07	1	63.6	17.3	0.7	В	3.1	>4	>4	2	N	N	Sea and brittle stars in PV	1 on 3	2	2	1	Silt; diverse surface tubes.
20SP-MW0521-C07	2	64.2	17.2	0.9	В	3.9	>4	>4	1	N	N	Sea stars, brittle stars, anemones in PV	2 -> 3		3	1	Silt; reduce mud clasts at SWI are artifacts.
20SP-MW0521-C07	4	63.7	16.7	0.9	В	2.4	>4	>4	2	N	N	Sea and brittle stars in PV	3	2			Silt; reduced clasts on SWI are artifacts.
20SP-MW0521-C08	1	62.8	16.6	0.5	В	4.3	>4	>4	2	N	N	Sea stars, brittle stars, anemones in PV	1 on 3	2	2	2	Silt; diverse surface tubes.
20SP-MW0521-C08	3	63.1	16.7	1	В	3.8	>4	>4	1	Ν	N	Sea, brittle stars, anemones in PV	1 on 3	1	3		Silt; diverse worm and amphipod tubes at surface.
20SP-MW0521-C08	4	62.9	16.7	0.9	В	4.4	>4	>4	2	N	N	Anemones, sea star in PV; brittle star at SWI	1 on 3	2			Silt; brittle star at SWI.
20SP-MW0521-C09	1	64.9	17.4	0.5	В	3.6	>4	>4	2	N	N	Sea pens, anemones, many brittle stars in PV	1 on 3	2	1	3	Silt; brittle stars.
20SP-MW0521-C09	4	64.8	17.6	0.9	В	3.4	>4	>4	2	N	N	Shrimp, anemones in PV	2 -> 3		1	3	Silt; brittle stars.
20SP-MW0521-C09	6	64.9	17	0.7	В	3	>4	>4	2	N	N	Sea and brittle stars in PV	1 on 3	1	0	1	Silt; mud clasts from previous drop.
20SP-MW0521-C10	1	64.1	16.5	0.3	В	3.5	>4	>4	2	N	N	Sea and brittle stars in PV	1 on 3	1	3	1	Silt; diverse surface tubes, anemones and brittle stars.
20SP-MW0521-C10	6	64.2	16.6	1.8	В	2.9	>4	>4	2	N	N	Brittle stars, anemones in PV	2			1	Silt; few biogenic structures.
20SP-MW0521-C10	11	64.3	16.6	0.5	Р	3.1	>4	>4	2	N	N	Sea and brittle stars	1 on 3	7			Silt; numerous voids.
20SP-MW0521-C11	1	38.0	3.8	1.3	P	Ind	3-2	>4	1	N	N	Sand dollars, possible egg case in PV	Ind				Well-sorted rippled medium sand; reduced mud patch at 2 cm.
20SP-MW0521-C11	2	37.7	3.5	2	Р	Ind	3-2	4	1	N	N	Nudibranch, sand dollar in PV	Ind				Well-sorted, rippled fine sand.
20SP-MW0521-C11	4	37.8	3	2	P	1.9	3-2/>4	>4	1	N	N	None	Ind				2-3 cm of rippled fine sand over reduced silt.

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Appendix C1: SPI Data Set Sediment Profile and Plan View Imaging Survey Mayflower Wind Farm, May 2020

SPI Image Analysis Results, Mayflower Survey, May 2020

Station ID	Replicate	Water Depth	h Penetration Depth (cm)	Boundary Roughness (cm)	Roughness Origin	aRPD Depth (cm)	Grain Size Major Mode (phi units)	Grain Size Minimum (phi units)	Grain Size Maximum (phi units)	Present?/	Beggiatoa		Infaunal Successional Stage	Feeding Void Count	Subsurface Worm Count	Brittle Star Count	Comments
20SP-MW0521-C12	1	34.6	4.4	1.8	Р	Ind	3-2	4	1	N	N	Many sand dollars in PV	Ind				Rippled fine sand; boundary roughness is ripple height; sand dollar.
20SP-MW0521-C12	2	34.6	4.1	3.1	Р	Ind	3-2	4	1	N	N	Many sand dollars in PV	Ind				Rippled fine sand; roughness is ripple height; sand dollars.
20SP-MW0521-C12	3	34.6	5.1	0.7		2.1	3-2	4	1	N	N	Sand dollars	Ind				Fine sand; sand dollars; very subtle physical aRPD measured.
20SP-MW0521-C13	1	37.5	2.5	2.4	Р	Ind	3-2	>4	0	N	N	Sand dollars, rock crab in PV	Ind				Rippled fine sand; darker sediment band at 1 cm.
0SP-MW0521-C13	2	37.5	2.7	1.7	Р	Ind	3-2	>4	0	N	N	Sand dollars, debris? in PV	Ind				Fine sand; sand dollars; darker sands at 1 cm.
0SP-MW0521-C13	5	37.5	2.8	2.1	Р	1.5	3-2	>4	0	N	N	Sand dollars, possible hydroids in PV	Ind				Rippled fine sand; sand dollars; aRPD physical but distinct.
0SP-MW0521-C14	1	40.0	3.2	1.3	Р	Ind	3-2	4	1	N	N	Sand dollars, shrimp, possible brittle star in PV	Ind				Rippled fine sand; surface tubes.
0SP-MW0521-C14	2	40.1	2.6	1.6	Р	Ind	3-2	4	1	N	N	Sand dollars, nudibranch	Ind				Rippled fine sand; sand dollars.
20SP-MW0521-C14	3	40.2	2.3	1.2	Р	Ind	3-2	4	1	N	N	Sand dollars, nudibranch in PV; cumacean? in SPI water column	Ind				Rippled fine sand.
20SP-MW0521-C15	3	37.4	4.5	1.6	В	2.9	3-2	4	1	N	N	Sand dollars, hydroids/bryozoa? in PV	Ind				Rippled fine sand. Physical aRPD.
20SP-MW0521-C15	4	37.3	2.1	1.3	Р	1.1	3-2	>4	1	N	N	Sand dollars	Ind				Fine sand; footprint of previous drop in PV.
0SP-MW0521-C15	5	37.3	2.7	2.9	Р	Ind	3-2	>4	0	N	Ν	Sand dollars	Ind				Rippled fine sand; darker sediment at 2-3 cm.
20SP-MW0521-CP1	1	15	3.2	0.5	Р	Ind	2-1	4	-1	N	N	Algae, hydroids, bryozoa in PV	Ind				Shell hash on medium to coarse sand.
20SP-MW0521-CP1	2	15	2.2	1.2	Р	Ind	2-1	4	-2	N	N	Red algae	Ind				Shell hash on very coarse and coarse sand.
20SP-MW0521-CP1	3	15	4	1.4	Р	Ind	2-1	4	-2	N	N	Red algae in PV	Ind				Shell hash coarse and medium sand.
20SP-MW0521-CP2	1	12	8	8.0	Р	Ind	1-0	3	-2	N	N	None	Ind	<u></u>			Fine shell fragments on medium and coarse sand.
20SP-MW0521-CP2	2	12	6.6	0.6	Р	Ind	2-1	3	-2	N	N	None	Ind				Shell has on medium sand, coarse sand layer at 3-4 cm.
20SP-MW0521-CP2	3	12	4.6	0.7	Р	Ind	1-0/2-1	3	-3	N	N	None	Ind				Coarse sand (2 cm) over medium sand; shell hash.

Notes:

aRPD = apparent redox potential discontinuity

B = biogenic

BR = boundary roughness

fs = fine sand

Ind = indeterminate

N = no

P = physical PV = plan view

SPI = sediment profile imaging

SWI = sediment–water interface

Y = yes

vfs = very fine sand

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Appendix C2
PV Image Data Set

Appendix C2: PV Image Data Set Sediment Profile and Plan View Imaging Survey Mayflower Wind Farm, May 2020

Plan View Image Analysis Results, Mayflower Survey, May 2020

Plan View Image Ana	iysis Result	s, Mayriower	Survey, May	y 2020				CMECS Substrate	e Classifications (Janua	ry 2020 Guida	ance and references there	in)											
0	Dealisate	. 5.	Water	Image Width	Image Height	Field of	Habitas Tona		Outrature Outralian	Substrate		Outstands Occurs Present	Bedforms R = ripples (wavelength				Biological	Epifauna/Infauna Types and		Fish Types	Mud		a Comments
Station ID		Image Date				View (m²)	Habitat Type	Substrate Class	Substrate Subclass	Group	Substrate Subgroup	Substrate Group Percent	in cm)	Burrows	Tubes I	racks I	Information	Counts	Flora	and Count	Clasts	Beggiatoa	a Comments
Mayflower Propose 20SP-MW0521-001		5/13/2020		102	9) 68	0.69	Hard bottom substrate with macroalgae	Unconsolidated mineral	Coarse unconsolidated	Gravels	Gravel pavement	Gravel 90	N	N	N	N	E, A	Hydroids, bryozoans	Y	N	N	N	High concentration of particulates in water column. Some macroalgae and shell fragments.
20SP-MW0521-001	5	5/13/2020	10.6	136	91	1.24	Hard bottom substrate with	Unconsolidated mineral	Coarse	Gravels	Gravel pavement	Gravel 90	N	N	N	N	E, A	Sponge, hydroids, bryozoans	Υ	N	N	N	Some macroalgae. Primarily gravels (90%) with 10% sand.
20SP-MW0521-001	8	5/13/2020	10.4	87	58	0.50	macroalgae Hard bottom substrate with	Unconsolidated mineral	unconsolidated Coarse	Gravels	Gravel pavement	Gravel/pebble 80, cobble 5, sandy	N	N	N	N	E, A	Hydroids, bryozoans, shrimp	Υ	N	N	N	Some macroalgae, and some shell fragments. Particulates in water
20SP-MW0521-002	5	5/13/2020	23.2	77	51	0.39	macroalgae Rippled sands	Unconsolidated mineral	unconsolidated Fine unconsolidated	Sand	Medium sand	mud 15 Sand 88, pebbles 2, shell fragments	R (18)	N	N	N	E	(1) Crustacean (1)	N	N	N	N	column. Shell fragments in troughs. Crustacean/shrimp? at left
20SP-MW0521-002	6	5/13/2020	23.9	75	50	0.37	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Very coarse/coarse san	10 d Sand 90, shell fragments 10,	R (28)	N	N	N	Е	Hermit crabs (4)	N	N	N	N	Sand ripples with shell fragment deposits in troughs.
20SP-MW0521-002	7	5/13/2020	23.7	82	55	0.45	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Very coarse/coarse san	pebbles <1 d Sand 90, shell fragments 10	R (20)	N	N	N	Е	Snail (1)	N	N	N	N	Rippled sand with shell fragment deposits in troughs.
20SP-MW0521-003	2	5/13/2020	17.5	85	57	0.48	Hard bottom substrate with	Unconsolidated mineral		Gravels	Gravel pavement	Gravel 70, cobble 15, sand 10, shell	N	N	N	N	E, A, I	Urchin (2), sponge	Y	N	N	N	Gravelly substrate with sponge, macroalgae and some bivalve shells.
20SP-MW0521-003	3	5/13/2020	17.7	84	56	0.47	macroalgae and epifauna Hard bottom substrate with	Unconsolidated mineral	unconsolidated Coarse	Gravels	Gravel pavement	fragments 5 Gravel 85, cobble 10, sand 5	N	N	N	N	E, A, I	Urchin (1), sponge	~	N	N	N	Sponges covering 30% of substrate.
2031 -10100 0321-003	3	3/13/2020	17.7	04	30	0.47	macroalgae and epifauna	Onconsolidated milieral	unconsolidated	Olaveis	Graver pavement	Graver 65, cobbie 16, sand 5	N	IN.	IV.	IV.	L, A, I	Oromin (1), aponge		14			oponiges covering 30 % or substrate.
20SP-MW0521-003	4	5/13/2020	17.8	87	58	0.50	Hard bottom substrate with macroalgae and epifauna	Unconsolidated mineral	Coarse unconsolidated	Gravels	Gravel pavement	Gravel 80, sand 15, cobble 5	N	N	N	N	E, A, I	Urchin (2), mussels (5), sponge	Υ	N	N	N	Sponge covers 70% of surface, live mussel bed (5%), gravels with some sand.
20SP-MW0521-005	2	5/13/2020	27.0	106	70	0.74	Hard bottom substrate with macroalgae and epifauna	Unconsolidated mineral	Coarse unconsolidated	Gravels	Gravel pavement	Gravel 85, cobble 10, sand 5	N	N	N	N	E, A, I	Urchin (3), sponge	Y	N	N	N	Boring Sponge 10 % of substrate, macroalgae 5 %.
20SP-MW0521-005	3	5/13/2020	26.8	101	67	0.67	Hard bottom substrate with macroalgae and epifauna	Unconsolidated mineral		Gravels	Gravel pavement	Gravel 85, cobble 10, sand 5	N	N	N	N	E, A, I	Urchin (4), sponge	Υ	N	N	N	Boring sponge 15%, sponge 20%.
20SP-MW0521-005	4	5/13/2020	26.9	104	69	0.72	Hard bottom substrate with macroalgae and epifauna	Unconsolidated mineral	Coarse unconsolidated	Gravels	Gravel pavement	Gravel 70, cobble 20, sand 10	N	N	N	N	E, A, I	Urchin (1), sponge	Υ	N	N	N	Boring sponge 10%, Sponge 30%, Gravel/cobble/sand.
20SP-MW0521-007	7	5/12/2020	24.8	116	77	0.90	Hard bottom substrate with	Unconsolidated mineral		Gravel mixe	s Sandy gravel	Granule/pebbles 50, sand 45, shell	N	N	N	N	E, A	Bryozoans, tunicates	Y	N	N	N	Sheath tunicates, yellow and orange. Bryozoans.5 % of surface area.
20SP-MW0521-007	8	5/12/2020	25.3	114	76	0.86	macroalgae Hard bottom substrate with macroalgae and epifauna	Unconsolidated mineral	unconsolidated Coarse unconsolidated	Gravel mixe	s Sandy gravel	fragments 5 50 granule/pebble, 45 sand , 5 shell fragments <1 cobble	N	N	Υ	N	Е	Hermit crab (1), btyozoans	N	N	N	N	Bryozoans evident on coarser substrate. Sheath tunicate (yellow).
20SP-MW0521-007	9	5/12/2020	25.2	109	72	0.79	Hard bottom substrate with	Unconsolidated mineral	Coarse	Gravel mixe	s Sandy gravel	Granule/pebble 40, sand 55, shell	N	N	Υ	N	Е	Bryozoans, tunicates	Υ	N	N	N	Numerous bryozoans, a few sheath tunicates.
20SP-MW0521-009	1	5/12/2020	20.2	85	56	0.48	macroalgae Sand and gravel	Unconsolidated mineral		Gravelly	Gravelly sand	fragments 5, cobble <1 Gravel 30, sand 70	R	N	Υ	N	E, A	Barnacles, bryozoans	Υ	N	N	N	High energy environment, subtle ripples, mobile granules/pebbles and
20SP-MW0521-009	2	5/12/2020	21.9	86	57	0.49	Sand and gravel	Unconsolidated mineral	unconsolidated Coarse unconsolidated	Gravelly	Gravelly sand	Gravel 30, sand 70	R	N	N	N	E, A	Barnacles, bryozoans	Υ	N	N	N	shell fragments. Medium sand with some gravels. High energy environment with mobile granules/pebbles and shell fragments.
20SP-MW0521-009	5	5/12/2020	22.2	89	59	0.53	Sand and gravel	Unconsolidated mineral	Coarse unconsolidated	Gravelly	Gravelly sand	Gravel 30, sand 70	R	N	N	N	E, A	Barnacles, bryozoans, hydroids	Υ	N	N	N	Imprint is an artifact of the SPI frame. High energy environment with mobile granules/pebbles and shell fragments.
20SP-MW0521-011	1	5/13/2020	16.7	92	61	0.56	Shell reef	Shell	Shell Reef	Crepidula	NA	Crepidula 100	N	N	N	N	E	Crepidula, spider crab (1),	N	N	N	N	Entire surface covered with crepidula shells with silt on surface.
20SP-MW0521-011	3	5/13/2020	19.2	91	60	0.55	Shell reef	Shell	Shell Reef	reef Crepidula	NA	Crepidula shells 100	N	N	N	N	E, A	hydroids Spider crabs (2), Crepidula,	Υ	N	Υ	N	Entire surface covered with Crepidula shells with thin layer of silt on
20SP-MW0521-011	4	5/13/2020	17.8	90	60	0.54	Shell reef	Shell	Shell Reef	reef Crepidula	NA	Shells 100	N	N	N	N	E, A	hydroids Spider crab (2), Crepidula,	N	N	N	N	surface. Mud clast is an artifact from the SPI frame. Entire surface covered with Crepidula shell, silt covering surface.
20SP-MW0521-013	1	5/13/2020	20.5	85	57	0.48	Sand	Unconsolidated mineral	Coarse	reef Gravelly	Gravelly sand	Gravel 20, sand 80	N	Υ	М	N	E, A	hydroids Barnacles	Y	N	N	N	Medium sand with some gravel and shell fragments.
20SP-MW0521-013	2	5/13/2020	20.4	90	60	0.54	Rippled sands	Unconsolidated mineral	unconsolidated Coarse	Sand	Fine sand	Gravel 10, sand 85, shell fragments	R (8)	Υ	Υ	N	E, A	Moon snail (1), hydroids	Υ	N	N	N	Sand ripples with gravel and shell fragments.
20SP-MW0521-013	5	5/13/2020	20.0	93	62	0.57	Sand	Unconsolidated mineral	unconsolidated Fine unconsolidated	Sand	Medium sand	5 Sand 95, shell fragments 5	R (10)	N	Υ	N	N	N	N	N	N	N	Sand ripples with small shell fragments in troughs.
20SP-MW0521-015	1	5/16/2020	23.2	74	49	0.36	Hard bottom substrate with	Unconsolidated mineral	Coarse	Gravel mixe	s Sandy gravel	Granules/pebbles 50, sand 25, shell	N	N	N	N	E, A	Bryozoans, hydroids	Y	N	N	N	Sandy gravel with crepidula and bivalve shells. Macroalgae on larger
20SP-MW0521-015	2	5/16/2020	23.2	76	51	0.39	macroalgae Hard bottom substrate with	Unconsolidated mineral	unconsolidated Coarse	Gravel mixe	s Sandy gravel	fragments 25 Granules/pebbles 60, shell	N	N	N	N	E,A	Bryozoans, hydroids	Υ	N	N	N	substrate particles. Granules/Pebbles with crepidula and bivalve shells and sand.
20SP-MW0521-015	3	5/16/2020	23.2	77	51	0.39	macroalgae Hard bottom substrate with		unconsolidated Coarse		s Sandy gravel	fragments 20, sand 20 Granules/pebbles 50, shell	N	N	N	N	E, A	Bryozoans, hydroids	· ·	N	N	N	Macroalgae on larger particles. Crepidula and bivalve shells, with granules/pebbles and sand.
							macroalgae		unconsolidated			fragments 35, sand 15		N					'				Macroalgae on larger particles.
20SP-MW0521-017	1	5/16/2020	23.7	77	51	0.40	Rippled sands	Unconsolidated mineral			Medium sand	Sand 99, shell fragment 1	K	Y		N	E, A	Snails (2)	Y	N	N	N	Sand with some gravel. Macroalgae attached to gravel. Minor ripple wavelength not measureable.
20SP-MW0521-017	2	5/16/2020	23.7	71	47	0.34	Rippled sands	Unconsolidated mineral			Medium sand	Sand 98, gravel 1, shell fragment 1	R (15)	Υ	N	Υ	E, A	Snails (5), Hermit crab (1)	Y	N	N 	N	Macroalgae on gravel pieces, shell fragments.
20SP-MW0521-017	3	5/16/2020	23.7	79	53	0.42	Rippled sands	Unconsolidated mineral			Medium sand	Sand 99, shell fragment 1	R (18)	Y		N	<u> </u>	Snail (1)	N	N	N	N	Subtle bedforms.
20SP-MW0521-019	3	5/16/2020	21.9	78	52 50	0.41	Rippled sands Sand	Unconsolidated mineral			Fine/very fine sand	Sand 98, shell fragments 2	K	Y	•	Y	E, A E. A	Hermit crab (19), snail (3), bryozoans	Ϋ́	N	N	N N	Subtle ripples, with scour or biogenic depressions.
20SP-MW0521-019 20SP-MW0521-019	4	5/16/2020 5/16/2020	21.9 21.8	75 76	50	0.37	Sand Rippled sands				Fine/very fine sand Fine/very fine sand	Sand 95, shell fragments 4, cobble 1 Sand 99, shell fragment 1	N R (8)	т У		Y	⊑, A F Λ	Hermit crabs (8) Hermit crabs (15), snails (18)	T V	N N	IN NI	N N	Piece of cobble with barnacles. Crab shell. Piece of macroalgae. Some macroalgae. Very subtle ripples.
20SP-MW0521-019	2	5/16/2020	17.9	66	44	0.39	Sand and gravel	Unconsolidated mineral			s Sandy gravel	Granule/pebble 40, sand 50, shells	N (O)	N N		N N	۱, ۸ F	Bryozoans	' Y	N	N.	N	Medium sand with gravel and shell fragments. A few bryozoans.
20SP-MW0521-021	4	5/16/2020	18.2	68	46	0.29	Sand and gravel	Unconsolidated mineral	unconsolidated	Gravelly	Gravelly sand	10 Granule/pebble 15, cobble 5, sand	R (13)	N	Υ	N	E, A	Crepidula (4), snail (1),	Y	N	N	N	Bryozoans attached to cobble/gravel substrate. Tunicate evident. High
	_						-		unconsolidated		•	70, shell 10	. ,					bryozoans, tunicate, sponge					energy environment with mobile granules/pebbles and shell fragments, macroalgae.
20SP-MW0521-021	5	5/16/2020	17.9	88	59	0.52	Rippled sands with gravel and shells	Unconsolidated mineral	Coarse unconsolidated	Gravelly	Gravelly sand	Granule/pebble 10, boulder 20, sand 60, shells 10	R (20)	N	Υ	N	E, A	Snails (~40), Crepidula (5)	Y	N	N	N	Macroalgae and bryozoans attached to cobble and boulder. Crepidula shells and bivalve shells.

Plan View Image Ana	,	-,,						CMECS Substrate	e Classifications (Janua	ry 2020 Guid	ance and references therein	n)	_										
			Water	Image Width	Image Height	Field of				Substrate	ı		Bedforms R = ripples (wavelength				Biological	Epifauna/Infauna Types and		Fish Types	Mud		
Station ID 20SP-MW0521-022	Replicate	Image Date		(cm)	(cm) 52	View (m²	Habitat Type Sand and gravel	Substrate Class	Substrate Subclass Fine unconsolidated		Substrate Subgroup Medium sand	Substrate Group Percent Sand 90, shell 5, granule/pebble 5	in cm)	Burrows	Tubes	Tracks	Information E, A, I		Flora	and Count	Clasts E	- 55	
	3	5/16/2020	17.1	79		0.41	-	Unconsolidated mineral					IN	1	1			Diopatra (~200), snail (2), hermit crab (1)		IN	IN	N	High concentration of Diopatra worm tubes. Some pebbles.
20SP-MW0521-022	5	5/16/2020	17.2	83	55	0.46	Sand and gravel	Unconsolidated mineral	unconsolidated	Gravelly	Gravelly sand	Sand 90, gravel 5, shell fragments 5	N	Y	Y	Υ	E, A, I	Snails (2), Diopatra ~200	Y	N	N	N	Few calcareous worm tubes.
20SP-MW0521-022	6	5/16/2020	17.2	83	55	0.46	Sand and gravel	Unconsolidated mineral	Coarse unconsolidated	Gravelly	Gravelly sand	Medium sand 70, pebble/granule 25, shell 5	N	Y	Y	Y	E, A, I	Snails (3), Diopatra (50)	Y	N	N	N	One cobble, primarily medium sand with gravel. Green algae.
20SP-MW0521-023	1	5/16/2020	12.3	77	52	0.40	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Very coarse/coarse sand	d Sand 95, shell fragments 5	R (20)	N	N	Υ	Е	Snails (2)	N	N	N	N	Rippled sand with shell fragment deposits in troughs.
20SP-MW0521-023	2	5/16/2020	12.8	77	51	0.40	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Very coarse/coarse sand	d Sand 95, shell fragments 5	R (11)	N	N	N	N	N	N	N	N	N	Rippled sand with shell fragment deposits in troughs.
20SP-MW0521-023	3	5/16/2020	12.9	76	50	0.38	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Very coarse/coarse sand	d Sand 95, shell fragments 5	R (24)	N	N	N	N	N	N	N	N	N	Rippled sand with shell fragment deposits in troughs.
20SP-MW0521-025	1	5/16/2020	17.1	59	40	0.23	Gravel substrate	Unconsolidated mineral		Gravel mixe	es Sandy gravel	Granule/pebbles 70, sand 10, cobble 5, shell fragments 15	N	N	N	N	E, A	Orange Sponge, hydroids	Y	N	N	N	Gravelly sand with some cobble, Crepidula and bivalve shells.
20SP-MW0521-025	3	5/16/2020	16.9	66	44	0.29	Gravel substrate	Unconsolidated mineral	unconsolidated Coarse unconsolidated	Gravels	Gravel pavement	Granules/pebbles 80, shell fragments 10, sand 10	N	N	N	N	E, A	Barnacles, Hermit Crab (1), bryozoans	Υ	N	N	N	Gravelly sand with some cobble, Crepidula and bivalve shells, barnacles on cobble.
20SP-MW0521-025	4	5/16/2020	17.0	104	70	0.72	Gravel substrate	Unconsolidated mineral		Gravels	Gravel pavement	Granule/pebbles 80, sand 10, shells	N	N	N	N	E, A	Bryozoans, hydroids	Υ	N	N	N	Some cobble, primarily gravel with sand and shell fragments.
20SP-MW0521-027	1	5/16/2020	12.0	77	51	0.39	Sand and gravel	Unconsolidated mineral		Gravelly	Gravelly sand	10, cobble 1 Granule/pebble 25, sand 74, shell	R	Υ	Υ	N	E,A	Urchin (1)	Υ	N	N	N	Deposition of mobile sand around larger gravel pieces. Macroalgae on
20SP-MW0521-027	2	5/16/2020	12.0	72	48	0.34	Sand and gravel	Unconsolidated mineral	unconsolidated Fine unconsolidated	Gravelly	Gravelly sand	fragment 1 Granule/pebble 15, sand 75, shell	R	N	Υ	N	E, A	Sand dollar (1), snails (3)	Υ	N	N	N	larger gravel. Conglomerates of gravel and macroalgae. Mobile sand evident by
20SP-MW0521-027	3	5/16/2020	12.0	72	48	0.35	Rippled sands with gravel	Unconsolidated mineral	Coarse	Gravelly	Gravelly sand	fragments 10 Gravel 20, sand 79, shell fragment 1	R (7)	N	U	N	E, A	hermit crab (1) Snails (~50), hermit crabs	Υ	N	N	N	deposition around gravels. Isolated eelgrass. Barnacles on large pebbles. Some macroalgae. Shell fragments in
20SP-MW0521-029	1	5/15/2020	7.0	68	45	0.31	and shells Sand and gravel with	Unconsolidated mineral	unconsolidated Coarse	Gravelly	Gravelly sand	Granule/pebble 10, cobble 1, sand	N	N	Y	N	A, I	(10), Diopatra (5)		N	N	N	troughs of sand ripples. Diopatra polychaete tubes on surface. Macroalgae attached to larger
20SP-MW0521-029	3	5/15/2020	7.0	82	54	0.44	macroalgae Sand and gravel with	Unconsolidated mineral	unconsolidated Coarse	Gravel mixe	es Sandy gravel	80, shell fragments 9 Sand 70, granules/pebbles 20, shell	R	N	N	N	E. A	Barnacles, hydroids	Υ	N	N	N	substrate pieces. Sandy substrate with granules/pebbles. Macroalgae growth on large
20SP-MW0521-029	4	5/15/2020	7.0	75	50	0.38	macroalgae Sand and gravel with	Unconsolidated mineral	unconsolidated Coarse	Gravelly	Gravelly sand	fragments 10 Sand 70, granules/pebbles 15, shell	N	N	N	N	E. A	Diopatra (1)	· ·	N	N	N	gravel pieces. Bedforms visible, wavelength not measureable. High energy environment, sand and granule/pebble mix with shell
20SP-MW0521-031		5/15/2020	8.0	77	52	0.40	macroalgae	Unconsolidated mineral	unconsolidated	-		fragments 15	D (12.)	N	N	N	N.	N	N	N	N	N	fragments. Macroalgae on larger particles.
	'						Rippled sands				•	d Sand 99, shell fragments 1	R (13)	IN N			N	N	IN .	IN N	IN .		Sand ripples with shell fragment deposits in troughs.
20SP-MW0521-031	4	5/15/2020	8.0	74	49	0.36	Rippled sands	Unconsolidated mineral			,	d Sand 98, shell fragments 2	R (30)	IN	N	N	N 	N 	N 	N 	N 	N	Sand ripples with shell fragments deposits in troughs.
20SP-MW0521-031	5	5/15/2020	8.0	78	52	0.40	Rippled sands	Unconsolidated mineral				d Sand 99, shell fragment 1	R (30)	N	N	N	N	N	N	N	N	N	Rippled sands with some shell fragment deposits in trough.
20SP-MW0521-033	1	5/15/2020	9.0	77	51	0.40	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Sand 100	R (8)	N	N	Υ	N	N	Y	Unidentified Juvenile Fish	N	N	Rippled sand. Stick in upper part of image. Macroalgae fragment. Fish may be sand lance.
20SP-MW0521-033	3	5/15/2020	9.0	80	54	0.43	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Sand 100	R (12)	N	N	N	N	N	N	(45) N	N	N	Rippled sand with trace shell fragments.
20SP-MW0521-033	4	5/15/2020	9.0	79	53	0.42	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Sand 100	R (12)	N	N	Υ	N	N	N	N	N	N	Rippled sand with trace shell fragments.
20SP-MW0521-035	12	5/24/2020	20.3	59	40	0.24	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Very coarse/coarse sand	d Sand 99, shell fragment 1	R (21)	Y	Y	Υ	E	Snail (1)	N	N	N	N	Deposition of finer particles in troughs of ripples.
20SP-MW0521-035	13	5/24/2020	20.4	61	41	0.25	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Very coarse/coarse sand	d Sand 99, shell fragment 1	R	Υ	Υ	N	1	Diopatra (1)	N	N	N	N	Sand ripples with finer particles in troughs. Scale of image too small to
20SP-MW0521-035	14	5/24/2020	20.5	62	41	0.26	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Verv coarse/coarse sand	d Sand 99, shell fragment 1	R (30)	Υ	Y	N	1	Diopatra (1)	N	N	N	N	measure sand ripple wavelength. Finer particles and shell fragments in troughs.
20SP-MW0521-037	1	5/24/2020	26.9	64	42	0.27	Rippled sands	Unconsolidated mineral			Medium sand	Sand 100	R (32)	Y	Y	Y	F	Hermit crab (4)	N	N	N	N	Numerous biogenic depressions.
20SP-MW0521-037	2	5/24/2020	24.2	65	44	0.29	Rippled sands	Unconsolidated mineral			Medium sand	Sand 100	R (45)	· ·	Y	· ·	F	Crab (1), anemone (1)	N	N	N	N	Stick in upper part of image. Some flocculent material.
20SP-MW0521-037	2	5/24/2020	21.9	66	44	0.29		Unconsolidated mineral			Medium Sand	Sand 100, shell fragment <1		Y	Y		_	Anemone (2)	N	N	N	N	Crab shell, few shell fragments. Some flocculent material.
	- 7						Rippled sands						R (25)							N N			
20SP-MW0521-039	,	5/25/2020	22.8	64	43	0.27	Rippled sands	Unconsolidated mineral			Fine/very fine sand	Sand 100	R (24)	N	Y	Y	_	Anemone (1), hermit crabs (6)	N 	N	N	N	Numerous tubes.
20SP-MW0521-039	8	5/25/2020	28.0	62	41	0.26	Rippled sands	Unconsolidated mineral			Fine/very fine sand	Sand 100	R (26)	N	Y	Y	E	Snail (1)	N	N	N	N	Numerous tubes on surface.
20SP-MW0521-039	9	5/25/2020	28.3	63	42	0.27	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Sand 100	R (26)	N	Y	Υ	ı	N	N	N	N	N	Some flocculent material on surface. Many small tubes.
20SP-MW0521-041	1	5/25/2020	29.7	52	35	0.18	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Fine sand 100, shell fragment <1	R (10)	N	Y	Υ	E	Anemone (16)	N	N	N	N	Numerous anemones.
20SP-MW0521-041	3	5/25/2020	29.3	61	40	0.24	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Sand 100	R	Υ	Υ	Υ	Е	Hermit crab (1)	N	N	N	N	Few diopatra on surface. Very few shell fragments. Very subtle ripples.
20SP-MW0521-041	4	5/25/2020	29.7	61	40	0.25	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Sand 100	N	Υ	Υ	Υ	E	Anemone (15)	N	N	N	N	Long tubes or fecal casts on surface.
20SP-MW0521-043	6	5/25/2020	30.5	62	41	0.26	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Medium sand	Sand 99, shell fragment 1	R	N	Υ	Y	E	Anemone (1), hermit crab (4)	N	N	N	N	High levels of turbidity in water column. Ripples are very subtle.
20SP-MW0521-043	8	5/25/2020	30.3	58	39	0.23	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Medium sand	Sand 99, shell fragment 1	R (18)	N	Υ	Υ	E, I	Snail (3); Diopatra (1)	N	N	N	N	High turbidity in the water column.
20SP-MW0521-043	9	5/25/2020	29.8	67	44	0.30	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Medium sand	Sand 99, shell fragment 1	R (25)	N	Υ	Υ	E	Anemone (2); Snail (5)	N	N	N	N	High turbidity in water column.
20SP-MW0521-045	2	5/25/2020	33.8	62	41	0.25	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Sand 99, shell fragment 1	R (13)	Υ	Y	Y	E	Sand Dollar (6), hermit crab	N	N	N	N	Numerous Diopatra on surface.
20SP-MW0521-045	3	5/25/2020	32.9	57	38	0.21	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Sand 99, shell fragment 1	R (14)	Υ	Υ	Υ	E	Hermit crab (5)	N	N	N	N	Numerous tubes on surface.
20SP-MW0521-045	5	5/25/2020	32.9	61	41	0.25	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Sand 100, shell fragment <1	R (19)	N	Υ	Υ	Е	Hermit crab (1); anemone (1)	N	N	N	N	Few Diopatra tubes on surface.
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Appendix C2: PV Image Data Set Sediment Profile and Plan View Imaging Survey Mayflower Wind Farm, May 2020

Plan View Image Analysis Results, Mayflower Survey, May 2020

Plan View Image An	alysis Re	esults, IV	ayriower S	survey, May	y 2020				CMECS Substrate	e Classifications (January	/ 2020 Guida	ance and references therei	in)	_										
				Water	Image Width	Image Height	Field of				Substrate			Bedforms R = ripples (wavelength			E	Biological	Epifauna/Infauna Types and		Fish Types	Mud		
Station ID 20SP-MW0521-047			age Date		(cm) 62	(cm) 41	View (m²		Substrate Class	Substrate Subclass	Group	Substrate Subgroup	Substrate Group Percent	in cm) R (16)	Burrows	Tubes T	Tracks In	nformation		Flora		Clasts	Beggiato N	
			25/2020	33.5			0.26	Soft bottom	Unconsolidated mineral	Fine unconsolidated		Fine/very fine sand	Sand 98, shell fragments 2	K (10)	T	ī	ī	'	Diopatra (1)	N	N	IN	IN	Numerous worm tubes on surface. Ripples are very subtle.
20SP-MW0521-047	2	5/:	25/2020	33.1	64	43	0.27	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Sand 100	R	Υ	Y	Υ	Е	Anemone (1)	N	N	N	N	High turbidity in water column. Subtle ripples on surface.
20SP-MW0521-047	3	5/:	25/2020	33.5	61	41	0.25	Rippled soft bottom	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Sand	R (13)	Υ	Υ	Υ	Е	Hermit crab (1)	N	N	N	N	High turbidity in the water column.
20SP-MW0521-049	1	5/:	25/2020	33.9	59	39	0.23	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Sand 100	R (7)	Υ	Υ	Υ	Е	Hermit crab (2)	N	N	N	N	Few diopatra tubes on surface. Irregular ripple wavelength, very subtle.
20SP-MW0521-049	2	5/3	25/2020	34.0	56	37	0.21	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Sand 100	R (17)	Υ	Υ	Υ	Е	Sand Dollar (4); hermit crab	N	N	N	N	Turbidity in water column. Tubes concentrated in troughs between ripples.
20SP-MW0521-049	3	5/:	25/2020	34.1	61	41	0.25	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Sand 100	R (17)	Υ	Υ	Υ	N	N	N	N	N	N	Turbidity in the water column. A few Diopatra.
20SP-MW0521-051	1	5/:	25/2020	35.5	63	42	0.26	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine sand	Sand 100	R (12)	Υ	Υ	Υ	Е	N	N	N	N	N	Sand ripples are subtle.
20SP-MW0521-051	2	5/:	25/2020	35.6	63	42	0.26	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine sand	Sand 100, shell fragment <1	R (8)	Υ	Υ	Υ	N	N	N	N	N	N	Sand ripples are subtle.
20SP-MW0521-051	3	5/3	25/2020	35.6	61	40	0.24	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine sand	Sand 100, shell fragment <1	R	Υ	Υ	Υ	E,I	Hermit crab (1); Diopatra (10+)	N	N	N	N	Very subtle sand ripple. Wave length indeterminate.
20SP-MW0521-053	6	5/:	23/2020	36.3	78	52	0.41	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Sand 100, shell fragment <1	R (7)	Υ	Υ	N	E, I	Hermit crab (1)	N	N	N	N	Particulates in water column. Some tubes and burrows.
20SP-MW0521-053	7	5/:	23/2020	35.3	78	52	0.40	Sand with worm reef	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Sand 100, shell fragment <1	N	Υ	Υ	Υ	E, I	Bryozoans	N	N	N	N	Subarea with high density of tubes, possibly amphipods. Possible
20SP-MW0521-053	11	5/:	25/2020	36.5	57	38	0.22	Sand with dense worm tubes	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Sand 100, shell fragment <1	N	Υ	Υ	Υ	E, I	Hermit crab (1)	N	N	N	N	bryozoan in middle of image. 60% of surface area with tubes, possibly Ampelisca (amphipods).
20SP-MW0521-054			22/2020	39.6	81	54	0.43	Rippled sands	Unconsolidated mineral			Fine/very fine sand	Sand 100, shell fragment <1	R (8)	N	Y	N	<u> </u>	N	N	N	N	N	Imprint artifact of SPI frame. Particulates in water column. Tubes in troughs of ripples.
20SP-MW0521-054			22/2020	37.0	71	47	0.34	Rippled sands	Unconsolidated mineral			Fine/very fine sand	Sand 100, shell fragment <1	R (7)	N	Y	···	F I	Hermit crab (1)	N	N	N	N	Particulates in water column. Tubes in troughs of ripples.
20SP-MW0521-054			22/2020	39.2	91	54	0.44	Rippled sands	Unconsolidated mineral			Fine/very fine sand	Sand 100, shell fragment <1	R (10)	· ·	· V	· v	E, I	Jonah Crab (1); hermit crab (1)	N	N	N	N.	Numerous worm tubes in troughs of ripples. Particulates in water column.
					84	56	0.44								· ·	· ·	· ·	N N		N	N N	N	N N	High concentration of particulates in water column.
20SP-MW0521-055			22/2020	39.7	04			Rippled sands	Unconsolidated mineral			Fine sand	Sand 100	R (5)	T		Y	IN	N	IN	N 	IN	IN	·
20SP-MW0521-055			22/2020	39.8	82	55	0.45	Rippled sands	Unconsolidated mineral			Fine sand	Sand 100	R (5)	Υ	Y	Y	N 	N 	N	N	Υ	N	High concentration of particulates in water column. Worm and amphipod tubes in troughs between ripples.
20SP-MW0521-055			22/2020	40.1	81	54	0.44	Rippled sands	Unconsolidated mineral			Fine sand	Sand 100, shell fragment <1	R (9)	Y	Y		N	N	N	N	N	N	High concentration of particulates in water column. Large bivalve shell (~6 cm).
20SP-MW0521-057	3		22/2020	41.2	74	49	0.36	Rippled sands	Unconsolidated mineral			Fine/very fine sand	Sand 100	R (7)	N	Y	N	N	N	N	N	N	N	High concentration of particulates in water column. Tubes in troughs of ripples.
20SP-MW0521-057	4	5/:	22/2020	41.2	82	55	0.45	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Sand 100, shell fragment <1	R (10)	Υ	Y	Υ	N	N	N	N	N	N	High concentration of particulates in water column. Tubes in troughs of ripples.
20SP-MW0521-057	5	5/:	22/2020	41.3	73	49	0.36	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Sand 100, shell fragment <1	R (9)	N	Y	Υ	E	Hermit crab (1)	N	N	N	N	High concentration of particulates in water column. Tubes in troughs of ripples.
20SP-MW0521-059	1	5/:	22/2020	40.7	86	57	0.49	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Sand 100, shell fragment <1	R (9)	N	Y	N	N	N	N	N	N	N	High concentration of particulates in water column. Tubes in troughs of ripples.
20SP-MW0521-059	2	5/:	22/2020	40.6	88	59	0.52	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Sand 100, shell fragment <1	R (10)	N	Υ	N	N	N	N	N	N	N	High concentration of particulates in water column. Tubes predominantly in troughs of ripples.
20SP-MW0521-059	3	5/:	22/2020	40.7	86	57	0.49	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Sand 100, shell fragment <1	R (11)	N	Υ	N	N	N	N	N	N	N	High concentration of particulates in water column. Tubes in troughs of ripples.
Mayflower Wind Le	ase Area																							
20SP-MW0521-061	1	5/	14/2020	40.2	84	56	0.47	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Sand 100, shell fragment <1	R (12)	Υ	Υ	Υ	E, I	Snail (1), Diopatra (1)	N	N	N	N	Diopatra worm tube on surface. Ripples are subtle.
20SP-MW0521-061	3	5/	14/2020	40.0	86	57	0.49	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Sand 100, shell fragment <1	R (15)	Υ	Y	Υ	E, I	Snail (1), Diopatra (28) skate egg case (1)	N	N	N	N	Diopatra tubes on surface. Ripples are subtle, low wave height. Skate Egg Case.
20SP-MW0521-061	5	5/	14/2020	40.0	85	57	0.48	Rippled sands	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Sand/silt 100, shell fragment <1	R (13)	Υ	Υ	Υ	E, I	Snail (1), Diopatra (5)	N	N	N	N	Ripples are subtle. Stick and bird feather.
20SP-MW0521-064	2	5/	14/2020	45.3	71	47	0.33	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Sandy mud	NA	Sand/silt 100, shell fragment <1	N	Υ	Υ	Υ	Е	Nudibranch(1)	N	N	N	N	Possible squid egg case attached to bryozoan colony. Biogenic depressions, burrow openings.
20SP-MW0521-064	3	5/	14/2020	45.3	74	49	0.36	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Sandy mud	NA	Sand/silt 100, shell fragment <1	N	Υ	Υ	Υ	E	Nudibranch (1)	N	N	N	N	Biogenic depressions and burrows, some tubes.
20SP-MW0521-064	5	5/	14/2020	45.2	80	53	0.43	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Sandy mud	NA	Sand/silt 100, shell fragment <1	N	Υ	Υ	Υ	Е	Hermit Crab (2)	N	N	N	N	High concentration of Ampelisca tubes on surface.
20SP-MW0521-066	1	5/	14/2020	44.4	79	53	0.42	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Sandy mud	NA	Sand 100, shell fragment <1	N	Υ	Υ	Υ	Е	Fish (1); gastropod (2); hermit	N	Unidentified	N	N	Bryozoans and hydroids. A few bird feathers. High concentration of
20SP-MW0521-066	3	5/	14/2020	43.0	78	52	0.41	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Sandy mud	NA	Sand/silt 100, shell fragment <1	N	Υ	Υ	Υ	Е	crab (1) Nudibranch (2); fish (1)	N	fish (1) Hake (1)	N	N	Ampelisca tubes. Fish is half buried in sediment. Dense area of Ampelisca tubes.
20SP-MW0521-066	4	5/	14/2020	43.1	75	50	0.37	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Sandy mud	NA	Sand/silt 100, shell fragment <1	N	Υ	Υ	Υ	Е	Snail (1); fish (1)	N	Unidentified	N	N	Partial image of fish. High concentration of Ampelisca tubes.
20SP-MW0521-067	1	5/	15/2020	46.6	72	48	0.34	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Sand/silt 100, shell fragment <1	N	Υ	Υ	Υ	Е	Diopatra (5); hermit crabs (2)	N	fish (1) N	N	N	Biogenic depressions, from foraging fish.
20SP-MW0521-067	2	5/	15/2020	46.9	75	50	0.37	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Sand/silt 100, shell fragment <1	N	Υ	Υ	Υ	Е	Snail (1)	N	Hake (1)	N	N	Many tracks, and biogenic depression from fish foraging.
20SP-MW0521-067	3	5/	15/2020	46.7	75	50	0.38	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Sand/silt 100, shell fragment <1	N	Υ	Υ	Υ	N	N	N	N	N	N	Many tracks and worms tubes.
20SP-MW0521-070	1	5/	14/2020	45.5	69.85	48.26	0.00	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	VFS/silt 100, shell fragment <1	N	Υ	Y	Υ	E, I	Diopatra (8)	N	N	N	N	Moderate amount of tubes, burrows and tracks.
20SP-MW0521-070	2	5/	14/2020	45.4	72	48	0.35	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Sand and silt 100, shell fragment <1	I N	Υ	Υ	Υ	E, I	Hermit Crab (1); Diopatra (10)	N	N	N	N	Many tracks, evidence of recent burrow excavation.
20SP-MW0521-070	5	5/	14/2020	45.5	76	51	0.39	Soft bottom	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Sand/silt 100, shell fragment <1	N	Υ	Υ	Υ	E, I	Hermit crab (1); Diopatra (5)	N	N	N	N	Numerous worm and Ampelisca tubes.
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Plan View Image Analysis Results, Mayflower Survey, May 2020		CMECS Substrate Classifications (January 2020 Guidance and references therei	in)								
Image Image Water Width Height	ield of	Substrate		Bedforms R = ripples (wavelength			Biological	Epifauna/Infauna Types and	Fish Types		
Station ID Replicate Image Date Depth (m) (cm) (cm) 20SP-MW0521-071 1 5/14/2020 45.8 78 52	ew (m²) Habitat Type 0.41 Soft bottom	Substrate Class Substrate Subclass Group Substrate Subgroup Unconsolidated mineral Fine unconsolidated Mud NA	Substrate Group Percent Sand/silt 100, shell fragment <1	in cm)	Burrows Tubes	s Tracks In	formation E, I	Counts Snails (6); Diopatra tubes (4)	Flora and Count	Clasts Begg	
			_	N.	Y				N N	N N	·
	0.35 Soft bottom		Sand/silt 100, shell fragment <1	IN		T	E, I	Snail (2); Diopatra (2)	N N		Skate imprint, lower right corner.
20SP-MW0521-071 4 5/14/2020 45.8 77 51	0.39 Soft bottom	Unconsolidated mineral Fine unconsolidated Mud NA	Sand/silt 100, shell fragment <1	N	Y Y	Y	E, I	Snails (3); hermit crab (1); Diopatra (2)	N N	N N	Many biogenic depressions, tubes and tracks.
20SP-MW0521-073 1 5/17/2020 51.4 82 55	0.45 Soft bottom	Unconsolidated mineral Fine unconsolidated Mud NA	Sand/silt 100, shell fragment <1	N	Y Y	Y	E	Nudibranch (1); snail (2)	N Hake (1)	N N	Biogenic depressions, many tubes along margins of depressions.
20SP-MW0521-073 3 5/17/2020 51.3 79 53	0.42 Soft bottom	Unconsolidated mineral Fine unconsolidated Mud NA	Sand/silt 100, shell fragment <1	N	Y Y	Υ	E	Snail (2)	N N	N N	Many worm tubes and Ampelisca tubes. Biogenic depressions with dense concentration of tubes along margins.
20SP-MW0521-073 5 5/17/2020 51.4 74 49	0.36 Soft bottom	Unconsolidated mineral Fine unconsolidated Mud NA	Sand/silt 100, shell fragment <1	N	Y Y	Υ	E	Snails (10)	N N	N N	
20SP-MW0521-074 1 5/17/2020 50.0 69 46	0.32 Soft bottom	Unconsolidated mineral Fine unconsolidated Mud NA	Sand/silt 100, shell fragment <1	N	Y Y	Y	Е	Nudibranch (1); snail (1)	N N	N N	
20SP-MW0521-074 2 5/17/2020 50.0 70 47	0.33 Soft bottom	Unconsolidated mineral Fine unconsolidated Mud NA	Sand/silt 100, shell fragment <1	N	Y Y	Υ	Е	Hermit crabs (3); snail (1)	N N	N N	
20SP-MW0521-074 5 5/17/2020 50.0 69 46	0.32 Soft bottom	Unconsolidated mineral Fine unconsolidated Mud NA	Sand/silt 100, shell fragment <1	N	Y Y	Υ	E	Snails (3)	N Hake (1)	N N	,
20SP-MW0521-076 5 5/15/2020 47.1 72 48	0.35 Soft bottom	Unconsolidated mineral Fine unconsolidated Mud NA	Sand/silt 100, shell fragment <1	N	Y Y	Y	Е	Snail (4); shrimp (1)	N N	N N	
20SP-MW0521-077 1 5/15/2020 50.2 77 51	0.39 Soft bottom	Unconsolidated mineral Fine unconsolidated Mud NA	Sand/silt 100, shell fragment <1	N	Y Y	Υ	E	Snail (2)	N N	N N	
20SP-MW0521-077 2 5/15/2020 50.3 75 50	0.37 Soft bottom	Unconsolidated mineral Fine unconsolidated Mud NA	Sand/silt 100, shell fragment <1	N	Y Y	Υ	E	Juvenile shrimp (~100)	N N	N N	tracks, tubes and burrows. Bivalve shell. Many worm tubes, burrow and tracks. Ampelisca tubes in biogenic
20SP-MW0521-077 8 5/15/2020 50.2 76 51	0.39 Soft bottom	Unconsolidated mineral Fine unconsolidated Sandy mud NA	Sand/silt 100, shell fragment <1	N	Y Y	Υ	E	Snail (2)	N Hake (1)	N N	depression. Many tubes, burrows and tracks. Ampelisca tubes.
20SP-MW0521-080 1 5/17/2020 50.3 75 50	0.37 Soft bottom	Unconsolidated mineral Fine unconsolidated Mud NA	Sand/silt 100, shell fragment <1	N	Y Y	Y	N	N	N N	N N	High concentration of tubes, burrows and tracks. Bivalve shell.
20SP-MW0521-080 3 5/17/2020 50.3 66 44	0.29 Soft bottom	Unconsolidated mineral Fine unconsolidated Mud NA	Sand/silt 100, shell fragment <1	N	Y Y	Y	N	N	N N	N N	
20SP-MW0521-080 5 5/17/2020 50.2 74 50	0.37 Soft bottom	Unconsolidated mineral Fine unconsolidated Mud NA	Sand/silt 100, shell fragment <1	N	Y Y	Υ	E	Hermit crab (2)	N N	N N	·
20SP-MW0521-082 1 5/17/2020 49.6 73 49	0.36 Soft bottom	Unconsolidated mineral Fine unconsolidated Mud NA	Sand/silt 100, shell fragment <1	N	Y Y	Υ	E, I	Nudibranch (1); shrimp (2);	N N	N N	High concentration of tubes, tracks and burrows. Dense clusters of tubes
20SP-MW0521-082 3 5/17/2020 49.6 76 51	0.39 Soft bottom	Unconsolidated mineral Fine unconsolidated Mud NA	Sand/silt 100, shell fragment <1	N	Y Y	Υ	E	bivalve siphons (10) Anemone (1)	N N	N N	
20SP-MW0521-082 5 5/17/2020 49.6 70 46	0.32 Soft bottom	Unconsolidated mineral Fine unconsolidated Mud NA	Sand/silt 100, shell fragment <1	N	Y Y	Υ	E, I	Snails (2), bivalve siphons (8)	N N	N N	
20SP-MW0521-083 1 5/17/2020 51.3 70 47	0.33 Soft bottom	Unconsolidated mineral Fine unconsolidated Sandy mud NA	Sand/silt 100, shell fragment <1	N	Y Y	Y	N	N	N N	N N	ampelisca tubes in depressions. Many tracks, tubes and burrows. High concentration of tubes, burrows and tracks. Few biogenic
20SP-MW0521-083 2 5/17/2020 51.3 74 49	0.36 Soft bottom	Unconsolidated mineral Fine unconsolidated Mud NA	Sand/silt 100, shell fragment <1	N	Y Y	Υ	Е	Juvenile shrimp (1)	N Hake (1)	N N	depressions. 4 ~26cm Hake in depression. Other depressions evident with high
20SP-MW0521-083 5 5/17/2020 51.2 75 50	0.38 Soft bottom	Unconsolidated mineral Fine unconsolidated Sandy mud NA	Sand/silt 100, shell fragment <1	N	Y Y	Y	Е	Hermit crab (1)	N N	N N	concentration of tubes. Many burrows and tracks. High concentration of ampelisca tubes in biogenic depressions. Many
20SP-MW0521-084 3 5/17/2020 52.2 80 53	0.43 Soft bottom	Unconsolidated mineral Fine unconsolidated Sandy mud NA	Sand/silt 100, shell fragment <1	N	Y Y	Y	N	N	N N	N N	burrows, tubes and tracks. Biogenic depressions, with dense concentration of tubes. Many tracks,
20SP-MW0521-084 4 5/17/2020 52.2 79 53	0.42 Soft bottom	Unconsolidated mineral Fine unconsolidated Sandy mud NA	Sand/silt 100, shell fragment <1	N	Y Y	Y	F	Hermit crab (1)	N Hake (1)	N N	tubes and burrows. Very few shell fragments.
20SP-MW0521-084 5 5/17/2020 52.3 79 53	0.42 Soft bottom	Unconsolidated mineral Fine unconsolidated Sandy mud NA	Sand/silt 100, shell fragment <1	N	Y Y	· V	N	N	N Sea Robbin		tracks, tubes and burrows. Fish in depression.
		<u> </u>				· ·		land such (4)	(1)		depressions.
20SP-MW0521-086 1 5/17/2020 54.3 80 53	0.42 Soft bottom	Unconsolidated mineral Fine unconsolidated Sandy mud NA	Sand/silt 100, shell fragment <1	N	Y Y	•		Jonah crab (1)	N N	N N	depressions.
20SP-MW0521-086 3 5/17/2020 54.1 74 50	0.37 Soft bottom	Unconsolidated mineral Fine unconsolidated Sandy mud NA	Sand/silt 100, shell fragment <1	N	Y Y	Y	N	N	N N	N N	Sediment kicked up by quickly departing fish.
20SP-MW0521-086 5 5/17/2020 54.3 76 51	0.39 Soft bottom	Unconsolidated mineral Fine unconsolidated Sandy mud NA	Sand/silt 100, shell fragment <1	N	Y Y	Y	E	Jonah crab (1); shrimp (3)	N N	N N	fragments.
20SP-MW0521-088 1 5/17/2020 51.2 75 50	0.38 Soft bottom	Unconsolidated mineral Fine unconsolidated Sandy mud NA	Sand/silt 100, shell fragment <1	N	Y Y	Y	E	Snail (1)	N N	N N	Egg case. Many tracks, burrows and tubes.
20SP-MW0521-088 2 5/17/2020 51.1 84 56	0.47 Soft bottom	Unconsolidated mineral Fine unconsolidated Sandy mud NA	Sand/silt 100, shell fragment <1	N	Y Y	Υ	E	Crab (1); shrimp (1)	N N	N N	Many burrows and tracks. Lower concentration of tubes. Dense clusters of tubes in deeper biogenic depressions.
20SP-MW0521-088 5 5/17/2020 51.2 78 52 20SP-MW0521-090 1 5/18/2020 53.8 74 49	0.41 Soft bottom	Unconsolidated mineral Fine unconsolidated Sandy mud NA	Sand/silt 100, shell fragment <1	N		Y	N	N	N Hake (1)	N N	High concentration of burrows, tubes associated with biogenic depressions, many tracks.
	0.36 Soft bottom	Unconsolidated mineral Fine unconsolidated Mud NA	Sand/silt 100, shell fragment <1	IN	Y Y	Y	_	Hermit crab (1)	N N	N N	
20SP-MW0521-090 2 5/18/2020 53.7 75 50	0.38 Soft bottom	Unconsolidated mineral Fine unconsolidated Mud NA	Sand/silt 100, shell fragment <1	N	Y Y	Y	E	Snail (1)	N N	N N	
20SP-MW0521-090 7 5/18/2020 53.7 77 51	0.40 Soft bottom	Unconsolidated mineral Fine unconsolidated Mud NA	Sand/silt 100, shell fragment <1	N	Y Y	Y	N	N	N N	N N	Many tubiculous isopods and amphipods. Many tubes, burrows and tracks. Evidence of biogenic depressions.
20SP-MW0521-091 1 5/18/2020 54.4 75 50	0.38 Soft bottom	Unconsolidated mineral Fine unconsolidated Mud NA	Sand/silt 100	N	Y Y	Υ	1	Worm (1)	N N	N N	Many tubes, tracks and burrows. One worm on surface.
20SP-MW0521-091 3 5/18/2020 54.3 76 50	0.38 Soft bottom	Unconsolidated mineral Fine unconsolidated Mud NA	Sand/silt 100, shell fragment <1	N	Y Y	Υ	Е	Snail (1)	N N	N N	Moderate amount of tubes, burrows and tracks.
20SP-MW0521-091 5 5/18/2020 54.3 77 51	0.39 Soft bottom	Unconsolidated mineral Fine unconsolidated Mud NA	Sand/silt 100	N	Y Y	Υ	E	Nudibranch(1), snail (1); hermit crab (1)	N N	N N	Many tracks, tubes and burrows.
20SP-MW0521-093 1 5/18/2020 55.4 76 50	0.38 Soft bottom	Unconsolidated mineral Fine unconsolidated Sandy mud NA	Sand/silt 100, shell fragment <1	N	Y Y	Y	Е	Anemone (1)	N N	N N	Large biogenic excavation. High concentration of tubes along edge of depression. Many tubes, burrows and tracks.
20SP-MW0521-093 2 5/18/2020 55.4 70 46	0.32 Soft bottom	Unconsolidated mineral Fine unconsolidated Mud NA	Sand/silt 100, shell fragment <1	N	Y Y	Υ	N	N	N N	N N	
20SP-MW0521-093 4 5/18/2020 53.7 122 81	0.99 Soft bottom	Unconsolidated mineral Fine unconsolidated Mud NA	Sand/silt 100, shell fragment <1	N	Y Y	Υ	E, I	Snail (3), red worms (2)	N N	N N	Many burrows and tracks, moderate amount of tubes. Biogenic depression with high concentration of tubes along margins.

								CMECS Substrate				_									
			Water	Image Width	Image Height	Field o	•			Substrate		Bedforms R = ripples (wavelength			Biologica			Fish Types	Mud		
ation ID SP-MW0521-096	Replicate 1	Image Date 5/17/2020	53.8	(cm) 80	(cm) 54	View (m 0.43	· · · · · · · · · · · · · · · · · · ·	Substrate Class Unconsolidated mineral	Substrate Subclass Fine unconsolidated Sa	Group Substrate Subgroup	Substrate Group Percent Sand/silt 100, shell fragment <1	in cm)	Burrows T	ubes Trad	cks Informatio	n Counts Hermit crab (1)	Flora	and Count N	Clasts	Beggiato N	Many long tubes, tracks and burrows.
P-MW0521-096	3	5/17/2020	53.7	78	52	0.40	Soft bottom		Fine unconsolidated Sa	•	Sand/silt 100, shell fragment <1	N	Y	Y Y	N	N	N	N	N	N	Egg Case top left. Biogenic depressions with higher concentration of
-MW0521-096	4	5/17/2020	53.5	76	50	0.38	Soft bottom	Unconsolidated mineral	Fine unconsolidated Sa	andy mud NA	Sand/silt 100, shell fragment <1	N	Υ	Y Y	Е	Isopods (~10)	N	N	N	N	tubes along margins. Many tubes, burrows and tracks. Large biogenic depression, with high concentration of tubes along margins. Many tubes, burrows and tracks.
-MW0521-098	1	5/17/2020	55.3	83	55	0.46	Rippled sands	Unconsolidated mineral	Fine unconsolidated Sa	andy mud NA	Sand/silt 100, shell fragment <1	R (29)	Y	Y Y	Е	Hermit crabs (2)	N	N	N	N	Some tubes, burrows and moderate amount of tracks. One crest of bedform visible.
-MW0521-098	4	5/17/2020	55.2	79	53	0.42	Rippled sands	Unconsolidated mineral	Fine unconsolidated Sa	andy mud NA	Sand/silt 99, shell fragment 1	R	Υ	Y Y	E	Hermit crab (1); shrimp (1); snail (1)	N	N	N	N	Large bivalve shell (5 cm). A few tubes and burrows, many tracks subtle ripple, not measureable.
-MW0521-098	5	5/17/2020	55.3	93	62	0.58	Rippled sands	Unconsolidated mineral	Fine unconsolidated Sa	andy mud NA	Sand/silt 100, shell fragment <1	R (26)	Υ	Y Y	Е	Hermit crab (1)	N	N	N	N	Moderate amount of tracks, some burrow and tubes. Relatively lar period between ripple crests.
-MW0521-100	1	5/23/2020	49.4	77	51	0.39	Soft bottom	Unconsolidated mineral	Fine unconsolidated Sa	andy mud NA	Sand/silt 100, shell fragment <1	N	Y	Y Y	I	Diopatra (1), worms (2)	N	N	N	N	2 worms on surface. Many tubes, burrows and tracks.
P-MW0521-100	2	5/23/2020	49.5	83	55	0.46	Soft bottom	Unconsolidated mineral	Fine unconsolidated Sa	andy mud NA	Sand/silt 100, shell fragment <1	N	Υ	Y Y	N	N	N	N	N	N	Biogenic depressions with high concentration of tubes within. Man
P-MW0521-100	3	5/23/2020	49.5	85	56	0.48	Soft bottom	Unconsolidated mineral	Fine unconsolidated Sa	andy mud NA	Sand/silt 100, shell fragment <1	NS	Υ	Y Y	Е	Sand dollar (1)	N	N	N	N	tubes, burrows and tracks. Large biogenic depressions with many tubes within. Many tracks, the depressions with many tubes within tracks, the depressions with many tubes within the depressions within the depression with many tubes within the depression with the depression w
P-MW0521-101	1	5/18/2020	54.6	77	52	0.40	Soft bottom	Unconsolidated mineral	Fine unconsolidated M	ud NA	Sand/silt 100, shell fragment <1	N	Y	Y Y	E	Anemone (1)	N	N	N	N	and burrows. Hake in depression. Depression contain high concentration of tube
P-MW0521-101	2	5/18/2020	54.4	77	51	0.39	Soft bottom	Unconsolidated mineral	Fine unconsolidated M	ud NA	Sand/silt 100	N	Υ	Y Y	Е	Hermit crabs (2)	N	N	N	N	Many tubes, burrows and tracks. Biogenic depressions with high. concentration of tubes. Many tube tracks and burrows.
P-MW0521-101	4	5/18/2020	54.5	73	48	0.35	Soft bottom	Unconsolidated mineral	Fine unconsolidated M	ud NA	Sand/silt 100, shell fragment <1	N	Υ	Y Y	N	N	N	Unidentified fish (1)	N	N	High concentration of tubes in biogenic depressions. Many tubes, burrows and tracks.
P-MW0521-102	1	5/18/2020	55.3	73	49	0.36	Soft bottom	Unconsolidated mineral	Fine unconsolidated M	ud NA	Sand/silt 100	N	Υ	Y Y	E	Snail (1)	N	N	N	N	Many tubes, burrows and tracks. Higher concentration of tubes in biogenic depressions.
P-MW0521-102	3	5/18/2020	52.9	82	54	0.44	Soft bottom	Unconsolidated mineral	Fine unconsolidated M	ud NA	Sand/silt 100, shell fragment <1	N	Υ	Y Y	Е	Hermit crab (1); anemone (1)	N	Fish (1)	N	N	Unidentifiable juvenile fish.
-MW0521-102	5	5/18/2020	55.3	75	50	0.38	Soft bottom	Unconsolidated mineral	Fine unconsolidated M	ud NA	Sand/silt 100, shell fragment <1	N	Υ	Y Y	N	N	N	N	N	N	Biogenic depression with high concentration of tubes. Many burre tracks and tubes.
P-MW0521-103	1	5/22/2020	56.8	81	54	0.43	Soft bottom	Unconsolidated mineral	Fine unconsolidated M	ud NA	Sand/silt 100, shell fragment <1	N	Y	Y Y	E	Anemone (1)	N	N	N	N	Large biogenic depressions with high concentration of tubes.
MW0521-103	2	5/22/2020	56.8	80	53	0.42	Soft bottom	Unconsolidated mineral	Fine unconsolidated M	ud NA	VFS/silt 100, shell fragment <1	N	Υ	Y Y	N	N	N	N	N	N	Higher concentration of Ampelisca Tubes in biogenic depression
P-MW0521-103	3	5/22/2020	56.7	84	56	0.47	Soft bottom	Unconsolidated mineral	Fine unconsolidated M	ud NA	VFS/silt 100, shell fragment <1	N	Υ	Y Y	Е	Anemone (1), shrimp (1)	N	N	N	N	Biogenic excavations. Moderate to High concentration of tubes. L amount of burrow and moderate tracks. Anemone bottom right in
P-MW0521-106	6	5/22/2020	57.1	76	51	0.39	Soft bottom	Unconsolidated mineral	Fine unconsolidated M	ud NA	Sand/silt 100	N	Y	Y Y	Е	Snails (4); anemone (1)	N	N	N	N	Moderate amount of tracks, tubes and burrows.
-MW0521-106	8	5/22/2020	56.9	84	56	0.47	Soft bottom	Unconsolidated mineral	Fine unconsolidated M	ud NA	Sand and silt 100, shell fragment <1	N	Υ	Y Y	E	Anemone (4); hermit crab (1);	N	N	N	N	Large biogenic depression, left side of image. Moderate amount
MW0521-106	9	5/22/2020	57.1	88	59	0.52	Soft bottom	Unconsolidated mineral	Fine unconsolidated M	ud NA	Sand/silt 100, shell fragment <1	N	Υ	Y Y	E, I	unidentifiable org. (1) Shrimp (1); anemone (2);	N	N	N	N	burrows and tracks. High concentration of tracks. Moderate amount of burrows and to
-MW0521-108	1	5/22/2020	54.7	84	56	0.47	Soft bottom	Unconsolidated mineral	Fine unconsolidated M	ud NA	Silt 90, VFS 10	R (10)	Y	Y Y	Е	bivalve siphon (1) Anemone (9)	N	N	N	N	Low amount of tracks, burrows and tubes.
-MW0521-108	6	5/22/2020	55.2	81	54	0.43	Soft bottom	Unconsolidated mineral	Fine unconsolidated M	ud NA	Silt 90, VFS 10, shell fragment <1	R (10)	Υ	Y Y	E	Anemone (13)	N	N	Υ	N	Mud clast is an artifact from the SPI frame. Low amount of burrou moderate amount of tracks and tubes. Tubes concentrated between
P-MW0521-108	9	5/22/2020	55.0	77	51	0.40	Soft bottom	Unconsolidated mineral	Fine unconsolidated M	ud NA	Silt 90, VFS 10, shell fragment <1	N	Υ	Y Y	E	Anemone (1)	N	N	N	N	ripple crests. Extensive biogenic depressions. Higher concentration of tubes in
MW0521-109	1	5/23/2020	53.6	66	44	0.29	Soft bottom	Unconsolidated mineral	Fine unconsolidated M	ud NA	Silt 90, VFS 10, shell fragment <1	N	Y	Y Y	N	N	N	N	N	N	depressions. Moderate amount of burrows and tracks. Two large biogenic depressions, with high concentration of tubes
-MW0521-109	3	5/23/2020	54.0	82	55	0.45	Soft bottom	Unconsolidated mineral	Fine unconsolidated M	ud NA	Silt 90, VFS 10, shell fragment <1	N	Υ	Y Y	E	Anemone (3)	N	N	N	N	Moderate amount of burrows, tubes and tracks. High concentration of tracks, low to moderate amount of tubes ar
-MW0521-109	4	5/23/2020	53.9	80	53	0.42	Soft bottom	Unconsolidated mineral	Fine unconsolidated M	ud NA	Silt 90, VFS 10, shell fragment <1	N	Υ	Y Y	E	Anemone (1)	N	N	N	N	burrows. Moderate amount of tracks, low to moderate amount of tubes and
-MW0521-111	1	5/22/2020	57.4	86	58	0.50	Soft bottom	Unconsolidated mineral	Fine unconsolidated M	ud NA	Silt 90, VFS 10	N	Y	Y Y	E	Anemone (1)	N	Unidentifiabl e Fish (1)	N	N	burrows. Portion of fish captured in image. Moderate amount of tracks. Lov amount of tubes and burrows. Biogenic depression in top left corr
-MW0521-111	3	5/22/2020	57.3	82	55	0.45	Soft bottom	Unconsolidated mineral	Fine unconsolidated M	ud NA	Silt 90, VFS 10, shell fragment <1	N	Υ	Y Y	E	Anemone (2)	N	N	N	N	higher concentration of tubes. Large biogenic depression top left, with higher concentration of t along margins. A few tracks, and moderate amount of tubes and
-MW0521-111	5	5/22/2020	57.3	81	54	0.44	Soft bottom	Unconsolidated mineral	Fine unconsolidated M	ud NA	Silt 90, VFS 10, shell fragment <1	N	Υ	Y Y	N	N	N	N	N	N	burrows. Moderate amount of tracks. Some tubes and burrows. Higher
MW0521-114	1	5/23/2020	62.2	81	54	0.43	Soft bottom	Unconsolidated mineral	Fine unconsolidated M	ud NA	Silt/sand 100, shell fragment <1	N	Y	Y Y	E	Sea stars (2); Jonah crab (1)	N	Fish (1)	N	N	concentration of tubes in biogenic depressions. Portion of fish in image, not identifiable. Many tracks, some tubes
MW0521-114	2	5/23/2020	62.0	89	59	0.52	Soft bottom	Unconsolidated mineral	Fine unconsolidated M	ud NA	VFS/silt 100	N	Υ	Y Y	Е	Sea star (1), brittle star (5)	N	N	N	N	burrows. High concentration of tracks, some tubes and burrows. Sea stars
MW0521-114	4	5/23/2020	62.1	82	54	0.44	Soft bottom	Unconsolidated mineral	Fine unconsolidated M	ud NA	Silt >90, VFS <10	N	Υ	Y Y	E, I	Burrowing anemone (24); sea	N	N	N	N	submerged in sediment. Numerous bivalve siphons and burrowing anemones. A few track
P-MW0521-116	1	5/22/2020	60.9	79	53	0.42	Soft bottom	Unconsolidated mineral	Fine unconsolidated M	ud NA	Silt >90, VFS <10	N	Y	Y Y	E	star (1); bivalve siphons Sea stars (6)	N	N	N	N	Numerous tubes and burrows. Moderate amount of tracks, burrows and tubes.
P-MW0521-116	2	5/22/2020	60.9	82	55	0.45	Soft bottom	Unconsolidated mineral	Fine unconsolidated M	ud NA	Silt >90, VFS <10, shell fragment <	l N	Υ	Y Y	E, I	Sea stars (6); burrowing anemone (1)	N	N	N	N	Biogenic depressions with higher concentration of tubes along ma Moderate amount of tracks, burrows and tubes.
P-MW0521-116	5	5/22/2020	60.9	83	55	0.46	Soft bottom	Unconsolidated mineral	Fine unconsolidated M	ud NA	Silt >90, VFS <10, shell fragment <	l N	Υ	Y Y	E, I	Sea star (7); burrowing	N	N	N	N	Biogenic depression with higher concentration of tubes along man Moderate amount of tubes and tracks, low amount of burrows.

Plan View Image Analysis Results, Mayflower Survey, May 2020

				Image	Image	Field of						Bedforms R = ripples										
Station ID F	Replicate Ima	ige Date D		Width (cm)	Height (cm)	Field of View (m ²)	Habitat Type	Substrate Class	Substrate Subclass Group	Substrate Subgroup	Substrate Group Percent	(wavelength in cm)	Burrows	Tubes	Tracks	Biological Information		Flora	Fish Types and Count	Mud Clasts	Beggiatoa	Comments
20SP-MW0521-117	•	22/2020	59.8	81	54	0.44	Soft bottom		Fine unconsolidated Mud	NA	Silt >90, VFS <10, shell fragment <1	N	Y	Y	Y	N	N	N	N	N	N	Biogenic depressions with slightly higher concentration of tubes along
20SP-MW0521-117	2 5/2	2/2020	59.8	82	55	0.45	Soft bottom	Unconsolidated mineral	Fine unconsolidated Mud	NA	Silt >90, VFS <10	N	Y	Y	Y	N	N	N	N	N	N	margins. Moderate amount of tracks, low amount of burrows and tubes. Image partially obscured by suspended sediment, possibly from startled
20SP-MW0521-117			59.8	72	48				Fine unconsolidated Mud	NA		N	Υ	Y	Υ	N	N	N	N	N	N	fish. Higher concentration of tubes in biogenic depressions. Moderate amount of tracks and tubes, low amount of burrows. Low amount of tubes and burrows, moderate amount of tracks.
		2/2020			40	0.35	Soft bottom				Silt >90, VFS <10, shell fragment <1	IN	ī	ī	T	IN	IN .	IN	IN	IN	IN	<u> </u>
20SP-MW0521-120	1 5/2	23/2020	62.5	69	46	0.32	Soft bottom	Unconsolidated mineral	Fine unconsolidated Mud	NA	Silt >90, VFS <10, shell fragment <1	N	Υ	Υ	Υ	E	Sea star (8)	N	N	N	N	Higher concentrations of tubes in biogenic depressions. Moderate to high amount of tubes and tracks, moderate to low amount of burrows.
20SP-MW0521-120	2 5/2	23/2020	62.4	79	53	0.41	Soft bottom	Unconsolidated mineral	Fine unconsolidated Mud	NA	Silt >90, VFS <10, shell fragment <1	N	Υ	Υ	Υ	E, I	Sea stars (11), burrowing anemone (2), bivalve siphons,	N	N	N	N	Bivalve siphons, high concentration of tubes and moderate amount of track and burrows. Numerous red worms on surface.
20SP-MW0521-120	4 5/2	23/2020	62.6	85	56	0.48	Soft bottom	Unconsolidated mineral	Fine unconsolidated Mud	NA	Silt >90, VFS <10, shell fragment <1	N	Υ	Υ	Υ	E	red worms Sea stars (9)	N	N	N	N	Large biogenic depression, appears recent. No tubes along margins. Moderate amount of tubes and burrows. High concentration of tracks.
Mayflower Wind Lease	Area (SPI/PV	/ Control /	Area Statio	ns)																		
20SP-MW0521-C01		25/2020	31.8	56	38	0.21	Rippled sands	Unconsolidated mineral	Fine unconsolidated Sand	Medium sand	Sand >90, silt <10, shell fragment <1	R (14)	Υ	Υ	Υ	E	Anemone (2); gastropods (2)	N	N	N	N	Moderate amount of tracks, low amount of burrows and tubes.
20SP-MW0521-C01	3 5/2	25/2020	31.8	54	36	0.20	Rippled sands	Unconsolidated mineral	Fine unconsolidated Sand	Medium sand	Sand >90, silt <10, shell fragment	R (14)	Υ	Υ	Υ	E	Anemone (1); gastropods (1)	N	N	N	N	Very low amount of tubes and burrows. Moderate amount of tracks.
20SP-MW0521-C01	4 5/2	25/2020	31.7	63	42	0.27	Rippled sands	Unconsolidated mineral	Fine unconsolidated Sand	Medium sand	<1, granules <1 Sand >90, silt <10, shell fragment <1	R (18)	N	Υ	Υ	E	Gastropods (11)	N	N	N	N	Very few tracks and tubes.
20SP-MW0521-C02	2 5/2	25/2020	28.9	40	27	0.11	Rippled sands	Unconsolidated mineral	Fine unconsolidated Sand	Very coarse/coarse sand	d Sand >90, silt <5, shell fragments <5	R	Υ	Υ	Υ	E	Hermit crab (1)	N	N	N	N	Moderate amount of tracks, small scale biogenic depressions with higher amount of tubes in depressions. Ripple wavelength not measureable at
20SP-MW0521-C02	3 5/2	25/2020	28.9	49	32	0.16	Rippled sands	Unconsolidated mineral	Fine unconsolidated Sand	Very coarse/coarse sand	d Sand >90, silt <5, shell fragments <5	R	N	Υ	Υ	Е	Gastropods (3)	N	N	N	N	this scale. Ripple wavelength not measureable at this scale. High amount of tracks
20SP-MW0521-C02	4 5/2	25/2020	29.0	51	34	0.17	Rippled sands	Unconsolidated mineral	Fine unconsolidated Sand	Very coarse/coarse sand	d Sand >90, silt <10, shell fragments	R (14)	N	Υ	Υ	E	Gastropod (2), hermit crab (1)	N	N	N	N	and small scale biogenic depressions. A few tubes. Silt and shell fragments in troughs of ripples.
20SP-MW0521-C03	1 5/2	25/2020	30.7	68	45	0.30	Rippled sands	Unconsolidated mineral	Fine unconsolidated Sand	Fine/very fine sand	Sand >90, silt <10, shell fragment 1	R (12)	Υ	Υ	Υ	Е	Gastropod (4)	N	N	N	N	Moderate amount of tracks. Very low amount of tubes and burrows. Ripples well defined.
20SP-MW0521-C03	2 5/2	25/2020	31.0	67	44	0.30	Rippled sands	Unconsolidated mineral	Fine unconsolidated Sand	Fine/very fine sand	Sand >90, silt <10, shell fragment 1	R (20)	N	Υ	Υ	Е	Anemone (1); gastropod (2)	N	N	N	N	Low amount of tracks and tubes.
20SP-MW0521-C03	3 5/2	25/2020	30.9	69	46	0.32	Rippled sands	Unconsolidated mineral	Fine unconsolidated Sand	Fine/very fine sand	Sand >90, silt <10, shell fragment 1	R (20)	N	Υ	Υ	E	Gastropods (4)	N	N	N	N	Low amount of tubes, moderate to high amount of tracks.
20SP-MW0521-C04	1 5/2	25/2020	32.9	57	38	0.21	Rippled sands	Unconsolidated mineral	Fine unconsolidated Sand	Medium sand	Sand >90, silt <10, shell fragment <1	R (26)	N	Υ	Υ	Е	Anemone (1), gastropod (1)	N	N	N	N	A few tubes and tracks. Relatively long period between ripple crests.
20SP-MW0521-C04	2 5/2	25/2020	33.0	70	47	0.33	Rippled sands	Unconsolidated mineral	Fine unconsolidated Muddy sand	NA	Sand >90, silt <10, shell fragment <1	R (13)	N	Υ	Υ	Е	Anemone (8); gastropod (2)	N	N	N	N	Higher concentration of tubes in trough between ripples. Anemones clustered together. Moderate amount of tracks, low amount of tubes.
20SP-MW0521-C04	4 5/2	25/2020	32.8	62	41	0.26	Rippled sands	Unconsolidated mineral	Fine unconsolidated Sand	Medium sand	Sand >90, silt <10, shell fragment 1	R (13)	N	Υ	Υ	Е	Gastropods (2)	N	N	N	N	A few tubes and tracks. Ripples are unevenly spaced.
20SP-MW0521-C05	1 5/2	25/2020	30.5	61	41	0.25	Rippled sands	Unconsolidated mineral	Fine unconsolidated Sand	Medium sand	Sand >90, silt <10, shell fragment <1	R (20)	N	Υ	Υ	E	Anemone (1)	N	N	N	N	Moderate amount of tracks and low amount of tubes.
20SP-MW0521-C05	2 5/2	25/2020	30.4	68	45	0.31	Rippled sands	Unconsolidated mineral	Fine unconsolidated Sand	Medium sand	Sand >90, silt <10, shell fragment <1	R (18)	N	Υ	Υ	Е	Anemone (3); sand dollar (1);	N	N	N	N	Moderate amount of tracks, low amount of tubes.
20SP-MW0521-C05	3 5/2	25/2020	30.6	61	41	0.25	Rippled sands	Unconsolidated mineral	Fine unconsolidated Sand	Medium sand	Sand >90, silt <10, shell fragment <1	R (18)	N	Υ	Υ	Е	gastropods (2) Gastropods (4)	N	N	N	N	Moderate amount of tracks and low amount of tubes.
20SP-MW0521-C06	1 5/2	23/2020	63.8	80	53	0.43	Soft bottom	Unconsolidated mineral	Fine unconsolidated Mud	NA	Silt 100, shell fragment <1	N	Y	Υ	Υ	E	Brittle stars; burrowing	N	N	N	N	Very high concentration of brittle stars, some bivalve siphons. High
20SP-MW0521-C06	2 5/2	23/2020	63.8	76	51	0.38	Soft bottom	Unconsolidated mineral	Fine unconsolidated Mud	NA	Silt 100	N	Υ	Υ	Υ	Е	anemones (10) Brittle stars; burrowing	N	N	N	N	concentration of tubes and burrows, few tracks. High concentration of brittle stars. High concentration of tubes, moderate
20SP-MW0521-C06	5 5/2	23/2020	63.7	84	56	0.47	Soft bottom	Unconsolidated mineral	Fine unconsolidated Mud	NA	Silt 100	N	Υ	Υ	Υ	E	anemones Sea star (1); brittle stars; burrowing anemones (~15)	N	N	N	N	amount of burrows and tracks. High concentration of brittle stars, tubes and moderate amount of burrows. Low amount of tracks.
20SP-MW0521-C07	1 5/2	23/2020	63.6	82	55	0.45	Soft bottom	Unconsolidated mineral	Fine unconsolidated Mud	NA	Silt 100, shell fragment <1	N	Υ	Υ	Υ	E, I	Sea stars (3); bivalve siphons	N	N	N	N	High concentration of brittle stars and tubes. Moderate amount of
20SP-MW0521-C07	2 5/2	23/2020	64.2	82	55	0.45	Soft bottom	Unconsolidated mineral	Fine unconsolidated Mud	NA	Silt 100, shell fragment <1	N	Υ	Υ	Υ	E	(10), burrowing anemone (6) Sea star (2); burrowing anemone (13); brittle stars	N	Flat fish (1)	N	N	burrows and tracks. High concentration of brittle stars. Unidentifiable flat fish, partially in image. High concentration of tubes. moderate amount of burrows and
20SP-MW0521-C07	4 5/2	23/2020	63.7	79	52	0.41	Soft bottom	Unconsolidated mineral	Fine unconsolidated Mud	NA	Silt 100, shell fragment <1	N	Υ	Υ	Υ	E, I	Sea star (2); burrowing anemone (10); brittle stars;	N	N	N	N	tracks. High concentration of brittle stars and tubes. Moderate amount of burrows and low amount of tracks.
20SP-MW0521-C08	1 5/2	23/2020	62.8	81	54	0.44	Soft bottom	Unconsolidated mineral	Fine unconsolidated Mud	NA	Silt 100, shell fragment <1	N	Y	Υ	Υ	E,I	Bivalve siphons (10); burrowing anemone (13); sea	N	N	N	N	High concentration of brittle stars and tubes.
20SP-MW0521-C08	3 5/2	23/2020	63.1	81	54	0.44	Soft bottom	Unconsolidated mineral	Fine unconsolidated Mud	NA	Silt 100, shell fragment <1	N	Υ	Υ	Υ	E, I	star (1); brittle stars Burrowing anemone (~30); bivalve siphons (8); sea star	N	N	N	N	High concentration of brittle stars, tubes and tracks. Moderate amount of burrows.
20SP-MW0521-C08	4 5/2	23/2020	62.9	83	56	0.46	Soft bottom	Unconsolidated mineral	Fine unconsolidated Mud	NA	Silt 100, shell fragment <1	N	Υ	Υ	Υ	E, I	Burrowing anemone (~25); sea star (1); bivalve siphons (5);	N	N	N	N	High concentration of brittle stars, tubes and tracks. Low amount of burrows.
20SP-MW0521-C09	1 5/2	23/2020	64.9	80	53	0.42	Soft bottom	Unconsolidated mineral	Fine unconsolidated Mud	NA	Silt 100, shell fragment <1	N	Υ	Υ	Y	E, I	brittle stars Sea pen (2), brittle stars; bivalve siphons (8); burrowing	N	N	N	N	High concentration of brittle stars, tubes. Moderate amount of tracks and some burrows.
20SP-MW0521-C09	4 5/2	23/2020	64.8	80	53	0.42	Soft bottom	Unconsolidated mineral	Fine unconsolidated Mud	NA	Silt 100, shell fragment <1	N	Υ	Υ	Υ	E, I	Burrowing anemones (~40+); sea star (1); brittle star;	N	N	N	N	High concentrations of brittle stars, burrowing anemones, tubes and tracks. Fewer burrows.
20SP-MW0521-C09	6 5/2	23/2020	64.9	77	51	0.39	Soft bottom	Unconsolidated mineral	Fine unconsolidated Mud	NA	Silt 100, shell fragment <1	N	Υ	Υ	Υ	E, I	bivalve siphons (6) Sea star (2); brittle stars; burrowing anemones (~30+)	N	N	Υ	N	Mud clasts are an artifact from the SPI frame. High concentration of brittle stars and burrowing anemones.

Integral Consulting Inc.

Appendix C2: PV Image Data Set Sediment Profile and Plan View Imaging Survey Mayflower Wind Farm, May 2020

Plan View Image Analysis Results, Mayflower Survey, May 2020

								CMECS Substrate	e Classifications (January 2020	Guidance and references there	in)	_									
	5		Water	Image Width	Image Height	Field of View (m ²)				strate		Bedforms R = ripples (wavelength			Biologic			Fish Types			
Station ID 20SP-MW0521-C10	Replicate 1	e Image Date 5/23/2020	64.1	(cm) 86	(cm) 57	0.49	Habitat Type Soft bottom	Substrate Class Unconsolidated mineral		oup Substrate Subgroup NA	Substrate Group Percent Silt 100, shell fragment <1	in cm)	Burrows	Y Y	racks Informat		Flora	and Count N	Clasts	Beggiato: N	A Comments High concentration of brittle stars. Moderate amount of tubes and tracks.
	•	0/20/2020	0	00	o.	0.10	CON DOMONI	Chiconochidated minoral	Time anconconducted initial		One 100, onon magnione 41	.,	•		,.	burrowing anemones (~40);		.,	.,		Some burrows.
20SP-MW0521-C10	6	5/23/2020	64.2	73	49	0.36	Soft bottom	Unconsolidated mineral	Fine unconsolidated Mud	NA	Silt 100, shell fragment <1	N	Υ	Υ	Y E	Brittle stars; burrowing anemone (~40+); bivalve	N	Unidentified Fish (1)	Υ	N	High concentration of Brittle Stars. Mud clasts may be an artifact from the SPI frame.
20SP-MW0521-C10	11	5/23/2020	64.3	78	52	0.41	Soft bottom	Unconsolidated mineral	Fine unconsolidated Mud	NA	Silt 100, shell fragment <1	N	Υ	Υ	Y E, I	Brittle stars; sea stars (2); burrowing anemones (~40);	N	N	N	N	High concentration of Brittle Stars. Moderate amount of burrows, tubes and tracks.
20SP-MW0521-C11	1	5/14/2020	38.0	77	51	0.40	Rippled sands	Unconsolidated mineral	Fine unconsolidated Sand	Fine/very fine sand	Sand >95, silt <5, shell fragment <1	R (12)	Υ	Υ	Y E	Hermit crab (2); sand dollar (2)) N	N	N	N	A few tubes and burrows. Moderate amount of tracks. Shell fragments very small particles.
20SP-MW0521-C11	2	5/14/2020	37.7	83	56	0.46	Rippled sands	Unconsolidated mineral	Fine unconsolidated Sand	Fine/very fine sand	Sand 100, shell fragment <1	R (20)	Υ	Υ	Y E	Nudibranch (1); hermit crab	N	N	N	N	A few tracks and burrows. Moderate amount of tubes.
20SP-MW0521-C11	4	5/14/2020	37.8	82	55	0.45	Rippled sands	Unconsolidated mineral	Fine unconsolidated Sand	Fine/very fine sand	Sand 100, shell fragment <1	R (12)	Υ	Υ	Y N	N	N	N	N	N	Imprint and mud clast are artifacts from the SPI frame. Moderate amount of tubes and tracks. A few burrows.
20SP-MW0521-C12	1	5/14/2020	34.6	75	50	0.38	Rippled sands	Unconsolidated mineral	Fine unconsolidated Sand	Fine/very fine sand	Sand 100, shell fragment <1	R (12)	N	Υ	Y E	Sand dollar (35)	N	N	N	N	High concentration of sand dollars. A few tube clusters.
20SP-MW0521-C12	2	5/14/2020	34.6	81	54	0.44	Rippled sands	Unconsolidated mineral	Fine unconsolidated Sand	Fine/very fine sand	Sand 100, shell fragment <1	R (15)	N	Υ	Y E	Sand dollar (20)	N	N	N	N	High concentration of Sand Dollars, tracks and tubes.
20SP-MW0521-C12	3	5/14/2020	34.6	81	54	0.44	Rippled sands	Unconsolidated mineral	Fine unconsolidated Sand	Fine/very fine sand	Sand 100, shell fragment <1	R (10)	N	Υ	Y E	Sand dollar (20)	N	N	N	N	Frame imprint from SPI camera system. High concentration of tracks and moderate amount of tubes.
20SP-MW0521-C13	1	5/15/2020	37.5	81	54	0.44	Sand	Unconsolidated mineral	Fine unconsolidated Sand	Fine/very fine sand	Sand 100, shell fragment <1	N	N	Υ	Y E	Sand dollar (43); crab (1)	N	N	N	N	High concentration of Sand Dollars. Portion of crab caught in image, Not Identifiable. Ripples difficult to discern due to reworked substrate by sand dollars.
20SP-MW0521-C13	2	5/15/2020	37.5	74	50	0.37	Sand	Unconsolidated mineral	Fine unconsolidated Sand	Fine/very fine sand	Sand 100, shell fragment <1	N	N	Υ	Y E	Sand dollar (50); burrowing anemones	N	N	N	N	High concentration of sand dollars. Moderate amount of burrowing anemones. Shell fragments very fine. Ripples difficult to discern due to reworked substrate by sand dollars.
20SP-MW0521-C13	5	5/15/2020	37.5	80	53	0.43	Sand	Unconsolidated mineral	Fine unconsolidated Sand	Fine/very fine sand	Sand 100, shell fragment <1	N	N	Υ	Y E	Sand dollar (17)	N	N	N	N	Moderate amount of sand dollars, a few tubes. Fine shell fragments.
20SP-MW0521-C14	1	5/15/2020	40.0	83	55	0.46	Rippled sands	Unconsolidated mineral	Fine unconsolidated Sand	Fine/very fine sand	Sand 100, shell fragment <1	R (10)	Υ	Υ	Y E	Shrimp (1); sand dollar (8)	N	N	N	N	High amount of tracks, low amount of tubes and burrows. Shell fragments fine particles.
20SP-MW0521-C14	2	5/15/2020	40.1	81	54	0.44	Rippled sands	Unconsolidated mineral	Fine unconsolidated Sand	Fine/very fine sand	Sand 100, shell fragment <1	R (10)	N	Υ	Y E	Nudibranch (1); sand dollar (12)	N	N	N	N	High concentration of tracks. Shell fragments are very fine. A few Tubes.
20SP-MW0521-C14	3	5/15/2020	40.2	80	54	0.43	Rippled sands	Unconsolidated mineral	Fine unconsolidated Sand	Fine/very fine sand	Sand 100, shell fragment <1	R (18)	N	Υ	Y E	Sand dollar (10); Nudibranch	N	N	N	N	Moderate amount of Sand Dollars. Fine shell fragment particles.
20SP-MW0521-C15	3	5/14/2020	37.4	81	54	0.44	Sand	Unconsolidated mineral	Fine unconsolidated Sand	Fine/very fine sand	Sand 100, shell fragment <1	N	N	Υ	Y E	Sand dollar (67); Bushy	N	N	N	N	Very high concentration of sand dollars. Fine particles of shell fragments.
20SP-MW0521-C15	4	5/14/2020	37.3	78	52	0.41	Sand	Unconsolidated mineral	Fine unconsolidated Sand	Fine/very fine sand	Sand 100, shell fragment <1	N	N	Υ	Y E	Bryozoa (1); hermit crab (1) Sand dollar (42); hermit crab	N	N	N	N	Imprint is an artifact of the SPI frame. Very high concentration of sand dollars. Shell fragments fine particles.
20SP-MW0521-C15	5	5/14/2020	37.3	81	54	0.43	Sand	Unconsolidated mineral	Fine unconsolidated Sand	Fine/very fine sand	Sand 100	N	N	N	Y E	(1) Sand Dollar (62); Hermit crab	N	N	N	N	Very few tubes. Imprint is and artifact from the SPI frame. Very high concentration of sand dollar. Shell fragments are very fine.
20SP-MW0521-CP1	1	5/24/2020	15.0	81	54	0.44	Sand	Unconsolidated mineral	Coarse Grave unconsolidated	lly Gravelly sand	Medium sand >90, granules/pebble: <5, shell fragments <5	s N	N	N	N N	Bryozoans, Snail (2), Hermit crab (1), Macroalgae	N	N	N	N	Evidence of a high energy location with mobile granules/pebbles. Few strands of algae.
20SP-MW0521-CP1	2	5/24/2020	15.0	70	47	0.33	Sand	Unconsolidated mineral	Coarse Grave unconsolidated	lly Gravelly Sand	Medium sand 80, granules/pebbles 10; shell fragments 10	N	N	N	N A	Macroalgae, bryozoans	Υ	N	N	N	High energy with mobile granules/pebbles and shell fragments.
20SP-MW0521-CP1	3	5/24/2020	15.0	75	50	0.38	Sand	Unconsolidated mineral	Coarse Grave unconsolidated	lly Gravelly Sand	Medium sand 70, granules/pebbles 20, shell fragments 5	N	N	Υ	N A	Macroalgae, hermit crab (1), Bryozoans	Υ	N	N	N	High energy area, with mobile pebbles/granules.
20SP-MW0521-CP2	1	5/24/2020	12.0	67	45	0.30	Sand	Unconsolidated mineral	Fine unconsolidated Sand	Very coarse/coarse sar	d Sand 90, granules/pebbles 5, shell fragments 5	R	N	N	N N	N	N	N	N	N	High energy area with mobile granules/pebbles.
20SP-MW0521-CP2	2	5/24/2020	12.0	69	46	0.32	Sand	Unconsolidated mineral	Coarse Sand unconsolidated	Very coarse/coarse sar	nd Sand 95, granules <5, shell fragments <5	R	N	N	N N	N	N	N	N	N	High energy area, with mobile granules.
20SP-MW0521-CP2	3	5/24/2020	12.0	82	55	0.45	Sand	Unconsolidated mineral		lly Gravelly Sand	Sand 80, granule/pebbles 15, shell fragments 5	N	N	N	N N	N	N	N	N	N	High energy area with mobile granules/pebbles.

Notes:
A = macroalgae
CMECS = Coastal and Marine Ecological Classification Standard
E = epifauna
H = high
I = emergent infauna
L = low
M = medium
N = none
NA = not applicable
PV = plan view
R = ripples
SPI = sediment profile imaging
Y = yes
VFS = very fine sand

Integral Consulting Inc. Page 7 of 7 ATTACHMENT 2 - Sediment Profile and Plan View Imaging Survey of the Mayflower Wind Project Areas. August 22 – September 1, 2020. Integral, 2020b

Sediment Profile and Plan View Imaging Survey of the Mayflower Wind Project Areas

August 22-September 1, 2020

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Final Report December 4, 2020

REVISION HISTORY

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ACRONYMS AND ABBREVIATIONS

ac acre(s)

aRPD apparent redox potential discontinuity

BOEM Bureau of Ocean and Energy Management

cm centimeter(s)

CMECS Coastal and Marine Ecological Classification Standard

COP Construction and Operations Plan

DSC Digital Still Camera

ECR export cable route

Eh oxidation/reduction potential

FGDC Federal Geographic Data Committee

ft feet/foot

FSP Field Survey Plan

GUI graphical user interface

Integral Consulting Inc.

ISO International Standard Organization

km kilometer(s)

L liter(s)

lb pound(s) m meter(s)

MB megabyte

mi mile(s)

mL milliliter(s)

MLA Mayflower Lease Area

mm millimeter(s)

MW megawatt

NEF Nikon Electronic Format

NMFS National Marine Fisheries Service

nmi nautical mile(s)

NYSERDA New York State Energy Research and Development Authority

OIS Ocean Imaging Systems

PV plan view

QA/QC quality assurance and quality control

RPD redox potential discontinuity

RTVS Real-Time Visualization System

SD Secure Digital

SLR single lens reflex

SOD sediment oxygen demand

SPI sediment profile imaging

SWI sediment-water interface

U.S. United States

UTC Coordinated Universal Time

W watt

WTG wind turbine generator

1 PROJECT BACKGROUND

Mayflower Wind proposes a 1,200-megawatt (MW) offshore wind renewable energy generation project located in federal waters off the southern coast of Massachusetts, approximately 26 nautical miles (nmi) (48 kilometers [km]) south of the island of Martha's Vineyard and 20 nmi (37 km) south of Nantucket within federal Lease Area OCS-A 0521 (Project). The Mayflower Lease Area (MLA) where the offshore wind turbine generators (WTGs) will be placed is approximately 127,388 acres (ac) (515 km²). The export cable route (ECR) will extend approximately 55 miles (mi) (90 km) from the MLA to a landing point in Falmouth, Massachusetts. Figure 1-1 shows the location of MLA and ECR; adjacent federal wind lease areas are also shown on the map.

Mayflower Wind requires approval from the Bureau of Ocean and Energy Management (BOEM) as well as other federal, state, and local permits and approvals prior to construction. Mayflower Wind will prepare and submit a Construction and Operations Plan (COP) to BOEM for its review and approval. Once approved, BOEM will engage a third party to prepare an Environmental Impact Statement as required under the National Environmental Policy Act. To support the development of the COP, Mayflower Wind is undertaking a number of technical studies intended to characterize the existing conditions and support the analysis of potential impacts of the Project on various resources. These studies include seasonal benthic infauna and seafloor habitat assessments of the MLA and ECR, as well as three control or reference areas: one along the ECR, one east of the MLA, and one west of the MLA.

This report describes the sediment profile imaging (SPI) and plan view (PV) imaging survey methods and results conducted at the MLA and ECR in the summer of 2020 (August 22 through September 1). This survey was conducted as part of the benthic infauna and seafloor habitat assessment survey, which also included the collection of sediment for laboratory analysis of benthic community structure and physical parameters (e.g., grain size, total organic carbon), and Real-Time Visualization System (RTVS) video footage of seafloor habitat. A high-resolution geophysical survey (bathymetry, backscatter, side scan sonar) of the Mayflower Project area was also conducted separately from this benthic survey. Interpretation of the SPI–PV data are reported herein. Results do not include synthesis or comparison to the benthic and acoustic field surveys; results of those surveys are reported separately.

The summer 2020 benthic survey is the second seasonal survey conducted at the Mayflower Project area; a spring survey was conducted in May 2020 (Integral 2020). No temporal comparison of the spring and summer SPI–PV data sets is made in this report.

2 SPI CAMERA/PLAN VIEW VIDEO SURVEY

SPI technology was invented by Donald C. Rhoads, Ph.D., at Yale University as a benthic ecological research tool in the late 1960s (Rhoads and Cande 1971). The basic concept was to image surface sediments, i.e., the biologically and physically active portion of the sediment column, in profile so that in situ animal–sediment interactions/relationships could be observed and measured. SPI was commercialized in the early 1980s by Dr. Rhoads and one of his students (Joseph Germano, Ph.D.) as a reconnaissance tool for rapidly characterizing physical, geochemical, and biological surface sediment structures, and by inference processes (Rhoads and Germano 1982, 1986). Since then, SPI has since been used in numerous marine and estuarine surveys throughout North America, Asia, Europe, and Africa (e.g., see Rhoads and Germano 1990; Revelas et al. 1987; Diaz and Schaffner 1988; Valente et al. 1992). Germano et al. (2011) provide a comprehensive history of the development and diverse applications of SPI technology from 1970 through 2010. In the past decade, a PV camera has often been attached to the SPI camera frame to obtain a larger-scale image of the seabed immediately above and before the sediment profile image is obtained. This high-resolution PV image provides information on broader-scale seafloor habitat features that cannot be seen from the profile image perspective and is particularly informative in firmer sand or gravel settings where attached or mobile epifauna are prevalent.

This report describes the SPI–PV survey image collection methods (Section 2.1) and image analysis methods (Section 2.2), the SPI and PV image analysis results (Section 3), and classification of the SPI–PV data in the Coastal and Marine Ecological Classification Standard (CMECS) framework (Federal Geographic Data Committee [FGDC] 2012) in Section 4. CMECS is the framework recommended by BOEM (2013, 2019) and the National Marine Fisheries Service (NMFS) (2020) for development projects on the continental shelf off the United States (U.S.) East Coast.

2.1 SPI-PV IMAGE COLLECTION

The SPI–PV survey was conducted as part of the Mayflower Wind benthic survey; the images were collected concurrently with the benthic grab and live feed video survey aboard the M/V *Berto L Miller* from August 22 to September 1, 2020. Figure 2-1a shows the stations sampled with the SPI–PV camera system and those sampled with the benthic grab and live video system and indicates stations where both types of samples were collected. At each SPI–PV station, the vessel was positioned at the target location and a minimum of five replicate images were collected in an effort to collect at least three good quality SPI and PV images for analysis. In addition, at five stations along the upper ECR, perpendicular transects were sampled with the with SPI–PV camera. Figure 2-1b show the stations sampled along these transects. Each transect was designed to be 1,000-meter (m) lines consisting of four single (un-replicated) SPI–PV drops spaced approximately 100 m apart on each side of the ECR (e.g.,

replicates 1 through 4 and 10+ in Figure 2-1b) station. At the centermost ECR station (002, 005, 015, 024, and 124) within a transect set, the standard SPI–PV station sampling was performed (i.e., five replicates to collect at least three good SPI and PV images). At Stations 002, 005, and 024, three replicate images were analyzed. At Stations 015 and 124, four SPI–PV replicates were inadvertently analyzed and these data are included in the final data sets (Appendix C). Finally, no SPI image was obtained at transect Station 002-10, therefore the only data at that location are from the PV image.

At each station, the SPI–PV camera was deployed on the winch wire and the system was determined to have reached bottom when the winch cable was observed to go slack. For each replicate, the SPI–PV system was left on the bottom for 20 seconds, raised 2–5 m, vessel repositioned, and the subsequent replicates were acquired. Generally, 1 minute was allowed to pass between replicates in order for the strobe to recharge and any suspended sediment to clear from next replicate location.

As noted above, Figures 2-1a and 2-1b show the actual locations sampled with the SPI–PV camera system, as well as the collocated and separate benthic grab sampling locations. Including the transect locations, a total of 127 stations were targeted—this includes 87 replicated stations and 40 un-replicated transect stations. Appendix A1 lists all the SPI–PV station and replicate drops conducted for this survey along with station coordinates recorded during image acquisition. In some instances, more than five camera drops were made at a station in an effort to ensure that three optimal-quality SPI and PV images were obtained for analysis. Decisions to re-sample/modify camera settings were made following download and review of the initial image sets from each location.

The field notebook is provided in Appendix A2. Appendix A3 contains the SPI–PV image collection field forms. The field notebook and field forms list details on the camera system's configuration for each station, including stop collar settings and the number of weights used to achieve optimal prism penetration. For this survey, all weights (i.e., ten 25-pound [lb] weights or an additional 250 lb) were added to the camera frame for all deployments along the cable route because of the firm seafloor. The stop collar heights and number of weights were adjusted on multiple occasions in the MLA to optimize prism penetration depth due to the predominance of silt. The following subsections detail the respective SPI and PV sampling equipment setup and image collection process.

Including the extra replicates analyzed at Stations 015 and 124, and the missed SPI replicate at 002-10, a total of 303 PV and 302 SPI replicates were analyzed from this survey. This total includes three replicate SPI–PV images at 85 stations, four replicate SPI–PV images at two stations, and 40 PV and 39 SPI images from un-replicated transect locations. In most cases, the SPI–PV replicate pairs analyzed were from the same camera drop. One replicate SPI and PV image at each of four stations (051, 054, 078, and 124) were not collocated (due to PV image quality/water clarity).

2.1.1 SPI Camera

Integral Consulting Inc. (Integral) used its Ocean Imaging Systems (OIS) Model 3731-D SPI system to take high-resolution in situ digital images of the sediment-water interface (SWI) for the Mayflower Wind benthic survey. The camera system features a Nikon D7100 digital camera set within a water-tight housing on top of a wedge-shaped prism. This prism assembly is mounted on a moveable carriage within a robust stainless steel frame. The frame is lowered to the seafloor on a winch wire, and the tension on the wire keeps the prism in its "up" position. When the frame lands on the seafloor and the winch wire goes slack, the camera prism descends into the sediment at a slow, controlled rate by the dampening action of a hydraulic piston to minimize disturbance of the SWI (Figure 2-2). On the prism's descent, a trigger is tripped that activates a time-delay circuit of variable length (15 seconds for this survey) to allow the camera to penetrate the seafloor before the image is taken. The prism has a Plexiglas® window at the front and a mirror on the bottom wedge at a 45-degree angle. The camera lens looks down at the mirror, which reflects the image of the sediment column against the window. The resulting images give the viewer the same perspective as looking through the side of an aquarium filled with sediment. The prism has an internal strobe mounted inside at the back of the wedge to provide illumination for the image; this chamber is normally filled with distilled water, so image quality is unaffected by near-bottom water turbidity. After the first image is obtained at a target location, the camera is raised approximately 5 m off the bottom and a wiper blade mounted on the frame removes sediment adhering to the faceplate. The strobe recharges and the camera is ready to be lowered again for a replicate image. For this survey, a minimum of 1 to 2 minutes was allowed to pass between station replicates to avoid taking photographs of re-suspended sediments from the previous drop.

Two types of adjustments to the SPI camera frame system are typically made in the field to optimize prism penetration: 1) adjusting the chassis stop collars to set how far the prism assembly can descend; and 2) adding or subtracting lead weights to the chassis. Both adjustments can affect the prism penetration depth into the substrate. As noted previously, settings for stop collar height and number of weights were recorded on the image collection form (Appendix A3).

Camera settings (i.e., f-stop, shutter speed, International Standard Organization [ISO] equivalents, digital file format, color balance, etc.) are selectable through a water-tight USB port on the camera housing and Nikon Camera Control Pro 2® software. At the beginning of the survey, the time on the SPI camera's internal data logger was synchronized with the internal clock on the navigation system to Coordinated Universal Time (UTC) time. Details of the camera settings for each digital image are available in the associated parameters file embedded in the electronic image file. For this survey, the ISO-equivalent was set at 640, shutter speed to 1/250, aperture to f 10, white balance to flash, color mode to sRGB, Active D-lighting to off, and High ISO Noise Ratio to normal. Images were stored as lossless compressed raw (14 bit) Nikon Electronic Format (NEF) files (6,000 x 4,000 pixels) and optimal quality JPEG (fine; 6,000 x 4,000

pixels). Recording modes for two 32-megabyte (MB) Secure Digital (SD) memory cards were set as NEF in slot 1 and JPEG in slot 2. Adjustments to ISO, shutter speed, and aperture are documented in the field notebook (Appendix A2).

Calibration information for the SPI images was determined by measuring 1-centimeter (cm) gradations from the Kodak® Color Separation Guide image, which was obtained by placing the guide card against the SPI prism. This calibration information was applied to all SPI images that were analyzed. Linear and area measurements were recorded as number of pixels (conversion factor of 14.52 pixels per cm) and converted to metric units using the calibration information.

When reviewing image quality during the field effort, the unique time stamp on each digital image was cross-checked with the time stamp in the navigational system's computer data file. The field crew kept redundant written sample logs of image acquisition time and sampling stations (Appendix A3). Images were downloaded after the first station and then periodically thereafter to verify successful image acquisition and assess prism penetration. The image files were renamed, during and immediately following the survey, with the appropriate station name in accordance with the field survey plan (FSP) (AECOM 2020).

2.1.2 Plan View Camera

An OIS Model Digital Still Camera (DSC) 24000 PV underwater camera system with a wideangle dome port (rated to 6,000 m) was attached to the SPI camera frame and used to collect PV photographs of the seafloor surface during each "drop" of the system. The PV system consisted of Nikon D7100 digital single lens reflex (SLR) camera encased in a 17-4PH stainless steel housing with a domed glass port, a 24 VDC autonomous power pack, a 500-watt (W) strobe, and a bounce trigger. A 3-lb weight was attached to the bounce trigger with snap swivels (50-lb tensile breaking point) and a 3-foot (ft) nylon line so that the weight hung below the camera frame. The focus and trigger line length were adjusted during the survey based on observed water clarity conditions; these adjustments are documented in the field notebook (Appendix A2). Two OIS Model 400-37 Deep Sea Scaling lasers were mounted to the DSC 24000 housing that projected two red laser dots separated by a constant distance of 26 cm regardless of the field of view of the PV image, which is a function of the length of the trigger line. As the SPI-PV camera frame was lowered to the seafloor, the weight attached to the bounce trigger contacted the seafloor prior to the SPI-PV camera frame, hitting the bottom and triggering the PV camera to fire (Figure 2-2). Details of the PV camera settings for each digital image are available in the associated parameters file embedded in each electronic image file. Initially for this survey, the ISO-equivalent was set at 640, shutter speed to 1/20, and aperture to f 16. Changes to these three settings are documented in the field notebook (Appendix A2). Additional camera settings that were maintained for the entirety of the survey were white balance to flash, color mode to sRGB, Active D-lighting to off, and High ISO Noise Ratio to normal. Images were stored as lossless compressed raw (14-bit) NEF files (6,000 x 4,000 pixels) and optimal quality JPEG (fine; 6,000 x

4,000 pixels). Recording modes for two 32-MB SD memory cards were set as NEF in slot 1 and JPEG in slot 2. As with the SPI camera, the internal clock in the digital PV camera was synchronized with the navigation system computer (UTC) during field operations. Throughout the survey, PV images were downloaded at the same time as the SPI images (i.e., after collection image quality assurance and quality control [QA/QC]).

The ability of the PV system to collect useable images is dependent on the clarity of the near-bottom water column, which can be caused by excessive wave action from storm events and bottom turbidity kicked up by the SPI frame during previous replicate drops.

2.2 IMAGE ANALYSIS

Integral uses a proprietary, integrated, MATLAB-based image analysis software (iSPI v1.2) to analyze SPI and PV images. The image files along with the metadata-containing Microsoft® Excel files generated during the field survey are imported directly into iSPI. A menu-structured graphical user interface (GUI) in iSPI allows the image analyst to manually or semi-automatically measure and/or add descriptive comments for key imaged features. The analyst is presented with the paired SPI and PV images in the GUI (Figure 2-3) and can expand and annotate features on either image as desired. The draft data are stored in the system for review by a senior SPI scientist who can inspect all measurements recorded and revise as needed. Following the QA check of all measured and descriptive parameters, the data set is compiled and identified as final; the data can then be evaluated and exported. Figure 2-3 shows the iSPI v1.2a GUI display following QA review.

The subsections below describe the methodology used to identify and measure features observed in SPI images and PV images and the underlying interpretive rationale.

2.2.1 SPI Image Analysis

The SPI image analysis approach and interpretive frameworks described below are both based on and built upon the seminal SPI method development work conducted by Rhoads and Germano in the 1980s (Rhoads and Germano 1982, 1986).

2.2.1.1 Grain Size, Sediment Structure and Composition

The sediment grain-size major mode and range were estimated by visually comparing the textures in each image with a photograph set of known grain sizes (grain-size comparator). The comparator images were generated by imaging a series of sieved Udden-Wentworth sediment size class samples (equal to or less than coarse silt up to granules) that were placed against the SPI camera prism in the laboratory. Seven grain-size classes (phi units) are on this comparator: >4 (silt-clay), 4–3 (very fine sand), 3–2 (fine sand), 2–1 (medium sand), 1–0 (coarse sand), 0–(-1) (very coarse sand), and <(-1) (granule and larger). The lower limit of optical resolution of the

photographic system is about 62 microns (the coarse silt/very fine sand boundary), allowing recognition of grain sizes equal to or greater than coarse silt (>4). For sediment particles larger than granules (< -2), such as pebbles and cobbles, the analyst directly measured the size of the particles in millimeters (mm) in the life-size images. The image analyst documented the predominant major modal grain size across the entire image (or noted the major mode of obvious layers if present) and total grain-size range (minimum to maximum particle size) observed in each image. Distinct layering in grain size or notable sedimentary fabrics were noted in the comment field.

2.2.1.2 Prism Penetration Depth

The reported SPI prism penetration depth is the average depth in centimeters (cm) from the SWI to the bottom of the image or stitched images. The analyst traces the SWI in each image and the iSPI software calculates the total cross-sectional area of the sediment column in the image; this area is divided by the linear width (14.42 cm) of the image to determine the average penetration depth. iSPI v.1.2a includes a neural network–based feature detector that automatically identifies and traces the SWI in the images. The analyst can then edit the SWI if needed; this combination of automation and manual editing streamlines the measurement of this parameter. Accurately delineating the SWI is the first step in the SPI image analysis workflow as subsequent measurements need this datum.

2.2.1.3 Small-Scale Surface Boundary Roughness

Once the SWI is delineated, the iSPI software determines surface boundary roughness automatically by calculating the vertical distance between the highest and lowest points of the SWI. The surface boundary roughness may be related to either physical structures (e.g., sand ripples) or biogenic features (e.g., burrow openings or fish foraging depressions). The analyst notes whether the overall roughness appears to be physical or biogenic in origin.

2.2.1.4 Apparent Redox Potential Discontinuity Depth

Near-surface marine sediments are typically aerobic and have higher optical reflectance than the underlying reduced or anaerobic sediments. Surface sands washed free of mud also have higher optical reflectance than underlying muddy sands. These differences in reflectance with depth in the sediment column are readily apparent in SPI images. The oxidized surface sediment particles are coated with ferric hydroxide, which has a brownish or olive color, while reduced sediments below this oxygenated layer are darker, generally gray to black (Fenchel 1969; Lyle 1983). The boundary between the colored ferric hydroxide surface sediment and underlying gray to black sediment is called the apparent redox potential discontinuity (aRPD). Note that this boundary is referred to as the *apparent* RPD as the actual redox potential discontinuity (RPD) is the horizon that separates the positive oxidation/reduction potential (Eh)

(oxidizing) region of the sediment column from the underlying negative Eh (reducing) region, which can only be determined with microelectrodes.

The color/reflectance contrast of the aRPD boundary can vary widely in SPI images as a function of organic loading and bioturbation levels, and the geochemical processes associated with different environmental settings (Germano et al. 2011). The relative contrast between the apparently oxidized, brownish surface sediment layer and underlying gray to blackish sediments is also noted and can be mapped across a surveyed area.

In iSPI manual mode, the average aRPD depth is measured in each image by the analyst tracing the redox color boundary across the image. This boundary is often undulated or wavy as a function of the distribution of individual macrofauna and their localized biogenic mixing activities. The average depth of the aRPD is then calculated in iSPI by subtracting the aRPD boundary from the SWI. iSPI includes a semi-automated algorithm, based on a localized gradient analysis approach, that allows the analyst to quickly highlight the general aRPD transition zone. This step restricts the area of the image that is evaluated by the computer, and the routine then delineates a detailed RPD boundary and calculates its average depth across the image. As with the SWI delineation, the analyst can edit any portion of the computer-delineated aRPD boundary in a QA step.

The aRPD is a key SPI parameter for documenting changes (or gradients) that develop over time in response to benthic disturbance factors (e.g., sediment erosion or depositional events), demersal fish foraging, and temporal (seasonal or yearly cycles) changes in environmental factors, such as water temperature and organic loading. Overall, time-series RPD measurements following a disturbance are a diagnostic element in assessing the rate and degree of recovery in an area following a perturbation (Rhoads and Germano 1982, 1986) (Figure 2-4).

Finally, it is important to note that there are physical factors that may influence the aRPD depth in a SPI image. For example, in well-sorted sands with little or no silt or organic matter, the depth of the aRPD can be influenced by factors such as sediment porosity and near-bottom current flow velocities that force surface water into the substrate. If such factors are inferred by the analyst based on bottom texture and environmental setting, then these aRPD depths are considered physical aRPDs (i.e., they are not solely a function of infaunal biogenic mixing).

2.2.1.5 Organic Loading, Sedimentary Methane, and Thiophilic Bacterial Colonies

If organic loading is high in marine sediments, porewater sulfate is depleted and methanogenesis occurs. In SPI images, methanogenesis can be revealed by the appearance of methane bubbles in the sediment column. These gas-filled voids are readily discernible in SPI images because of their irregular shape and glassy texture (due to the reflection of the strobe off the gas). The image analyst notes the presence of these methane voids, and the number and area of the voids can be measured.

A related feature that indicates if an area is suffering severe sediment oxygen demand (SOD) due to organic enrichment and/or depleted water column dissolved oxygen levels (i.e., hypoxia or anoxia) is the presence of the sulfur-oxidizing bacterial colonies at or just below the SWI. These bacterial colonies have diagnostic bright white or orange filamentous morphology that has been documented in numerous SPI surveys (Germano et al. 2011). The presence of sulfur-oxidizing bacterial colonies appears when boundary-layer dissolved oxygen concentrations drop into the "hypoxic" range between 0 and 1 milliliters per liter (mL/L) (Rosenberg and Diaz 1993). If present, the image analyst notes the presence and relative extent of sulfur-oxidizing bacteria in a SPI image.

2.2.1.6 Infaunal Successional Stage

In fine-grained, silt-dominated sediment habitats, following a disturbance marine benthic infaunal communities follow the succession pattern described by Pearson and Rosenberg (1978) and Rhoads and Germano (1982). Figure 2-4 illustrates this generalized progression from an initial community of tiny, densely populated, tubiculous, surface-dwelling polychaete assemblages (Stage 1) to a mature, equilibrium community of deep-dwelling, head-down deposit feeders (Stage 3) that create distinctive feeding voids and aerated burrows that are visible in SPI images.

However, in temporal and spatially dynamic marine environments, benthic communities are unlikely to progress completely and sequentially through four stages in accordance with the idealized conceptual model depicted in Figure 2-4. Various and transitional combinations of these basic successional stages are possible (e.g., Stage 1 going to Stage 2). More frequently, secondary succession can occur in response to additional labile carbon input to surface sediments, with surface-dwelling Stage 1 or 2 organisms co-existing at the same time and place with Stage 3, resulting in the assignment of a "Stage 1 on 3" or "Stage 2 on 3" designation. The image analyst assigned an infaunal successional stage for each SPI image analyzed based on this interpretive paradigm.

The successional dynamics of invertebrate communities in sand and coarser sediments are less well-documented and biogenic structures are less-well preserved or discernable in SPI images from non-cohesive sediments, so successional stage is often indeterminate in sand-dominated settings, especially when prism penetration is minimal (e.g., less than 5 cm).

2.2.1.7 Other Biological Features

In addition to the infaunal successional stage designation, specific biological features can be identified and traced by the analyst when observed in the images. These features include: 1) the infaunal organisms themselves (bivalves, polychaetes, crustacea); 2) the feeding pockets or voids that subsurface, deposit-feeding polychaetes produce; and 3) the burrows that polychaetes and crustacea can produce. When biological features are identified and measured

in an image, iSPI automatically counts and calculates each feature's size and depth in the sediment column. The "Sediment Profile Attributes" box in Figure 2-3 shows the number feeding voids, worms, and burrows identified in that SPI image.

2.2.2 PV Image Analysis

A PV image provides a different view of the seafloor than the associated SPI image. This complementary perspective can provide valuable information on the broader seabed topography, substrate composition and the presence and density of epifauna, and infaunal and demersal fauna and/or their biostructures, such as burrows and fecal casts. The PV image can provide a broader spatial context for any features detected in the SPI image that exhibit a visible surface manifestation.

The scale information provided by the underwater lasers deployed with the PV camera (red dots in PV image in Figure 2-3) allows measurements of ripple wavelength, density counts of epifauna (number per square meter), or larger macrofauna or fish that may be missed in the SPI image cross section. During image analysis, the iSPI software automatically detects the lasers and calibrates the scale of each PV image. The key features noted/quantified in PV images for this survey are listed below:

General Observations:

- Field of View (cm²)
- Habitat Type (e.g., hard bottom, rippled sand)
- Epifauna/Infauna Types (types and count)
- Biological Percent Cover (low, medium, and high)
- Fish Type (presence: yes/no, count and type)
- Flora (presence: yes/no)
- Bedforms (ripples; yes [wavelength in cm]/no)
- Burrows (presence: yes/no)
- Tracks (presence; yes/no)
- Tubes (presence: yes/no)
- General Comments (overall replicate biological and physical conditions, noteworthy/rare organisms, etc.).

For this survey, each PV image was also assessed relative to the CMECS framework (FGDC 2012) and more recent BOEM (2019) and NMFS (2020) recommendations for substrate and biotic components. These classifications are listed below and discussed in Section 4 of this report.

CMECS Substrate Components:

- Substrate Class (e.g., rock, consolidated mineral, unconsolidated mineral and shell)
- Substrate Subclass (e.g., coarse, fine, shell reef)
- Substrate Group (e.g., gravels, gravel mixes)
- Substrate Subgroup (e.g., sandy gravel, gravelly sand)
- Substrate Group Percent.

CMECS Biotic Components:

- Complex Habitat (presence: yes/no)
- Biotic Subclass (e.g., soft sediment fauna, attached fauna)
- Biotic Group (e.g., larger tube-building fauna, sand dollar bed)
- Co-occurring Biotic Group (e.g., mobile mollusks on soft sediment, tracks and trails).

2.2.3 CMECS Substrate Classification from SPI-PV Imagery

NMFS (2020) recommendations for mapping fish habitat for offshore development projects state that "it is particularly important to identify and delineate complex, sensitive habitats that are more vulnerable to project impacts." Complex habitats are defined as: 1) CMECS-defined hard bottom substrates (defined as rock substrate, the three gravel substrates [gravels, gravel mixes, gravelly], and shell substrates); 2) CMECS hard bottom substrates with epifauna or macroalgae cover; and 3) vegetated habitats (e.g., submerged aquatic vegetation and tidal wetlands).

SPI and PV imagery combined can be used to classify physical habitat in accordance with these CMECS designations. NMFS (2020) indicates that seabed imagery (such as video or PV still images) should be used to characterize rock, gravel, and shell substrates. Grab samples or SPI imagery, which are also useful for characterizing gravel mixes and gravelly substrates, are particularly useful for characterizing the fine unconsolidated substrate subclass (slightly gravel, sands, and muds). This is because SPI images (or grab samples) provide more detailed information on near-surface sediment grain sizes than PV images, especially in sands and silts where the SPI prism penetrates the bottom to several centimeters or deeper.

For this survey, CMECS Substrate Group and Substrate Subgroup were designated for each SPI image and these classifications are included in Appendix C1. These SPI-based substrate classifications were assigned in accordance with the CMECS substrate classification scheme as modified for offshore wind projects by NMFS (2020). Similarly, CMECS Substrate Group and Substrate Subgroup were designated for each PV image and these classifications are included in Appendix C2. Given the larger-scale, seabed field of view, the PV images allow identification of complex habitats as defined above (NMFS 2020). For fine unconsolidated substrates, the PV

CMECS classifications were informed by the SPI designations (e.g., fine vs. medium sand). Overall, however, the PV image–based CMECS substrate designations (Appendix C2) are the designations mapped and discussed in this report (Section 4).

3 SPI-PV RESULTS

The SPI and PV image analysis results are discussed in this section. Copies of all SPI and PV images analyzed for this report are provided in Appendices B1 and B2. Appendix C1 provides the complete SPI image analysis results, and the complete PV image analysis results are provided in Appendix C2. Spatial patterns in benthic habitat conditions along the ECR, within the MLA, and at the control areas are summarized below for the physical, geochemical, and biological features observed in the images. Inferences about processes based on the physical and biological structures observed in the SPI–PV images are based on this summer 2020 data set only. Synthesis with other data sets (e.g., benthic taxonomy and acoustic data), as well as previous or future SPI–PV surveys at the site, may either confirm or point to revisions needed in these initial hypotheses. These broader cross-discipline and temporal data evaluations will be reported elsewhere.

3.1 PHYSICAL CHARACTERISTICS

Table 3-1 lists the key SPI–PV physical parameters (e.g., grain size, presence and size of sand ripples, penetration depth, etc.) summarized by station. These data are mapped together in Figure 3-1a (the entire Project area) and Figure 3-1b (the transect locations). Note that the grain size major mode tabulated and mapped for each station is the coarsest major mode observed among the three SPI station replicates, or the single replicate in the case of transect stations. These data reflect the major modes observed across the entire sediment profile and not just on the sediment bed. The sediment textures observed on the sediment bed are captured in the CMECS substrate groups/subgroups discussed and mapped in Section 4. Appendix C1 includes the designated grain size major mode for all individual replicates. The major spatial patterns in these parameters are described below.

Relatively coarse sediments (gravels and sands) dominate the ECR. The coarsest material is found at nearshore stations (Stations 001 to 007) and again on the shoal between Martha's Vineyard and Nantucket (Stations 025 to 029, including Station CP2). These higher energy regions show a mixture of medium to coarse sands, often mixed with gravels or with gravel pavements on the sediment surface.

Between Stations 007 and 025 and south from Station 031 to 061, i.e., the northern edge of the MLA, medium to very fine rippled sands predominate. The MLA is dominated by silts mixed with subfractions of very fine and fine sands, especially along the eastern edge.

Figure 3-1b shows the SPI physical parameters at the transect stations (Stations 002, 005, 015, 024, and 124) and the northern portion of the ECR. Gravels, sandy gravels, and rippled sands dominant the four transect locations and the ECR from Falmouth Harbor through the shoal

areas between Martha's Vineyard and Nantucket. Transect 124, south of the islands, is dominated by fine sand and silt. Three representative SPI–PV images from the left, center, and right of each transect are shown in Figures 3-2 through 3-6. These panels illustrate the textural gradients, or lack thereof, across the 1-km ECR corridor at each location. At Transect 002, rippled sand is evident at the western end with increasing amounts of surface gravels and shell debris to the east (Figure 3-2). Transect 005 shows a gravel-dominated bottom across the entire transect (Figure 3-3). Station 015 exhibits a shell (*Crepidula*) reef at the northern end that transitions to rippled fine sand south of the center line (Figure 3-4). Transect 024 consists of rippled coarse sand on the western end and transitions to an increasingly gravel-dominated seabed to the east (Figure 3-5). Transect 124, approximately 16 km south of Transect 024, is a mix of fine sands and silts with reduced subsurface sediments and, as discussed further in Section 3.2, thin aRPDs (high SOD) at some locations (Figure 3-6).

The colored-coded station dots in Figures 3-1a and 3-1b represent the station-averaged SPI prism penetration depth. Station-average penetration depths ranged from zero (no prism penetration) to 18.5 cm, with an average depth of 7.6 cm (Table 3-1). The SPI camera was fully loaded with lead weights for all ECR stations, therefore the gradients in penetration depths along the route reflect the relative bearing strength of the sediment bed. Consistent with the grain-size patterns described above, the coarse-grained shoals show minimal penetration (<4 cm), with zero prism penetration obtained at Stations 007, 029, and un-replicated transect Station 005-4 (Table 3-1). Relatively deep penetration (>8 cm) was obtained at most of the stations in the MLA, as well as at the west control area (Stations C6 to C10). Intermediate penetration (4–8 cm) was typical in the fine/medium rippled sand zones and at the northernmost control area (Stations C01 to C05), immediately west of the north-south portion of the ECR. Penetration was notably shallower at the control area east of the MLA (Stations C11 to C15), which is also rippled fine to medium sand. This may be due to large numbers of sand dollars in that area impeding prism penetration (e.g., see image C15-SPI-3 in Appendix B1).

Rippled sands were observed along the ECR and at the cable route and east control area. When observed clearly in the PV images, the analyst estimated the crest-to-crest wavelength (to the whole cm) of the ripples. The largest ripples measured at each station are indicated in Figures 3-1a and 3-1b. Large or extra-large ripples (≥21 cm) are prevalent in the northern portion of the ECR from south of the islands to Station 043. South of Station 043, sand ripples were not observed except at two stations in control area east (Stations C11 and C14) and at Station 098—a relatively sandy area near the center of the MLA.

3.2 GEOCHEMICAL CHARACTERISTICS

Figures 3-7a and 3-7b show the distribution of aRPD depths, averaged by station, across the survey area. At 47 of 126 (37%) of the locations sampled, the aRPD was indeterminate due to minimal penetration in gravels, and coarse, medium, and fine sands. These areas encompass

the hard substrate/highest energy areas from the ECR landing to just south of the islands. Measured station-average aRPD depths ranged from 0.2 to 4.8 cm with an average aRPD depth of 2.3 cm (Table 3-1). Consistently deeper aRPDs (>2 cm) were found throughout the MLA and the west control area (Stations C06 to C10). These well-developed aRPDs generally exhibited low contrast redox boundaries (Figure 3-8), suggesting a biogenically well-mixed upper sediment column without the buildup of labile organic matter.

Stations that exhibited shallow to intermediate aRPD depths with high-contrast redox boundaries are denoted with an asterisk (*) in Figures 3-7a and 3-7b. Figure 3-6 shows examples of SPI images with high-contrast aRPDs. High-contrast redox stations are evident along the southern half of the ECR and into the northeast portion of the MLA. Figure 3-9 shows three examples of the high-contrast aRPDs from this portion of the survey area. Each of the images in Figure 3-9 show surface sandier sediments overlying reduced silt. In the image from Station 041-5, a subsurface sand layer is evident below the reduced silt layer. This area, at the base of the shoal that extends southwest from Nantucket, appears to be subject to episodic deposition of silts and sands and these patterns suggests seasonal or inter-annual near-bottom energy regime changes with alternating periods of transgressive sand transport and fine-grained sediment deposition.

Stations that exhibited very thin aRPD depths in addition to high-contrast redox boundaries are denoted with two asterisks (**) in Figures 3-7a and 3-7b. These locations, Stations 011, 019, 124, and 45, appear to have high SOD at the time of the survey. Figure 3-10 shows examples of SPI–PV images from these high SOD areas. At Stations 011 and 019, along the northern portion of the ECR, the bottom consists of slipper shell (*Crepidula*) reef bed that overlies highly reduced, black mud. These are the only stations sampled where sedimentary methanogenesis was apparent based on the presence of methane bubbles in the sediment column, and further point to high SOD. There was no evidence of sulfur-oxidizing bacterial mats in any of the SPI or PV images (Appendix C).

Finally, a very unusual gel-like deposit was observed at Stations 106, 109, and 121 in the MLA. Figure 3-11 shows this whitish material. It varies in thickness from approximately 2 to 7 cm and it is spatially patchy—apparent in two of three replicates at Stations 106 and 109 (only as an isolated clump at 109-3), and all three Station 121 replicates, where is thickest. The PV image from Station 121-5 shows a hole in this deposit; the PV image from Station 106-3 appears to show the camera frame footprint from a previous camera drop that has fragmented the deposit, but it remains cohesively in place (Figure 3-11). The underlying sediment bed in the SPI images from all locations exhibits dark sand particles, possibly being transported by this mobile material/deposit. Fine-grained sediments are deposited on top of this material.

3.3 BIOLOGICAL CHARACTERISTICS

This section focuses on the infaunal community structure as inferred from the SPI images (i.e., the infaunal successional stage); some biological features observed in the PV images are also noted. Conversely, the CMECS biotic component classifications compiled in Section 4 of this report are based predominantly on the biological features observed and measured in the PV images.

Figures 3-12a and 3-12b show the distribution of infaunal successional stages across the survey area for each SPI image replicate analyzed. The frequency distribution (inset on Figures 3-12a and 3-12b) shows that 156 of the 302 replicates (52%) had indeterminate successional stages due to predominantly gravelly and sandy bottom where SPI prism penetration was minimal. For the images where infaunal successional stage was assigned, 108 (36%) were high-order successional stages (Stage 2 going to 3, Stage 3, Stage 1 on 3, and Stage 2 on 3). Twenty-five (8%) were intermediate successional stages (Stage 1 going to 2 and Stage 2) and 13 (4%) were assigned Stage 1. Most of the low-order successional stage replicates were associated with the high SOD areas noted above. The indeterminate successional stages are clustered along the southern portion of the ECR and at the cable route control area (Stations C01 to C05). The MLA and west control area exhibit predominantly high-order (i.e., Stage 3) successional stages.

A wide variety of surface-dwelling fauna (large and small tube-building fauna), encrusting/ attached epifauna, mobile epifauna, and fish were observed both in SPI and PV images. Appendix C1 (SPI results) includes a list of epifauna observed in the SPI images, and Appendix C2 (PV results) includes both the epifauna and emergent infauna (e.g., *Diopatra* tubes, burrowing anemones, etc.) observed and counts of each faunal type. Appendix B provides copies of all images analyzed and listed in Appendix C. Across the wide range of gravel, sand, and fine-grained substrates mapped, flora and fauna observed include macroalgae (red, green, and brown), sponges, bryozoans, hydroids, barnacles, anemones, gastropods (snails and slipper shells), bivalves, nudibranchs, urchins, brittle stars, sand dollars, hermit crabs, Jonah crabs, amphipods, isopods, shrimp, and finfish (e.g., sculpin, hake, etc.).

4 SPI-PV CMECS CLASSIFICATIONS

The summer 2020 Mayflower SPI and PV images were evaluated in accordance with BOEM's guidelines on benthic habitat surveys for renewable energy development (BOEM 2019) and NMFS's supplemental recommendations on mapping essential fish habitat (NMFS 2020). BOEM previously recommended the CMECS framework (FGDC 2012) for offshore energy benthic habitat assessments (BOEM 2013). CMECS consists of four major components—water column, geoform, substrate, and biotic. SPI and PV image data have been used to inform the CMECS substrate and biotic components in offshore renewable energy studies (New York State Energy Research and Development Authority [NYSERDA] 2017; Integral 2019). The PV imagery, with its larger field of view and downward-looking perspective, provides the majority of information on gross physical and biological habitat characteristics for CMECS classifications. The collocated SPI image complements the PV data by providing fine-scale details on physical and biological structures (and by inference processes) in the upper sediment column. It is particularly useful in defining the grain sizes (major mode, range, and stratification) present at a specific location by profiling the upper sediment bed. This informs the CMECS Substrate Groups and Subgroup designations under the Coarse and Fine Unconsolidated Substrate Subclasses (NMFS 2020).

Each SPI–PV pair was evaluated in combination, and the CMECS substrate and biotic components listed below were designated for each station and replicate.

CMECS Substrate Component:

- Substrate Class
- Substrate Subclass
- Substrate Group
- Substrate Subgroup.

CMECS Biotic Component:

- Biotic Subclass
- Biotic Group
- Co-occurring Biotic Group.

Table 4-1 lists CMECS substrate and biotic classifications for each station and replicate. The habitat type description, epifauna/infauna types and counts, and comments from the full PV image results table provided in Appendix C2, as well as whether a replicate is complex habitat as defined in NMFS (2020), are also included in Table 4-1. Of the CMECS substrate component

categories, the substrate group and subgroup classifications based on the SPI–PV imagery provide effective descriptors of physical seafloor habitat. Figures 4-1a and 4-1b are maps of these components on a station-by-station basis. In most instances, all three station replicates exhibited similar substrate group/subgroup textures (Table 4-1). When there was within-station heterogeneity, the dominant textures are mapped. Figure 4-1a provides an overview of CMECS substrate components across the entire Project area, with gravel- and shell-dominated areas colored blue or green, sands in orange or yellow, and silt-dominated areas depicted in brown. Locations defined as complex habitat are noted with an asterisk (*). Figure 4-1b shows the same information for the northern portion of the ECR and along the transects. This map details both spatial homogeneity (e.g., Transect 005) and spatial heterogeneity (e.g., Transect 015) in complex habitat textures across the ECR corridor (also see Figures 3-2 through 3-6).

For the CMECS biotic component, the biotic group and co-occurring biotic group provide detailed information on the biological community structure and organisms observed at each sample location. These biotic components are mapped in Figures 4-2a and 4-2b on a station-by-station basis. As with the substrate components, when biotic components varied among station replicates, the dominant classifications for the station overall were mapped. Table 4-2 lists the 25 different CMECS biotic group or biotic subgroup designations assigned across the 303 PV replicate images analyzed from this summer 2020 survey. The number and percentage of replicates in each category is indicated. While the diversity of biotic groups is high due to the diverse substrates along the northern portion of the ECR, five CMECS biotic group categories (Tracks and Trails, Small Tube-Building Fauna, Larger Tube-Building Fauna, Mobile Crustaceans on Soft Sediments, and Mobile Mollusks on Soft Sediments) make up over half (56%) of the designations overall. These biotic groups are widespread in the predominantly soft-bottom substrates (fine sands and silts) along the southern portion of the ECR, throughout the MLA, and at the control areas.

Together, Table 4-1 and Figures 4-1a–b and 4-2a–b provide a detailed "snapshot" of seafloor physical and biological habitat in accordance with the CMECS framework in the Mayflower Project areas in summer 2020. Additional surveys conducted in the same manner and Project areas over time should allow seasonal and/or inter-annual changes in seabed habitat conditions to be documented.

5 REFERENCES

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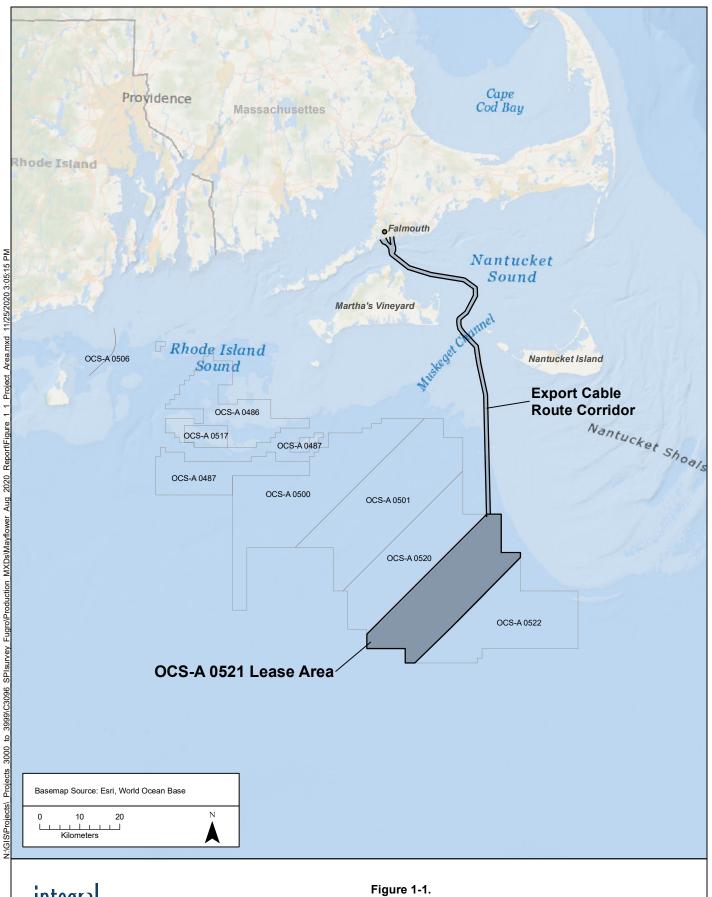
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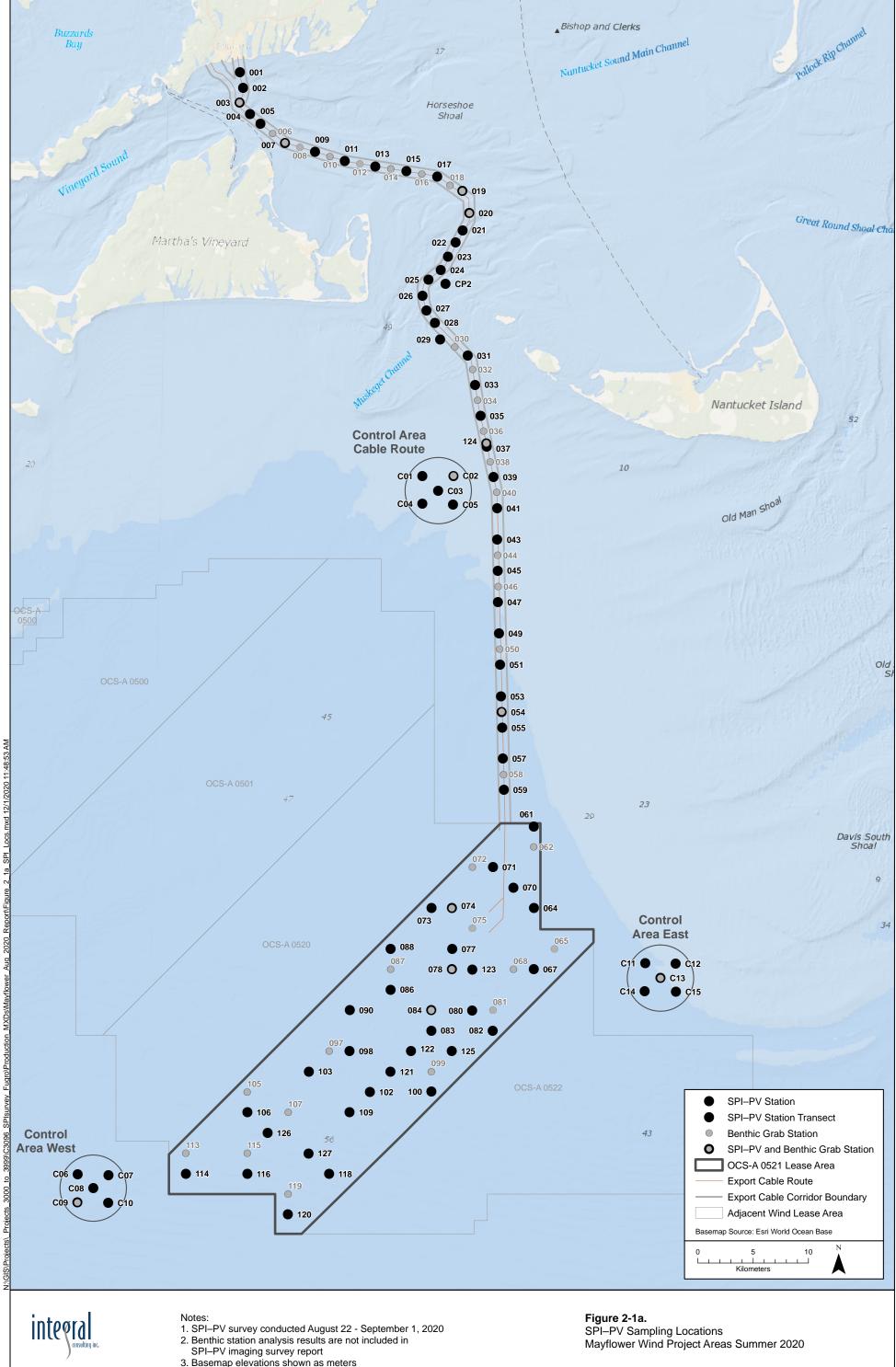
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Figures

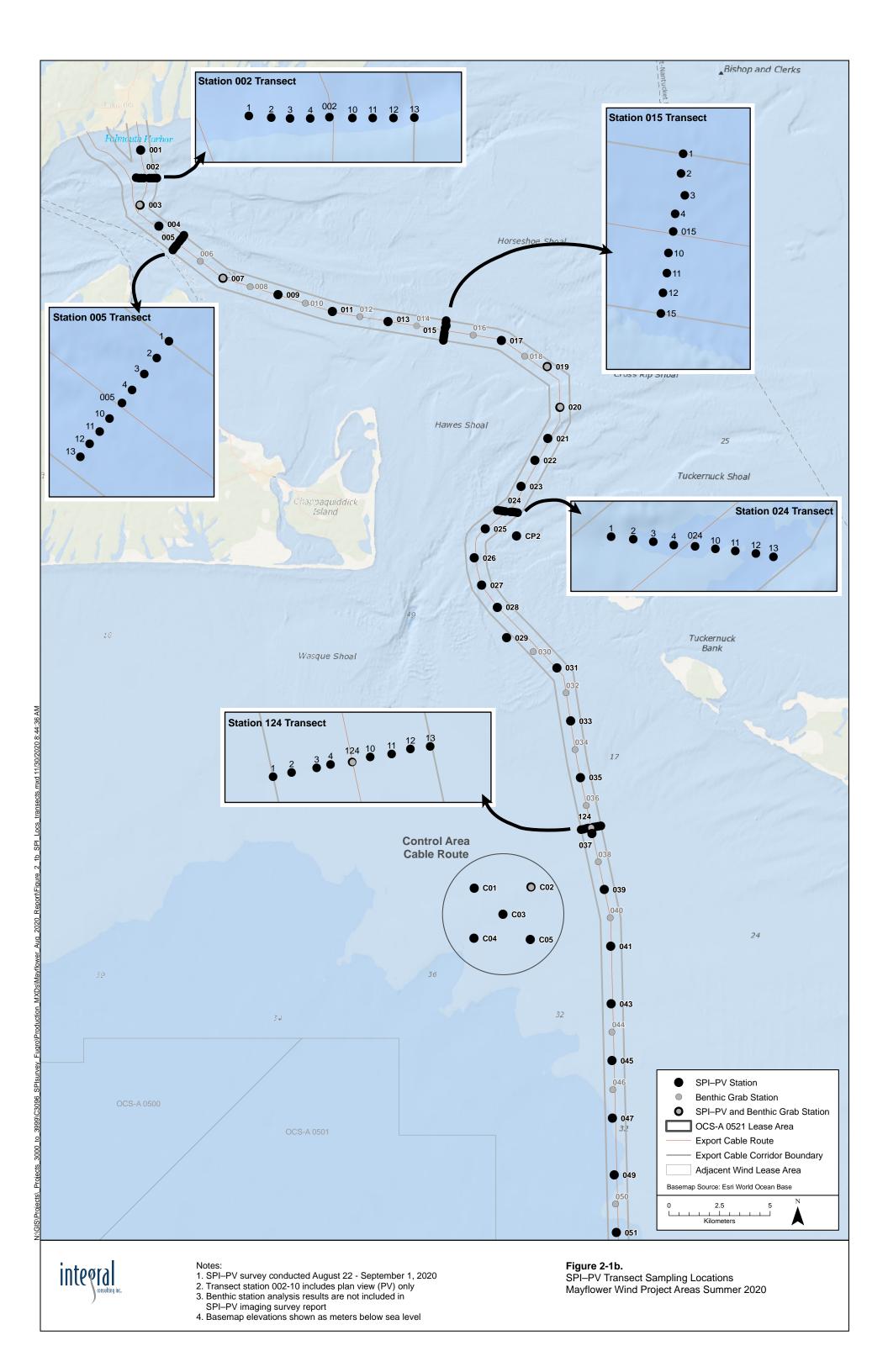




Mayflower Wind Lease Area and Export Cable Route and Adjacent Wind Lease Areas
Mayflower Wind Project Areas Summer 2020



3. Basemap elevations shown as meters below sea level



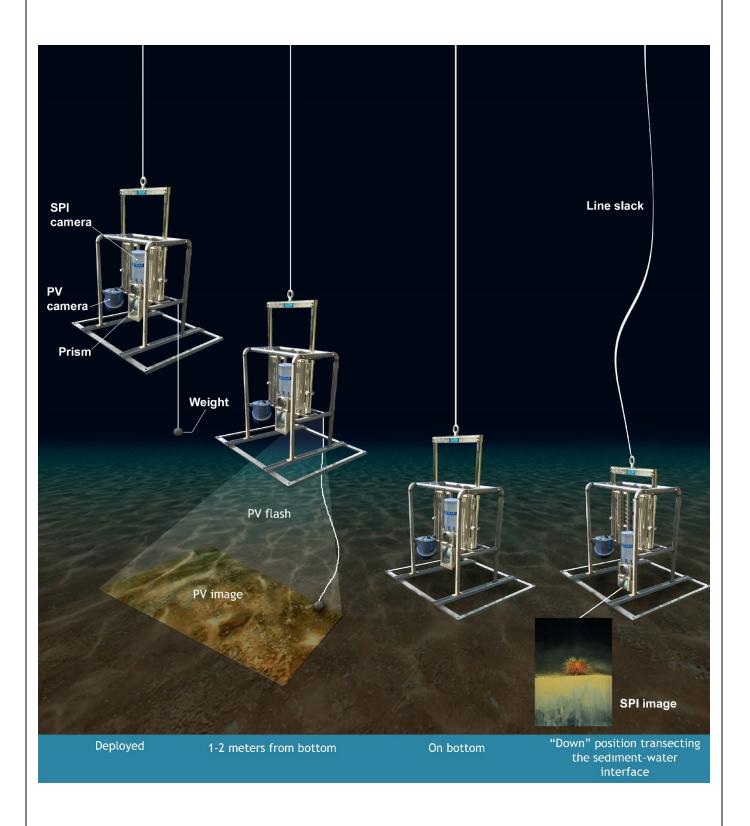




Figure 2-2.The Sediment Profile and Plan View Camera System Deployment

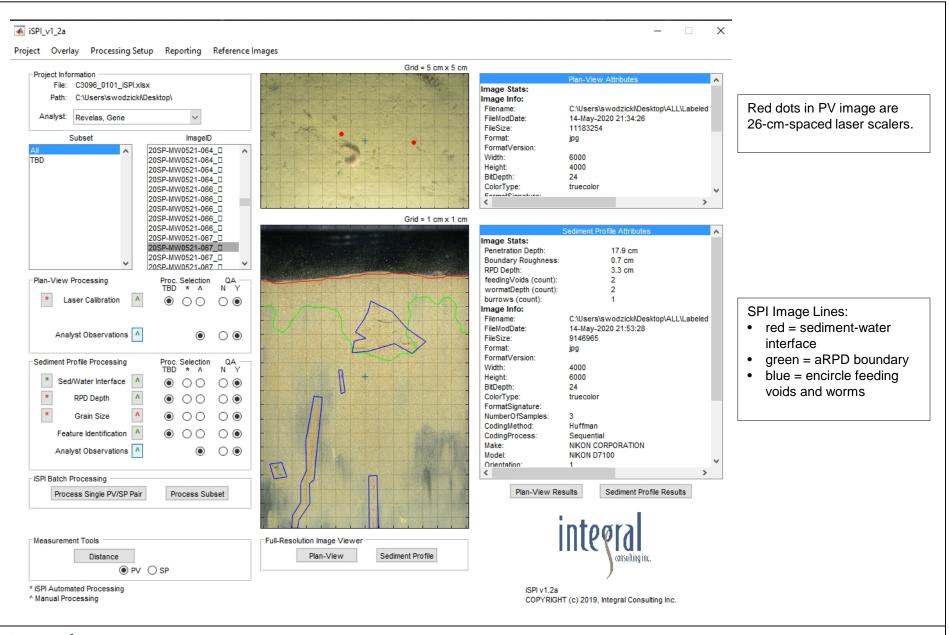




Figure 2-3. iSPI Display

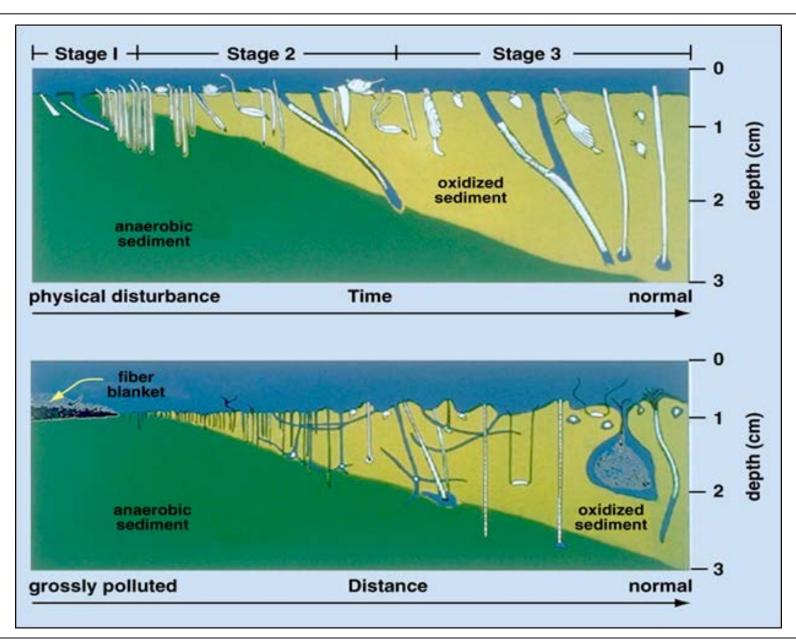
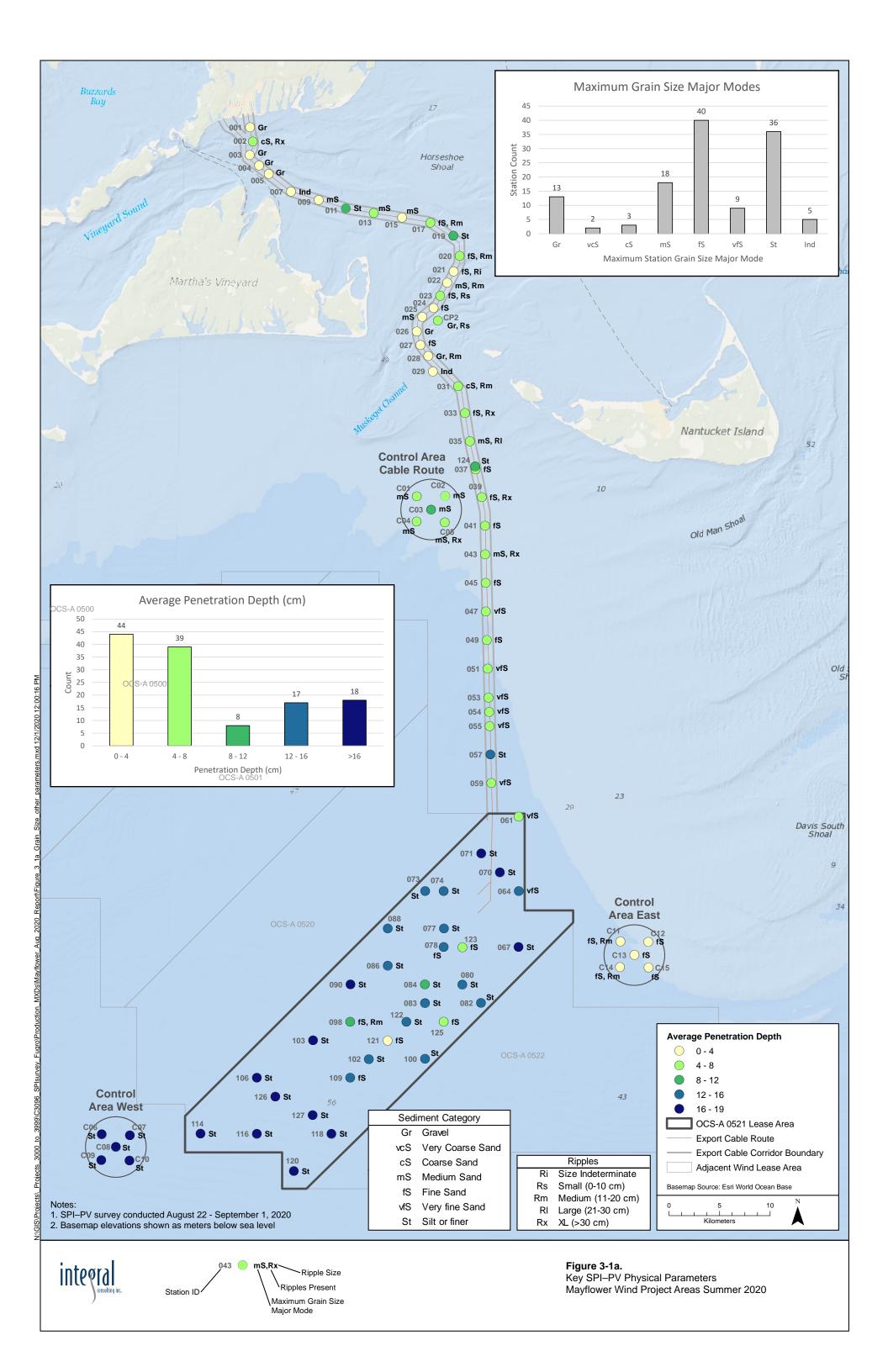
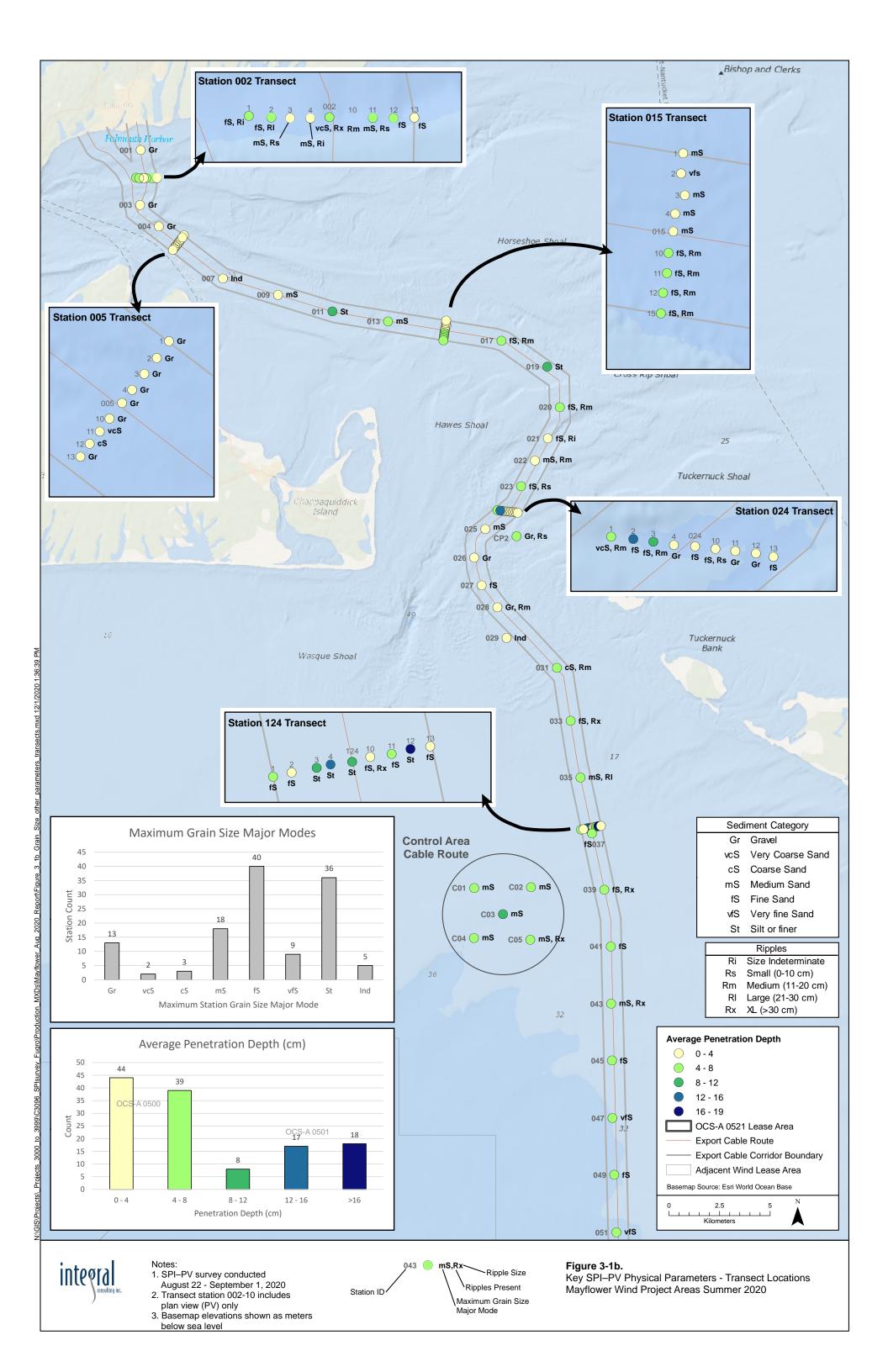
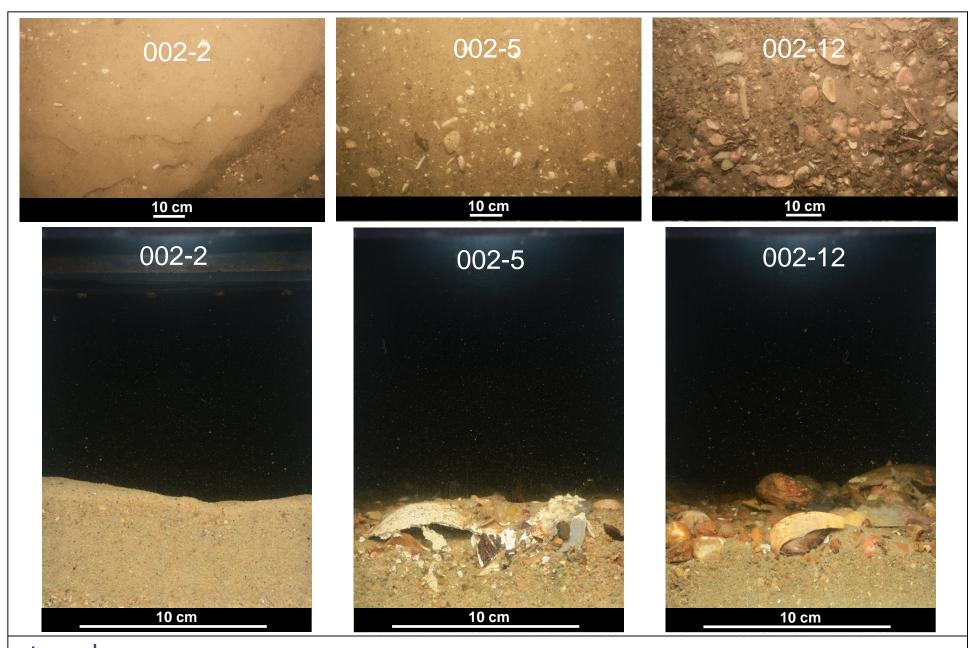




Figure 2-4.Benthic Infaunal Successional Stages that Develop Over Time or Space Following a Disturbance (from Rhoads and Germano 1982)







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Figure 3-2.Three SPI–PV image pairs from west to east along Transect 002 showing a transition from rippled medium sand to coarse and gravelly sand with surface shell debris. Scale: width of SPI images = 14.4 cm; width of PV 002-2 = 95 cm, 002-5 = 90 cm, 002-12 = 56 cm.

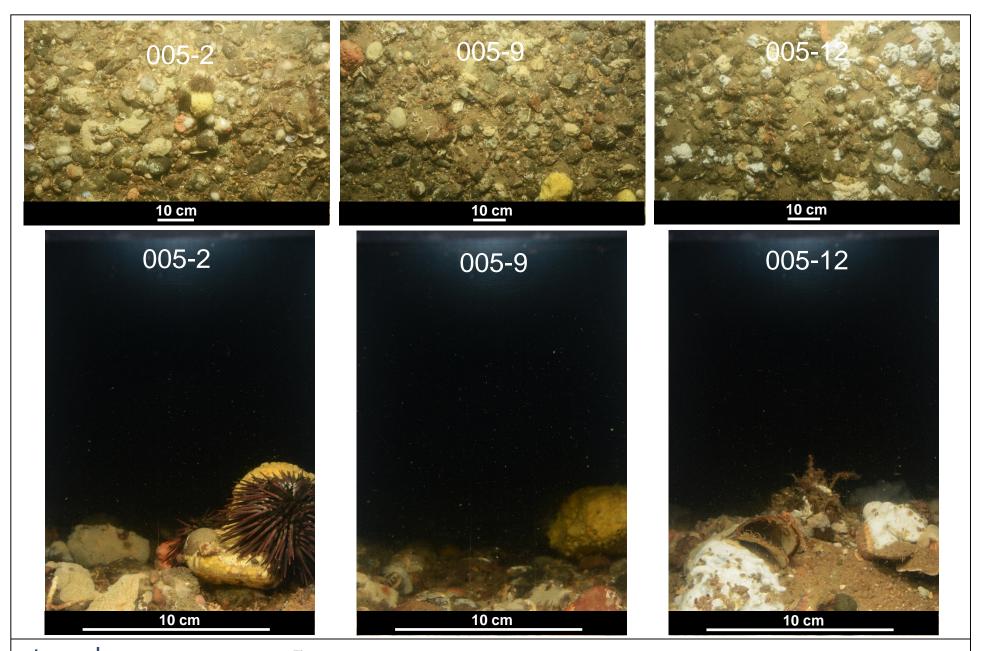
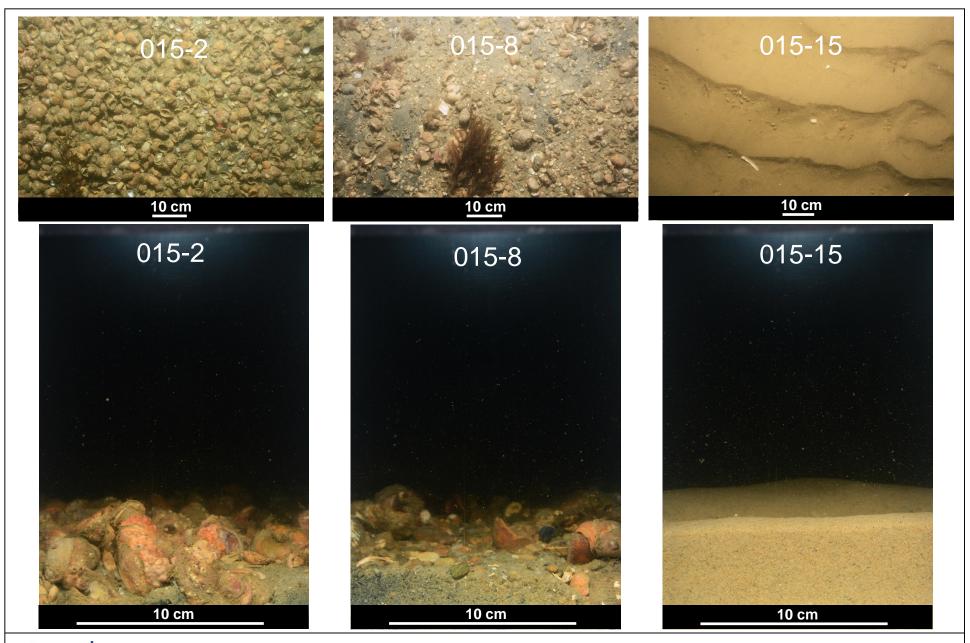




Figure 3-3.Three SPI–PV image pairs from southwest to northeast along Transect 005 showing gravel-dominated, complex habitat across the ECR corridor. Scale: width of SPI images = 14.4 cm; width of PV 005-2 = 82 cm, 005-9 = 91 cm, 005-12 = 90 cm.





Three SPI–PV image pairs from Transect 015 showing a transition from a gastropod (*Crepidula*) reef in the northern half of the transect to rippled fine sand south of the center line. Scale: width of SPI images = 14.4 cm; width of PV 015-2 = 86 cm, 015-8 = 83 cm, 015-15 = 95 cm.

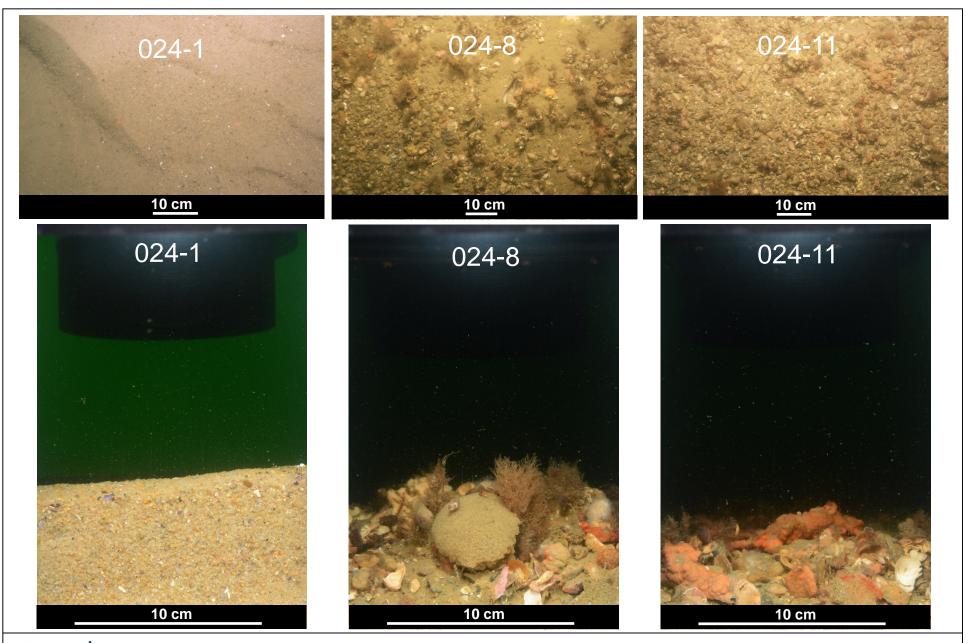




Figure 3-5.Three SPI–PV image pairs from west to east along Transect 024 showing a transition from rippled coarse sand west of center line to gravel-dominated/gravelly sand mixes to the east. Scale: width of SPI images = 14.4 cm; width of PV 024-1 = 66 cm, 024-8 = 93 cm, 024-11 = 85 cm.

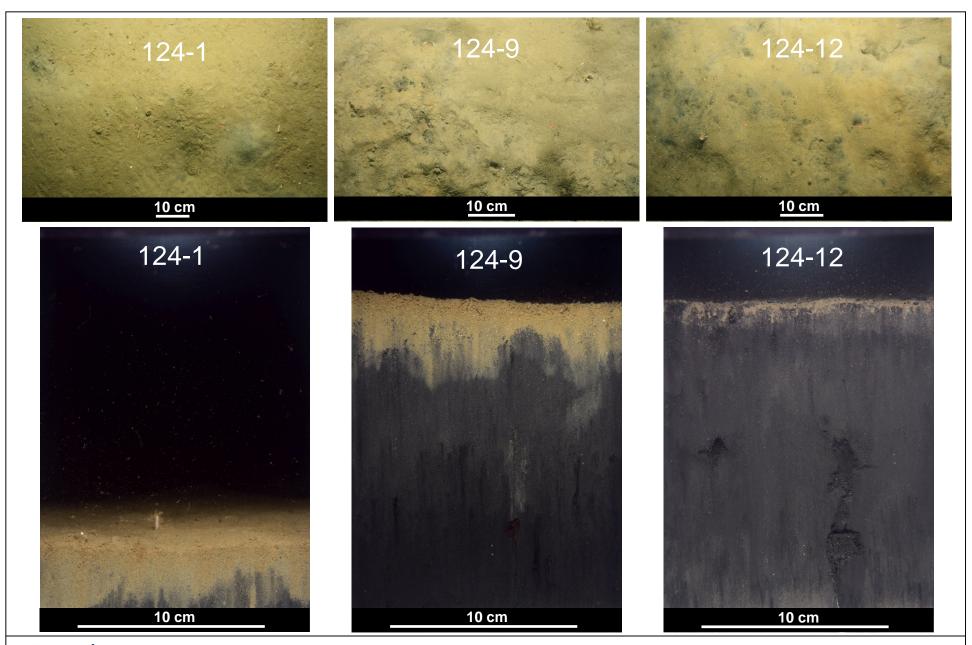
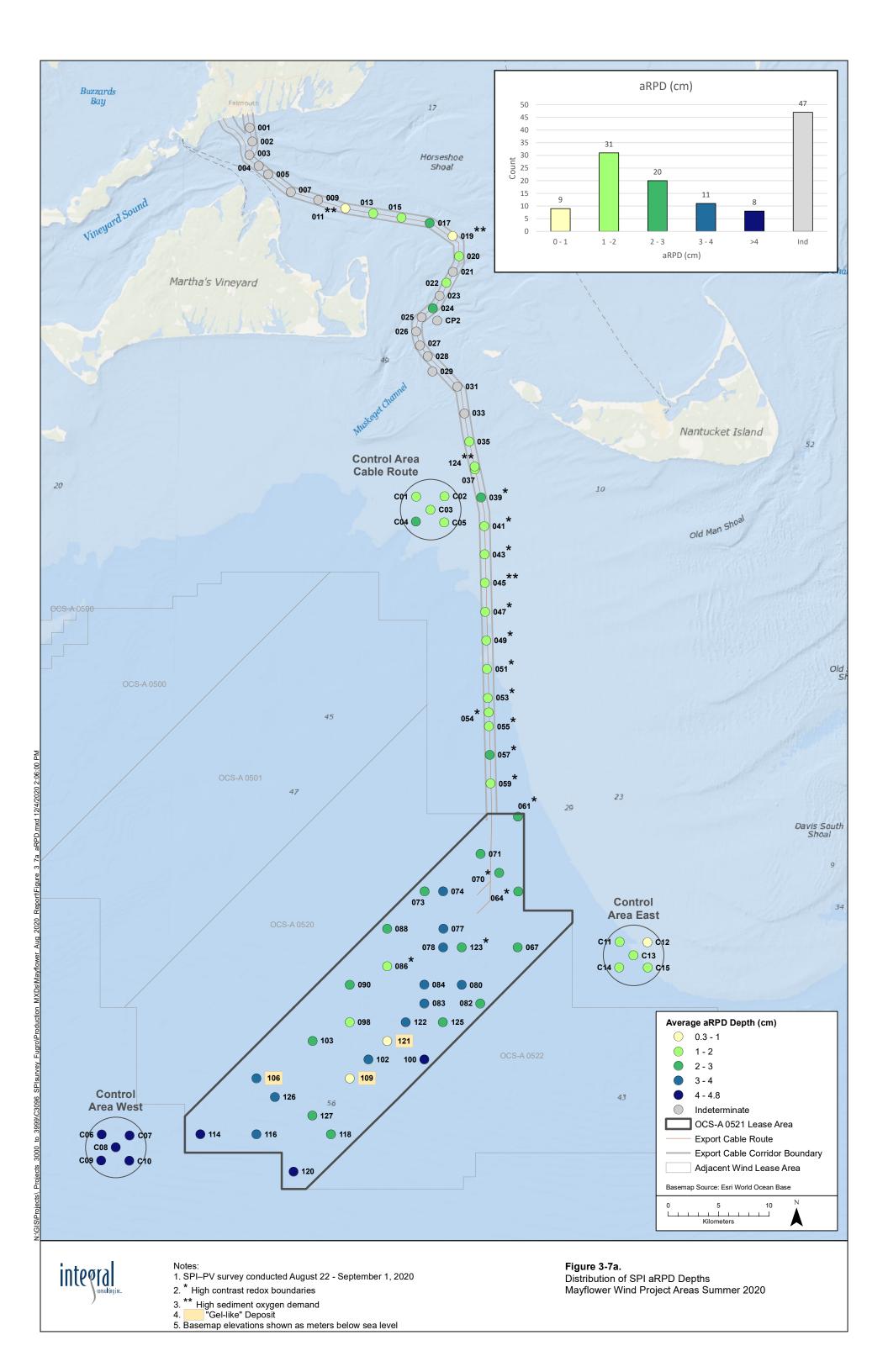
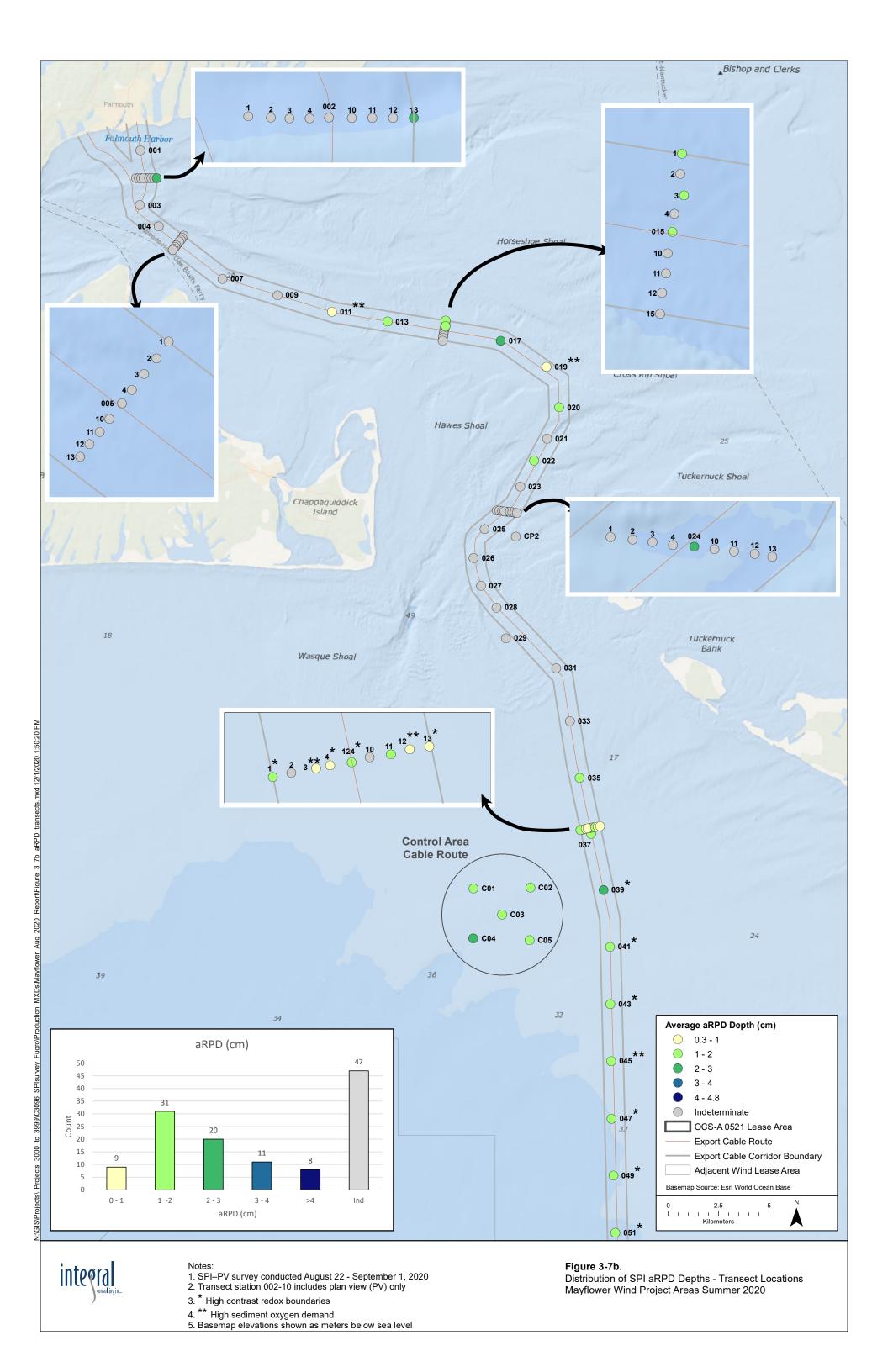




Figure 3-6.Three SPI–PV image pairs from west to east along Transect 124 showing a transition from fine sand to silt. Redox boundaries are high contrast. High SOD is apparent at Station 124-12 where the aRPD depth (the veneer of brown, oxidized surface sediment) is very shallow. Scale: width of SPI images = 14.4 cm; width of PV 124-1 = 89 cm, 124-9 = 63 cm, 124-12 = 69 cm.





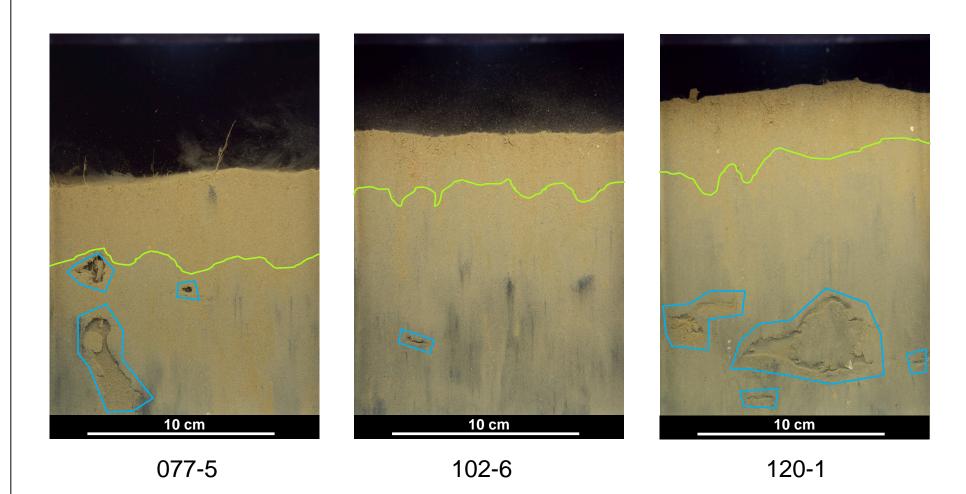




Figure 3-8.

Three SPI images from the upper, central, and lower portion of the MLA showing low-contrast aRPD boundaries (green lines) and biogenic structures (blue polygons), indicating well-mixed sediment columns without the buildup of labile organic matter. Scale: width of SPI images = 14.4 cm.

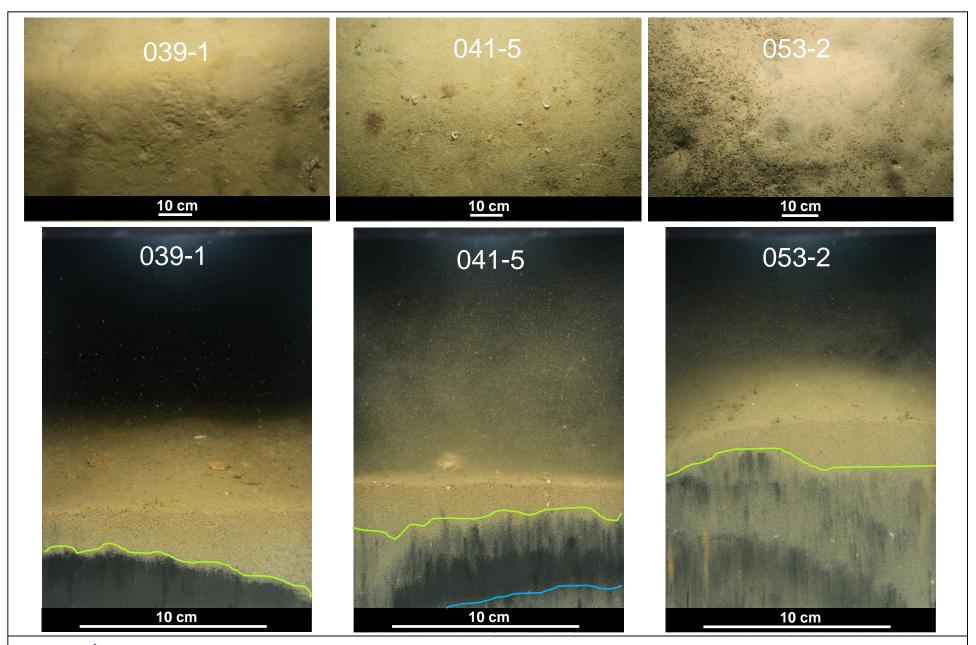




Figure 3-9.Three SPI–PV images showing high contrast aRPD boundaries (green lines define aRPD depth) along the southern portion of ECR. At Station 041-5, a subsurface sand layer is evident below the reduced silt layer (blue line). Scale: width of SPI images = 14.4 cm; width of PV 039-1 = 88 cm, 041-5 = 90 cm, 053-2 = 81 cm.

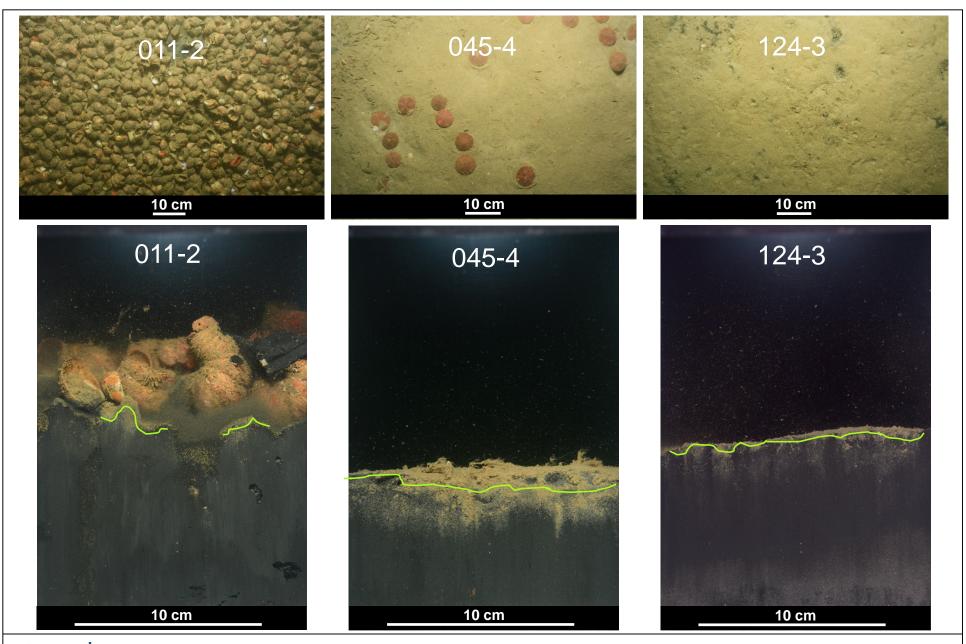




Figure 3-10.

Three SPI–PV images showing examples of high SOD sediments along the ECR. Very thin aPRDs are present in all replicates from Stations 011 and 124 (green lines), and replicate 4 at Station 045. The highly reduced sediments immediately below the thin, surface oxidized layer can by seen in the PV image 124-3. Scale: width of SPI images = 14.4 cm; width of PV 011-2 = 90 cm, 045-4 = 83 cm, 124-3 = 85 cm.

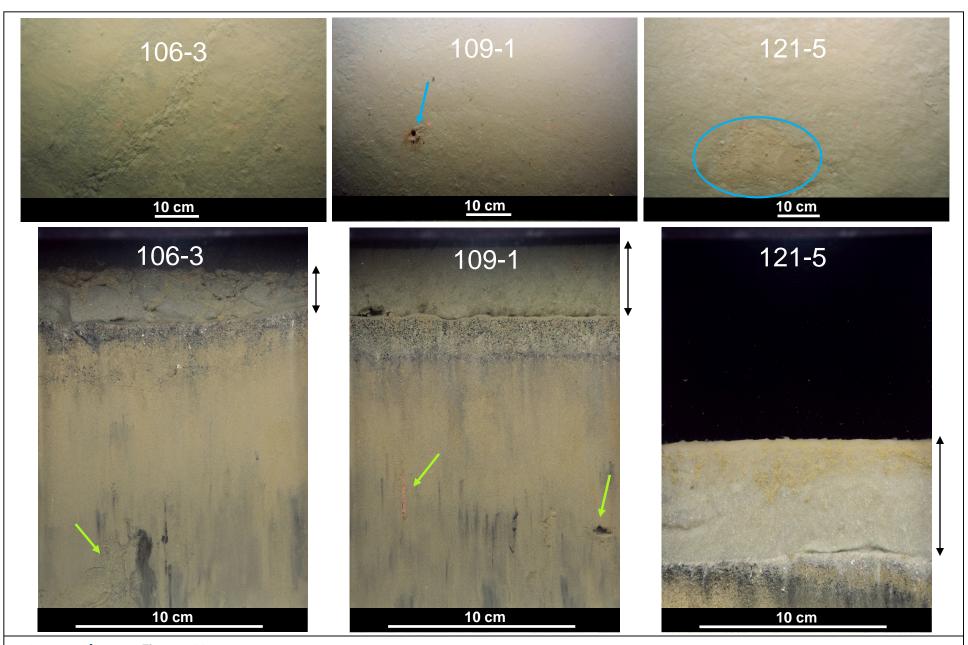
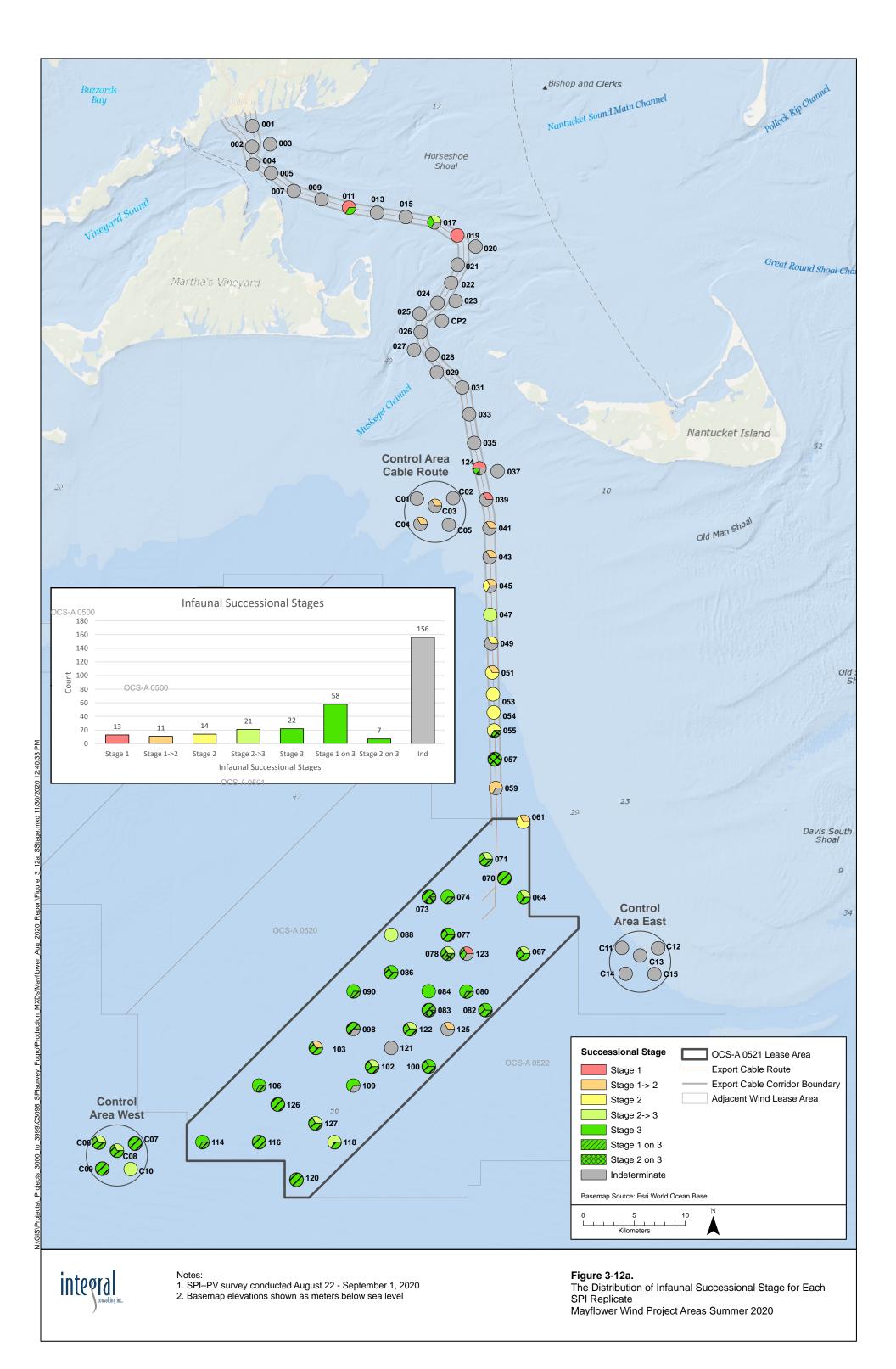
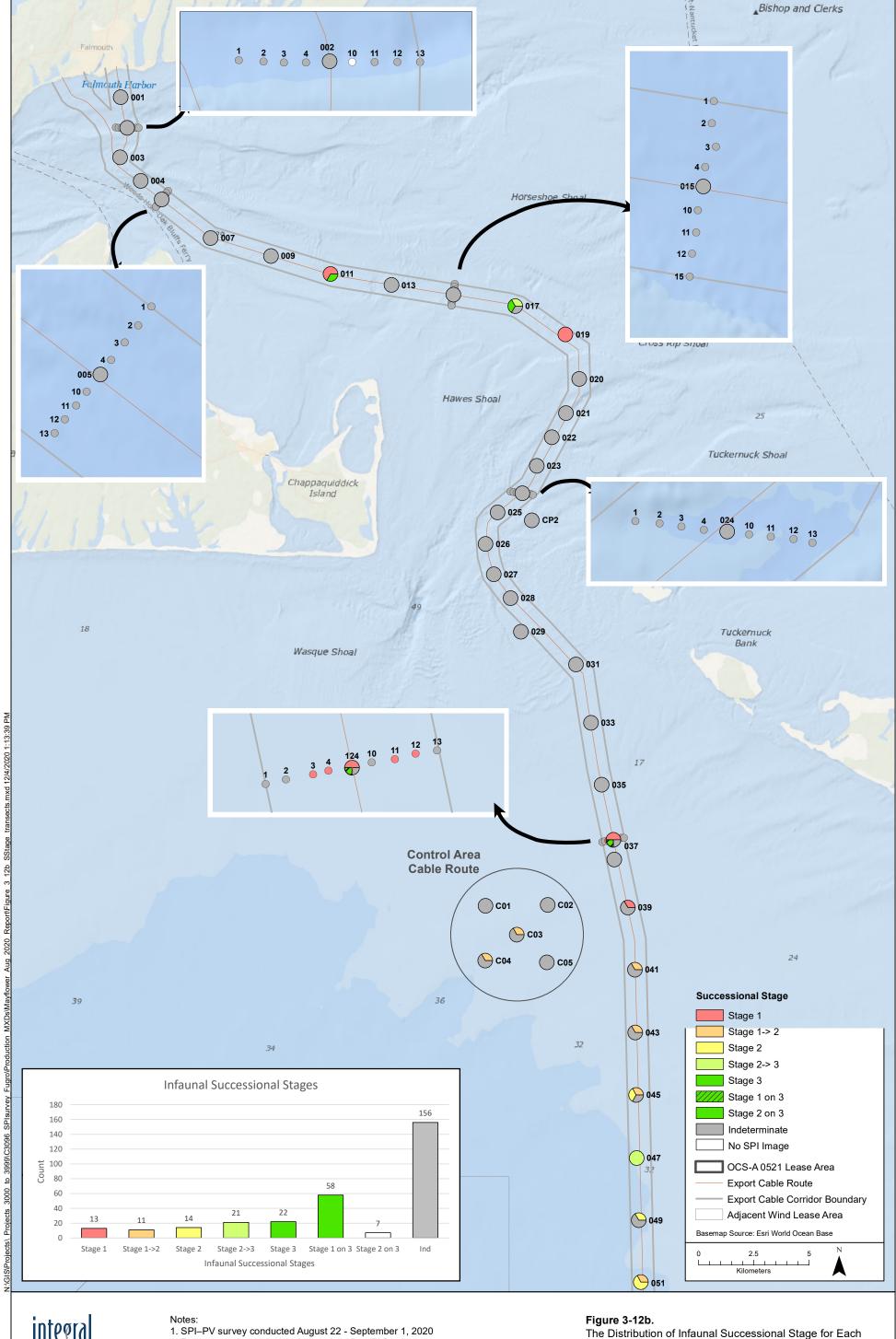




Figure 3-11.

Three SPI–PV images showing 3- to 6-cm "gel-like" deposit (black arrows) in the southern portion of the lease area. Station 121 PV image shows a "hole" in the deposit (blue circle) and a cerianthid anemone in the deposit is evident at Station 109 (blue arrow). Biota/biogenic structures (green arrows) are present in the sediment column at Stations 106 and 109. Scale: width of SPI images = 14.4 cm; width of PV 106-3 = 67 cm, 109-1 = 66 cm, 121-5 = 70 cm.



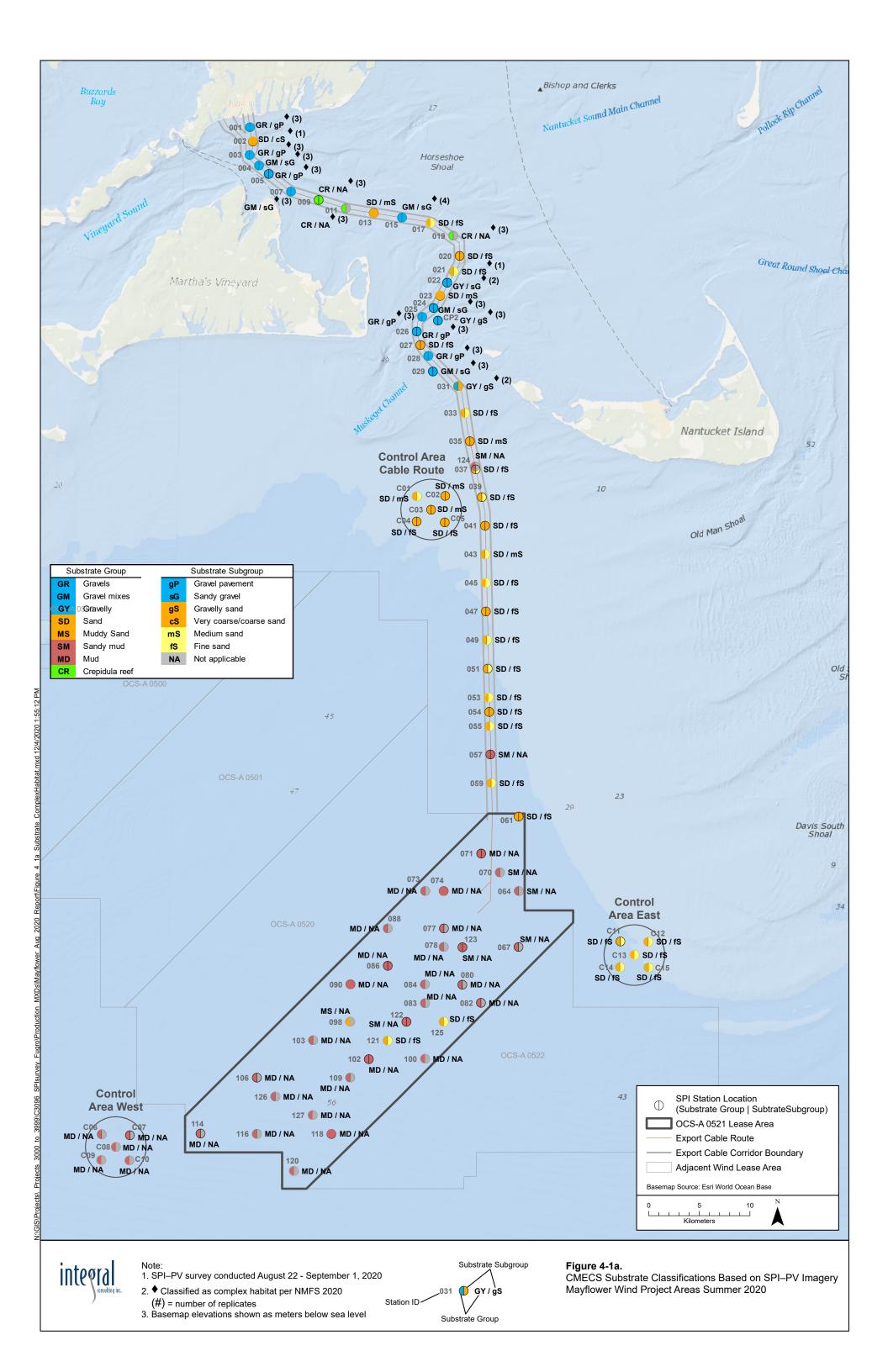


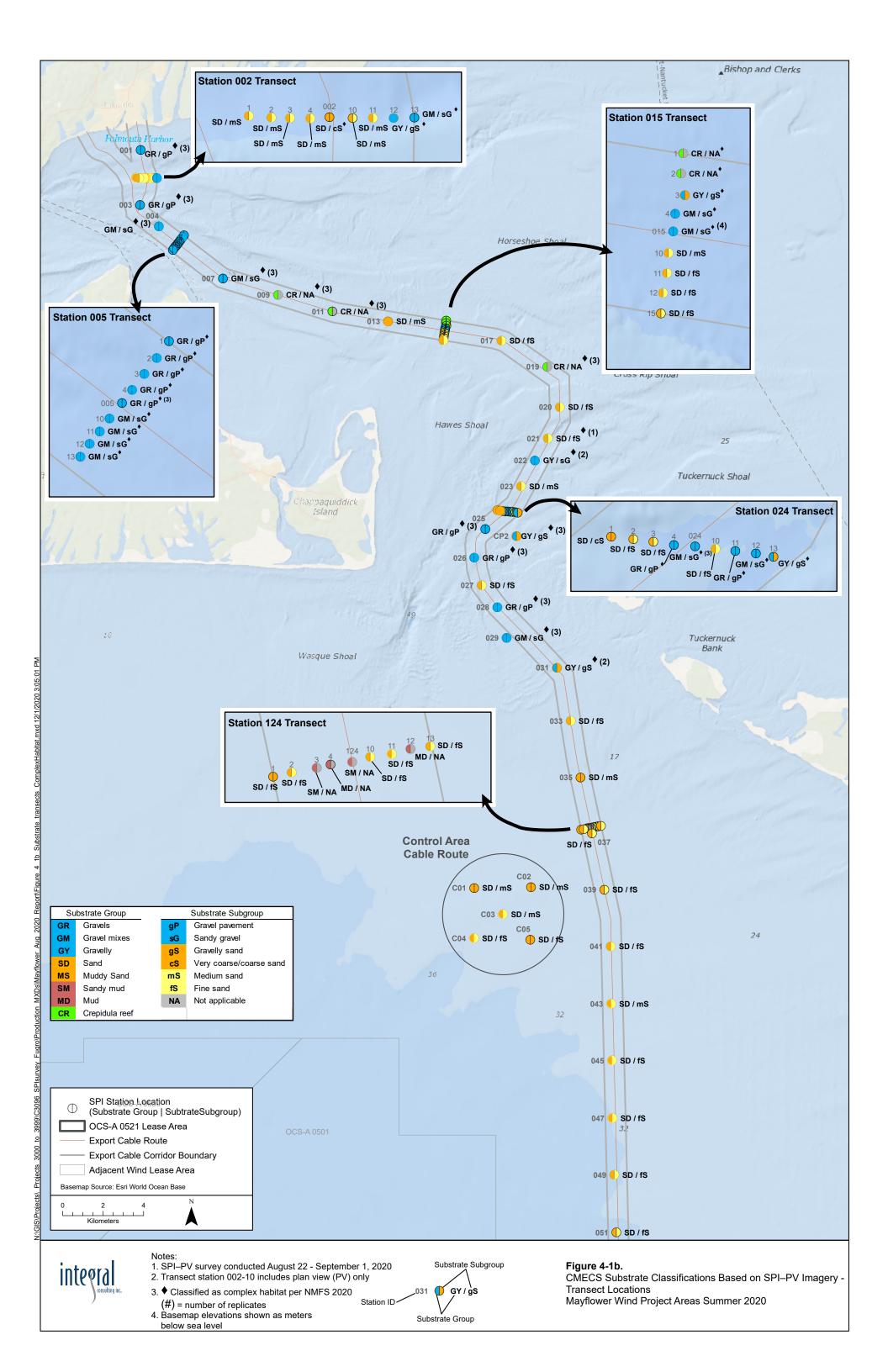
integral

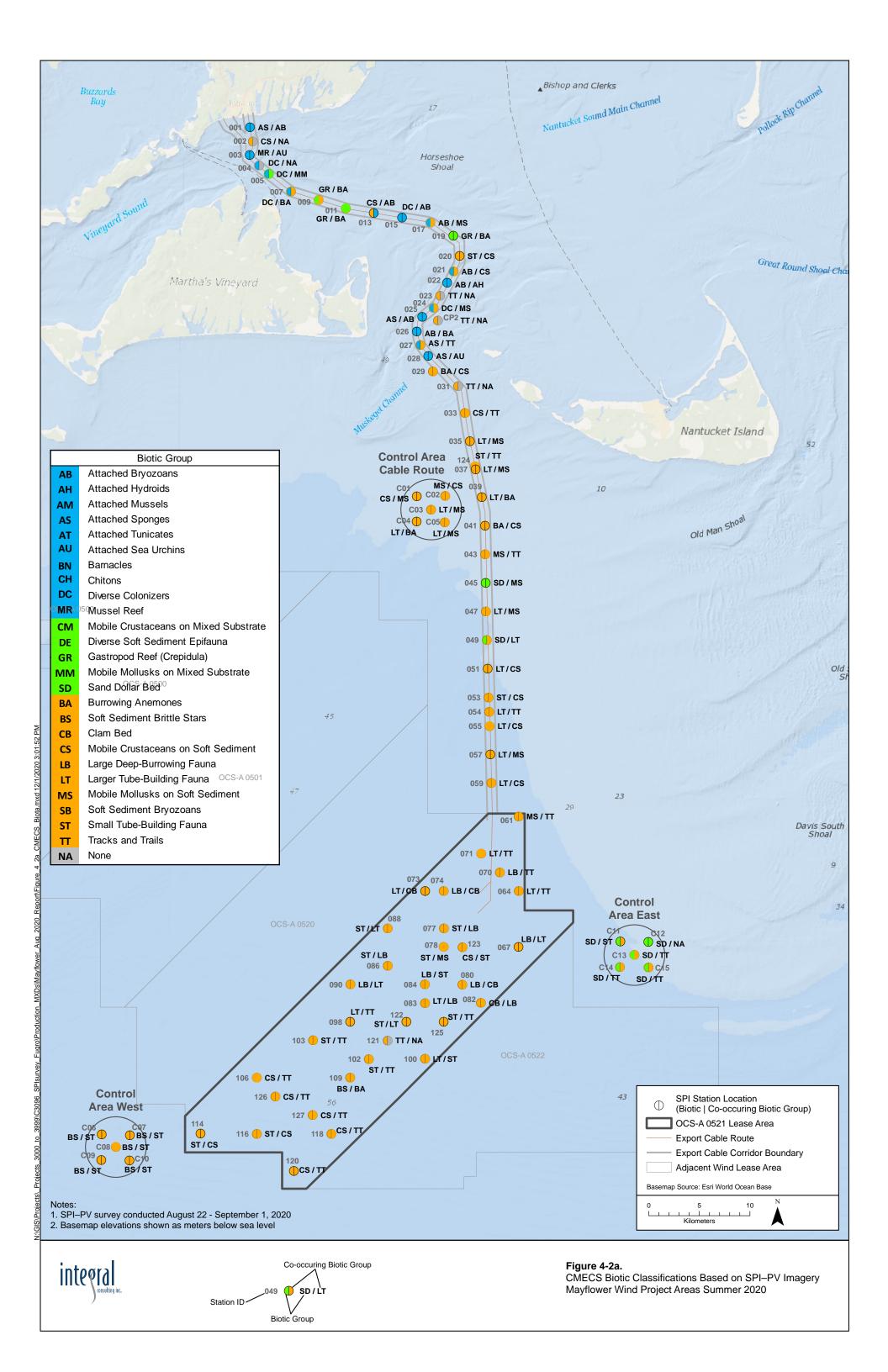
2. Transect station 002-10 includes plan view (PV) only

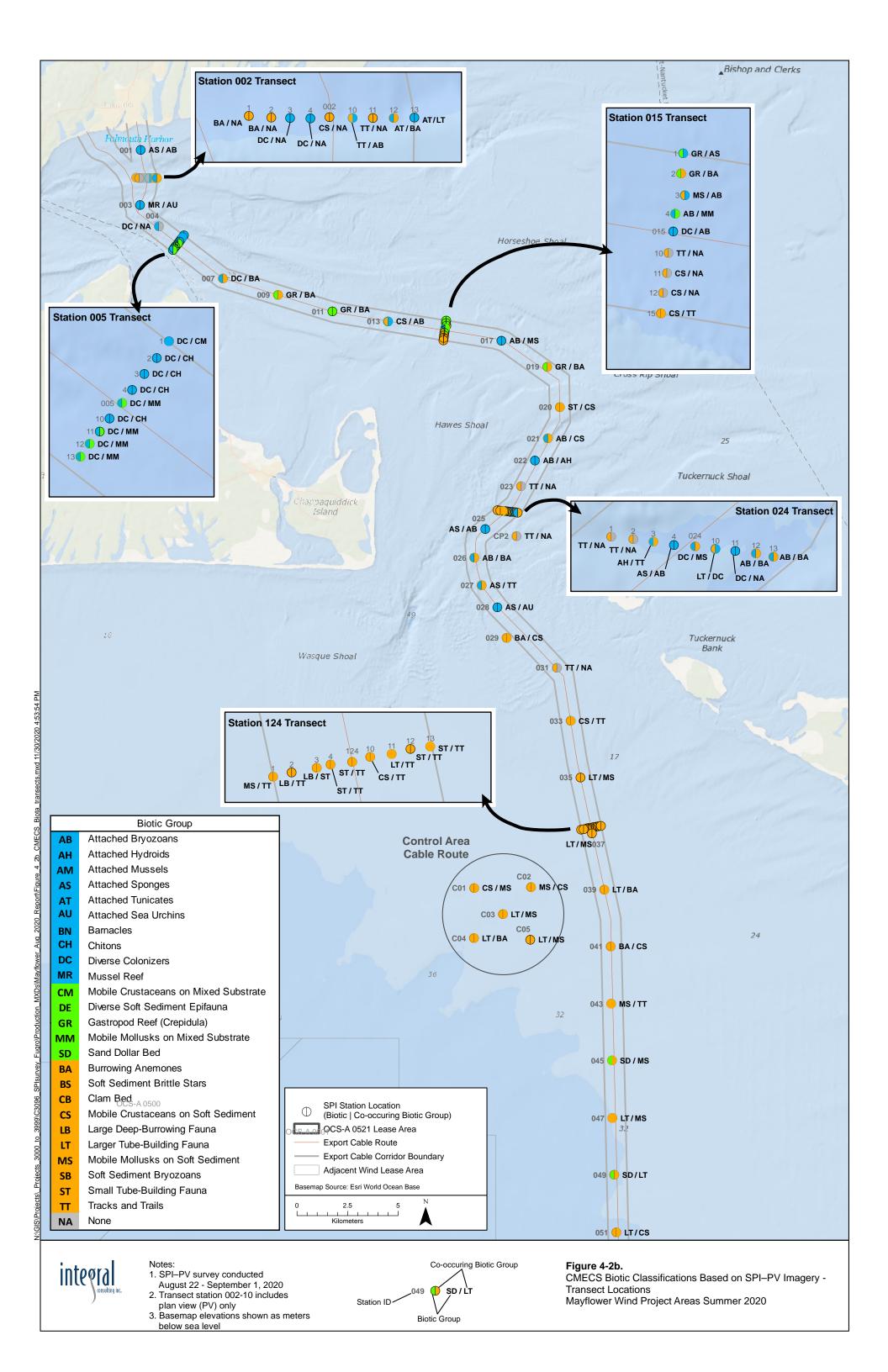
3. Basemap elevations shown as meters below sea level 4. Unreplicated transect stations are shown as a smaller circle The Distribution of Infaunal Successional Stage for Each SPI Replicate - Transect Locations

Mayflower Wind Project Areas Summer 2020









Tables

Table 3-1. SPI Physical Parameters Summarized by Station

Station ID	Replicate	Station Average Penetration (cm)	Station Average Roughness (cm)	Station Average aRPD (cm)	Coarsest Grain Size Major Mode	Station Grain Size Descriptor Code	Ripple Presence and Size
20SU-MW0521-001		3.3	1.8	Ind	-2 to -3	Gr	
20SU-MW0521-002	1	4.9	2.4	Ind	3-2	fS	Ri
20SU-MW0521-002	2	6.8	0.8	Ind	3-2/1-0	fS	RI
20SU-MW0521-002	3	2.4	3.4	Ind	2-1	mS	Rs
20SU-MW0521-002	4	2.8	1.6	Ind	2-1	mS	Ri
20SU-MW0521-002		5.2	0.8	Ind	0 to -1	vcS	Rx
20SU-MW0521-002	10		No SP	I Image This Re	plicate		Rm
20SU-MW0521-002	11	5.3	1.0	Ind	2-1	mS	Rs
20SU-MW0521-002	12	4.4	1.5	Ind	3-2	fS	
20SU-MW0521-002	13	3.8	1.3	2.4	3-2	fS	
20SU-MW0521-003		2.5	2.0	Ind	-4 to -5	Gr	
20SU-MW0521-004		2.0	2.1	Ind	-3 to -4	Gr	
20SU-MW0521-005	1	1.3	1.3	Ind	-2 to -3	Gr	
20SU-MW0521-005	2	1.6	1.6	Ind	-5 to -6	Gr	
20SU-MW0521-005	3	0.6	0.6	Ind	Ind	Gr	
20SU-MW0521-005	4	0.0	Ind	Ind	Ind	Gr	
20SU-MW0521-005		0.5	8.0	Ind	-3 to -4	Gr	
20SU-MW0521-005	10	1.9	1.7	Ind	-1 to -2	Gr	
20SU-MW0521-005	11	2.7	1.2	Ind	0 to -1	vcS	
20SU-MW0521-005	12	3.7	2.8	Ind	1-0	cS	
20SU-MW0521-005	13	1.9	1.2	Ind	Ind	Gr	
20SU-MW0521-007		0.0	Ind	Ind	Ind	Ind	
20SU-MW0521-009		3.5	2.0	Ind	2-1	mS	
20SU-MW0521-011		10.2	2.9	0.3	>4	St	
20SU-MW0521-013		4.9	0.9	1.8	2-1	mS	
20SU-MW0521-015	1	3.8	1.2	1.5	2-1	mS	
20SU-MW0521-015	2	1.6	1.8	Ind	4-3	vfS	
20SU-MW0521-015	3	2.8	1.3	1.2	2-1	mS	
20SU-MW0521-015	4	2.0	2.7	Ind	2-1	mS	
20SU-MW0521-015		2.7	1.4	1.2	2-1	mS	
20SU-MW0521-015	10	4.5	1.9	Ind	3-2	fS	Rm
20SU-MW0521-015	11	4.4	0.7	Ind	3-2	fS	Rm
20SU-MW0521-015	12	5.8	0.9	Ind	3-2	fS	Rm
20SU-MW0521-015	15	5.3	8.0	Ind	3-2	fS	Rm
20SU-MW0521-017		7.4	0.7	2.2	3-2	fS	Rm
20SU-MW0521-019		10.7	2.2	0.7	>4	St	
20SU-MW0521-020		6.4	1.9	2.0	3-2	fS	Rm
20SU-MW0521-021		2.9	1.3	Ind	3-2	fS	Ri
20SU-MW0521-022		2.8	2.2	1.5	2-1	mS	
20SU-MW0521-023		4.5	1.1	Ind	3-2	fS	
20SU-MW0521-024	1	7.4	1.4	Ind	0 to -1	vcS	Rm
20SU-MW0521-024	2	15.3	0.6	Ind	3-2/0 to -1	fS	
20SU-MW0521-024	3	8.7	0.5	Ind	3-2/2-1	fS	Rm

Table 3-1. SPI Physical Parameters Summarized by Station

Station ID	Replicate	Station Average Penetration (cm)	Station Average Roughness (cm)	Station Average aRPD (cm)	Coarsest Grain Size Major Mode	Station Grain Size Descriptor Code	Ripple Presence and Size
20SU-MW0521-024	4	1.8	1.1	Ind	-1 to -2	Gr	
20SU-MW0521-024		2.7	1.4	2.2	3-2	fS	
20SU-MW0521-024	10	1.7	2.4	Ind	3-2	fS	Rs
20SU-MW0521-024	11	2.3	1.2	Ind	-3 to -4	Gr	
20SU-MW0521-024	12	2.2	1.3	Ind	-2 to -3	Gr	
20SU-MW0521-024	13	3.5	2.0	Ind	3-2	fS	
20SU-MW0521-025		1.8	1.3	Ind	2-1	mS	
20SU-MW0521-026		3.0	2.6	Ind	-3 to -4	Gr	
20SU-MW0521-027		2.6	2.0	Ind	3-2	fS	
20SU-MW0521-028		2.4	0.9	Ind	-3 to -4	Gr	
20SU-MW0521-029		0.0	Ind	Ind	Ind	Ind	
20SU-MW0521-031		6.0	1.7	Ind	1-0	cS	
20SU-MW0521-033		4.4	2.1	Ind	3-2	fS	
20SU-MW0521-035		5.4	3.2	1.2	2-1	mS	RI
20SU-MW0521-037		4.5	2.2	1.5	3-2	fS	
20SU-MW0521-039		5.9	1.6	2.1	3-2	fS	Rx
20SU-MW0521-041		5.5	1.0	1.5	3-2	fS	
20SU-MW0521-043		5.2	1.3	1.5	2-1	mS	
20SU-MW0521-045		5.1	0.7	1.2	3-2	fS	
20SU-MW0521-047		7.1	1.1	1.6	4-3	vfS	
20SU-MW0521-049		4.8	1.1	1.4	3-2	fS	
20SU-MW0521-051		6.9	0.6	1.4	4-3	vfS	
20SU-MW0521-053		7.6	2.1	1.7	4-3	vfS	
20SU-MW0521-054		7.0	0.8	1.7	4-3	vfS	
20SU-MW0521-055		6.7	0.8	1.3	4-3	vfS	
20SU-MW0521-057		14.6	1.6	2.7	>4	St	
20SU-MW0521-059		6.3	0.7	1.8	4-3	vfS	
20SU-MW0521-061		5.9	1.0	2.1	4-3	vfS	
20SU-MW0521-064		15.7	1.4	2.6	4-3	vfS	
20SU-MW0521-067		16.2	1.3	2.7	>4	St	
20SU-MW0521-070		17.0	8.0	2.9	>4	St	
20SU-MW0521-071		17.6	0.9	3.0	>4	St	
20SU-MW0521-073		16.0	1.3	2.9	>4	St	
20SU-MW0521-074		16.0	1.2	3.0	>4	St	
20SU-MW0521-077		14.4	8.0	3.8	>4	St	
20SU-MW0521-078		12.7	1.5	3.5	3-2	fS	
20SU-MW0521-080		12.7	0.5	3.1	>4	St	
20SU-MW0521-082		12.8	1.1	2.9	>4	St	
20SU-MW0521-083		14.5	1.3	3.8	>4	St	
20SU-MW0521-084		11.4	2.4	3.1	>4	St	
20SU-MW0521-086		15.0	1.0	1.8	>4	St	
20SU-MW0521-088		14.5	0.8	2.7	>4	St	
20SU-MW0521-090		16.5	1.4	2.5	>4	St	

Table 3-1. SPI Physical Parameters Summarized by Station

Station ID	Replicate	Station Average Penetration (cm)	Station Average Roughness (cm)	Station Average aRPD (cm)	Coarsest Grain Size Major Mode	Station Grain Size Descriptor Code	Ripple Presence and Size
20SU-MW0521-098		8.4	1.8	1.6	3-2	fS	Rm
20SU-MW0521-100		14.7	1.6	4.6	>4	St	
20SU-MW0521-102		15.7	0.9	3.5	>4	St	
20SU-MW0521-103		18.5	0.7	3.0	>4	St	
20SU-MW0521-106		16.1	0.9	3.7	>4	St	
20SU-MW0521-109		15.7	0.7	0.6	3-2	fS	
20SU-MW0521-114		18.2	0.5	4.1	>4	St	
20SU-MW0521-116		16.2	1.4	3.6	>4	St	
20SU-MW0521-118		17.3	8.0	2.9	>4	St	
20SU-MW0521-120		17.6	1.3	4.4	>4	St	
20SU-MW0521-121		3.5	1.4	1.0	3-2	fS	
20SU-MW0521-122		15.2	0.6	3.4	>4	St	
20SU-MW0521-123		7.7	8.0	2.1	3-2	fS	
20SU-MW0521-124	1	4.6	0.6	1.8	3-2/>4	fS	
20SU-MW0521-124	2	2.3	0.5	Ind	3-2	fS	
20SU-MW0521-124	3	10.3	1.2	0.2	>4	St	
20SU-MW0521-124	4	12.8	0.7	8.0	>4	St	
20SU-MW0521-124		10.6	1.0	1.2	>4	St	
20SU-MW0521-124	10	3.9	1.4	Ind	3-2	fS	
20SU-MW0521-124	11	5.3	1.6	1.9	3-2	fS	
20SU-MW0521-124	12	17.7	0.4	0.4	>4	St	
20SU-MW0521-124	13	3.2	0.6	1.0	3-2	fS	
20SU-MW0521-125		5.8	1.7	2.6	3-2	fS	
20SU-MW0521-126		16.8	8.0	3.4	>4	St	
20SU-MW0521-127		16.8	0.7	2.5	>4	St	
20SU-MW0521-C01		4.9	1.7	2.0	2-1	mS	
20SU-MW0521-C02		5.3	1.1	1.7	2-1	mS	
20SU-MW0521-C03		8.2	8.0	1.7	2-1	mS	
20SU-MW0521-C04		7.3	2.4	2.2	2-1	mS	
20SU-MW0521-C05		4.9	0.9	1.1	2-1	mS	Rx
20SU-MW0521-C06		17.4	0.6	4.8	>4	St	
20SU-MW0521-C07		18.1	1.0	4.6	>4	St	
20SU-MW0521-C08		16.9	0.6	4.3	>4	St	
20SU-MW0521-C09		17.3	0.7	4.2	>4	St	
20SU-MW0521-C10		17.2	0.6	4.5	>4	St	
20SU-MW0521-C11		2.9	1.1	1.6	3-2	fS	Rm
20SU-MW0521-C12		2.8	1.4	1.0	3-2	fS	
20SU-MW0521-C13		2.3	1.1	1.3	3-2	fS	
20SU-MW0521-C14		2.8	1.0	1.5	3-2	fS	Rm

Table 3-1. SPI Physical Parameters Summarized by Station

Station ID	Replicate	Station Average Penetration (cm)	Station Average Roughness (cm)	Station Average aRPD (cm)	Coarsest Grain Size Major Mode	Station Grain Size Descriptor Code	Ripple Presence and Size
20SU-MW0521-C15		3.6	0.9	1.7	3-2	fS	
20SU-MW0521-CP2		5.3	1.2	Ind	-1 to -2	Gr	Rs

•	Station Average Penetration (cm)	Station Average Roughness (cm)	Station Average aRPD (cm)
N	126	126	126
Min	0	0.4	0.2
Mean	7.6	1.3	2.3
Median	5.3	1.2	2.0
Max	18.5	3.4	4.8

Notes:

aRPD = apparent redox potential discontinuity

cS = coarse sand

fS = fine sand

Gr = gravel

Ind = indeterminate

mS = medium sand

Ri = size indeterminate

RI = large (21-30 cm)

Rm = medium (11-20 cm)

Rs = small (0-10 cm)

Rx = extra large (>30 cm)

SPI = sediment profile imaging

St = silt or finer

vcS = very coarse sand

vfS = very fine sand

Table 4-1. Mayflower CMECS Substrate and Biotic Classifications for each SPI-PV Image Pair, Summer 2020

				CMECS Substrate Class	ifications			CMECS E	iotic Components		- Complex		
Station ID	Replicate	e Habitat Type	Substrate Class	Substrate Subclass	Substrate Group	Substrate p Subgroup	Biotic Subclass	Co-occuring Biotic Subclass	Biotic Group	Co-occurring Biotic Group	Complex Habitat (Y/N) per NMFS 2020	Epifauna/Infauna Types and Counts	Comments
20SU-MW0521-001	1	Hard Bottom Substrate with Shells and Macroalgae	Unconsolidated Mineral	Coarse Unconsolidated	Gravels	Gravel Pavement	Attached Fauna	None	Attached Sponges	Attached Bryozoans	Y	Sponges (7)	Mostly gravel over sand. Red algae common and sponges. Some pink shell fragments.
20SU-MW0521-001	2	Hard Bottom Substrate with Shells and Macroalgae	Unconsolidated Mineral	Coarse Unconsolidated	Gravels	Gravel Pavement	Attached Fauna	None	Attached Sponges	Attached Hydroids	Υ	Sponges (5); Hydroids (2)	Mostly gravel with some sand and shell fragments. Some red algae and various sponges.
20SU-MW0521-001	3	Hard Bottom Substrate with Macroalgae	Unconsolidated Mineral	Coarse Unconsolidated	Gravels	Gravel Pavement	Attached Fauna	None	Attached Sponges	None	Υ	Sponges (11)	Mostly all gravel over sand. Bivalve shell fragments in SPI image and possible hydroids.
20SU-MW0521-002	1	Rippled Sand with Shells	Unconsolidated Mineral	Fine Unconsolidated	Sand	Medium Sand	Attached Fauna	None	Barnacles	None	N	Barnacles (8)	Mostly sand with bivalve and snail shell fragments. Barnacles present on one shell fragment.
20SU-MW0521-002	2	Rippled Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Medium Sand	Attached Fauna	None	Barnacles	None	N	Barnacles (15)	Mostly rippled sand with scattered shell fragments and pebbles. One shell fragments with barnacles. Detached red algae.
20SU-MW0521-002	3	Sandy Bottom with Gravel and Macroalgae	Unconsolidated Mineral	Fine Unconsolidated	Sand	Medium Sand	Attached Fauna	None	Diverse Colonizers	None	N	Sponges (2); Bryozoans (5)	Mostly rippled sand with gravel, pebbles, shell fragments in troughs. Isolated, detrital, and possibly rooted eelgrass, 4-5 plants, mostly brown, one green shoot. Possible epifauna on rocks. Some macroalgae.
20SU-MW0521-002	4	Rippled Sand with Shells	Unconsolidated Mineral	Fine Unconsolidated	Sand	Medium Sand	Attached Fauna	None	Diverse Colonizers	None	N	Sponges (6); Bryozoans (6)	Mostly sand with dispersed epifauna and shell fragments.
20SU-MW0521-002	5	Sand with Gravel, Shells, and Macroalgae	Unconsolidated Mineral	Coarse Unconsolidated	Gravelly	Gravelly Sand	Attached Fauna	None	Barnacles	None	Υ	Barnacles (10)	Mostly sand with dispersed shell fragments and pebbles. Some red algae present. Small barnacles evident in SPI.
20SU-MW0521-002	6	Rippled Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Soft Sediment Fauna	None	Mobile Crustaceans on Soft Sediments	None	N	Hermit crab (1)	Mostly all sand, one ripple. Some detached macroalgae present.
20SU-MW0521-002	8	Rippled Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Medium Sand	Inferred Fauna	None	Tracks and Trails	None	N	None	Sandy bottom with one big ripple, shell fragments in troughs. Apparent biogenic depression.
20SU-MW0521-002	10	Rippled Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Medium Sand	Attached Fauna	Inferred Fauna	Attached Bryozoans	Tracks and Trails	N	Bryozoans	Mostly sand. Large ripple, possibly due to underlying wood or hydroid shelf.
20SU-MW0521-002	11	Rippled Sand with Macroalgae	Unconsolidated Mineral	Fine Unconsolidated	Sand	Medium Sand	Inferred Fauna	None	Tracks and Trails	None	N	None	Rippled sand with some eelgrass. Biogenic depression middle-left. Two detrital eelgrass shoots, one brown, one green.
20SU-MW0521-002	12	Sand with Gravel and Shells	Unconsolidated Mineral	Coarse Unconsolidated	Gravelly	Gravelly Sand	Attached Fauna	None	Attached Tunicates	Barnacles	Υ	Barnacles (10); Sea Pork	Mostly medium to fine sand with gravels and shell fragments. A few barnacles on shell fragments.
20SU-MW0521-002	13	Sand with Gravel, Shells, and Macroalgae	Unconsolidated Mineral	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Attached Fauna	Soft Sediment Fauna	Attached Tunicates	Larger Tube-Building Fauna	Υ	Tunicates (20); Diopatra (1)	Sand and gravel mix, strange stringy sponges or sea pork. Patches of apparent hydroids and trace red algae.
20SU-MW0521-003	8	Hard Bottom Substrate with Epifauna	Unconsolidated Mineral	Coarse Unconsolidated	Gravels	Gravel Pavement	Attached Fauna	None	Barnacles	Chitons	Y	Barnacles (50); Chitons (2)	Mostly gravel and pebbles. Some epifauna on rocks and bivalve shell fragments. Two suspended jellyfish.
20SU-MW0521-003	9	Hard Bottom Substrate with Macroalgae and Epifauna	Unconsolidated Mineral	Coarse Unconsolidated	Gravels	Gravel Pavement	Attached Fauna	None	Diverse Colonizers	Mobile Crustaceans on Hard or Mixed Substrates	Y	Sponges (2); Snail (1); Urchin (1); Mussels (5); Hermit crab (1)	Mixed gravel bottom with diverse epifauna. Trace red macroalgae.
20SU-MW0521-003	10	Hard Bottom Substrate with Shells, Macroalgae and Epifauna	Unconsolidated Mineral	Coarse Unconsolidated	Gravels	Gravel Pavement	Mollusk Reef Biota	Attached Fauna	Mussel Reef	Attached Sea Urchins	Υ	Urchin (2); Sponge (1); Mussels (15); Barnacles	Mixed gravel bottom with diverse epifauna. Trace red macroalgae. Live mussel bed.
20SU-MW0521-004	1	Hard Bottom Substrate with Shells and Macroalgae	Unconsolidated Mineral	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Attached Fauna	None	Diverse Colonizers	None	Y	Sponges (4); Bryozoans (20)	Settled sand atop gravels. Numerous diverse bryozoans and trace macroalgae.
20SU-MW0521-004	3	Hard Bottom Substrate with Shells and Macroalgae	Unconsolidated Mineral	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Attached Fauna	None	Diverse Colonizers	None	Y	Sponges (3); Bryozoans (10)	Settled sand atop gravels. Numerous diverse bryozoans and trace macroalgae.
20SU-MW0521-004	4	Hard Bottom Substrate with Shells and Macroalgae	Unconsolidated Mineral	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Attached Fauna	None	Diverse Colonizers	None	Υ	Sponges (2); Bryozoans (15)	Settled sand over gravels. Numerous diverse bryozoans and trace macroalgae.
20SU-MW0521-005	1	Hard Bottom Substrate with Sand and Shells	Unconsolidated Mineral	Coarse Unconsolidated	Gravels	Gravel Pavement	Attached Fauna	None	Diverse Colonizers	Mobile Crustaceans on Hard or Mixed Substrates	Y	Bryozoans (5); Sponges (8); Urchin (1); Hermit crabs (3); Snails (2); Chitons (2)	Gravels with settled sand and shell fragments. Diverse fauna and colonizers. Trace macroalgae.
20SU-MW0521-005	2	Hard Bottom Substrate with Sand, Shells and	Unconsolidated Mineral	Coarse Unconsolidated	Gravels	Gravel Pavement	Attached Fauna	None	Diverse Colonizers	Chitons	Υ		Gravels with sand and shell fragments. Diverse fauna and colonizers, trace macroalgae.
20SU-MW0521-005	3	Macroalgae Hard Bottom Substrate with Sand and Shells	Unconsolidated Mineral	Coarse Unconsolidated	Gravels	Gravel Pavement	Attached Fauna	None	Diverse Colonizers	Chitons	Υ	Bryozoans (10); Urchin	Mostly gravel under shell fragments and sand. Diverse fauna and colonizers. Trace macroalgae.
20SU-MW0521-005	4	Hard Bottom Substrate with Sand and Shells	Unconsolidated Mineral	Coarse Unconsolidated	Gravels	Gravel Pavement	Attached Fauna	None	Diverse Colonizers	Chitons	Υ	(1) Snail (1); Chiton (1); Sponges (10); Bryozoans (10)	Gravels with settled sand and shell fragments. Trace macroalgae.

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Table 4-1. Mayflower CMECS Substrate and Biotic Classifications for each SPI-PV Image Pair, Summer 2020

				CMECS Substrate Class	ifications			CMECS E	Biotic Components		_		
Station ID	Replicate	Habitat Type	Substrate Class	Substrate Subclass	Substrate Group	Substrate p Subgroup	Biotic Subclass	Co-occuring Biotic Subclass	Biotic Group	Co-occurring Biotic Group	Complex Habitat (Y/N) per NMFS 2020		S Comments
20SU-MW0521-005	5	Hard Bottom Substrate with Sand, Shells and	Unconsolidated Mineral	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Attached Fauna	None	Diverse Colonizers	Mobile Mollusks on Hard or Mixed Substrates		Sponges (5); Urchin (2); Snail (10); Chiton (3);	
20SU-MW0521-005	7	Macroalgae Hard Bottom Substrate with Sand and Shells	Unconsolidated Mineral	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Attached Fauna	None	Diverse Colonizers	Mobile Mollusks on Hard or Mixed Substrates	Υ	Bryozoans (10) Sponges (5); Urchin (3); Snail (3); Chiton (1);	Sand and shell fragments over hard substrate. Diverse colonizers and bryozoans. Trace macroalgae present.
20SU-MW0521-005	9	Hard Bottom Substrate with Sand and Macroalgae	Unconsolidated Mineral	Coarse Unconsolidated	Gravels	Gravel Pavement	Attached Fauna	None	Diverse Colonizers	Chitons	Υ	Bryozoans (10) Sponges (3); Chitons (4 Bryozoans (15)); Mostly gravel and hard substrate with some sand and trace macroalgae. Worm tubes or casts on rocks.
20SU-MW0521-005	10	Hard Bottom Substrate with Sand and Shells	Unconsolidated Mineral	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Attached Fauna	None	Diverse Colonizers	Chitons	Y	Sponges (15); Chitons(1); Snail (1);	Settled sand atop mostly gravels. Numerous sponges and other fauna. Trace macroalgae present.
20SU-MW0521-005	11	Hard Bottom Substrate with Sand, Macroalgae and	Unconsolidated Mineral	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Attached Fauna	None	Diverse Colonizers	Mobile Mollusks on Hard or Mixed Substrates	Υ	Bryozoans (10) Sponges (20); Bryozoar (20); Snail (15)	s Mostly sponges and bryozoan colonies over hard substrate with some settled sand. Trace macroalgae.
20SU-MW0521-005	12	Epifauna Hard Bottom Substrate with Sand and Shells	Unconsolidated Mineral	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Attached Fauna	None	Diverse Colonizers	Mobile Mollusks on Hard or Mixed Substrates	Υ	Sponges (20); Snail (10) Bryozoans (10)); Sponge covering 20% of surface. Sand and shell fragments over gravels and hard substrate.
20SU-MW0521-005	13	Hard Bottom Substrate with Sand and Shells	Unconsolidated Mineral	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Attached Fauna	None	Diverse Colonizers	Mobile Mollusks on Hard or Mixed Substrates	Υ	Sponges (20); Snail (10) Bryozoans (5)); Sponges covering 35% of surface. Sand settled on gravels and hard substrate.
20SU-MW0521-007	6	Hard Bottom Substrate with Shells and Epifauna	Unconsolidated Mineral	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Attached Fauna	None	Diverse Colonizers	Barnacles	Y	Bryozoans (25); Sponge (12); Barnacles (25)	es Gravel and sand with large shell fragments. Bryozoans covering 50% of surface.
20SU-MW0521-007	8	Hard Bottom Substrate with Shells and Epifauna	Unconsolidated Mineral	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Attached Fauna	None	Diverse Colonizers	Barnacles	Υ	Diopatra (15); Sponge (1); Bryozoan (3)	Gravel and sand with shell fragments. Bryozoans covering 50% of surface, sponges covering 15%.
20SU-MW0521-007	9	Hard Bottom Substrate with Shells and Epifauna	Unconsolidated Mineral	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Attached Fauna	None	Diverse Colonizers	Barnacles	Υ	, .	is Gravel and sand with shell fragments. Red algae growing off larger cobble.
20SU-MW0521-009	1	Sand and Crepidula with Gravel and Shells	Unconsolidated Mineral	Coarse Unconsolidated	Gravelly	Gravelly Sand	Mollusk Reef Biota	Attached Fauna	Gastropod Reef	Barnacles	Y	Crepidula; Barnacles (50); Snail (2); Bryozoar	Mostly sand, with pebbles and shell fragments in the trough around as Crepidula. Numerous limpets. Long white shell fragments.
20SU-MW0521-009	4	Shell Reef with Sand	Shell Substrate	Shell Reef Substrate	Crepidula Reef	NA	Mollusk Reef Biota	Attached Fauna	Gastropod Reef	Barnacles	Υ	Crepidula; Barnacles (200); Hydroid (2);	Crepidula shell fragments over sand and gravel. Numerous barnacles on shell fragments. Some long white shell fragments.
20SU-MW0521-009	5	Shell Reef with Sand	Shell Substrate	Shell Reef Substrate	Crepidula Reef	NA	Mollusk Reef Biota	Attached Fauna	Gastropod Reef	Barnacles	Υ	Sponge (1) Sand dollar (1); Bryozoa (5); Barnacles (200); Crepidula	n Mostly Crepidula shell fragments over sand with attached fauna.
20SU-MW0521-011	1	Shell Reef	Shell Substrate	Shell Reef Substrate	Crepidula Reef	NA	Mollusk Reef Biota	Attached Fauna	Gastropod Reef	Barnacles	Y	Crepidula; Bryozoan (1) Barnacles (50)	; Entire surface covered with Crepidula shell fragments, silt on surface.
20SU-MW0521-011	2	Shell Reef	Shell Substrate	Shell Reef Substrate	Crepidula Reef	NA	Mollusk Reef Biota	Attached Fauna	Gastropod Reef	None	Υ	Crepidula	Entire surface covered with Crepidula shell fragments, silt on surface. One biogenic disturbance.
20SU-MW0521-011	5	Shell Reef	Shell Substrate	Shell Reef Substrate	Crepidula Reef	NA	Mollusk Reef Biota	Attached Fauna	Gastropod Reef	Barnacles	Υ	Crepidula; Sponges (2); Barnacles (50)	
20SU-MW0521-013	1	Sand with Shells	Unconsolidated Mineral	Fine Unconsolidated	Sand	Medium Sand	Attached Fauna	None	Attached Bryozoans	Barnacles	N	Bryozoans (3); Barnacle (5)	s Mostly sand with shell fragments. Worm tubes evident. Biogenic depression bottom right.
20SU-MW0521-013	4	Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	None	Mobile Crustaceans on Soft Sediments	None	N	Hermit crabs (4)	Mostly sand with shell fragments. Possible young bryozoans.
20SU-MW0521-013	5	Sand with Shells	Unconsolidated Mineral	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Attached Fauna	Mobile Crustaceans on Soft Sediments	Attached Bryozoans	N	Hermit crabs (10); Bryozoan (1)	Mostly sand with shell fragments. Numerous tracks and trails. Biogenic depression with apparent worm tubes. Some red algae.
20SU-MW0521-015	1	Shell Reef with Sand and Gravel	Shell Substrate	Shell Reef Substrate	Crepidula Reef	NA	Mollusk Reef Biota	Attached Fauna	Gastropod Reef	Attached Sponges	Y	Crepidula; Sponges (3)	Mostly Crepidula over sand and pebbles. Some sponges, one large finfish, and diverse colonizers on shell fragments.
20SU-MW0521-015	2	Shell Reef with Macroalgae	Shell Substrate	Shell Reef Substrate	Crepidula Reef	NA	Mollusk Reef Biota	Attached Fauna	Gastropod Reef	Barnacles	Υ	Crepidula; Barnacles	Mostly Crepidula over sand with macroalgae and barnacles. Possible nudibranch.
20SU-MW0521-015	3	Sand with Shells and Gravel	Unconsolidated Mineral	Coarse Unconsolidated	Gravelly	Gravelly Sand	Attached Fauna	Soft Sediment Fauna	Attached Bryozoans	Mobile Mollusks on Soft Sediments	Υ	Snail (3); Bryozoans (2)	
20SU-MW0521-015	4	Sand with Gravel, Shells, and Macroalgae	Unconsolidated Mineral	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Attached Fauna	Soft Sediment Fauna	Attached Bryozoans	Mobile Mollusks on Soft Sediments	Υ	Bryozoans (5); Snail (2)	Pebble/granule over sand with Crepidula and large bivalve shell fragments. Trace macroalgae present.
20SU-MW0521-015	5	Sand with Gravel, Shells,	Unconsolidated Mineral	Coarse Unconsolidated	Gravelly	Gravelly Sand	Attached Fauna	Soft Sediment Fauna	Attached Bryozoans	Mobile Mollusks on Soft	Y	• (): ()	Sand and gravel with Crepidula and shell fragments. Possible nudibranch, worm tubes, and unidentified attached fauna.
20SU-MW0521-015	7	and Macroalgae Sand and Gravel with Shells and Macroalgae	Unconsolidated Mineral	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Attached Fauna	None	Barnacles	Sediments Diverse Colonizers	Υ	Diopatra (1) Sponge (3); Tunicate (1) Snail (1); Barnacles (20)); Sand and gravel with Crepidula and bivalve shell fragments and trace red
20SU-MW0521-015	8	Sand with Gravel, Shells, and Macroalgae	Unconsolidated Mineral	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Attached Fauna	None	Barnacles	Diverse Colonizers	Υ	Crab (1); Snail (3); Sponge (1); Bryozoan	Pebble/granule over sand with Crepidula and bivalve shell fragments. Red algae present. Some unidentified fauna.
20SU-MW0521-015	9	Sand with Gravel, Shells, and Macroalgae	Unconsolidated Mineral	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Attached Fauna	Soft Sediment Fauna	Attached Sponges	Mobile Mollusks on Soft Sediments	Υ	(4); Barnacles (20) Snail (2); Sponge (1)	Pebble/granule with Crepidula and bivalve shell fragments and sand. Trace macroalgae present.

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Table 4-1. Mayflower CMECS Substrate and Biotic Classifications for each SPI-PV Image Pair, Summer 2020

				CMECS Substrate Class	sifications		- ·	CMECS B	iotic Components				
											Complex Habitat		
											(Y/N) per		
			0.1.4.4.01	0.1.1.0.1.1	010	Substrate	D: :: 0	Co-occuring Biotic	Di di O	Co-occurring Biotic	NMFS	Epifauna/Infauna Types	
Station ID	Replicat		Substrate Class	Substrate Subclass	Substrate Group		Biotic Subclass	Subclass	Biotic Group	Group	2020	and Counts	Comments
20SU-MW0521-015	10	Rippled Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Medium Sand	Inferred Fauna	None	Tracks and Trails	None	N	None	Variable rippled sand with finer sediment and shell fragments deposited in troughs. Red algae present.
20SU-MW0521-015	11	Rippled Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	None	Mobile Crustaceans on Soft Sediments	None	N	Hermit crabs (2)	Variable rippled sand with finer sediment deposited in troughs. Trace red algae present.
20SU-MW0521-015	12	Rippled Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	None	Mobile Crustaceans on Soft Sediments	None	N	Hermit crabs (30)	Rippled sand with finer sediment and shell fragments deposited in troughs.
20SU-MW0521-015	15	Rippled Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails	N	Hermit crabs (2)	Fine rippled sand with shell fragments deposited in troughs.
20SU-MW0521-017	1	Sandy Bottom with Macroalgae	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Attached Fauna	Inferred Fauna	Attached Bryozoans	Tracks and Trails	N	Bryozoans (1)	Sand bottom with dense macroalgae coverage. Suspended particles in water column. One detached, detrital brown eelgrass shoot.
20SU-MW0521-017	2	Sand Bottom with Macroalgae	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Attached Fauna	Inferred Fauna	Barnacles	Tracks and Trails	N	Barnacles (20)	Mostly sand with red and green macroalgae cover. Barnacles on shell fragments. High energy environment with suspended particulates.
20SU-MW0521-017	5	Rippled Sand with Macroalgae	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Attached Fauna	Soft Sediment Fauna	Attached Bryozoans	Mobile Mollusks on Soft Sediments	N	Bryozoans (5); Snail (4)	Mostly sand with macroalgae. High energy environment causing particle suspension. Four detached, detrital eelgrass shoots, two green and two brown.
20SU-MW0521-019	3	Shell Reef with Macroalgae	Shell Substrate	Shell Reef Substrate	Crepidula Reef	NA	Mollusk Reef Biota	Attached Fauna	Gastropod Reef	Barnacles	Y	Crepidula; Barnacles (100); Bryozoans (5)	Entire surface covered with Crepidula shell fragments, silt on surface. Attached red algae.
20SU-MW0521-019	5	Shell Reef with Macroalgae	Shell Substrate	Shell Reef Substrate	Crepidula Reef	NA	Mollusk Reef Biota	Attached Fauna	Gastropod Reef	Barnacles	Υ	Crepidula; Bryozoans	Entire surface covered with Crepidula shell fragments, silt on surface.
20SU-MW0521-019	6	Shell Reef with Macroalgae	Shell Substrate	Shell Reef Substrate	Crepidula Reef	NA	Mollusk Reef Biota	Attached Fauna	Gastropod Reef	Barnacles	Υ	(10); Barnacles (300) Crepidula; Bryozoans (3) Barnacles (100), Hermit crab (1)	Attached red algae and bryozoans. Entire surface covered with Crepidula shell fragments, silt on surface. Macroalgae and bryozoans.
20SU-MW0521-020	1	Rippled Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Attached Fauna	Small Tube-Building Fauna	Barnacles	N	Hermit crab (2); Polychaete worm tube (10); Barnacles (4)	Rippled sand with areas of worm tubes and some shell fragments. Possible egg sack on right.
20SU-MW0521-020	2	Rippled Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	None	Small Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	N	Hermit crabs (2); Polychaete worm tubes (10)	Rippled sand with areas of apparent worm tubes, high energy environment causing suspended sand. Red macroalgae present
20SU-MW0521-020	3	Rippled Sand with Shells	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Inferred Fauna	None	Tracks and Trails	None	N	None	Rippled sand in high energy environment causing suspended particles. Suspended red algae present. Trace Crepidula shell fragments.
20SU-MW0521-021	1	Rippled Sand with Shells	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Attached Fauna	Soft Sediment Fauna	Attached Bryozoans	Mobile Crustaceans on Soft Sediments	N	Bryozoans (5); Hermit crabs (4); Barnacles (20)	Mostly sand with scattered Crepidula and shell fragments. Smaller fragments deposited in troughs. Trace macroalgae present.
20SU-MW0521-021	2	Soft Bottom with Shells and Macroalgae	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Attached Fauna	None	Attached Hydroids	Barnacles	N	Skate Egg Case (1); Hydroids (5); Barnacles (30)	Mostly sand with shell fragments. One skate egg sack with barnacles. Trace macroalgae present.
20SU-MW0521-021	3	Sand with Gravel and Shells	Unconsolidated Mineral	Coarse Unconsolidated	Gravelly	Gravelly Sand	Attached Fauna	None	Attached Bryozoans	Barnacles	Υ	Barnacles (20); Bryozoans (2)	Mostly sand with dispersed gravel and shell fragments. Numerous barnacles on larger shell fragments or gravel.
20SU-MW0521-022	1	Rippled Sand with Shells and Gravel	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Attached Fauna	Inferred Fauna	Attached Hydroids	Tracks and Trails	N	Hydroids (4)	Subtle rippled sand bottom with dispersed shell fragments and gravel.
20SU-MW0521-022	2	Sand with Gravel, Shells, and Macroalgae	Unconsolidated Mineral	Coarse Unconsolidated	Gravelly	Gravelly Sand	Attached Fauna	Inferred Fauna	Attached Bryozoans	Tracks and Trails	Υ	Bryozoans (8)	Sand with scour around gravel and large shell fragments. Red algae and bryozoans growing on larger particles.
20SU-MW0521-022	3	Sand with Gravel, Shells, and Macroalgae	Unconsolidated Mineral	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Attached Fauna	None	Attached Bryozoans	Barnacles	Υ	Bryozoan (15); Sponge (1); Barnacles (15)	Gravel mixed with sand transitioning to sand on the right side. Trace macroalcae.
20SU-MW0521-023	1	Rippled Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Medium Sand	Inferred Fauna	None	Tracks and Trails	None	N	None (1), Barriacies (13)	Rippled sand with some shell fragments and red algae. High energy environment causing suspended sediment and low visibility.
20SU-MW0521-023	4	Rippled Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Medium Sand	Inferred Fauna	None	Tracks and Trails	None	N	None	Rippled sand with dispersed shell fragments. Trace red algae.
20SU-MW0521-023	5	Rippled Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	None	Mobile Crustaceans on Soft Sediments	None	N	Hermit crab (1)	Subtly rippled sand bottom with shell fragments. Larger ripple on right. Clasts on left and right.
20SU-MW0521-024	1	Rippled Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Inferred Fauna	None	Tracks and Trails	None	N	None	Variably rippled sand with shell fragments.
20SU-MW0521-024	2	Rippled Sand with Shells	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Inferred Fauna	None	Tracks and Trails	None	N	None	Variably rippled and sorted sand with shell fragments. Suspended red algae.
20SU-MW0521-024	3	Rippled Sand with Shells	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Attached Fauna	Inferred Fauna	Attached Hydroids	Tracks and Trails	N	Hydroids (1)	Variable rippled sand with shell fragments of various sizes in troughs. Trace red algae. Potential worm tubes. One detached, detrital, green eelgrass fragment.
20SU-MW0521-024	4	Hard Bottom Substrate with Shells and Macroalgae	Unconsolidated Mineral	Coarse Unconsolidated	Gravels	Gravel Pavement	Attached Fauna	None	Attached Sponges	Attached Bryozoans	Υ	Sponges (4); Bryozoans (4)	Sand and gravel substrate with some red algae.
20SU-MW0521-024	6	Gravel over Sand with Shells and Macroalgae	Unconsolidated Mineral	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Attached Fauna	None	Diverse Colonizers	None	Y	Sponges (12); Bryozoans (8)	s Gravel and large shell fragments over sand. Diverse sponges and bryozoans. Macroalgae present.
20SU-MW0521-024	7	Gravel and Shell over Sand with Macroalgae	Unconsolidated Mineral	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Attached Fauna	Soft Sediment Fauna	Diverse Colonizers	Mobile Mollusks on Soft Sediments	Υ	` '	s Mostly gravel over sand. Diverse sponges and bryozoans. Macroalgae present. One detached, detrital, green eelgrass fragment.
20SU-MW0521-024	8	Sand with Gravel, Shells, and Macroalgae	Unconsolidated Mineral	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Attached Fauna	None	Diverse Colonizers	None	Υ		Mostly gravel over sand with some shell fragments and trace macroalgae. Diverse bryozoans.

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Table 4-1. Mayflower CMECS Substrate and Biotic Classifications for each SPI-PV Image Pair, Summer 2020

				CMECS Substrate Class	sifications		_	CMECS E	Biotic Components		_ Complex		
											Habitat (Y/N) per		
Station ID	Replicate	e Habitat Type	Substrate Class	Substrate Subclass	Substrate Grou	Substrate up Subgroup	Biotic Subclass	Co-occuring Biotic Subclass	Biotic Group	Co-occurring Biotic Group	NMFS 2020	Epifauna/Infauna Types and Counts	Comments
20SU-MW0521-024	10	Rippled Sand with Shells	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine	Soft Sediment Fauna	Attached Fauna	Larger Tube-Building	Diverse Colonizers	N	Diopatra (15); Sponge	Mostly sand with apparent Diopatra bed and diverse bryozoans. Some
20SU-MW0521-024	11	and Macroalgae Hard Bottom Substrate with Shells and Macroalgae	Unconsolidated Mineral	Coarse Unconsolidated	Gravels	Sand Gravel Pavement	Attached Fauna	None	Fauna Diverse Colonizers	None	Υ	(1); Bryozoan (3) Sponges (10); Bryozoans (10)	macroalgae present. Two detached, detrital, brown eelgrass shoots. Mostly gravels with trace macroalgae. Sea star.
20SU-MW0521-024	12	Gravel and Sand with Shells	Unconsolidated Mineral	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Attached Fauna	None	Attached Bryozoans	Barnacles	Υ	Bryozoans (10); Barnacles (100); Snail	Mostly gravel with shell fragments over sand. Trace macroalgae present.
20SU-MW0521-024	13	Sand and Gravel with Shells	Unconsolidated Mineral	Coarse Unconsolidated	Gravelly	Gravelly Sand	Attached Fauna	None	Attached Bryozoans	Barnacles	Υ	(2) Bryozoans (1); Barnacles (15)	s Mostly sand with dispersed gravel and shell fragments. Attached fauna on larger fragments.
20SU-MW0521-025	1	Sand and Gravel Substrate with Shells and Macroalgae	Unconsolidated Mineral	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Attached Fauna	None	Attached Sponges	None	Υ	Sponges (4); Bryozoans	Primarily gravel over sand with trace macroalgae. Crepidula and bivalve shell fragments.
20SU-MW0521-025	2	Sand and Gravel Substrate with Shells and Macroalgae	Unconsolidated Mineral	Coarse Unconsolidated	Gravelly	Gravelly Sand	Attached Fauna	None	Attached Sponges	None	Υ	Sponges (4); Bryozoans	Primarily gravel over sand with spots of macroalgae. Crepidula and bivalve shell fragments.
20SU-MW0521-025	5	Hard Bottom Substrate with Shells and Macroalgae	Unconsolidated Mineral	Coarse Unconsolidated	Gravels	Gravel Pavement	Attached Fauna	None	Attached Sponges	Barnacles	Υ	Sponges (5); Bryozoans; Barnacles	Primarily gravel over sand with spots of macroalgae. Crepidula and bivalve shell fragments.
20SU-MW0521-026	2	Gravel and Sand with Shells and Macroalgae	Unconsolidated Mineral	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Attached Fauna	None	Attached Bryozoans	Barnacles	Υ	Barnacles; Bryozoans (2)) Mostly gravel substrate with some sand. Barnacles and macroalgae on gravel. High energy environment, suspended particulates. Possible bryozoans.
20SU-MW0521-026	4	Sand with Gravel, Shells, and Macroalgae	Unconsolidated Mineral	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Attached Fauna	None	Attached Bryozoans	Barnacles	Υ	Barnacles	Mostly gravel substrate with some sand. Barnacles and macroalgae on gravel. High energy environment, suspended particulates. Two, isolated, detached, detrital, green eelgrass shoots.
20SU-MW0521-026	5	Hard Bottom Substrate with Shells and Macroalgae	Unconsolidated Mineral	Coarse Unconsolidated	Gravels	Gravel Pavement	Attached Fauna	None	Barnacles	None	Υ	Barnacles	Mostly gravel substrate with some sand. Barnacles and macroalgae on gravel. High energy environment, suspended particulates. Two, isolated, detached, detrital, eelgrass shoots, one green, one brown.
20SU-MW0521-027	1	Rippled Sand with	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine	Attached Fauna	Inferred Fauna	Attached Bryozoans	Tracks and Trails	N	Bryozoans	Sand with dispersed gravels mixed in. Trace macroalgae cover.
20SU-MW0521-027	3	Macroalgae Rippled Sand with	Unconsolidated Mineral	Fine Unconsolidated	Sand	Sand Fine/Very Fine	Attached Fauna	None	Attached Sponges	Attached Bryozoans	N	Sponge (1); Bryozoans	Rippled sand and dispersed rocks with macroalgae cover. Two, isolated,
20SU-MW0521-027	5	Macroalgae Rippled Sand with Macroalgae	Unconsolidated Mineral	Fine Unconsolidated	Sand	Sand Fine/Very Fine Sand	Attached Fauna	None	Attached Sponges	None	N	(1) Sponge (1)	detached, detrital, green eelgrass shoots. Mostly rippled sand, a few rocks with attached macroalgae and fauna. Shell fragments deposited in troughs. One, detached, detrital, brown eelgrass
20SU-MW0521-028	1	Hard Bottom Substrate with Shells and Macroalgae	Unconsolidated Mineral	Coarse Unconsolidated	Gravels	Gravel Pavement	Attached Fauna	None	Attached Sponges	Barnacles	Υ	Urchin (1); Barnacles (100); Sponges (6)	shoot. Mostly granules among larger pieces of cobble with settled shell fragments and an abundance of red algae.
20SU-MW0521-028	2	Hard Bottom Substrate with Shells and Macroalgae	Unconsolidated Mineral	Coarse Unconsolidated	Gravels	Gravel Pavement	Attached Fauna	None	Attached Sea Urchins	Attached Sponges	Υ	Urchin (5); Sponges (5); Barnacles (100)	Mostly gravel substrate with numerous small settled shell fragment, sand and red algae present.
20SU-MW0521-028	3	Hard Bottom Substrate with Shells and Macroalgae	Unconsolidated Mineral	Coarse Unconsolidated	Gravels	Gravel Pavement	Attached Fauna	None	Attached Sponges	Barnacles	Υ	Sponges (5); Barnacles (100); Hermit crab (1)	Mostly gravel with small settled shell fragments and red algae.
20SU-MW0521-029	1	Sand with Gravel, Shells, and Macroalgae	Unconsolidated Mineral	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails	Y	Hermit crab (1)	Sand and gravel with some larger rocks. Red and green algae covering 50% of surface. Two, clumped, detached, detrital, brown eelgrass shoots.
20SU-MW0521-029	2	Sand with Gravel, Shells,	Unconsolidated Mineral	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Attached Fauna	Inferred Fauna	Barnacles	Tracks and Trails	Υ	Barnacles (20)	Mostly sand and gravel with larger cobble and shell fragments. Red and
20SU-MW0521-029	5	and Macroalgae Sand with Gravel, Shells, and Macroalgae	Unconsolidated Mineral	Coarse Unconsolidated	Gravelly	Gravelly Sand	Soft Sediment Fauna	Inferred Fauna	Attached Sponges	Tracks and Trails	Υ	Sponges (1)	green algae covering 50% of surface. Sandy substrate with granule and pebbles with dense red and green macroalgae.
20SU-MW0521-031	1	Rippled Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Medium Sand	Inferred Fauna	None	Tracks and Trails	None	N	None	Variable rippled sand with some shell fragments.
20SU-MW0521-031	4	Rippled Sand with Gravel	Unconsolidated Mineral	Coarse Unconsolidated	Gravelly	Gravelly Sand	Inferred Fauna	None	Tracks and Trails	None	Υ	None	Mostly sand with various sized pebbles.
20SU-MW0521-031	5	Rippled Sand with Gravel	Unconsolidated Mineral	Coarse Unconsolidated	Gravelly	Gravelly Sand	Inferred Fauna	None	Tracks and Trails	None	Υ	None	Rippled sand with granule deposits within trough.
20SU-MW0521-033	2	Rippled Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails	N	Hermit crabs (2)	Large sand ripples with smaller ripples evident. Possible small egg case or sea pork.
20SU-MW0521-033	4	Rippled Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine	Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on	Tracks and Trails	N	Hermit crab (1)	Rippled sand bottom with smaller ripples present.
20SU-MW0521-033	5	Rippled Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Sand Fine/Very Fine Sand	Inferred Fauna	None	Soft Sediments Tracks and Trails	None	N	None	Multi-directional and sized rippled sand. Tracks and a few shell fragments.
20SU-MW0521-035	6	Rippled Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	None	Larger Tube-Building	Mobile Mollusks on Soft	N	Diopatra (3); Snail (1)	Finer sediment and shell fragments deposited in trough of large rippled
20SU-MW0521-035	9	Rippled Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	None	Fauna Mobile Mollusks on Soft	Sediments None	N	Snail (1)	sand. Possible casting on right. Large ripples with Finer sediment deposited in trough. Few shell fragments.
20SU-MW0521-035	10	Rippled Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Inferred Fauna	Sediments Larger Tube-Building Fauna	Tracks and Trails	N	Diopatra (1)	Large sand ripples with finer sediment deposited in trough. Biogenic depression.

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Table 4-1. Mayflower CMECS Substrate and Biotic Classifications for each SPI-PV Image Pair, Summer 2020

				CMECS Substrate Class	sifications		_	CMECS E	Siotic Components		_ Complex		
						Substrata		Co occuring Rictio		Co courring Rictio	Habitat (Y/N) per		
Station ID	Replicat	e Habitat Type	Substrate Class	Substrate Subclass	Substrate Grou	Substrate up Subgroup	Biotic Subclass	Co-occuring Biotic Subclass	Biotic Group	Co-occurring Biotic Group	NMFS 2020	Epifauna/Infauna Types and Counts	Comments
20SU-MW0521-037	1	Rippled Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna		Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	N	Diopatra (3); Hermit crabs (2); Crab (1); Scale	Large sand ripples with trace shell fragments.
20SU-MW0521-037	2	Rippled Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	None	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediments	N	Worm (1) Diopatra (2); Snail (2); Hydroid (1)	Rippled sand with trace shell fragments. Biogenic depressions.
20SU-MW0521-037	4	Rippled Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	None	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	N		Fine rippled sand. Worm tube patches. Biogenic depressions.
20SU-MW0521-039	1	Rippled Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	None	Larger Tube-Building Fauna	Burrowing Anemones	N	Anemone (1); Diopatra (1); Hydroid (1)	Fine sand with large ripples and trace shell fragments. Worm tubes. Biogenic depressions.
20SU-MW0521-039	3	Rippled Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	None	Mobile Crustaceans on Soft Sediments	Burrowing Anemones	N	Hermit crabs (6); Anemone (1); Bryozoan	Fine rippled sand with diverse fauna. Biogenic depressions.
20SU-MW0521-039	4	Rippled Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	None	Larger Tube-Building Fauna	Burrowing Anemones	N	(1) Diopatra (1); Anemone (1)	Fine rippled sand with some shell particles and granules.
20SU-MW0521-041	1	Rippled Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	None	Burrowing Anemones	Mobile Mollusks on Soft Sediments	N	Anemone (19); Snail (10); Crabs (2)	Rippled sand with diverse fauna.
20SU-MW0521-041	2	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Inferred Fauna	Burrowing Anemones	Mobile Crustaceans on Soft Sediments	N	Anemone (11); Snail (8); Hermit crab (4); Jonah crabs (2)	Sandy bottom with many tracks, and patches of long tubes or fecal casts.
20SU-MW0521-041	5	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	None	Burrowing Anemones	Mobile Crustaceans on Soft Sediments	N		Silty surface sediment. Tubes or fecal cast on surface.
20SU-MW0521-043	1	Rippled Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Inferred Fauna	Burrowing Anemones	Tracks and Trails	N	Burrowing Anemone (3); Nassariid Snail (1); Possible Scale Worm (1)	Rippled medium to fine sand with few shell fragments. Ripples are subtle. Some tracks and trails.
20SU-MW0521-043	4	Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Inferred Fauna	Mobile Mollusks on Soft Sediments	Burrowing Anemones	N	Nassariid Snail (9); Burrowing Anemone (7); Possible Scale Worm (2)	
20SU-MW0521-043	5	Rippled Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Inferred Fauna	Mobile Mollusks on Soft Sediments	Tracks and Trails	N	Nassariid Snail (4); Hermit crab (1); Burrowing Anemone (1)	Rippled medium sand with some shell fragments. Wavelength indeterminate due to only one crest of rippled in frame. High turbidity in the water column. Moderate amount of tracks and few biogenic depressions.
20SU-MW0521-045	1	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	None	Sand Dollar Bed	Mobile Mollusks on Soft Sediments	N	Sand dollar (14); Snail	Soft sandy bottom with biogenic depressions and apparent underlying wood debris (bottom right).
20SU-MW0521-045	4	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	None	Sand Dollar Bed	Mobile Mollusks on Soft Sediments	N	Sand dollar (18); Snail (5); Hermit crab (1); Worm tubes (20)	Silty sand with high concentration of tubes.
20SU-MW0521-045	5	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	None	Sand Dollar Bed	Mobile Mollusks on Soft Sediments	N		Silty sand with apparent tubes or fecal casts on surface.
20SU-MW0521-047	2	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	None	Mobile Mollusks on Soft Sediments	None	N	Snail (2)	Fine sand with worm tubes and shell particulates.
20SU-MW0521-047	3	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	None	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediments	N	Snail (5)	Silty surface sediment with numerous worm tubes.
20SU-MW0521-047	5	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna		Larger Tube-Building Fauna	Tracks and Trails	N	Worm tubes (20)	Silty surface sediment with worm tubes and burrows.
20SU-MW0521-049	1	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	None	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediments	N	Snail (3)	Fine silty sediment with numerous worm tubes. Biogenic depressions.
20SU-MW0521-049	2	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	None	Sand Dollar bed	Larger Tube-Building Fauna	N	Sand dollar (2); Anemone (1)	Silty sediment with diverse fauna. Biogenic depressions. Unidentified organism top right.
20SU-MW0521-049	5	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	None	Sand Dollar Bed	Attached Sponges	N	Sand dollar (2); Sponge (1); Snail (1)	Silty surface sediment with worm tubes and finer sediment deposits. One large shell fragments fragment.
20SU-MW0521-051	1	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Tracks and Trails	N	Worm tubes (20)	Silty surface sediment with worm tubes and tracks. Trace shell fragments.
20SU-MW0521-051	3	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	None	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	N	Hermit crabs (4)	Silty surface sediment. High density of worm tubes. Trace shell fragments. Long tubes or fecal casts top right.
20SU-MW0521-051	4	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	None	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	N	Hermit crabs (2); Snail (1)	Silty surface sediment with bivalve and trace shell fragments. Possible hydroid or bryozoan.
20SU-MW0521-053	1	Sand with Dense Worm Tubes	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	None	Larger Tube-Building Fauna	None	N	Worm tubes (500)	Silty surface sediment with dense worm tubes. Trace shell fragments.
20SU-MW0521-053	2	Sand Bottom with Dense Worm Tubes	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	None	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	N	Hermit crab (1)	Silty surface sediment with dense worm tubes. Trace shell fragments.
20SU-MW0521-053	4	Sand with Dense Worm Tubes	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	None	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	N	Hermit crabs (4)	Silty surface sediment with dense worm tubes. Trace shell fragments. Possible Diopatra and hydroid.

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Mayflower Wind Farm, Summer 2020

Table 4-1. Mayflower CMECS Substrate and Biotic Classifications for each SPI-PV Image Pair, Summer 2020

				CMECS Substrate Class	sifications			CMECS E	Biotic Components		Complex		
						Substrate		Co-occuring Biotic		Co-occurring Biotic	Habitat (Y/N) per NMFS		
Station ID	Replica	te Habitat Type	Substrate Class	Substrate Subclass	Substrate Gro	up Subgroup	Biotic Subclass	Subclass	Biotic Group	Group	2020	and Counts	Comments
20SU-MW0521-054	1	Sand with Worm Tubes	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine	Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building	Tracks and Trails	N	Worm tubes (100)	Silty surface sediment with dense worm tubes. Trace shell fragments.
20SU-MW0521-054	3	Sand with Dense Worm Tubes	Unconsolidated Mineral	Fine Unconsolidated	Sand	Sand Fine/Very Fine Sand	Soft Sediment Fauna	None	Fauna Larger Tube-Building Fauna	Tracks and Trails	N	Worm tubes (100)	Silty surface sediment with dense worm tubes. Trace shell fragments.
20SU-MW0521-054	4	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	None	Larger Tube-Building Fauna	Small Tube-Building Fauna	N	Snail (1)	Silty surface sediment with few worm tubes. Trace shell fragments and biogenic depressions.
20SU-MW0521-055	2	Sand with Dense Worm	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine	Soft Sediment Fauna	None	Larger Tube-Building	Mobile Crustaceans on	N	Hermit crab (1)	Silty surface sediment with dense worm tubes. Trace shell fragments.
20SU-MW0521-055	3	Tubes Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Sand	Sand Fine/Very Fine Sand	Soft Sediment Fauna	Attached Fauna	Fauna Larger Tube-Building Fauna	Soft Sediments Attached Hydroids	N	Hydroid (1)	Silty surface sediment with dense worm tubes. Trace shell fragments. Ripples are subtle.
20SU-MW0521-055	5	Soft Bottom with Worm Tubes	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	None	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	N	Hermit crab (1)	Silty surface sediment with worm tubes. Trace shell fragments.
20SU-MW0521-057	2	Soft Bottom with Worm	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine	Soft Sediment Fauna	None	Larger Tube-Building	Mobile Mollusks on Soft Sediments	N	Snail (3)	Silty sediment with dense worm tubes. Trace shell fragments on right.
20SU-MW0521-057	3	Tubes Sand with Dense Worm Tubes	Unconsolidated Mineral	Fine Unconsolidated	Sand	Sand Fine/Very Fine Sand	Soft Sediment Fauna	None	Fauna Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	N	Hermit crab (1); Hydroid (1); Worm tubes (500)	Silty sediment with dense worm tubes. Trace shell fragments. Few unidentified organisms.
20SU-MW0521-057	5	Soft Bottom with Worm Tubes	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Tracks and Trails	N	Worm tubes (500)	Silty surface sediment with dense worm tubes. Trace shell fragments.
20SU-MW0521-059	1	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	None	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	N	Hermit crab (1)	Silty surface sediment with worm tubes and burrows. Trace shell fragments.
20SU-MW0521-059	2	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	None	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediments	N	Hermit crab (1); Snail (2)	Silty surface sediment with dispersed worm tubes. Trace shell fragments.
20SU-MW0521-059	4	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	None	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	N	Snail (2); Small crab (1)	Silty surface sediment. Particulates in water column. Possible egg case top left. Unidentified organism middle left.
20SU-MW0521-061	1	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Mobile Mollusks on Soft Sediments	N	Tubes (5); Nassariid Snail (4); Hermit crab (1)	Very fine sand graduating to silt with some shell particles. Few tubes and burrows. Many tracks and biogenic depressions.
20SU-MW0521-061	2	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Sediment Fauna	Inferred Fauna	Clam Bed	Tracks and Trails	N	Bivalve Siphon (3); Amphipod (2); Nassariid Snail (1)	Very fine sand graduating to silt with few shell particles. Many tracks and biogenic depressions.
20SU-MW0521-061	5	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails	N	Hermit crab (2)	Image partially obscured by particulates in water column. Few burrows and tracks, many biogenic depressions.
20SU-MW0521-064	2	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Sediment Fauna	Inferred Fauna	Larger Deep-Burrowing Fauna	Tracks and Trails	N	Tubes (5)	Very fine sand graduating to silt. Many tracks and biogenic depressions. Some burrows and few tubes. Brown filamentous organic matter scattered on surface.
20SU-MW0521-064	3	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Sediment Fauna	Inferred Fauna	Larger Deep-Burrowing Fauna	Larger Tube-Building Fauna	N	Tubes (20+)	Very fine sand graduating to silt. Moderate amount of burrows, tubes and tube clusters. Many tracks and distinct biogenic depressions.
20SU-MW0521-064	4	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Tracks and Trails	N	Tubes (5)	Very fine sand graduating to silt. Few tubes and burrows. Many tracks and biogenic depressions. Clutter of fecal casts in frame.
20SU-MW0521-067	1	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Sediment Fauna	Inferred Fauna	Larger Deep-Burrowing Fauna	Tracks and Trails	N	Tubes (20+); Nassariid Snail (1)	Fine to very fine sand with some silt. Brown filamentous organic matter on surface. Many burrows and few tubes. Some tracks and biogenic depressions.
20SU-MW0521-067	2	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Sediment Fauna	Inferred Fauna	Larger Deep-Burrowing Fauna	Larger Tube-Building Fauna	N	Tubes (10+)	Very fine sand graduating to silt. Many tubes and burrows. Some tracks and biogenic depressions.
20SU-MW0521-067	3	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Larger Deep-Burrowing Fauna	N	Tubes (20+)	Very fine sand graduating to silt. Moderate amount of tubes and burrows. Brown filamentous organic matter scattered throughout surface.
20SU-MW0521-070	1	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Sediment Fauna	Inferred Fauna	Larger Deep-Burrowing Fauna	Tracks and Trails	N	Tubes (5); Nassariid Snail (2); Hermit crab (1)	Very fine sand quickly graduating to mud. High concentration of burrows and few tubes. Many distinct tracks and trails and biogenic depressions. Possible feather and sand clast aggregate.
20SU-MW0521-070	3	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Tracks and Trails	N	Tubes (20+); Nassariid Snail (2); Worm (1)	Very fine sand graduating to silt. Brown filamentous algae on surface. Large cluster of tubes and moderate amount of burrows. High concentration of distinct tracks and biogenic depressions. Possible fish skeletal remains
20SU-MW0521-070	5	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Sediment Fauna	Inferred Fauna	Larger Deep-Burrowing Fauna	Tracks and Trails	N	Tubes (5); Snail (1)	contained within large burrow. Very fine sand graduating to silt with few shell fragments. Many tracks and trails. Few tubes, burrows and sand clast aggregates.
20SU-MW0521-071	7	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Small Tube-Building Fauna	N	Tubes (30); Nassariid Snail (3); Bivalve Siphon (3); Hermit crab (1)	Very fine sand graduating to silt with very few small shell fragments. Few tubes and burrows. Some tracks and biogenic depressions. Brown filamentous organic matter on surface.
20SU-MW0521-071	8	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Tracks and Trails	N	Tubes (50+); Snail (1); Hermit crab (1)	Very fine sand graduating to silt. Brown filamentous organic matter on surface. High concentration of thin ampelisca tubes. Few burrows and tracks and trails.
20SU-MW0521-071	10	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediments	N		Very fine sand graduating to silt. Moderate amount of tubes and a few burrows. Some thin ampelisca tubes.

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Table 4-1. Mayflower CMECS Substrate and Biotic Classifications for each SPI-PV Image Pair, Summer 2020

			-	CMECS Substrate Class	sifications			CMECS I	Biotic Components				
											Complex Habitat		
						Substrate		Co-occuring Biotic		Co-occurring Biotic	(Y/N) per		
Station ID	Replicat	e Habitat Type	Substrate Class	Substrate Subclass	Substrate Grou		Biotic Subclass	Subclass	Biotic Group	Group	NMFS 2020	Epifauna/Infauna Types and Counts	Comments
20SU-MW0521-073	1	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Clam Bed	Small Tube-Building Fauna	N	Bivalve Siphon (15); Tubes (10+); Hermit cra (1); Nassariid Snail (1)	Very fine sand quickly graduating to silt with very few small shell fragments. b Moderate amount of bivalve siphons and diverse tube structures. Some burrows and tracks and trails. Brown filamentous organic matter on surface.
20SU-MW0521-073	4	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Clam Bed	N	Bivalve Siphon (8), Nassariid Snail (2),), Very fine sand graduating to silt with few very small shell fragments. High concentration of ampelisca tubes and few worm tubes. Many tracks and few burrows. Few areas of brown filamentous organic matter on surface.
20SU-MW0521-073	5	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Clam Bed	N	Hermit crab (1) Tubes (10+); Bivalve Siphon (9); Hermit crab (1)	Very fine sand graduating to silt with few very small shell fragments. Moderate amount of burrows and few worm tubes in depressions. Many biogenic depressions and tracks.
20SU-MW0521-074	1	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Larger Deep-Burrowing Fauna	Clam Bed	N	Tubes (10+); Bivalve Siphon (4); Nassariid Snail (4)	Very fine sand graduating to silt with very few small shell fragments. Moderate amount of burrows. Few concentrations of worm tube clusters in depressions. Many tracks and trails. Small area of brown filamentous organic material on surface.
20SU-MW0521-074	2	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Larger Deep-Burrowing Fauna	Tracks and Trails	N	Tubes (20+); Nassariid Snail (6); Bivalve Siphor (2)	Very fine sand graduating to silt with few small shell fragments. Many tracks and biogenic depressions. High concentration of burrows and some tubes and tube clusters within depressions.
20SU-MW0521-074	4	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Clam Bed	Larger Tube-Building Fauna	N	Bivalve Siphon (30+); Tubes (10+); Nassariid Snail (10); Worm (1)	Very fine sand graduating to silt with very few small shell fragments. High
20SU-MW0521-077	1	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Tracks and Trails	N	Tubes (10+); Nassariid Snail (2); Hermit crab (1	
20SU-MW0521-077	2	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Larger Deep-Burrowing Fauna	N	Tubes (20+); Nassariid Snail (1); Hermit crab (1	Very fine sand graduating to silt with few small shell fragments. High) concentration of diverse tubes and some burrows. Few tracks and biogenic decressions.
20SU-MW0521-077	5	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Larger Tube-Building Fauna	N	Tubes (30+); Nassariid Snail (2)	Very fine sand graduating to silt with few small shell fragments. Moderate concentration of diverse tubes. Large depression from fish with cluster of ampelisca tubes. Many tracks and some burrows.
20SU-MW0521-078	1	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Mobile Mollusks on Soft Sediments	N	Tubes (20+); Nassariid Snail (13)	Very fine sand graduating to silt. Some diverse tube structures. Large clam shell. Few small burrows and many tracks and biogenic depressions.
20SU-MW0521-078	3	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building	Mobile Mollusks on Soft	N	Tubes (30+); Nassariid	Clusters of diverse tubes within depressions. Some burrows and many
20SU-MW0521-078	4	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Fauna Small Tube-Building Fauna	Sediments Mobile Mollusks on Soft Sediments	N	Snail (8) Tubes (50+); Nassariid Snail (5); Hermit crab (1	tracks. Very fine sand graduating to silt with very few small shell fragments. Fecal) casts on surface. Abundance of diverse tubes and few burrows. Many tracks and biogenic depressions, few large depressions potentially from fish.
20SU-MW0521-080	1	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Clam Bed	N	Tubes (20+); Bivalve Siphon (20+); Isopod (2) Hermit crab (1)	Very fine sand graduating to silt with few small shell fragments. Moderate ; amount of tubes and tracks. One tube cluster and one recently excavated burrow. Fecal casts on surface.
20SU-MW0521-080	2	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Larger Deep-Burrowing Fauna	Larger Tube-Building Fauna	N	Tubes (10+); Bivalve Siphon (7); Hermit crab (1), Worm (1)	Very fine sand graduating to silt with few shell fragments. Many tubes and
20SU-MW0521-080	4	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Larger Deep-Burrowing Fauna	Clam Bed	N	Bivalve Siphon (20+); Tubes (20+); Hermit crabs (3); Worm (2)	Very fine sand transitioning to silt with few small shell fragments. Many tubes and burrows and few tracks.
20SU-MW0521-082	1	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	None	Clam Bed	Small Tube-Building Fauna	N	Bivalve Siphons (30+); Tubes (10+); Hermit crabs (2); Squid (1)	Very fine sand graduating to silt with few shell fragments. High concentration of diverse tubes and moderate amount of burrows.
20SU-MW0521-082	2	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Larger Deep-Burrowing Fauna	N	Tubes (20+); Bivalve	Very fine sand graduating to silt with few shell fragments. Many tubes and); burrows, few tube clusters. One sand clast aggregate. Some tracks and biogenic depressions.
20SU-MW0521-082	3	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Clam Bed	Larger Deep-Burrowing Fauna	N	Bivalve Siphon (40+);	Very fine sand graduating to silt with few shell fragments. High concentration b of bivalve siphons and burrows. Moderate amount of tracks and few depressions.

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Table 4-1. Mayflower CMECS Substrate and Biotic Classifications for each SPI-PV Image Pair, Summer 2020

				CMECS Substrate Class	sifications			CMECS I	Biotic Components				
											Complex Habitat (Y/N) per		
Station ID	Replicat	e Habitat Type	Substrate Class	Substrate Subclass	Substrate Gro	Substrate up Subgroup	Biotic Subclass	Co-occuring Biotic Subclass	Biotic Group	Co-occurring Biotic Group	NMFS 2020	Epifauna/Infauna Types and Counts	Comments
20SU-MW0521-083	3	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA NA	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	N	Tubes (30+); Shrimp (2) Amphipod (2)	
20SU-MW0521-083	4	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Larger Deep-Burrowing Fauna	N	Tubes (30+); Worm (3); Hermit crab (1);	Very fine sand graduating to silt with few small shell fragments. High concentration of diverse tube structures and few worms appearing in tubes.
20SU-MW0521-083	5	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Larger Deep-Burrowing Fauna	N	Amphipod (1) Tubes (30+); Hermit crabs (3)	Some tracks and few biogenic depressions. Very fine sand graduating to silt with few small shell fragments. Clumps of fecal casts on surface. Diverse tube structures, aggregated in depressions. Burrows of varying sizes and few tracks.
20SU-MW0521-084	2	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Small Surface-Burrowing Fauna	g Larger Deep-Burrowing Fauna	N	Tubes (40+); Shrimp (6) Worms (2)	
20SU-MW0521-084	3	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Larger Deep-Burrowing Fauna	Small Tube-Building Fauna	N	Tubes (30+); Shrimp (2) Worm (1)	Very fine sand graduating to silt with few small shell particles. High concentration of burrows and diverse tube structures with a few clusters of polychaete and ampelisca tubes.
20SU-MW0521-084	4	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Larger Deep-Burrowing Fauna	Small Tube-Building Fauna	N	Tubes (20+); Shrimp (2) Hermit crab (1); Worm (1)	Very fine sand graduating to silt with few shell particles. Many distinct tracks through middle of frame and few biogenic depressions. Moderate amount of diverse tubes and burrows.
20SU-MW0521-086	1	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Larger Deep-Burrowing Fauna	N	Tubes (20+); Shrimp (2) Worm (2); Hermit crab (1)	Moderate amount of diverse tube structures and some burrows. Suspended filamentous organic material. Many tracks and biogenic depressions.
20SU-MW0521-086	4	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Larger Deep-Burrowing Fauna	N	Tubes (20+)	Very fine sand graduating to silt with few shell particles. Moderate amount of tubes and some burrows. Some tubes aggregated in depressions. Few pieces of brown/green filamentous organic material. Many tracks and biogenic depressions.
20SU-MW0521-086	5	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	N	Tubes (30+); Juvenile shrimp (3); Hermit crab (1)	Very fine sand graduating to silt with few shell particles. High concentration of diverse tube structures with few burrows. Many distinct tracks and biogenic depressions.
20SU-MW0521-088	2	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Larger Tube-Building Fauna	N	Tubes (20+); Hermit crabs (2)	Very find sand graduating to silt with few shell particles. Moderate amount of diverse tube structures with some aggregates of polychaete tubes in biogenic depressions. Few burrows and tracks.
20SU-MW0521-088	5	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Larger Deep-Burrowing Fauna	Larger Tube-Building Fauna	N	Tubes (10+); Hermit crabs (2)	Very fine sand graduating to silt with few shell particles. Moderate amount of burrows and diverse tube structures. Few tracks and biogenic depressions.
20SU-MW0521-088	6	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Larger Tube-Building Fauna	N	Tubes (30+); Hermit crabs (4)	Very fine sand graduating to silt. High concentration of diverse tube structures and moderate amount of burrows. One recently excavated burrow. Some brown filamentous organic material on surface. Few tracks and biogenic depressions.
20SU-MW0521-090	1	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Larger Deep-Burrowing Fauna	Small Tube-Building Fauna	N	Tubes (30+); Hermit crabs (2)	Very fine sand graduating to silt with few shell particles. Diverse tube structures ranging in sizes and moderate amount of burrows. Many tracks and some biogenic depressions. Brown filamentous organic material on surface.
20SU-MW0521-090	2	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Larger Deep-Burrowing Fauna	Tracks and Trails	N	Tubes (10+)	Very fine sand graduating to silt. Diverse tube structures varying in sizes, high amount of burrows. High amount of tracks and few biogenic depressions.
20SU-MW0521-090	3	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Larger Deep-Burrowing Fauna	N	Tubes (20+); Hermit crabs (2); Nassariid Sna (2)	Very fine sand graduating to silt with few small shell particles. Moderate il amount of tubes, burrows and some clusters of tubes in depressions. Many distinct tracks and few areas of brown filamentous organic material.
20SU-MW0521-098	1	Rippled Sand with Silt	Unconsolidated Mineral	Fine Unconsolidated	Muddy Sand	NA	Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	N	Tubes (40+); Hermit crai (1)	b Very fine rippled sand graduating to silt, ripples are very subtle. Slight disturbance from particulates in water column on bottom left side of frame. High concentration of tubes and few burrows. Tube clusters aggregated in depressions. Moderate amount of tracks.
20SU-MW0521-098	2	Sand with Silt	Unconsolidated Mineral	Fine Unconsolidated	Muddy Sand	NA	Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Larger Deep-Burrowing Fauna	N	Tubes (20+); Shrimp (2) Hermit crab (1)	
20SU-MW0521-098	5	Rippled Sand with Silt	Unconsolidated Mineral	Fine Unconsolidated	Muddy Sand	NA	Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Tracks and Trails	N	Tubes (10+); Hermit craft (1); Worm (1)	Medium sand graduating to silt with few shell fragments. Few tubes and high concentration of tracks and biogenic depressions.

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Table 4-1. Mayflower CMECS Substrate and Biotic Classifications for each SPI-PV Image Pair, Summer 2020

				CMECS Substrate Class			CMECS Biotic Components						
						Substrate		Co-occuring Biotic		Co-occurring Biotic	Complex Habitat (Y/N) per NMFS		_
Station ID	Replicat	e Habitat Type	Substrate Class	Substrate Subclass	Substrate Gro		Biotic Subclass	Subclass	Biotic Group	Group	2020	and Counts	Comments
20SU-MW0521-100	3	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Larger Tube-Building Fauna	N	Tubes (40+); Shrimp (2) Amphipods (1); Hermit crab (1)	Very fine sand graduating to silt with few shell particles. Abundance of diverse tubes and moderate amount of burrows. Few tube clusters. Some tracks and biogenic depressions.
20SU-MW0521-100	4	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	N	Tubes (50+); Amphipod (2); Jonah crab (1)	
20SU-MW0521-100	5	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Small Tube-Building Fauna	N	Tubes (50+); Amphipod (2); Shrimp (1)	Very fine sand graduating to silt with few shell particles. High concentration of diverse tube structures with few burrows. Green and brown filamentous organic material. Moderate amount of tracks and biogenic depressions.
20SU-MW0521-102	2	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Tracks and Trails	N	Tubes (40+); Small Amphipod (5)	Very fine sand graduating to silt with few shell particles. High concentration of diverse tube structures and moderate amount of burrows. Few clumps of fecal casts and few areas of brown and orange organic material. Many
20SU-MW0521-102	3	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Tracks and Trails	N	Tubes (30+); Small Amphipod (2); Brittle Sta (1)	tracks and biogenic depressions. Very fine sand graduating to silt. High concentration of diverse tube ar structures and some burrows. Many tracks and biogenic depressions. Clump of fecal casts and brown and orange organic material on surface.
20SU-MW0521-102	6	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Larger Deep-Burrowing Fauna	N	Tubes (20+); Small Amphipod (2)	Very fine sand graduating to silt with few shell particles. Moderate amount of tubes and some burrows. Many tracks and some biogenic depressions.
20SU-MW0521-103	1	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Tracks and Trails	N	Tubes (10+); Amphipod (2)	Thin layer of very fine sand graduating to silt. Some diverse tube structures, few burrows. High amount of tracks and biogenic depressions.
20SU-MW0521-103	4	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Tracks and Trails	N	Shrimp (1)	Thin layer of very fine sand graduating to silt. Some tubes and few burrows with a cluster of tubes aggregated in depression. Many tracks and trails.
20SU-MW0521-103	5	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Tracks and Trails	N	Tubes (10+); Burrowing Anemone (2)	Thin layer of very fine sand graduating to silt with few shell fragments. Few small tubes and burrows. Many tracks and biogenic depressions.
20SU-MW0521-106	2	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails	N	Shrimp (3)	Layer of organic material overlaying coarser sand graduating to silt. Orange/brown filamentous organic material contained within surface layer. Few tracks.
20SU-MW0521-106	3	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails	N	Amphipod (2)	Layer of organic material overlaying coarser sand graduating to silt. Orange/brown filamentous organic material contained within surface layer.
20SU-MW0521-106	5	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	N	Tubes (10+); Shrimp (7) Rock crab (1)	Very fine sand graduating to silt with few pockets of biofilm. Orange/brown organic material on surface. Many distinct tracks and few biogenic depressions.
20SU-MW0521-109	1	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Soft Sediment Brittle Stars	Burrowing Anemones	N	Brittle Star (5); Cerianthi Anemone (1)	d Layer of organic material overlaying coarser sand graduating to silt. Orange/brown filamentous organic material contained within surface layer. Few tracks through organic material.
20SU-MW0521-109	3	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Soft Sediment Brittle Stars	Mobile Crustaceans on Soft Sediments	N	Brittle Star (4); Shrimp (2)	Coarser sand graduating to silt, few clusters of organic material. Some orange/brown filamentous organic material on surface. Moderate amount of tracks, some burrows and few biogenic depressions.
20SU-MW0521-109	4	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Burrowing Anemones	N	Tubes (10+); Cerianthid Anemone (4); Squid (1); Shrimp (1)	Thin layer of silt and organic material overlaying coarser sand graduating to
20SU-MW0521-114	1	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building	Tracks and Trails	N	Tubes (10+); Shrimp (1)	; Very fine sand graduating to silt with few shell fragments. Few tubes, high
20SU-MW0521-114	3	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Fauna Mobile Crustaceans on Soft Sediments	Starfish Bed	N	Worm (1) Tubes (20+); Shrimp (10); Sea Star (7)	concentration of tracks and some biogenic depressions. Moderate amount of tubes and few burrows. One recently excavated burrow. Some tracks and biogenic depressions.
20SU-MW0521-114	5	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	N	Tubes (10+); Shrimp (3)	Very fine sand graduating to silt with few shell particles. Few fecal mounds on surface. Moderate amount of tracks and large biogenic depression.
20SU-MW0521-116	1	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Starfish Bed	N	Tubes (20+); Sea Star (4); Shrimp (3); Brittle Star (1); Rock crab (1)	Very fine sand graduating to silt with few shell particles. Moderate amount of tubes and tracks, few burrows.
20SU-MW0521-116	2	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	N	Tubes (20+); Shrimp (4)	Very fine sand graduating to silt with few shell particles. Depression from sea star and tail of fish in depression. Moderate amount of tracks.
20SU-MW0521-116	3	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	N		; Very fine sand graduating to silt with few shell particles. Moderate amount of tubes, few burrows. Few tracks and biogenic depressions.

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Table 4-1. Mayflower CMECS Substrate and Biotic Classifications for each SPI-PV Image Pair, Summer 2020

				CMECS Substrate Class		CMECS Biotic Components							
Olestica ID	Daallaat		Substrate Class	Substrate Subclass	Substrate Group	Substrate	Biotic Subclass	Co-occuring Biotic Subclass	Biotic Group	Co-occurring Biotic	Complex Habitat (Y/N) per NMFS	Epifauna/Infauna Types	
Station ID 20SU-MW0521-118	Replicate 2	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	p Subgroup NA	Soft Sediment Fauna		Mobile Crustaceans on	Group Tracks and Trails	2020 N	and Counts Shrimp (4)	Comments Very fine sand graduating to silt with few shell particles. Very high
20SU-MW0521-118	4	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Soft Sediments Mobile Crustaceans on	Tracks and Trails	N	Shrimp (3); Tubes (1)	abundance of tracks and trails. Very fine sand graduating to silt with few shell particles. One tube and high
									Soft Sediments			, , , ,	abundance of tracks and trails.
20SU-MW0521-118	5	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails	N	Shrimp (1); Worm (1)	Very fine sand graduating to silt with few shell particles. High abundance of tracks and trails. Brown filamentous organic material on surface.
20SU-MW0521-120	1	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails	N	Shrimp (9); Skate Egg Case (1)	Very fine sand graduating to silt with few shell particles. High abundance of tracks and some biogenic depressions. Brown filamentous organic material
20SU-MW0521-120	2	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails	N	Shrimp (7)	on surface. Very fine sand graduating to silt with few shell particles. High abundance of tracks and some biogenic depressions. Brown filamentous organic material
20SU-MW0521-120	4	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud*	NA	Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails	N	Shrimp (4); Worms (3); Sea Star (1)	on surface. Very fine sand graduating to silt with few shell fragments and particles. High abundance of tracks and some biogenic depressions.
20SU-MW0521-121	3	Sand with Organic Material	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Inferred Fauna	None	Tracks and Trails	None	N	None	Layer of organic material overlaying very fine to fine sand. Many tracks and trails. Brown filamentous organic material contained within surface layer.
20SU-MW0521-121	4	Sand with Organic Material	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Tracks and Trails	N	Worm (1)	Thick layer of organic material overlaying very fine to fine sand. Many tracks and trails. Brown filamentous organic material contained within surface layer.
20SU-MW0521-121	5	Sand with Organic Material	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Inferred Fauna	Mobile Mollusks on Soft Sediments	Tracks and Trails	N	Gastropod (1)	Thick layer of organic material overlaying fine to medium sand. Brown filamentous organic material contained within surface layer.
20SU-MW0521-122	1	Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Larger Deep-Burrowing Fauna	N	Tubes (20+), Amphipod (1); Worm (1)	Very fine sand graduating to silt. Moderate amount of diverse tube structures, some burrows and many tracks and trails.
20SU-MW0521-122	4	Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Larger Tube-Building Fauna	N	Tubes (30+); Amphipod (1)	Fine sand overlaying very fine sand graduating to silt. High concentration of diverse tube structures, some burrows. Moderate amount of tracks and few
20SU-MW0521-122	5	Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Larger Tube-Building Fauna	N	Tubes (30+)	biogenic depressions. High concentration of diverse tube structures and few tube clusters. Few burrows, moderate amount of tracks and biogenic depressions.
20SU-MW0521-123	2	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Tracks and Trails	N	Hermit crabs (3); Amphipods	Numerous tube-building amphipods (clearly evident in paired SPI image).
20SU-MW0521-123	3	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediments	Small Tube-Building Fauna	N		Diverse epifauna and moderate amount of tubes.
20SU-MW0521-123	5	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails	N		Large shell fragments (bivalve, crab).
20SU-MW0521-124	1	Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine	Soft Sediment Fauna	Inferred Fauna	Mobile Mollusks on Soft	Tracks and Trails	N	Anemone (2); Snail (3)	Fecal casts on surface.
20SU-MW0521-124	2	Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Sand Fine/Very Fine Sand	Soft Sediment Fauna	Inferred Fauna	Sediments Larger Deep-Burrowing Fauna	Tracks and Trails	N	Scale Worm (1); Crab (1); Snail (3); Anemone	Fecal casts on surface.
20SU-MW0521-124	3	Sand	Unconsolidated Mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Sediment Fauna	Inferred Fauna	Larger Deep-Burrowing Fauna	Small Tube-Building Fauna	N	(2) Snail (2); Anemone (2)	Reduced sediment just below sediment surface.
20SU-MW0521-124	4	Sand	Unconsolidated Mineral	Fine Unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Tracks and Trails	N	Snail (1); Anemone (1)	Reduced sediment below sediment surface, many tracks and trails.
20SU-MW0521-124	5	Sand	Unconsolidated Mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Tracks and Trails	N	Scale Worm (1)	Many tracks and trails.
20SU-MW0521-124	6	Sand	Unconsolidated Mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails	N	Crabs (4); Hermit crab (1)	Image partially obscured by suspended material.
20SU-MW0521-124	8	Sand	Unconsolidated Mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Sediment Fauna	Inferred Fauna	Mobile Mollusks on Soft Sediments	Tracks and Trails	N	Crab (1); Snail (2); Anemone (1)	Reduced sediment just below sediment surface.
20SU-MW0521-124	9	Sand	Unconsolidated Mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Tracks and Trails	N		Reduced sediment just below sediment surface, sediment surface exhibit clumps.
20SU-MW0521-124	10	Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails	N	Crabs (2); Hermit crab (1); Scale Worm (1); Snail (1)	Weathered sand ripples.
20SU-MW0521-124	11	Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Tracks and Trails	N	Crab (1); Diopatra (3); Anemone (1); Scale Worm (2)	Weathered sand ripples.
20SU-MW0521-124	12	Sand	Unconsolidated Mineral	Fine Unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Tracks and Trails	N		Reduced sediment just below sediment surface.
20SU-MW0521-124	13	Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Tracks and Trails	N	Crab (1); Snail (1)	Suspended material throughout image.
20SU-MW0521-125	1	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Tracks and Trails	N	Amphipods	Numerous diverse surface tube (clearly identifiable in paired SPI image).
20SU-MW0521-125	4	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Tracks and Trails	Ν	Sand dollar (2); Amphipods	Numerous tube-building amphipods (clearly identifiable in paired SPI image). Several unidentified cylindrical translucent shapes visible.
20SU-MW0521-125	5	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building	Tracks and Trails	N	Jonah crab (1); Shrimp	Numerous tube-building amphipods (clearly identifiable in paired SPI

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Table 4-1. Mayflower CMECS Substrate and Biotic Classifications for each SPI-PV Image Pair, Summer 2020

						CMECS Biotic Components							
Station ID						Substrate		Co-occuring Biotic Subclass		Co occurring Biotic	Complex Habitat (Y/N) per		
	Replicat	e Habitat Type	Substrate Class	Substrate Subclass	Substrate Group		Biotic Subclass		Biotic Group	Co-occurring Biotic Group	NMFS 2020	Epifauna/Infauna Types and Counts	Comments
20SU-MW0521-126	1	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud	NA .	Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails	N	Shrimp (3)	Numerous tracks and trails.
20SU-MW0521-126	2	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediments	Burrowing Anemones	N	Shrimp (4); Cerianthid Anemone (1)	Tube clusters present. Low amount of burrows.
20SU-MW0521-126	5	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	N	Shrimp (4); Cerianthid Anemone (1)	Tube clusters present.
20SU-MW0521-127	1	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails	N	Crab (1); Shrimp (3)	Image lightly obscured by suspended material.
20SU-MW0521-127	3	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails	N	Shrimp (12)	Image lightly obscured by suspended material.
20SU-MW0521-127	5	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails	N	Shrimp (14)	Image lightly obscured by suspended material. Only the back half of the fish is visible in the image.
20SU-MW0521-C01	2	Sand with Silt	Unconsolidated Mineral	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediments	Mobile Mollusks on Soft Sediments	N	Hermit crabs (2); Nassariid Snail (1); Worm (1)	Fine layer of silt over laying medium to fine sand with few shell fragments. Small area of brown filamentous organic material. Moderate amount of tracks and few large biogenic depressions. Fecal casts abundant on surface Hermit crab feeding on brown filamentous organic matter.
20SU-MW0521-C01	4	Sand with Silt	Unconsolidated Mineral	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediments	Burrowing Anemones	N	Hermit crabs (3); Burrowing Anemone (2); Nassariid Snail (1)	Fine layer of silt overlaying medium to coarse sand with few granules and shell fragments. Moderate amount of tracks and biogenic depressions.
20SU-MW0521-C01	5	Sand with Silt	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Inferred Fauna	Mobile Mollusks on Soft Sediments	Burrowing Anemones	N	Nassariid Snail (6);	Thin layer of silt overlaying medium sand graduating to fine sand. Moderate ; amount of tracks and biogenic depressions.
20SU-MW0521-C02	1	Sand with Silt	Unconsolidated Mineral	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Inferred Fauna	Mobile Mollusks on Soft Sediments	Mobile Crustaceans on Soft Sediments	N	Nassariid Snail (6); Hermit crabs (2)	Fine layer of silt overlaying medium to coarse sand. Hermit crab feeding on shell. Some tracks and trails.
20SU-MW0521-C02	2	Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Inferred Fauna	Mobile Mollusks on Soft Sediments		N	Nassariid Snail (7); Hermit crabs (4)	Fine layer of silt overlaying medium to coarse sand with some shell fragments. Fecal casts on surface. Moderate amount of tracks and biogenic depressions.
20SU-MW0521-C02	4	Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediments	Mobile Mollusks on Soft Sediments	N	Hermit crabs (5); Nassariid Snail (2)	Thin layer of silt overlaying medium sand with some shell fragments. High amount of tracks and biogenic depressions. Hermit crab feeding on shell.
20SU-MW0521-C03	1	Sand with Silt	Unconsolidated Mineral	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediments	N	Tubes (40+); Nassariid Snail (4); Burrowing Anemone (1); Hermit crab (1); Unidentifiable crab (1)	Thin layer of silt overlaying fine sand with some shell fragments. High concentration of tubes and a recently excavated burrow. Few tracks and biogenic depressions.
20SU-MW0521-C03	2	Sand with Silt	Unconsolidated Mineral	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediments	N	Tubes (10+); Nassariid Snail (4); Cerianthid Anemone (2); Hermit crab (1); Ribbon Worm (1)	Fine layer of silt over laying fine sand with few shell fragments. Some tubes and one recently excavated burrow. Few tracks and biogenic depressions.
20SU-MW0521-C03	4	Sand with Silt	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediments	N	Tubes (30+); Nassariid	Fine silt layer overlaying fine to very fine sand with few small shell fragments. Abundant fecal casts on surface and few tubes.
20SU-MW0521-C04	1	Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Burrowing Anemones	N	Tubes (20+); Cerianthid Anemone (4); Hermit crabs (2); Nassariid Sna (2); Worm (1)	Thin layer of silt overlaying medium to fine sand with few small shell fragments. Reduced sediment on surface. Some tubes and a tube cluster. I Few tracks and trails.
20SU-MW0521-C04	4	Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediments	N		Silt overlaying medium sand with few small shell fragments. High concentration of tubes and one recently excavated burrow. Few tracks.
20SU-MW0521-C04	5		Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Burrowing Anemones	N	Tubes (10+); Nassariid Snail (7); Cerianthid Anemone (7); Burrowing Anemone (2); Scale Worm (1); Hermit Crab (1)	Thin layer of silt overlaying medium sand, few shell particles. Possible relic ripples. Some tubes and tracks.

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				CMECS Substrate Class	sifications		CMECS Biotic Components			- Complex			
						Substrate		Co-occuring Biotic		Co-occurring Biotic	Habitat (Y/N) per NMFS	Epifauna/Infauna Types	
Station ID	Replicate	Habitat Type	Substrate Class	Substrate Subclass	Substrate Grou	p Subgroup	Biotic Subclass	Subclass	Biotic Group	Group	2020	and Counts	Comments
20SU-MW0521-C05	1	Rippled Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediments	N	Tubes (20+); Nassariid Snail (18); Cerianthid Anemone (1); Hermit crab (1)	Rippled fine sand with few shell particles. Ripples are fairly subtle. High concentrations of tubes and some tracks. Crab leg in frame.
20SU-MW0521-C05	3	Rippled Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediments	N	Tubes (20+); Nassariid Snail (10); Cerianthid Anemone (1); Hermit crab (1)	Thin layer of silt overlaying rippled fine sand with few shell particles. Ripple are very subtle. High concentration of tubes and moderate amount of tracks
20SU-MW0521-C05	4	Rippled Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Medium Sand	Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediments	N	Tubes (10+); Nassariid Snail (12); Hermit crabs (5); Cerianthid Anemone (1); Sand dollar (1); Worm (1)	
20SU-MW0521-C06	1	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud	NA	Soft Sediment fauna	Inferred Fauna	Soft Sediment Brittle	Small Tube-Building	N	Brittle stars; Shrimp (3)	High concentration of brittle stars and tubes. Moderate amount of tracks and
20SU-MW0521-C06	2	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Stars Soft Sediment Brittle Stars	Fauna Small Tube-Building Fauna	N	Brittle stars; Shrimp (3)	burrows. Top center of image partially obscured by suspended material. High concentration of brittle stars and tubes. Moderate amount of tracks and burrows. Unknown translucent masses throughout top half of image (cylindrical, blue).
20SU-MW0521-C06	4	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Soft Sediment Brittle Stars	Small Tube-Building Fauna	N	Brittle stars; Shrimp (3)	High concentration of brittle stars and tubes. Moderate amount of tracks and burrows. Unknown translucent masses (cylindrical, blue).
20SU-MW0521-C07	1	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Soft Sediment Brittle Stars	Small Tube-Building Fauna	N	Brittle stars; Sea star (3) Shrimp (10)	High concentration of brittle stars and tubes. Moderate amount of tracks and burrows.
20SU-MW0521-C07	2	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Soft Sediment Brittle Stars	Small Tube-Building Fauna	N		 High concentration of brittle stars and tubes. Moderate amount of tracks and burrows. Single mud clast near the largest sea star.
20SU-MW0521-C07	4	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Soft Sediment Brittle Stars	Small Tube-Building Fauna	N	Brittle stars; Sea star (3)	; High concentration of brittle stars and tubes. Moderate amount of tracks and
20SU-MW0521-C08	2	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Soft Sediment Brittle	Small Tube-Building	N	. ,	burrows. High concentration of brittle stars and tubes. Moderate amount of tracks and
20SU-MW0521-C08	3	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Stars Soft Sediment Brittle Stars	Fauna Small Tube-Building Fauna	N	Shrimp (13) Brittle stars; Sea star (1) Shrimp (3)	burrows. High concentration of brittle stars and tubes. Moderate amount of tracks and
20SU-MW0521-C08	4	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Soft Sediment Brittle Stars	Small Tube-Building Fauna	N		burrows. High concentration of brittle stars and tubes. Moderate amount of tracks and burrows.
20SU-MW0521-C09	7	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Soft Sediment Brittle	Small Tube-Building	N	, , ,	; High concentration of brittle stars and tubes. Moderate amount of tracks and
20SU-MW0521-C09	8	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Stars Soft Sediment Brittle Stars	Fauna Small Tube-Building Fauna	N	Shrimp (13) Brittle stars; Sea pen (3) Sea star (1); Shrimp (4)	burrows. Unknown translucent mass near left laser dot. High concentrations of brittle stars and tubes. Moderate amount of tracks and burrows.
20SU-MW0521-C09	10	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Soft Sediment Brittle Stars	Small Tube-Building Fauna	N	Brittle stars; Sea star (1) Shrimp (5); Anemone (1)	; High concentration of brittle stars and tubes. Moderate amount of tracks and burrows.
20SU-MW0521-C10	1	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Soft Sediment Brittle	Small Tube-Building	N	Brittle stars; Shrimp (13)	High concentration of brittle stars and tubes. Moderate amount of tracks and
20SU-MW0521-C10	2	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Stars Soft Sediment Brittle Stars	Fauna Small Tube-Building Fauna	N	Brittle stars; Shrimp (5); Bivalve siphon (1)	burrows. High concentration of brittle stars and tubes. Moderate amount of tracks. Low amount of burrows.
20SU-MW0521-C10	4	Soft Bottom	Unconsolidated Mineral	Fine Unconsolidated	Mud	NA	Soft Sediment Fauna	Inferred Fauna	Soft Sediment Brittle Stars	Small Tube-Building Fauna	N	Brittle stars; Shrimp (7); Sea star (1)	
20SU-MW0521-C11	1	Rippled Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine sand	Soft Sediment Fauna	Inferred Fauna	Sand Dollar Bed	Small Tube-Building Fauna	N	Sand dollar (5)	Possible small fish, bottom center of picture. Tube clusters occur in several of the ripple lees. Low amount of burrows.
20SU-MW0521-C11	4	Rippled Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine sand	Soft Sediment Fauna	Inferred Fauna	Sand Dollar Bed	Small Tube-Building Fauna	N	Sand dollar (4); Hermit crabs (2)	Tube clusters occur in several of the ripple lees. Low amount of burrows. Unidentified invertebrate (1) in center left part of image.
20SU-MW0521-C11	5	Rippled Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine sand	Soft Sediment Fauna	Inferred Fauna	Sand Dollar Bed	Small Tube-Building Fauna	N	Sand dollar (1)	Tube clusters occur in several of the ripple lees. Low amount of burrows.
20SU-MW0521-C12	8	Rippled Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine sand	Soft Sediment Fauna	None	Sand Dollar Bed	None	N	Sand dollar (>35)	Sand ripples apparent in paired SPI image. Unable to discern wavelength, presence/absence of burrows, tubes, tracks due to suspended material in the water column.
20SU-MW0521-C12	10	Rippled Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine sand	Soft Sediment Fauna	None	Sand Dollar Bed	None	N	Sand dollar (15); Hermit crab (1)	Sand ripples and hermit crab apparent in paired SPI image. Unable to discern wavelength, presence/absence of burrows, tubes, tracks due to
20SU-MW0521-C12	11	Rippled Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine sand	Soft Sediment Fauna	None	Sand Dollar Bed	None	N	Sand dollar (14+)	suspended material in the water column. Sand ripples apparent in paired SPI image. Some brown filamentous organic material present. Unable to discern wavelength, presence/absence of burrows, tubes, tracks due to suspended material in the water column.

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Sediment Profile and Plan View Imaging Survey December 4, 2020 Mayflower Wind Farm, Summer 2020

Table 4-1. Mayflower CMECS Substrate and Biotic Classifications for each SPI–PV Image Pair, Summer 2020

				CMECS Substrate Class	sifications			CMECS	Biotic Components		_		
											Complex Habitat (Y/N) per		
						Substrate		Co-occuring Biotic	;	Co-occurring Biotic	NMFS	Epifauna/Infauna Types	
Station ID	Replicat	e Habitat Type	Substrate Class	Substrate Subclass	Substrate Group	Subgroup	Biotic Subclass	Subclass	Biotic Group	Group	2020	and Counts	Comments
20SU-MW0521-C13	4	Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine sand	Soft Sediment Fauna	Inferred Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand dollar (55+)	High concentration of sand dollars. Low amount of burrows.
20SU-MW0521-C13	5	Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine sand	Soft Sediment Fauna	Inferred Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand dollar (60+)	High concentration of sand dollars. Low amount of burrows.
20SU-MW0521-C13	7	Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine sand	Soft Sediment Fauna	Inferred Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand dollar (60+)	High concentration of sand dollars.
20SU-MW0521-C14	2	Rippled Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine sand	Soft Sediment Fauna	Inferred Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand dollar (4); Amphipod (5+)	Low amount of tubes.
20SU-MW0521-C14	3	Rippled Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine sand	Soft Sediment Fauna	Inferred Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand dollar (2), Amphipod (3)	Tube clusters occur in the lee of the ripples.
20SU-MW0521-C14	4	Rippled Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine sand	Soft Sediment Fauna	Inferred Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand dollar (4)	Low amount of tubes. Tube clusters occur in the ripple lees.
20SU-MW0521-C15	2	Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine sand	Soft Sediment Fauna	Inferred Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand dollar (54); Hermit crabs (2)	Low amount of tubes.
20SU-MW0521-C15	3	Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine sand	Soft Sediment Fauna	Inferred Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand dollar (86+); Hermi crabs (3); Snail (4)	it Brown filamentous organic material in center left of image. Low amount of tubes.
20SU-MW0521-C15	4	Sand	Unconsolidated Mineral	Fine Unconsolidated	Sand	Fine/Very Fine sand	Soft Sediment Fauna	Inferred Fauna	Sand Dollar Bed	Tracks and Trails	N	Sand dollar (72+); Hermi crab (1); Snail (1)	it Low amount of tubes.
20SU-MW0521-CP2	1	Sand with Gravel	Unconsolidated Mineral	Coarse Unconsolidated	Gravelly	Gravelly Sand	Inferred Fauna	None	Tracks and Trails	None	Y	None	Very coarse sand. High energy area with mobile granules and diverse shell fragment deposits.
20SU-MW0521-CP2	2	Sand with Gravel and Shells	Unconsolidated Mineral	Coarse Unconsolidated	Gravelly	Gravelly Sand	Inferred Fauna	None	Tracks and Trails	None	Υ	None	Very coarse sand. High energy area with mobile granules and diverse shell fragment deposits.
20SU-MW0521-CP2	3	Rippled Sand	Unconsolidated Mineral	Coarse Unconsolidated	Gravelly	Gravelly Sand	Inferred Fauna	None	Tracks and Trails	None	Υ	None	Rippled very coarse sand, ripples are irregular. High energy area with mobile granules and some shell fragment deposits.

Notes:

CMECS = Coastal and Marine Ecological Classification Standard
N = no
NA = not applicable
SPI = sediment profile imaging
Y = yes
* Substrate Group designation based on texture observed in SPI image.

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Table 4-2. Biotic Groups and Co-Occurring Biotic Groups Assigned to the Mayflower Summer PV Images

Biotic Groups		Co-Occurring Biotic Groups		Total Replicates	
Group	No. of Replicates	Group	No. of Replicates	(Group and Co-Occurring Group Combined)	Percent of Total Designations
Tracks and Trails	16	Tracks and Trails	79	95	16%
Small Tube-Building Fauna	46	Small Tube-Building Fauna	28	74	12%
Larger Tube-Building Fauna	54	Larger Tube-Building Fauna	13	67	11%
Mobile Crustaceans on Soft Sediments	33	Mobile Crustaceans on Soft Sediments	27	60	10%
		None ^a	44	44	7%
Mobile Mollusks on Soft Sediments	10	Mobile Mollusks on Soft Sediments	30	40	7%
Barnacles	9	Barnacles	25	34	6%
Larger Deep-Burrowing Fauna	17	Larger Deep-Burrowing Fauna	13	30	5%
Diverse Colonizers	24	Diverse Colonizers	3	27	4%
Attached Bryozoans	16	Attached Bryozoans	4	20	3%
Sand Dollar Bed	20			20	3%
Soft Sediment Brittle Stars	17			17	3%
Attached Sponges	13	Attached Sponges	3	16	3%
Burrowing Anemones	4	Burrowing Anemones	11	15	2%
Gastropod Reef	11			11	2%
Clam Bed	5	Clam Bed	5	10	2%
		Chitons ^a	6	6	1%
Attached Hydroids	3	Attached Hydroids	2	5	1%
,		Mobile Mollusks on Hard or Mixed Substrates ^a	5	5	1%
Attached Sea Urchins	1	Attached Sea Urchins	1	2	0.3%
Attached Tunicates	2			2	0.3%
		Mobile Crustaceans on Hard or Mixed Substrates ^a	2	2	0.3%
		Starfish Bed ^a	2	2	0.3%
Mussel Reef	1			1	0.2%
Small Surface-Burrowing Fauna	1			1	0.2%

Notes:

PV = plan view

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^a Not assigned as a Biotic Group

Appendix A

SPI-PV Stations Sampled, Field Log, and Field Forms

- Appendix A1. Stations Sample
- Appendix A2. Field Notebook
- Appendix A3. SPI–PV Collection Forms

Appendix A1

Stations Sample			Image		
	Replicate	Image Collection	Collection		
Station Number	Number	Date	Time (UTC)	Easting (m)	Northing (m)
20SU-MW0521-001	1	8/30/2020	17:58	367229.085	4599251.187
20SU-MW0521-001	2	8/30/2020	18:00	367224.968	4599247.285
20SU-MW0521-001	3	8/30/2020	18:02	367221.204	4599242.538
20SU-MW0521-001	4	8/30/2020	18:03	367217.061	4599238.587
20SU-MW0521-001	5	8/30/2020	18:05	367213.196	4599234.326
20SU-MW0521-002	1	8/30/2020	18:35	367005.395	4597867.197
20SU-MW0521-002	2	8/30/2020	18:47	367143.968	4597858.804
20SU-MW0521-002	3	8/30/2020	18:55	367260.377	4597853.782
20SU-MW0521-002	4	8/30/2020	19:03	367385.374	4597853.39
20SU-MW0521-002	5	8/30/2020	19:12	367519.45	4597871.965
20SU-MW0521-002	6	8/30/2020	19:15	367517.458	4597867.177
20SU-MW0521-002	7	8/30/2020	19:18	367513.563	4597862.569
20SU-MW0521-002	8	8/30/2020	19:20	367509.403	4597857.926
20SU-MW0521-002	9	8/30/2020	19:23	367511.79	4597848.954
20SU-MW0521-002	10	8/30/2020	19:31	367646.274	4597855.251
20SU-MW0521-002	11	8/30/2020	19:38	367772.286	4597856.303
20SU-MW0521-002	12	8/30/2020	19:45	367900.404	4597854.675
20SU-MW0521-002	13	8/30/2020	19:51	368029.248	4597856.804
20SU-MW0521-003	8	8/30/2020	23:16	367202.871	4596516.959
20SU-MW0521-003	9	8/30/2020	23:19	367197.164	4596518.496
20SU-MW0521-003	10	8/30/2020	23:22	367195.788	4596523.363
20SU-MW0521-003	11	8/30/2020	23:24	367190.934	4596523.22
20SU-MW0521-003	12	8/30/2020	23:26	367186.942	4596520.533
20SU-MW0521-004	1	8/31/2020	0:14	368137.839	4595457.477
20SU-MW0521-004	2	8/31/2020	0:19	368129.062	4595458.476
20SU-MW0521-004	3	8/31/2020	0:21	368122.73	4595459.242
20SU-MW0521-004	4	8/31/2020	0:23	368116.639	4595459.832
20SU-MW0521-004	5	8/31/2020	0:25	368111.502	4595456.423
20SU-MW0521-005	1	8/31/2020	1:09	369365.817	4595004.678
20SU-MW0521-005	2	8/31/2020	1:29	369290.896	4594899.185
20SU-MW0521-005	3	8/31/2020	1:43	369213.665	4594801.876
20SU-MW0521-005	4	8/31/2020	2:02	369138.259	4594703.027
20SU-MW0521-005	5	8/31/2020	2:19	369075.281	4594589.667
20SU-MW0521-005	6	8/31/2020	2:21	369070.255	4594592.459
20SU-MW0521-005	7	8/31/2020	2:23	369065.79	4594595.574
20SU-MW0521-005	8	8/31/2020	2:25	369060.644	4594597.622
20SU-MW0521-005	9	8/31/2020	2:28	369055.687	4594600.406
20SU-MW0521-005	10	8/31/2020	2:40	368999.009	4594524.558
20SU-MW0521-005	11	8/31/2020	2:54	368938.406	4594444.952
20SU-MW0521-005	12	8/31/2020	3:13	368875.351	4594367.604
20SU-MW0521-005	13	8/31/2020	3:24	368818.411	4594288.526

	Replicate	Image Collection	Image Collection		
Station Number	Number	Date	Time (UTC)	Easting (m)	Northing (m)
20SU-MW0521-007	5	8/31/2020	6:04	371279.311	4592879.015
20SU-MW0521-007	6	8/31/2020	6:07	371283.761	4592876.228
20SU-MW0521-007	7	8/31/2020	6:09	371288.37	4592874.194
20SU-MW0521-007	8	8/31/2020	6:11	371293.546	4592872.703
20SU-MW0521-007	9	8/31/2020	6:14	371299.144	4592871.217
20SU-MW0521-009	1	8/30/2020	13:41	374032.189	4592060.294
20SU-MW0521-009	2	8/30/2020	13:43	374026.391	4592058.168
20SU-MW0521-009	3	8/30/2020	13:45	374020.859	4592060.346
20SU-MW0521-009	4	8/30/2020	13:47	374015.568	4592058.43
20SU-MW0521-009	5	8/30/2020	13:48	374009.291	4592058.396
20SU-MW0521-011	1	8/30/2020	11:34	376716.623	4591238.374
20SU-MW0521-011	2	8/30/2020	11:36	376712.033	4591240.065
20SU-MW0521-011	3	8/30/2020	11:38	376705.675	4591241.53
20SU-MW0521-011	4	8/30/2020	11:40	376700.215	4591243.193
20SU-MW0521-011	5	8/30/2020	11:43	376694.515	4591243.959
20SU-MW0521-013	1	8/30/2020	9:02	379481.461	4590746.541
20SU-MW0521-013	2	8/30/2020	9:04	379476.273	4590748.97
20SU-MW0521-013	3	8/30/2020	9:06	379469.878	4590748.619
20SU-MW0521-013	4	8/30/2020	9:08	379464.645	4590747.089
20SU-MW0521-013	5	8/30/2020	9:11	379458.367	4590746.073
20SU-MW0521-015	1	8/30/2020	4:06	382336.822	4590794.08
20SU-MW0521-015	2	8/30/2020	4:20	382323.562	4590670.214
20SU-MW0521-015	3	8/30/2020	4:37	382347.376	4590535.719
20SU-MW0521-015	4	8/30/2020	4:48	382287.385	4590421.201
20SU-MW0521-015	5	8/30/2020	5:06	382272.157	4590317.202
20SU-MW0521-015	6	8/30/2020	5:08	382271.872	4590311.829
20SU-MW0521-015	7	8/30/2020	5:11	382271.947	4590306.384
20SU-MW0521-015	8	8/30/2020	5:12	382272.885	4590301.528
20SU-MW0521-015	9	8/30/2020	5:14	382275.787	4590296.548
20SU-MW0521-015	10	8/30/2020	5:32	382245.974	4590177.348
20SU-MW0521-015	11	8/30/2020	5:47	382236.174	4590052.211
20SU-MW0521-015	12	8/30/2020	5:58	382212.539	4589930.82
20SU-MW0521-015	13	8/30/2020	6:11	382194.033	4589803.034
20SU-MW0521-015	14	8/30/2020	6:36	382195.946	4589803.17
20SU-MW0521-015	15	8/30/2020	7:09	382199.488	4589803.103
20SU-MW0521-017	1	8/30/2020	2:41	385079.109	4589784.399
20SU-MW0521-017	2	8/30/2020	2:43	385074.441	4589786.021
20SU-MW0521-017	3	8/30/2020	2:44	385069.005	4589787.682
20SU-MW0521-017	4	8/30/2020	2:47	385063.975	4589790.372
20SU-MW0521-017	5	8/30/2020	2:49	385059.971	4589794.052
20SU-MW0521-019	2	8/30/2020	0:58	387345.341	4588487.301
20SU-MW0521-019	3	8/30/2020	1:00	387342.727	4588493.234
20SU-MW0521-019	4	8/30/2020	1:02	387341.907	4588499.413
20SU-MW0521-019	5	8/30/2020	1:03	387341.43	4588506.036
20SU-MW0521-019	6	8/30/2020	1:05	387341.543	4588512.174

·	Destruction	Lanca Calladia	Image		
Station Number	Replicate Number	Image Collection Date	Collection Time (UTC)	Easting (m)	Northing (m)
20SU-MW0521-020	1	8/31/2020	8:37	387963.004	4586489.748
20SU-MW0521-020	2		8:39	387967.611	4586493.878
		8/31/2020			
20SU-MW0521-020	3	8/31/2020	8:40	387973.894	4586495.493
20SU-MW0521-020	4	8/31/2020	8:42	387979.309	4586495.685
20SU-MW0521-020	5	8/31/2020	8:44	387984.949	4586494.874
20SU-MW0521-021	1	8/31/2020	9:18	387375.837	4584945.165
20SU-MW0521-021	2	8/31/2020	9:20	387371.01	4584943.576
20SU-MW0521-021	3	8/31/2020	9:22	387364.805	4584944.619
20SU-MW0521-021	4	8/31/2020	9:24	387359.974	4584948.391
20SU-MW0521-021	5	8/31/2020	9:26	387360.518	4584954.582
20SU-MW0521-022	1	8/31/2020	10:36	386736.92	4583854.264
20SU-MW0521-022	2	8/31/2020	10:39	386731.61	4583852.611
20SU-MW0521-022	3	8/31/2020	10:41	386725.809	4583850.677
20SU-MW0521-022	4	8/31/2020	10:42	386719.749	4583850.153
20SU-MW0521-022	5	8/31/2020	10:44	386713.896	4583849.115
20SU-MW0521-023	1	8/31/2020	11:17	386060.223	4582564.426
20SU-MW0521-023	2	8/31/2020	11:20	386054.837	4582563.234
20SU-MW0521-023	3	8/31/2020	11:22	386049.131	4582562.061
20SU-MW0521-023	4	8/31/2020	11:25	386043.773	4582562.066
20SU-MW0521-023	5	8/31/2020	11:26	386038.273	4582559.178
20SU-MW0521-024	1	8/31/2020	12:59	384876.401	4581382.012
20SU-MW0521-024	2	8/31/2020	13:09	385013.008	4581367.362
20SU-MW0521-024	3	8/31/2020	13:59	385136.765	4581350.974
20SU-MW0521-024	4	8/31/2020	14:09	385264.378	4581331.58
20SU-MW0521-024	5	8/31/2020	14:16	385409.837	4581336.268
20SU-MW0521-024	6	8/31/2020	14:17	385413.464	4581330.759
20SU-MW0521-024	7	8/31/2020	14:18	385415.448	4581325.149
20SU-MW0521-024	8	8/31/2020	14:20	385415.813	4581318.656
20SU-MW0521-024	9	8/31/2020	14:21	385411.437	4581311.984
20SU-MW0521-024	10	8/31/2020	14:29	385521.716	4581305.793
20SU-MW0521-024	11	8/31/2020	14:35	385644.002	4581292.842
20SU-MW0521-024	12	8/31/2020	14:40	385772.158	4581279.227
20SU-MW0521-024	13	8/31/2020	14:47	385880.303	4581258.673
20SU-MW0521-025	1	8/31/2020	16:31	384266.343	4580449.325
20SU-MW0521-025	2	8/31/2020	16:33	384271.103	4580452.708
20SU-MW0521-025	3	8/31/2020	16:36	384276.646	4580455.4
20SU-MW0521-025	4	8/31/2020	16:38	384281.453	4580459.264
20SU-MW0521-025	5	8/31/2020	16:40	384285.603	4580462.682
20SU-MW0521-026	1	8/31/2020	17:27	383736.686	4579016.618
20SU-MW0521-026	2	8/31/2020	17:30	383739.813	4579021.661
20SU-MW0521-026	3	8/31/2020	17:34	383735.106	4579025.188
20SU-MW0521-026	4	8/31/2020	17:37	383729.626	4579027.316
20SU-MW0521-026	5	8/31/2020	17:39	383726.026	4579022.69

	Replicate	Image Collection	Image Collection		
Station Number	Number	Date	Time (UTC)	Easting (m)	Northing (m)
20SU-MW0521-027	1	8/31/2020	18:12	384098.716	4577669.456
20SU-MW0521-027	2	8/31/2020	18:15	384098.161	4577663.57
20SU-MW0521-027	3	8/31/2020	18:18	384100.098	4577657.687
20SU-MW0521-027	4	8/31/2020	18:19	384097.08	4577651.863
20SU-MW0521-027	5	8/31/2020	18:22	384091.029	4577652.563
20SU-MW0521-028	1	8/31/2020	18:52	384865.761	4576566.9
20SU-MW0521-028	2	8/31/2020	18:54	384867.44	4576572.745
20SU-MW0521-028	3	8/31/2020	18:57	384868.611	4576578.548
20SU-MW0521-028	4	8/31/2020	18:59	384869.067	4576584.428
20SU-MW0521-028	5	8/31/2020	19:01	384870.411	4576591.157
20SU-MW0521-029	1	8/31/2020	20:06	385319.888	4575049.067
20SU-MW0521-029	2	8/31/2020	20:10	385325.362	4575052.589
20SU-MW0521-029	3	8/31/2020	20:11	385332.604	4575056.559
20SU-MW0521-029	4	8/31/2020	20:12	385343.083	4575060.009
20SU-MW0521-029	5	8/31/2020	20:14	385342.626	4575067.223
20SU-MW0521-029	6	8/31/2020	20:49	385328.874	4575082.32
20SU-MW0521-029	7	8/31/2020	20:50	385327.314	4575076.321
20SU-MW0521-029	8	8/31/2020	20:52	385327.648	4575069.255
20SU-MW0521-029	9	8/31/2020	20:55	385326.675	4575062.645
20SU-MW0521-029	10	8/31/2020	21:00	385322.446	4575056.575
20SU-MW0521-031	1	9/1/2020	10:55	387812.942	4573587.262
20SU-MW0521-031	2	9/1/2020	10:57	387814.062	4573582.02
20SU-MW0521-031	3	9/1/2020	10:59	387818.184	4573576.725
20SU-MW0521-031	4	9/1/2020	11:01	387819.856	4573570.082
20SU-MW0521-031	5	9/1/2020	11:04	387820.651	4573564.551
20SU-MW0521-033	1	8/29/2020	21:45	388500.563	4570949.236
20SU-MW0521-033	2	8/29/2020	21:47	388498.872	4570943.726
20SU-MW0521-033	3	8/29/2020	21:53	388497.906	4570937.859
20SU-MW0521-033	4	8/29/2020	21:56	388495.606	4570932.31
20SU-MW0521-033	5	8/29/2020	21:59	388494.284	4570927.925
20SU-MW0521-035	1	8/29/2020	19:33	388975.324	4568123.284
20SU-MW0521-035	2	8/29/2020	19:34	388968.985	4568118.56
20SU-MW0521-035	3	8/29/2020	19:36	388960.603	4568121.744
20SU-MW0521-035	4	8/29/2020	19:37	388960.317	4568126.338
20SU-MW0521-035	5	8/29/2020	19:38	388966.439	4568134.89
20SU-MW0521-035	6	8/29/2020	20:14	388980.95	4568115.696
20SU-MW0521-035	7	8/29/2020	20:16	388982.845	4568121.308
20SU-MW0521-035	8	8/29/2020	20:19	388984.872	4568126.989
20SU-MW0521-035	9	8/29/2020	20:21	388987.066	4568133.416
20SU-MW0521-035	10	8/29/2020	20:23	388987.814	4568139.265
20SU-MW0521-037	1	8/29/2020	14:23	389550.002	4565341.237
20SU-MW0521-037	2	8/29/2020	14:24	389555.438	4565346.072
20SU-MW0521-037	3	8/29/2020	14:26	389559.356	4565351.19
20SU-MW0521-037	4	8/29/2020	14:27	389556.683	4565358.811
20SU-MW0521-037	5	8/29/2020	14:28	389558.756	4565366.72

	Replicate	Image Collection	Image Collection		
Station Number	Number	Date	Time (UTC)	Easting (m)	Northing (m)
20SU-MW0521-039	1	8/29/2020	13:05	390170.49	4562575.489
20SU-MW0521-039	2	8/29/2020	13:06	390167.988	4562571.035
20SU-MW0521-039	3	8/29/2020	13:07	390162.322	4562566.714
20SU-MW0521-039	4	8/29/2020	13:08	390160.04	4562574.238
20SU-MW0521-039	5	8/29/2020	13:09	390153.403	4562578.826
20SU-MW0521-041	1	8/28/2020	6:04	390494.862	4559760.173
20SU-MW0521-041	2	8/28/2020	6:08	390489.023	4559763.287
20SU-MW0521-041	3	8/28/2020	6:11	390485.01	4559759.549
20SU-MW0521-041	4	8/28/2020	6:15	390479.112	4559759.452
20SU-MW0521-041	5	8/28/2020	6:19	390473.104	4559757.634
20SU-MW0521-043	1	8/28/2020	14:18	390511.69	4556908.988
20SU-MW0521-043	2	8/28/2020	14:21	390505.475	4556907.861
20SU-MW0521-043	3	8/28/2020	14:22	390503.958	4556900.932
20SU-MW0521-043	4	8/28/2020	14:25	390499.722	4556910.169
20SU-MW0521-043	5	8/28/2020	14:27	390493.823	4556914.715
20SU-MW0521-045	1	8/28/2020	16:08	390530.27	4554092.323
20SU-MW0521-045	2	8/28/2020	16:09	390535.838	4554098.895
20SU-MW0521-045	3	8/28/2020	16:10	390541.34	4554105.734
20SU-MW0521-045	4	8/28/2020	16:12	390549.664	4554103.927
20SU-MW0521-045	5	8/28/2020	16:13	390556.637	4554090.995
20SU-MW0521-047	1	8/28/2020	17:22	390566.184	4551255.688
20SU-MW0521-047	2	8/28/2020	17:23	390566.532	4551248.697
20SU-MW0521-047	3	8/28/2020	17:24	390561.102	4551240.899
20SU-MW0521-047	4	8/28/2020	17:25	390566.854	4551239.714
20SU-MW0521-047	5	8/28/2020	17:27	390571.653	4551234.546
20SU-MW0521-049	1	8/28/2020	18:09	390655.836	4548423.125
20SU-MW0521-049	2	8/28/2020	18:11	390656.718	4548432.037
20SU-MW0521-049	3	8/28/2020	18:12	390650.724	4548426.426
20SU-MW0521-049	4	8/28/2020	18:14	390654.808	4548415.903
20SU-MW0521-049	5	8/28/2020	18:16	390659.77	4548410.68
20SU-MW0521-051	1	8/28/2020	19:32	390762.258	4545576.297
20SU-MW0521-051	2	8/28/2020	19:33	390753.643	4545580.04
20SU-MW0521-051	3	8/28/2020	19:34	390748.425	4545586.852
20SU-MW0521-051	4	8/28/2020	19:37	390751.292	4545573.51
20SU-MW0521-051	5	8/28/2020	19:38	390756.76	4545564.637
20SU-MW0521-053	1	8/28/2020	20:20	390839.127	4542702.804
20SU-MW0521-053	2	8/28/2020	20:22	390839.286	4542697.164
20SU-MW0521-053	3	8/28/2020	20:24	390838.477	4542716.341
20SU-MW0521-053	4	8/28/2020	20:26	390830.642	4542720.121
20SU-MW0521-053	5	8/28/2020	20:29	390830.837	4542711.676
20SU-MW0521-054	1	8/28/2020	21:14	390903.983	4541282.034
20SU-MW0521-054	2	8/28/2020	21:16	390895.898	4541283.567
20SU-MW0521-054	3	8/28/2020	21:18	390890.717	4541292.186
20SU-MW0521-054	4	8/28/2020	21:19	390898.466	4541295.968
20SU-MW0521-054	5	8/28/2020	21:20	390903.133	4541302.738

	Replicate	Image Collection	Image Collection		
Station Number	Number	Date	Time (UTC)	Easting (m)	Northing (m)
20SU-MW0521-055	1	8/28/2020	23:02	390928.254	4539865.427
20SU-MW0521-055	2	8/28/2020	23:05	390935.661	4539868.675
20SU-MW0521-055	3	8/28/2020	23:07	390941.865	4539873.51
20SU-MW0521-055	4	8/28/2020	23:09	390947.527	4539877.96
20SU-MW0521-055	5	8/28/2020	23:11	390951.716	4539885.862
20SU-MW0521-057	1	8/28/2020	23:48	390993.562	4537049.228
20SU-MW0521-057	2	8/28/2020	23:50	390999.587	4537052.959
20SU-MW0521-057	3	8/28/2020	23:52	391005.372	4537056.919
20SU-MW0521-057	4	8/28/2020	23:54	391009.49	4537061.341
20SU-MW0521-057	5	8/28/2020	23:56	391014.778	4537066.439
20SU-MW0521-059	1	8/29/2020	1:02	391089.882	4534221.512
20SU-MW0521-059	2	8/29/2020	1:04	391096.455	4534221.512
20SU-MW0521-059	3	8/29/2020	1:06	391100.911	4534221.198
20SU-MW0521-059	4	8/29/2020	1:09	391107.886	4534226.683
20SU-MW0521-059	5	8/29/2020	1:11	391113.508	4534231.858
20SU-MW0521-061	1	8/29/2020	1:55	393817.568	4530921.379
20SU-MW0521-061	2	8/29/2020	1:57	393811.544	4530921.952
20SU-MW0521-061	3	8/29/2020	1:59	393806.13	4530919.792
20SU-MW0521-061	4	8/29/2020	2:01	393801.199	4530918.916
20SU-MW0521-061	5	8/29/2020	2:03	393795.755	4530918.067
20SU-MW0521-064	1	8/24/2020	20:48	393821.577	4523498.67
20SU-MW0521-064	2	8/24/2020	20:50	393828.029	4523502.394
20SU-MW0521-064	3	8/24/2020	20:51	393831.182	4523509.321
20SU-MW0521-064	4	8/24/2020	20:52	393825.775	4523512.437
20SU-MW0521-064	5	8/24/2020	20:54	393818.591	4523515.487
20SU-MW0521-067	1	8/24/2020	23:37	393801.972	4517974.657
20SU-MW0521-067	2	8/24/2020	23:39	393798.806	4517969.154
20SU-MW0521-067	3	8/24/2020	23:41	393797.561	4517962.969
20SU-MW0521-067	4	8/24/2020	23:43	393795.989	4517957.633
20SU-MW0521-067	5	8/24/2020	23:45	393795.675	4517951.896
20SU-MW0521-070	1	8/24/2020	19:55	391965.157	4525366.852
20SU-MW0521-070	2	8/24/2020	19:57	391958.515	4525368.771
20SU-MW0521-070	3	8/24/2020	19:58	391951.715	4525370.954
20SU-MW0521-070	4	8/24/2020	20:00	391944.79	4525374.915
20SU-MW0521-070	5	8/24/2020	20:02	391940.866	4525381.519
20SU-MW0521-071	1	8/24/2020	18:28	390104.672	4527236.708
20SU-MW0521-071	2	8/24/2020	18:29	390098.122	4527234.806
20SU-MW0521-071	3	8/24/2020	18:31	390093.331	4527230.263
20SU-MW0521-071	4	8/24/2020	18:33	390094.966	4527219.544
20SU-MW0521-071	5	8/24/2020	18:34	390108.208	4527220.7
20SU-MW0521-071	6	8/24/2020	19:00	390109.762	4527248.818
20SU-MW0521-071	7	8/24/2020	19:01	390114.997	4527243.261
20SU-MW0521-071	8	8/24/2020	19:03	390118.424	4527237.526
20SU-MW0521-071	9	8/24/2020	19:05	390119.199	4527232.731
20SU-MW0521-071	10	8/24/2020	19:09	390106.34	4527242.957

	Poplicate	Image Collection	Image Collection		
Station Number	Replicate Number	Image Collection Date	Time (UTC)	Easting (m)	Northing (m)
20SU-MW0521-073	1	8/24/2020	16:32	384537.72	4523512.111
20SU-MW0521-073	2	8/24/2020	16:33	384547.057	4523515.379
20SU-MW0521-073	3	8/24/2020	16:34	384555.611	4523517.675
20SU-MW0521-073	4	8/24/2020	16:35	384564.986	4523526.863
20SU-MW0521-073	5	8/24/2020	16:37	384560.463	4523531.586
20SU-MW0521-074	1	8/24/2020	15:35	386391.811	4523536.618
20SU-MW0521-074	2	8/24/2020	15:38	386395.639	4523531.371
20SU-MW0521-074	3	8/24/2020	15:40	386400.991	4523526.531
20SU-MW0521-074	4	8/24/2020	15:42	386400.265	4523519.041
20SU-MW0521-074	5	8/24/2020	15:43	386398.301	4523511.443
20SU-MW0521-077	1	8/24/2020	13:34	386423.222	4519810.507
20SU-MW0521-077	2	8/24/2020	13:36	386423.404	4519817.704
20SU-MW0521-077	3	8/24/2020	13:38	386417.524	4519821.781
20SU-MW0521-077	4	8/24/2020	13:40	386411.341	4519822.668
20SU-MW0521-077	5	8/24/2020	13:42	386406.383	4519823.542
20SU-MW0521-078	1	8/24/2020	12:05	386392.664	4517972.977
20SU-MW0521-078	2	8/24/2020	12:06	386391.85	4517962.825
20SU-MW0521-078	3	8/24/2020	12:07	386390.601	4517949.28
20SU-MW0521-078	4	8/24/2020	12:10	386389.469	4517943.657
20SU-MW0521-078	5	8/24/2020	12:13	386381.015	4517946.217
20SU-MW0521-080	1	8/24/2020	8:00	388230.481	4514237.815
20SU-MW0521-080	2	8/24/2020	8:02	388234.623	4514241.095
20SU-MW0521-080	3	8/24/2020	8:04	388237.222	4514244.983
20SU-MW0521-080	4	8/24/2020	8:06	388240.725	4514249.196
20SU-MW0521-080	5	8/24/2020	8:09	388244.262	4514253.312
20SU-MW0521-082	1	8/24/2020	8:45	390081.074	4512413.977
20SU-MW0521-082	2	8/24/2020	8:48	390084.962	4512410.426
20SU-MW0521-082	3	8/24/2020	8:50	390088.41	4512406.717
20SU-MW0521-082	4	8/24/2020	8:52	390092.695	4512402.662
20SU-MW0521-082	5	8/24/2020	8:53	390095.521	4512398.952
20SU-MW0521-083	1	8/24/2020	1:09	384557.591	4512408.376
20SU-MW0521-083	2	8/24/2020	1:12	384552.248	4512407.679
20SU-MW0521-083	3	8/24/2020	1:13	384546.54	4512407.448
20SU-MW0521-083	4	8/24/2020	1:15	384540.894	4512407.525
20SU-MW0521-083	5	8/24/2020	1:17	384534.93	4512409.015
20SU-MW0521-084	2	8/24/2020	7:12	384523.967	4514265.555
20SU-MW0521-084	3	8/24/2020	7:14	384529.849	4514264.93
20SU-MW0521-084	4	8/24/2020	7:16	384535.093	4514264.56
20SU-MW0521-084	5	8/24/2020	7:18	384541.047	4514263.452
20SU-MW0521-084	6	8/24/2020	7:20	384547.612	4514262.703
20SU-MW0521-086	1	8/22/2020	22:32	380840.506	4516117.414
20SU-MW0521-086	2	8/22/2020	22:35	380845.194	4516117.908
20SU-MW0521-086	3	8/22/2020	22:38	380850.754	4516118.539
20SU-MW0521-086	4	8/22/2020	22:42	380855.94	4516119.424
20SU-MW0521-086	5	8/22/2020	22:45	380860.967	4516120.2

	Replicate	Image Collection	Image Collection		
Station Number	Number	Date	Time (UTC)	Easting (m)	Northing (m)
20SU-MW0521-088	2	8/22/2020	18:49	380853.842	4519813.102
20SU-MW0521-088	3	8/22/2020	18:51	380858.947	4519815.487
20SU-MW0521-088	4	8/22/2020	18:54	380855.093	4519821.847
20SU-MW0521-088	5	8/22/2020	18:59	380861.981	4519826.074
20SU-MW0521-088	6	8/22/2020	19:03	380839.601	4519805.735
20SU-MW0521-090	1	8/23/2020	0:02	377162.886	4514260.139
20SU-MW0521-090	2	8/23/2020	0:04	377156.988	4514259.415
20SU-MW0521-090	3	8/23/2020	0:06	377156.411	4514268.241
20SU-MW0521-090	4	8/23/2020	0:08	377156.891	4514273.562
20SU-MW0521-090	5	8/23/2020	0:10	377155.646	4514277.794
20SU-MW0521-098	1	8/23/2020	1:03	377130.752	4510546.20
20SU-MW0521-098	2	8/23/2020	1:04	377133.322	4510550.37
20SU-MW0521-098	3	8/23/2020	1:06	377136.077	4510555.25
20SU-MW0521-098	4	8/23/2020	1:08	377138.039	4510559.24
20SU-MW0521-098	5	8/23/2020	1:10	377140.674	4510564.54
20SU-MW0521-100	1	8/24/2020	3:20	384560.075	4506877.675
20SU-MW0521-100	2	8/24/2020	3:23	384551.601	4506879.302
20SU-MW0521-100	3	8/24/2020	3:25	384544.244	4506878.205
20SU-MW0521-100	4	8/24/2020	3:27	384539.685	4506874.611
20SU-MW0521-100	5	8/24/2020	3:29	384534.421	4506871.754
20SU-MW0521-102	2	8/24/2020	5:44	378977.25	4506841.522
20SU-MW0521-102	3	8/24/2020	5:46	378979.203	4506846.828
20SU-MW0521-102	4	8/24/2020	5:48	378980.314	4506852.525
20SU-MW0521-102	5	8/24/2020	5:50	378980.69	4506857.717
20SU-MW0521-102	6	8/24/2020	5:53	378981.763	4506864.037
20SU-MW0521-103	1	8/23/2020	3:01	373452.502	4508697.929
20SU-MW0521-103	2	8/23/2020	3:03	373458.391	4508697.273
20SU-MW0521-103	3	8/23/2020	3:04	373458.342	4508700.34
20SU-MW0521-103	4	8/23/2020	3:06	373458.047	4508707.54
20SU-MW0521-103	5	8/23/2020	3:08	373462.28	4508711.632
20SU-MW0521-106	1	8/23/2020	6:18	367891.105	4504989.023
20SU-MW0521-106	2	8/23/2020	6:21	367891.169	4504995.651
20SU-MW0521-106	3	8/23/2020	6:22	367891.105	4505001.459
20SU-MW0521-106	4	8/23/2020	6:24	367890.291	4505008.546
20SU-MW0521-106	5	8/23/2020	6:25	367889.231	4505015.074
20SU-MW0521-109	1	8/24/2020	4:36	377137.08	4504991.91
20SU-MW0521-109	2	8/24/2020	4:38	377136.581	4504997.714
20SU-MW0521-109	3	8/24/2020	4:40	377133.432	4505002.634
20SU-MW0521-109	4	8/24/2020	4:41	377132.817	4505008.236
20SU-MW0521-109	5	8/24/2020	4:43	377131.072	4505013.867
20SU-MW0521-114	1	8/23/2020	9:46	362333.766	4499440.397
20SU-MW0521-114	2	8/23/2020	9:47	362333.885	4499447.682
20SU-MW0521-114	3	8/23/2020	9:49	362335.508	4499452.922
20SU-MW0521-114	4	8/23/2020	9:51	362341.24	4499459.936
20SU-MW0521-114	5	8/23/2020	9:53	362335.557	4499463.145

Stations Sample			Image		
	Replicate	Image Collection	Collection		
Station Number	Number	Date	Time (UTC)	Easting (m)	Northing (m)
20SU-MW0521-116	1	8/23/2020	7:51	367894.908	4499435.764
20SU-MW0521-116	2	8/23/2020	7:52	367892.829	4499442.8
20SU-MW0521-116	3	8/23/2020	7:54	367890.711	4499448.9
20SU-MW0521-116	4	8/23/2020	7:57	367889.25	4499457.454
20SU-MW0521-116	5	8/23/2020	7:58	367883.629	4499461.205
20SU-MW0521-118	1	8/23/2020	20:33	375270.885	4499434.702
20SU-MW0521-118	2	8/23/2020	20:35	375278.106	4499436.935
20SU-MW0521-118	3	8/23/2020	20:37	375284.778	4499437.921
20SU-MW0521-118	4	8/23/2020	20:39	375294.413	4499437.8
20SU-MW0521-118	5	8/23/2020	20:41	375289.831	4499443.216
20SU-MW0521-120	1	8/23/2020	18:54	371551.308	4495742.847
20SU-MW0521-120	2	8/23/2020	18:56	371554.443	4495748.141
20SU-MW0521-120	3	8/23/2020	18:58	371561.213	4495749.858
20SU-MW0521-120	4	8/23/2020	18:59	371571.122	4495750.314
20SU-MW0521-120	5	8/23/2020	19:01	371581.785	4495747.61
20SU-MW0521-121	1	8/23/2020	23:32	380858.701	4508704.889
20SU-MW0521-121	2	8/23/2020	23:34	380853.642	4508701.086
20SU-MW0521-121	3	8/23/2020	23:36	380848.779	4508697.383
20SU-MW0521-121	4	8/23/2020	23:38	380844.849	4508694.168
20SU-MW0521-121	5	8/23/2020	23:40	380841.671	4508690.163
20SU-MW0521-122	1	8/24/2020	0:22	382707.345	4510552.201
20SU-MW0521-122	2	8/24/2020	0:24	382702.989	4510550.256
20SU-MW0521-122	3	8/24/2020	0:26	382698.182	4510547.61
20SU-MW0521-122	4	8/24/2020	0:28	382693.377	4510544.666
20SU-MW0521-122	5	8/24/2020	0:30	382690.196	4510539.026
20SU-MW0521-123	1	8/24/2020	10:52	388234.273	4517954.308
20SU-MW0521-123	2	8/24/2020	10:54	388240.581	4517952.505
20SU-MW0521-123	3	8/24/2020	10:55	388247.35	4517953.143
20SU-MW0521-123	4	8/24/2020	10:57	388253.909	4517955.14
20SU-MW0521-123	5	8/24/2020	10:58	388255.402	4517963.575
20SU-MW0521-124	1	8/29/2020	15:05	389021.943	4565544.321
20SU-MW0521-124	2	8/29/2020	15:25	389136.689	4565569.634
20SU-MW0521-124	3	8/29/2020	15:37	389291.322	4565598.231
20SU-MW0521-124	4	8/29/2020	15:52	389377.319	4565618.555
20SU-MW0521-124	5	8/29/2020	16:06	389507.37	4565632.082
20SU-MW0521-124	6	8/29/2020	16:08	389511.114	4565626.305
20SU-MW0521-124	7	8/29/2020	16:10	389514.395	4565619.063
20SU-MW0521-124	8	8/29/2020	16:12	389520.378	4565622.284
20SU-MW0521-124	9	8/29/2020	16:14	389519.763	4565629.346
20SU-MW0521-124	10	8/29/2020	16:29	389622.327	4565665.666
20SU-MW0521-124	11	8/29/2020	16:41	389755.278	4565684.724
20SU-MW0521-124	12	8/29/2020	16:55	389871.43	4565716.015
20SU-MW0521-124	13	8/29/2020	17:09	389994.143	4565732.546

	Poplicate	Image Collection	Image Collection		
Station Number	Replicate Number	Image Collection Date	Time (UTC)	Easting (m)	Northing (m)
20SU-MW0521-125	1	8/24/2020	1:55	386399.574	4510559.671
20SU-MW0521-125	2	8/24/2020	1:57	386394.648	4510556.248
20SU-MW0521-125	3	8/24/2020	1:59	386387.804	4510554.352
20SU-MW0521-125	4	8/24/2020	2:01	386381.219	4510551.645
20SU-MW0521-125	5	8/24/2020	2:02	386376.432	4510549.345
20SU-MW0521-126	1	8/23/2020	4:47	369719.857	4503139.193
20SU-MW0521-126	2	8/23/2020	4:49	369722.487	4503131.617
20SU-MW0521-126	3	8/23/2020	4:50	369729.179	4503134.548
20SU-MW0521-126	4	8/23/2020	4:52	369731.611	4503141.019
20SU-MW0521-126	5	8/23/2020	4:54	369734.221	4503148.385
20SU-MW0521-127	1	8/23/2020	21:47	373415.638	4501289.099
20SU-MW0521-127	2	8/23/2020	21:48	373422.75	4501287.143
20SU-MW0521-127	3	8/23/2020	21:50	373427.996	4501282.975
20SU-MW0521-127	4	8/23/2020	21:51	373432.599	4501278.13
20SU-MW0521-127	5	8/23/2020	21:53	373441.605	4501280.69
20SU-MW0521-C01	1	8/28/2020	11:26	383739.026	4562651.838
20SU-MW0521-C01	2	8/28/2020	11:28	383733.103	4562654.91
20SU-MW0521-C01	3	8/28/2020	11:31	383731.147	4562649.721
20SU-MW0521-C01	4	8/28/2020	11:32	383725.718	4562645.701
20SU-MW0521-C01	5	8/28/2020	11:34	383722.932	4562652.085
20SU-MW0521-C02	1	8/28/2020	13:24	386544.226	4562693.29
20SU-MW0521-C02	2	8/28/2020	13:26	386537.566	4562698.678
20SU-MW0521-C02	3	8/28/2020	13:27	386533.629	4562691.474
20SU-MW0521-C02	4	8/28/2020	13:29	386529.418	4562685.246
20SU-MW0521-C02	5	8/28/2020	13:30	386534.585	4562675.775
20SU-MW0521-C03	1	8/28/2020	10:49	385154.127	4561347.976
20SU-MW0521-C03	2	8/28/2020	10:51	385147.771	4561338.695
20SU-MW0521-C03	3	8/28/2020	10:53	385143.348	4561346.32
20SU-MW0521-C03	4	8/28/2020	10:55	385140.564	4561351.998
20SU-MW0521-C03	5	8/28/2020	10:57	385140.474	4561359.632
20SU-MW0521-C04	1	8/28/2020	9:17	383729.815	4560169.918
20SU-MW0521-C04	2	8/28/2020	9:21	383725.129	4560166.272
20SU-MW0521-C04	3	8/28/2020	9:24	383718.896	4560164.304
20SU-MW0521-C04	4	8/28/2020	9:29	383713.532	4560162.163
20SU-MW0521-C04	5	8/28/2020	9:32	383707.401	4560162.831
20SU-MW0521-C05	1	8/28/2020	8:08	386507.145	4560081.642
20SU-MW0521-C05	2	8/28/2020	8:12	386503.38	4560085.613
20SU-MW0521-C05	3	8/28/2020	8:16	386502.035	4560090.61
20SU-MW0521-C05	4	8/28/2020	8:21	386498.372	4560093.921
20SU-MW0521-C05	5	8/28/2020	8:25	386495.792	4560099.363
20SU-MW0521-C06	1	8/23/2020	15:55	352545.554	4499414.451
20SU-MW0521-C06	2	8/23/2020	15:56	352541.873	4499406.388
20SU-MW0521-C06	3	8/23/2020	15:58	352549.212	4499393.447
20SU-MW0521-C06	4	8/23/2020	16:00	352550.971	4499406.102
20SU-MW0521-C06	5	8/23/2020	16:03	352548.418	4499421.556

Stations Sample			Image		
	Replicate	Image Collection	Collection		
Station Number	Number	Date	Time (UTC)	Easting (m)	Northing (m)
20SU-MW0521-C07	1	8/23/2020	16:49	355322.105	4499297.265
20SU-MW0521-C07	2	8/23/2020	16:51	355330.555	4499302.719
20SU-MW0521-C07	3	8/23/2020	16:53	355339.763	4499302.583
20SU-MW0521-C07	4	8/23/2020	16:56	355345.369	4499307.751
20SU-MW0521-C07	5	8/23/2020	16:57	355349.549	4499311.295
20SU-MW0521-C08	1	8/23/2020	15:14	353944.554	4498156.784
20SU-MW0521-C08	2	8/23/2020	15:15	353949.488	4498150.589
20SU-MW0521-C08	3	8/23/2020	15:18	353957.968	4498145.012
20SU-MW0521-C08	4	8/23/2020	15:20	353954.311	4498140.438
20SU-MW0521-C08	5	8/23/2020	15:22	353948.407	4498137.201
20SU-MW0521-C09	2	8/23/2020	11:57	352523.832	4496848.707
20SU-MW0521-C09	3	8/23/2020	11:59	352512.175	4496850.724
20SU-MW0521-C09	4	8/23/2020	12:04	352503.899	4496847.224
20SU-MW0521-C09	5	8/23/2020	12:05	352507.352	4496852.889
20SU-MW0521-C09	6	8/23/2020	12:08	352503.216	4496841.83
20SU-MW0521-C09	7	8/23/2020	13:35	352520.654	4496836.379
20SU-MW0521-C09	8	8/23/2020	13:37	352512.215	4496839.021
20SU-MW0521-C09	9	8/23/2020	13:40	352521.706	4496828.924
20SU-MW0521-C09	10	8/23/2020	13:43	352516.047	4496829.942
20SU-MW0521-C09	11	8/23/2020	13:44	352509.218	4496834.602
20SU-MW0521-C10	1	8/23/2020	14:29	355302.434	4496803.909
20SU-MW0521-C10	2	8/23/2020	14:31	355301.952	4496797.319
20SU-MW0521-C10	3	8/23/2020	14:33	355295.449	4496793.53
20SU-MW0521-C10	4	8/23/2020	14:35	355297.115	4496786.281
20SU-MW0521-C10	5	8/23/2020	14:37	355300.322	4496779.993
20SU-MW0521-C11	1	8/29/2020	8:52	403877.814	4518533.059
20SU-MW0521-C11	2	8/29/2020	8:56	403880.924	4518528.395
20SU-MW0521-C11	3	8/29/2020	9:00	403882.783	4518522.449
20SU-MW0521-C11	4	8/29/2020	9:04	403885.589	4518517.333
20SU-MW0521-C11	5	8/29/2020	9:07	403888.032	4518511.78
20SU-MW0521-C12	1	8/29/2020	6:58	406626.168	4518490.723
20SU-MW0521-C12	2	8/29/2020	7:02	406629.885	4518486.423
20SU-MW0521-C12	3	8/29/2020	7:05	406634.74	4518482.506
20SU-MW0521-C12	4	8/29/2020	7:08	406639.395	4518477.35
20SU-MW0521-C12	5	8/29/2020	7:12	406642.676	4518472.476
20SU-MW0521-C12	6	8/29/2020	7:39	406640.417	4518487.479
20SU-MW0521-C12	7	8/29/2020	7:41	406640.533	4518483.39
20SU-MW0521-C12	8	8/29/2020	7:54	406636.337	4518495.089
20SU-MW0521-C12	9	8/29/2020	7:56	406640.129	4518489.871
20SU-MW0521-C12	10	8/29/2020	7:59	406643.207	4518485.187
20SU-MW0521-C12	11	8/29/2020	8:01	406646.585	4518480.539
20SU-MW0521-C12	12	8/29/2020	8:03	406647.901	4518476.622

			Image		_
	Replicate	Image Collection	Collection		
Station Number	Number	Date	Time (UTC)	Easting (m)	Northing (m)
20SU-MW0521-C13	3	8/29/2020	5:58	405247.21	4517182.811
20SU-MW0521-C13	4	8/29/2020	6:03	405251.266	4517178.16
20SU-MW0521-C13	5	8/29/2020	6:07	405256.617	4517175.302
20SU-MW0521-C13	6	8/29/2020	6:11	405261.854	4517173.656
20SU-MW0521-C13	7	8/29/2020	6:14	405266.778	4517169.509
20SU-MW0521-C14	1	8/29/2020	4:21	403855.956	4515986.016
20SU-MW0521-C14	2	8/29/2020	4:24	403849.108	4515983.9
20SU-MW0521-C14	3	8/29/2020	4:25	403842.482	4515986.993
20SU-MW0521-C14	4	8/29/2020	4:27	403836.011	4515988.56
20SU-MW0521-C14	5	8/29/2020	4:29	403828.041	4515983.97
20SU-MW0521-C15	1	8/27/2020	23:06	406675.145	4515947.367
20SU-MW0521-C15	2	8/27/2020	23:08	406670.107	4515948.802
20SU-MW0521-C15	3	8/27/2020	23:11	406666.323	4515943.812
20SU-MW0521-C15	4	8/27/2020	23:15	406663.858	4515939.781
20SU-MW0521-C15	5	8/27/2020	23:18	406658.654	4515937.245
20SU-MW0521-CP2	1	8/31/2020	15:42	385819.167	4580095.73
20SU-MW0521-CP2	2	8/31/2020	15:43	385824.977	4580097.732
20SU-MW0521-CP2	3	8/31/2020	15:45	385830.369	4580100.578
20SU-MW0521-CP2	4	8/31/2020	15:46	385836.061	4580103.392
20SU-MW0521-CP2	5	8/31/2020	15:48	385842.203	4580105.336

Notes:

UTC = Coordinated Universal Time

EPSG code is 26919. Coordinate system is NAD 83 UTM Zone 19N.



Geodetic Parameters Data Sheet



Summary Sheet

Project	OCS A-0521					
Horizontal CRS	NAD83 / UTM zone 19N	NAD83 / UTM zone 19N EPSG c			26919	
Remarks	Operational work in NAI	Operational work in NAD83(2011), deliver in NAD83.				
Area of validity	United States (USA) - bo	United States (USA) - between 72°W and 66°W - onshore and offshore.				
Geodetic datum	North American Datum	North American Datum 1983				
Prime meridian	Greenwich	Greenwich				
Ellipsoid	GRS 1980	GRS 1980				
Semi-major axis	6378137 meter					
Inverse flattening	298.257222101					

Map projection	UTM zone 19N	UTM zone 19N				
Projection method	Transverse Mercator	Transverse Mercator				
Parameters	Name	lame Value Unit of measure				
	Latitude of natural origin	_atitude of natural origin 0° N				
	Longitude of natural origin	Longitude of natural origin 69° W				
	Scale factor at natural origin	0.9996	unity			
	False easting	500,000	meter			
	False northing	0	meter			

Vertical CRS	MLLW depth	EPSG code	5866
Vertical datum	Mean Lower Low Water		
Vertical transformation	Use GEOID18, "NAD83(2011) to NAVD88 (3)" [EPSG::9220 to NAVD88, followed by applying the VDATUM model (NOA	4	•

Coordinate axes	Name and order	Positive direction	Unit of measure
Horizontal axis 1	Easting (E)	east	meter
Horizontal axis 2	Northing (N)	north	meter
Vertical axis	Depth (D)	down	meter

Transformation name	NAD83 to NAD83(2011) (1)			EPSG code	
Transformation method	Geocentric translation2 (geog2D domain) -See also transformation "ITRF2014 to NAD83(2011) (1)" on page 2.				
Parameters	Name Value Unit of mea				measure
	X-axis translation		0	meter	
	Y-axis translation	0 meter			
	Z-axis translation		0	meter	

Sample point	NAD83 / UTM zone 19N	NAD83(2011)@2010.0
Latitude	41° 00' 04.695" N	41° 00' 04.695" N
Longitude	70° 30′ 36.305″ W	70° 30′ 36.305" W
Easting (m)	373,000.00	
Northing (m)	4,540,000.00	Template Nr: GD.TP.40.31.07

Doc number	Approved by	Date	Signature
18/Am/005-S	Bert Kampes Updated for ITRF2014	2018-06-25 2020-04-27	>B Campes

Coordinate transformation from ITRF2014 to NAD83(2011) to NAD83

Transformation	ITRF2014 to NAD83(2011) (1)		EPSG code	8970		
Note	For applications requiring better than 1-2m accuracy NAD83 cannot be considered identical to ITRS (or WGS 84) realizations¹. Their slightly different origin, orientation and scale needs to be accounted for, as well as for accumulated tectonic plate motion since epoch 2010.0 (the NAD83(2011) frame reference epoch). This is achieved by applying this time-dependent coordinate transformation. Plate deformation is ignored. Application of this coordinate transformation is mandatory for final rig positioning, shallow and deepwater engineering and construction projects, and preferred in all other cases. If the positioning system does not support this method, consult with Shell Geomatics Operations to discuss alternative solutions. For example, the IOGP defined null-transformation "NAD83 to WGS 84 (1)", EPSG code 1188 can be used for navigation. This 15 parameter time-dependent coordinate transformation may be reduced by the contractor to a 7 parameter time-specific project transformation, by using the correction signal reference epoch, or the approximate middle of the observation period or project start date as the time reference for the coordinates determined during the survey, as appropriate.					
	Use null-transformation "NAD83 to NAD NAD83 coordinates (NAD83(1986)).	083(2011) (1)" [EPSG::8971	1] to output delive	rable		
	A clear audit trail shall be maintained a	nd provided showing which	transformations a	are applied.		
	Shell Geomatics Operations shall sign of provided test point with a default tolerar		on and setup by u	sing the		
Method	Time-dependent Coordinate Frame rota	ation (geocentric domain)				
Parameters	Name	Value	Unit of measur	е		
	X-axis translation	1.0053	meter			
	Y-axis translation	-1.9092	meter			
	Z-axis translation	-0.5416	meter			
	X-axis rotation	26.7814	milliarc-second	t		
	Y-axis rotation	-0.4203	milliarc-second	t		
	Z-axis rotation	10.9321	milliarc-second	t		
	Scale difference	0.37	parts per billion	n (1e-9)		
	Rate of change of X-axis translation	0.0008	meters per yea	ar		
	Rate of change of Y-axis translation	-0.0006	meters per yea	ar		
	Rate of change of Z-axis translation	-0.0014	meters per yea	ar		
	Rate of change of X-axis rotation	0.0667	milliarc-sec pe	r year		
	Rate of change of Y-axis rotation	-0.7574	milliarc-sec pe	r year		
	Rate of change of Z-axis rotation	-0.0513	milliarc-sec pe	r year		
	Rate of change of scale difference	-0.07	parts per billio	n (1e-9)/year		
	Time reference	2010	year			

Sample point	NAD83 / UTM zone 19N NAD83(2011) / UTM zone 19N Epoch 2010.00	ITRF2014 Epoch 2019.42	Epoch 2021.5	Epoch 2023.5
Latitude	41° 37' 16.910" N	41° 37' 16.946" N	41° 37' 16.946" N	41° 37' 16.946" N
Longitude	70° 54' 53.018" W	70° 54' 53.035" W	70° 54' 53.037" W	70° 54' 53.038" W
Easting (m)	340,486.73			
Northing (m)	4,609,508.76			

¹ See IOGP Guidance Note 373-25 "Static and dynamic CRSs", and Guidance Note 373-26 "Coordinate Transformations in the US GoM OCS" for additional information, freely available via https://www.iogp.org/bookstore.

Appendix A2 Field Notebook

Mayflower Dummer 2020 Som Blakesley + Fink Spada Berto Miller PV F18 1/15 500 57I F11 1/250 640 32" weight line = 36" total 5 weights 18" Stop height MOB \$-19,20,21 Depart 8/22 0730 head to Station#90 Start @ station 88 @2:50 PM Jun Starts @ Station 90 Station CO9 add 2" to trigger @ 11:57 on 8/23 00

Rite in the Rain.

at site 118 back to trigger 36". @ 20:30 on 8/23 changed battery @ CO9 ofter u 24 hrs operation. probably due to of the extra shots in the beginning 3-24 @ 21:30 generator dies. Deput for New Bedford Port 8-25 @ 0700 Arrive, New Bedford Swap out generator, Rembe the boat, Papernork tweak come settings Lable & backup images Jetup IMU 8-27 @ 0800 get go aherd to get back to Work. Depart 10 AM from 36. Arrive @ C15 @ 18130

trigger length 36" for CIS change To 14 40" for CI4

8-28 @ 02:30 - Diant do C14 due to wind + lightning - moved north to 041 instead swell caused a few misfires of SPI+PV 40" trigger is OK - hard to tell if more focused

8-28 @ 03:30 - Moved trigger to 38.5"-hoping for sweet spot between slightly blurry images of 36" and 40" - on the way to COS

@4:40 - 38.5" looks good - swell causing mistires

8-28 7:57 SPI color card photo Vesify 26cm Laser spacing Swell causeing many extra Shots due to slow which.

13:00 Shorten trigger back to 36",

8-29 - Swell causing extra shots + misfires @ 059

decent photos - dropped stops to 15" from 17"

due to near over-penetration at site 057

Rite in the Rain

8-29@ 0200 site 061 - lower penetration

8.30 - site 019 @ 0100 (vic)-switched computers

8-31 - 0630 UTC @ site 007 - extremely rocky, hardly any penetration on SPI, and kicked up sedment and kelp. PV photos are good.

@ 0014-0025 - Only 3 PV shots taked - lubed trigger and it is working better

0800 - Station 023 only 3 PV Shots. Something is up with the trigger. I cut away a chunck of the fenency since it was leaning on the cable, and Relubed the hinge.

losers @ 26cm

1613 - Station CP2 PV trigger again. try adding extra veight to trigger ball.

1657 Station 025. Extra weight seems to have helped-Tizger ball now 5165. Strong current 5 PV photos 1.1-20 the last several station In the Shoals were taken in 2.5 to 3 kts currents. Good photos. I few stop in seed shots due to ball drifting off. But all good.

Rete in the Rain.

Appendix A3
SPI–PV Collection Forms



Project Name:	Mayflo	wer Summer	2020	Project No.:	C3096-0301	
Date: 8-22	-∂0 Boat:	Berto Miller	_ Crew: _	Spada/Blakesley		

Station ID	Replicate (A,B,C)	Time (hh:mm)	Depth (ft.)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
088	Α	Nonak			15	4	59000 5PI
VISO	B	1849		1			20 PV shots
	C	1851					due to slow which
	D	1854					SPI 3030-3036
	F	1859	1				PU 2275-2302
	F	1903					
086	A	2232	51 m		15	4	5 good SPI
0100	B	2235					15 PV Shots, 4 good
	C	2238					SP1 3037-3042
	D	2242					PV 2303-2317
	E	2245					
90	A	0002	54m		15	4	5 good SPI
	B	0005					7 PV Shots, 4 good
* 300	C	0006					SP1 3043-3048
	D	8000			4		PV 2318-2324
	E	0010					
98	A	No mark	55m		15	4	5 good SPI, lower penetration
	8	0103					10 PV Shits, 5 good
	c	0104					571 3049 - 3054
	D	0106					PV 2325-2374
	E	0103					
	F	0110					



Project Name: _	Mayflo	wer Summer	2020	Project No.:	C3096-0301	
Date: 8-23-2	020 Boat:	Berto Miller	Crew:	Spada/Blakesley		

Station ID	Replicate (A,B,C)	Time (hh:mm)	Depth (ft.)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
103	A	0301	56 m		15	5	5 good SPI 8 PV shots, 3 good
	В	0303					8 PV shots, 3 good
	C	0304					SPI 3055-3059
	D	0306					PV 2335-2342
	E	0308					11000
126	A	0447			14	5	126 was previously III, moved 1.8 km due to fishing busys 5 good SPI
	В	0449					5 good SPI
	c	0451					8 PV, 4 are good
	D	0452					
	E	0454					
106	A	0618	57 m		14	5	5 good SPI (3067+3066) 5 good PV Smudclast?
	B	0621					5 good PV Smudclast?
	С	0623					SPI
	D	0624					PV
	E	0625					
116	A	0751	61m		14	5	5 good SPI 4 good PV
	B	0752					4 good PV
	C	0754					
	D	0757					
	E	0758					
			1				
79.00							
					The A		



Project Name: Mayflower Summer 2020 Project No.: C3096-0301

Date: 8-73-70 Boat: Berto Miller Crew: Spada/Blakesley

Station ID	Replicate (A,B,C)	Time (hh:mm)	Depth (ft.)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
114	A	0946	62		14	5	3 good SPI
	B	0947					3 good SPI 5 good PV
	C	0949					
	D	0751					
	6	0953					
C09	В	1157	65		14	5	Add 2" to tragger (38"
	C	1159					3 good SPI
	D	1204					3 good SPI (11 sho 13)
	E	1206					Battery died (PV)
	F	1208					change/Redo 5 good PV 5 good SPI
	G	1335					5 500d PV
	H	1337					5 good SPI
	I	1340					
	J	1343					
	K	1344					
C10	A	1429	64		14	5	good shots
	B	1431					Penetration Death
	C	1433					Good shots Penetration Depth @ all Reference-14"
	P	1.435					
	E	1437					
C08	A	1514	63		14	5	good shots
	B	1515					
	C	1518					
	D	1520					



Project Name:	Mayflo	wer Summer 2	2020	Project No.:	C3096-0301	
Date: 8-23	3 - ∂ ⊘ Boat:	Berto Miller	_ Crew: _	Spada/Blakesley		

Station ID	Replicate (A,B,C)	Time (hh:mm)	Depth (ft.)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
(03	E	1522			14	5	good shots
C06	A	1555	64			9.	
	В	1556					
	C	1558					
	D	1500					
	E	1603					
C07	A	1649	64		14	5	good Shots
	B	1651					
	C	1653					
	D	1656					
	E	1657					
120	A	18:54	62		14	5	5 god 59 I 5 god PV
	B	1856					5 500d PV
	C	1858					
	D	1859					
	E	1901					
118	A	2033			14	5	Back to 36" trigger (total length)
	B	2035					(total length)
	C	2037					14" penetration
)	2039					Sgood SPIAPV
	E	2041					
127	A	2147			14	5	5 good SPZ&PV
	B	7148					
	(2150					



Project Name: Mayflower Summer 2020				Project No.:	C3096-0301	
Date: 8-23-	8-23-20 Boat: Berto Miller Crew			Spada/Blakesley		

Station ID	Replicate (A,B,C)	Time (hh:mm)	Depth (ft.)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
127	D	2151					
	E	2153					
121	A	2332			14	5	5 good SPI
	B	2334					5 good SPI 5 good PV (+2 extra
	C	2336					cloudy images)
	D	2338					
	E	2340					
122	A	0022			14	5	5 good SPI
	В	0024					5 good SPI 5 good PV
	C	0026					
	0	0028					
	E	0030					
83	Α	0109			14	5	5 good SPI
	B	0112					5 good SPI 5 good PV
	C	0113					
	D	0115					
	E	0117					
125	A	0155			14	5	3 good SPI, +2 good ones
	B	0157					with low penetration
	C	0159					5 good PV
	D	0201					
	E	0202					
	127	Station ID (A,B,C) 127	Station ID (A,B,C) (hh:mm) 127 D 2151 E 2153 121 A 2332 B 2334 C 2336 D 2338 E 2340 122 A 0022 B 0024 0024 C 0026 0026 B 0109 0028 E 0030 0028 B 0112 0113 C 0113 0115 E 0117 0155 B 0157 0157 C 0159 0201	Station ID (A,B,C) (hh:mm) Depth (ft.) 127	Replicate (hh:mm) Depth (ft.) (#) 127	Replicate Time (A,B,C) (H):mm) Depth (ft.) (#)	Replicate Time Depth (ft.) Count Height (each side) 1



Project Name:	Mayflo	wer Summer 2	2020	Project No.:	C3096-0301	
Date: 8-24-2020	Boat:	Berto Miller	Crew:	Spada/Blakesley		

Station ID	Replicate (A,B,C)	Time (hh:mm)	Depth (ft.)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
100	A	0320			14	5	5 good SPI 5 good PV
	B	0323					S good PV
	C	0325					
	D	0327					
	E	0329					
109	A	0436			14	5	3 good SPI, 2 overpenetration 4 good PV
	В	0438					4 good PV
	C	0440					
	D	0441					
	E	0443					
102	A						Site A = sediment grab
	B	0544			14	5	5 good SPI 4 good PV
	C	0546					4 good PV
	D	0548					
	E	0550					
	F	0553					
84	A				13	4	Site A=Sedment grab 5 good SPI 3 good PV
	B	0712					5 good SPI
	c	0714					3 good PV
	D	0716					
	E	0718					
	F	0720					



Project Name:	Mayflo	wer Summer 2	2020	Project No.:	C3096-0301	
Date: 8-24-	Boat:	Berto Miller	Crew:	Spada/Blakesley		

Station ID	Replicate (A,B,C)	Time (hh:mm)	Depth (ft.)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
080	A	0800			13	4	5 good PV
	B	0802					5 good PV
	C	0804					
	D	90 80					
	ϵ	08 09					
082	A	0845			13	4	5 good PV
	B	0848					5 good PV
	C	0850					
	0	0852					
	E	08 53					
123	A	1052	45		19	5	5 good SPI 5 good PV 5PI cobr card
	B	1054					5 good PV
	C	1055					SPI color card
	D	1057					
	E	1058					
078	A	1205	THE RESIDENCE OF THE PARTY OF T		14	5	5 6000 BPI 4 good PV
	B	1206					4 good PV
	C	1207					
	D	1210		100			change batteries,
	E	1213					
077	A	1334	45		14	5	4 good SPI
FAMILY.	B	1336					4 good SPI 4 good PV
	C	1338					
	D	1340					



Project Name: Mayflower Summer 2020 Project No.: C3096-0301

Date: 8-24-20 Boat: Berto Miller Crew: Spada/Blakesley

Station ID	Replicate	Time		Frame Count	Stop Height	Lead Weight	
Station ID	(A,B,C)	Miles Committee	Depth (ft.)	(#)	(in.)	(each side)	Comments
077	E	1347			14	5	
074	A	1535			14	5	5 good SPI
	B	1538					5 good SPI 4 good PW
	C	1540					
	D	1542					
	E	1543					
073	A	1632			14	5	5 good SPI
4	В	1633					5 good SPI 4 good PV
	C	1634					700
	P	1635					
	E	1637					
071	A	1878			15	5	1 good SPI
	B	1829					S good PV over penetration Remove 1 wight drop stops 1"
	C	1831					over penetration
	D	1833					Remove I wight
	E	1834					dop stops 1"
	F	1900			14	4	5 good SPI 5 good PV
	G	1901					5 good PV
	H	19 03					
	I	19 05					
	J	19 09					
070	A	1955			14	4	5 good SPT
	B	1957					5 good SPI 5 good PV
	C	1958					7 000



Project Name: _		wer Summer 2	2020	Project No.:	C3096-0301	
Date: 8-24-	20 Boat:	Berto Miller	_ Crew: _	Spada/Blakesley		

	Station ID	Replicate (A,B,C)	Time (hh:mm)	Depth (ft.)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
	070	D	2000			15	5	5 good SPIAPU
		E	2002					
	64	A	2048					
		B	2050					
		C	2051					
		D	2052					
		E	2054		,			
	67	A	2337			14.5	4	5 good SPI+PV
		B	2339					
		C	2341					
		D	2343					
		E	2345					
8-25-20	Ger	esato	- Doi	vn - l	nead	to.	Vew Be	dford
		Get	THE RESIDENCE OF THE PARTY OF T	Genesa		AND DESCRIPTION OF THE PARTY OF		
8-27-20	C15	A	2306			15	5	5 good SPI but 2 W/
		B	23 08					5 good SPI but 2 W/ low penetration 5 good PV, 6 shots total
		C	2311			-		5 good PV, 6 shots total
		D	2315					
		E	23 18					
8-28-20	040	A	0604			16	5	4 good SPI
		B	0608					4 good PV
		C	0611					
		D	0615					
		E	06 19					



Project N	lame:	Mayflo	wer Summer 2	2020	Project No.:	C3096-0301	
Date: 8	-28-707	P Roat	Berto Miller	Crown	Snada/Blakesley	,	

Station ID	Replicate (A,B,C)	Time (hh:mm)	Depth (ft.)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
C 05	A	0808			17	5	3 good SPI (low povetration)
	В	0812					3 good SPI (low postration) 5 good PV (8 botton shots)
	C	0816					
	D	0821					
	ϵ	0825					
C04	A	0917			17	5	5 good SPI
	B	0921					5 good SP1 5 good PV
	C	0924					
	D	0929					
	E	0932					
C03	1	1049			17	5	5good SPI&PV
	B	1051					
69	C	1053					
	7	1055					
	E	1057		8.00			
C01	A	1126			17	5	5,000 59I+PV
	В	1120	* -				
	C	1131					
	D	11 32					
	E	1134				The Roll of	Color Card
							Ves: fy 26cm Laser
							*Nathan his hour
							toug meeting.
							, , , ,



Project Name:	Mayflower Summer 2020			Project No.:	C3096-0301	
Date: 8-28-20	Boat:	Berto Miller	Crew: _	Spada/Blakesley		

Station ID	Replicate (A,B,C)	Time (hh:mm)	Depth (ft.)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
CO2	A	1324			17	5	5 good 59I+9V
	В	1326					5 good SPI+PV 11" penetration
	C	13 27					
	D	1329					
	E	1330					
043	A	1418			17	5	
	B	1421					
	C	1422					
	0	14 25					
	E	1427					
045	A	1608			17	5	
	B	1609					
	C	1610					
	0	1612					- 1 1
	E	1613			10	~	Trigger back to 36" 5 good SPI+ PV
047	A	1722			17	5	I god STLAPV
	B	1723					
	C	1724					
	D	1725					
	E	1727				-	c Isota RI
049	A	1809			12	5	5 sood SPI4 PV 13" penetration
	3	1811					13 penetration
	C	1812					
	D	1614					



Project Name:	Mayflo	wer Summer 2	2020	Project No.:	C3096-0301	
Date: 8-28	<u>- 20</u> Boat:	Berto Miller	Crew: _	Spada/Blakesley		

Station ID	Replicate (A,B,C)	Time (hh:mm)	Depth (ft.)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
049	E	1816			17	5	3,000 SPI
051	A	1931					35000 SPT 59000 PV
	В	1937					
	C	1934					
	D	1937					
	E	1938					
053	A	2020			17	5	5 good SPI
	B	20 21	3.2				5 5000 SPT 55001 RV
23/32/9/3	C	20 24					
	D	2026					
	E	2029					
054	A	21/4			17	5	4 good SPI 3 good PV 12" penetation
	B	2/16					35000 PV
	C	2/18					12" penetation
	D	2/19					
	E	420					
055	A	2302			17	5	5 good SPI 4 good PV
	B	2305				1 2	4 good PV
	c	2307			100		
	D	2309					
	ϵ	2311	*				
057	A	2348			144		5 good SPI+PV lots of extrashots
	В	2350					lots of extrashots
	C	2352					



8-28-

Project Name:	Mayflo	wer Summer	2020	Project No.:	C3096-0301	
Date: 8-29-20	20 Boat:	Berto Miller	Crew:	Spada/Blakesley		

	Station ID	Replicate (A,B,C)	Time (hh:mm)	Depth (ft.)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
70	057	2354 6	→ A C	Depth (ft.)		17	5	
		2356	* D					
10	059	0102	A			15	5	5 good SPI 5 good PV, one somewhat
		2356 0102 0104	*B					5 good PV, one somewhat
		0106	"(blurry
		0109	T*D					
		OIII4	,E					
	.061	A	0155			15	5	5 good SPI 3 good PV, 1 decent
		B	0157					3 good PV, 1 decent
		C	0159					
		D	0201					
		6	0203					
	C14	A	0421			15	5	3 good SPI
		В	0423					3 good SPI 4 good PV
		С	0425					
		D	0427					
		E	0429					
	C13	A	-					drop A = benthic grab drop B = benthic grab
		B						
	+ 9	C	0558			15	5	3 good SPI
		D	0603					3 good PV
		E	0607					fast current
		F	0611					
		6	0614					



Project Name:	Mayflower Summer 2020	Project No.: C3096-0301
Date: 8-29-20	Boat: Berto Miller Crew:	Spada/Blakesley

Station ID	Replicate (A,B,C)	Time (hh:mm)	Depth (ft.)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
C12	A	0658			15	5	
	B	0702					O good PV very strong current
	C	0705					very strong current
	D	0708					
	E	0712					
	F	0739					Boat blown offcourse
	G	0741					
	H	0754					4good PV
	I	0756					4good PV 5good SPI
	JV	6759					
	K v	0801					
	L ,	0803					
CII	A	0852			15	5	4 good PV
	B	0856					4 sond PV 5 good SPI
	C	0900					
	D	0904					
	Ē	0907					
039	A	1305			15	5	49000 PV
	AND DESCRIPTION OF THE PARTY OF	1306					4 good PV 5 good SPI Jelly Fish in PV
	C	1307					Jelly Fish in PV
	D	1308					
	E	1309					
037	A	1423					3 good PV
	3	1424					3 good PV 5 good SPI



Project Name:	Mayflo	wer Summer 2	2020	Project No.:	C3096-0301	
Date: 8-29-	20 Boat:	Berto Miller	_ Crew: _	Spada/Blakesley		

Station ID	Replicate (A,B,C)	Time (hh:mm)	Depth (ft.)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
037	C	1426				r	
	D	1427					
	E	1428					
124	A	1505			15	5	Transcet allgood
	B	1525					
	Ć	1537					
	D	1552					
	E	1606					3 good 59I 5 good PV
	F	16 08					5 good PV
-	G	1610					
C. 199	H	1612					
	I	1614					•
	5	1629					
	K	1641					
	L	16 55					
	M	1709					
-036	B	1858					
035	A	1933			15	5	5good SPI
	В	1934					5900d SPI PV Batt dead
	\$	1936					D good
	15	1937					
	E	1938					
035	F	20 14			15	5	55000 5PI 55000 PV
	6	2016					55000 PV



Project Name: Mayflower Summer 2020 Project No.: C3096-0301

Date: 8-29-20 Boat: Berto Miller Crew: Spada/Blakesley

Station ID	Replicate (A,B,C)	Time (hh:mm)	Depth (ft.)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
035	H	2019					Computer USB
	t	2021					computer USB trouble
	5	2023					
033	A	2145			5	15	5 good SPI
	B	2147					5 good SPI 5 good PV computer USB trouble
	C	2153					computer USB
	D	2156					trouble
	E	2159					11/1/
019	A				5	15	Benthic grab 5 good SPI+PV lots of shells, switched computer
	B	0058					5 good SPI+PV
	C	0100					lots of shells, switched
	D	0107					computer
	E	0103					
	F	0105					
017	A	0241			5	15	
	B	0243					
	C	0244					
	D	0247					
	E	0249					
015	A	0406			5	13	Start of transect
	3	0420					Great shots, SPI+PV
	C	0437					
	D	0448					
	E	0506					5 good SPI+PV



Project	Name:	Mayflo	wer Summer 2	2020	Project No.:	C3096-0301	
Date:	9-30-20	Boat.	Berto Miller	Crow	Snada/Blakesley		

Station ID	Replicate (A,B,C)	Time (hh:mm)	Depth (ft.)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
015	F	0508			15	5	
	G	0511					
	H	0512					
	I	0514					
	J	0532					
	K	0547					
	L	0558					
	M	0611					PV battery dead
	N	0636					PV battery dead PV battery dead
	0	0709					
013	A	0902			5	15	5 good SPI+PV
	B	0904					
	C	0906		19			
	D	0908					
	E	0911					
011	A	1134			5	15	5good SPI 5good PV
	B	1136	11/10/10/10				5good PV
	C	11 38	477				
	D	11 40					
	E	1143	100000				
009	A	1341	1		15	5	S goal SPI
	B	(343					5 good PV
	C	1345					color card
	0	1347					5 good 5PI 5 good PV color card 12.5" penetiation



Project Name: _	Mayflo	wer Summer 2	2020	Project No.:	C3096-0301	
Date: 8-30-	20 Boat:	Berto Miller	_ Crew: _	Spada/Blakesley		

Station ID	Replicate (A,B,C)	Time (hh:mm)	Depth (ft.)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
009	E	1348			15	5	
901	A	1758	116		15	5	5 4000 SPI4PV
	В	1800					5 good SPI+PV 12,5" penetration
	C	1802					Ü
	D	1803					
	F	1805					
002	A	1835			15	5	13.5" ponetry then
	7	1847					
4	C	1855					
	D	1903					
	E	1912					5 500d SPI 5 500d PV
	F	1915	*				5 good PV
	G	1918					
	14	1920					
	I	19 23					
	5	1931					
	K	193B					
	L	19 45					
	M	1951					
003	A						A-6 are benthic grabs
	B		12.74				
	C						
	D						
	E						4



Project Name;	Mayflo	wer Summer 2	2020	Project No.:	C3096-0301	
Project Name:	Boat:	Berto Miller	Crew: _	Spada/Blakesley		

	Station ID	Replicate (A,B,C)	Time (hh:mm)	Depth (ft.)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
	003	F						benthic grabs
		6						↓
		Н	2316			15	5	4 good SPI, one blank -changed SPI bettery 4 good PV
		I	2319					-changed SPI battery
		J	2322					4 good PV
		K	2324					see note about 2324 shot
		L	2326					
8-31-20	004	A	0014					5 good SPI, but low pen.
		3	0019					3 good PV (out of 3, lubed trigg
		C	0021					
		D	0023					
		Ē	0025					
/	005	A	0109					Good SPI+PV photos
		B	0129					low peretration on SPI's
		C	0143					
		D	0202					
		6	0219					5 good SPI+PV - low pen.
		F	0221					
1		6	0223					
Sect		H	0225				1	
Trayse		I	0228					
ì		J	0240					Good SPI+PV
		K	0254					
	1000000	L	0313					



Project Name: Mayflower Summer 2020 Project No.: C3096-0301

Date: 8-31-2020 Boat: Berto Miller Crew: Spada/Blakesley

Station ID	Replicate (A,B,C)	Time (hh:mm)	Depth (ft.)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
005	M	0324					
007	A						A-D Benthic grab
	В						
	C						
	D						V
	E	0604			15	5	3 SPI good ehough 5 good PV Low penetration
	F	0607					5 good PV
	6	0609					Low penetration
	Н	0611					
	I	0614					
020	A	0837					5 good SPI
	B	0839					5 good SPI 4 good PV
	C	0840					V
	D	0842					
	ī	0844					
021	A	0918					5 good SPI, but low pen. 4 good PV (out of 4 shots, streky trigger)
	B	0920					4 good PV (out of 4 shots,
	C	0922					streky trigger)
	D	0924					
	6	0924					
022	A	1036					3 good SPI, low pen. 5 good PV
	73	1039					5 good PV
	C	1041					
	D	1642					



Project Name:	Mayflo	wer Summer 2	2020	Project No.:	C3096-0301	
Date: 8-31-2020	Boat:	Berto Miller	_ Crew: _	Spada/Blakesley		

Station ID	Replicate (A,B,C)	Time (hh:mm)	Depth (ft.)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
022	E	1044					
023	A	1117					35000 PV
	B	11 20					3 good PV 5 good SPI
	C	1122					
9	D	1125					499160
	E	4 26					
024	A	12 59			15	5	All 5000
	B	1309			1	1	
	C	1359					14" Penetrather
	D	1409					over whole trused
	E	1416					14" Penetratien over whole trused 5 good SPI 5 good PV
	F	1417					5 good PV
	G	1413					
	14	1420					
	I	1421					
	5	1429			1/	1	
	K	1435			V		
	L	1440					
	M	1447					
CPX	A B	1542			15	5	3500 AV
	B	1543					2 good PV 5 good SPI Strong current
	C	1545					strong current
	D	1546					
	E	1548					



Project Name:		Mayflo	wer Summer	2020	Project No.:	C3096-0301	
Date:	3-31-21	D Boat:	Berto Miller	Crew: _	Spada/Blakesley	1	

Station ID	Replicate (A,B,C)	Time (hh:mm)	Depth (ft.)	Frame Count (#)	Stop Height (in.)	Lead Weight (each side)	Comments
092	+	1631			15	5	5 good 5PT
	B	16 33					5 Lbs trigger weight
	C	1636					5 lbs trigger weight
	D	1638					
	E	1640					
026	A	1727			15	5	5 good SPI
	R	1730					. 5 sood PV
	C	1734					3.2 kts commont
	P	1737					11.5 penetration
	E	1739					
027	A	1812			15	5	5 good SPI
	B	1815					5 500d PV
	C	1818					10.5" penet inten
	D.	1819					5 good SPI 5 good PV 10,5 "penet inten 2.7 Kts cursent.
	E	1822					
078	A	1852			15	5	5 500d 5PI
	8	1854					5 good SPI 5 good PV 2.7 kts curat
	C	1857					2.7 kts curent
	D	1859					10.5" penetentien
	E	19 01					
029	A	2006	154		15	5	10" penetration
	B	2010					10" penetration 8 sood Pl OK SPI
	C	2011					OK SPI
	0	2012					very little penetrather



Project Name:	Mayflo	wer Summer 2	2020	Project No.:	C3096-0301	
Date: 8-31	-20 Boat:	Berto Miller	_ Crew: _	Spada/Blakesley		

				Frame	Stop	Lead	
Station ID	Replicate (A,B,C)	Time (hh:mm)	Depth (ft.)	Count (#)	Height (in.)	Weight (each side)	Comments
	E	2014	15ft				4 good PV
029	F	2049			15	5	OK SPT
	G	2050					3 kts current 10" penetration
	H	2052			466		10" penetration
	I	2055					0
531	5	2100					
031	A	1055	15 Ft		15	5	2.8 kts current
	B	1057					3 good PV
	C	1059					2.8kts current 3 good PV 5 good 5PI 11" penetration
	D	1001					11" penetration
	E	11.04					
						1000	
	JAMES STATE						
		12.2					
							*
							*

Appendix B

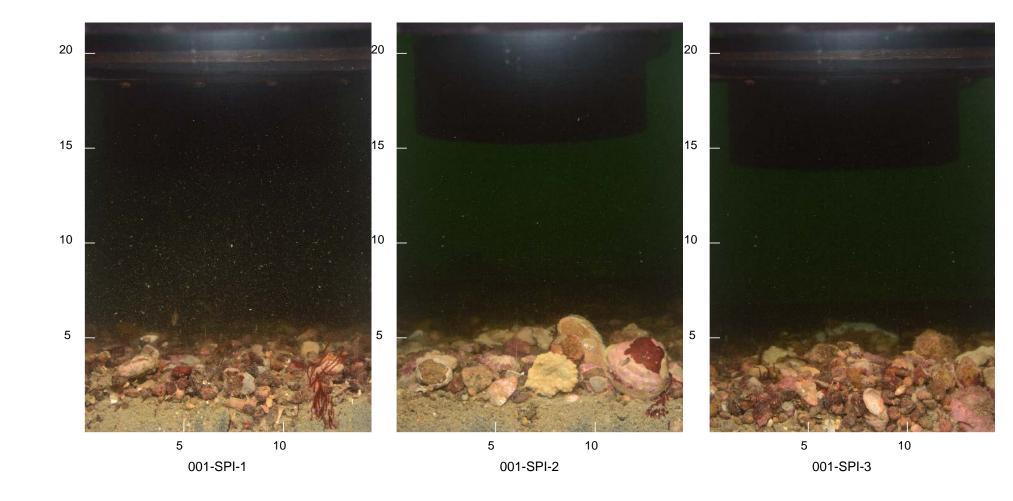
Sediment Profile Imaging and Plan View Image Library

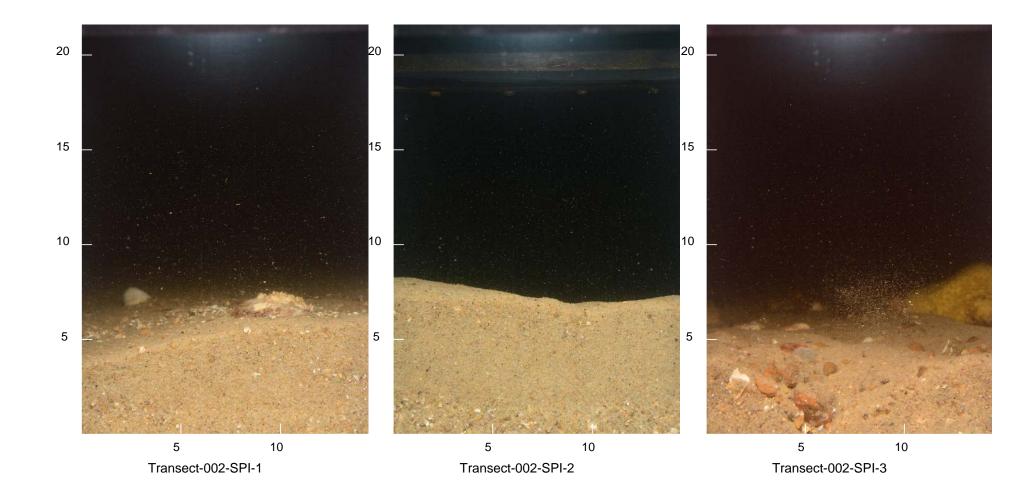
- Appendix B1. Sediment Profile Images
- Appendix B2. Plan View Images

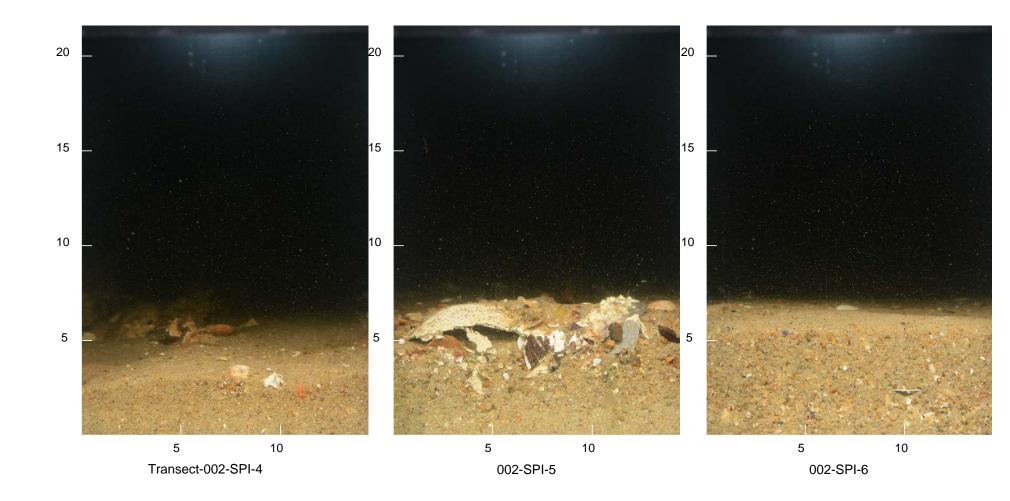
Appendix B1

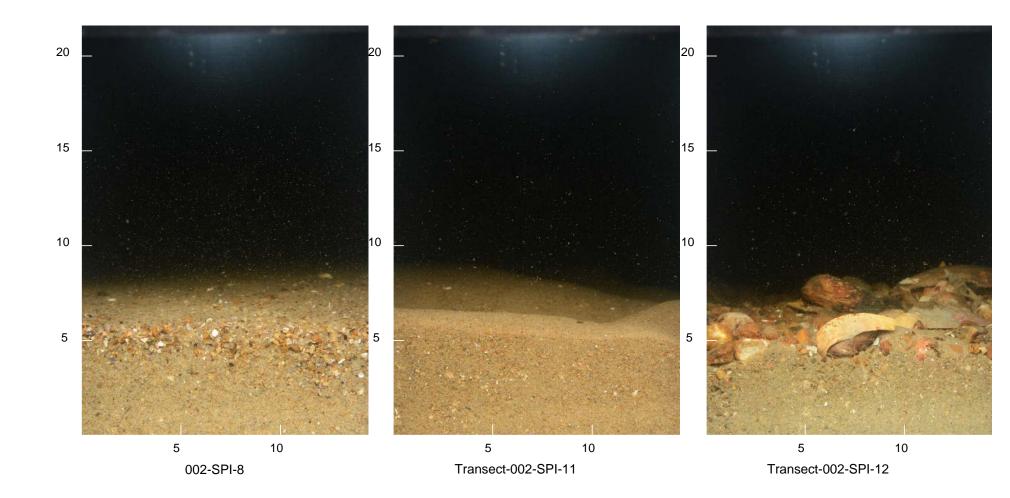
Sediment Profile Images

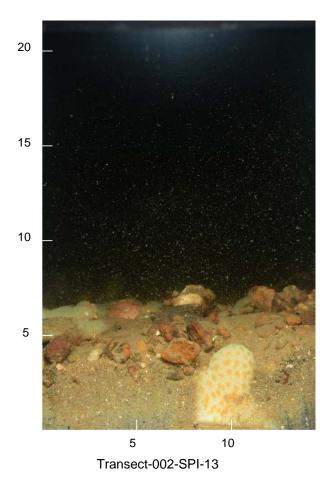
Scale: Width of SPI Images = 14.42 cm

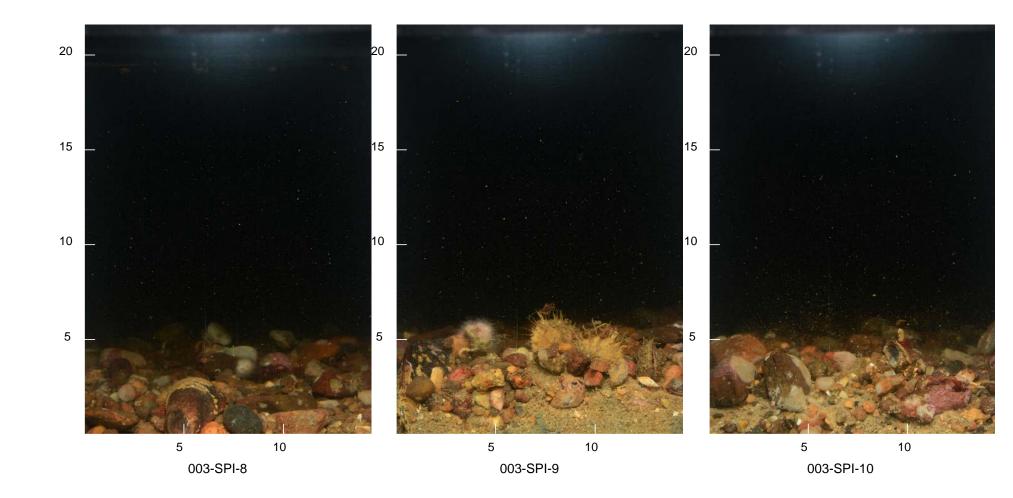


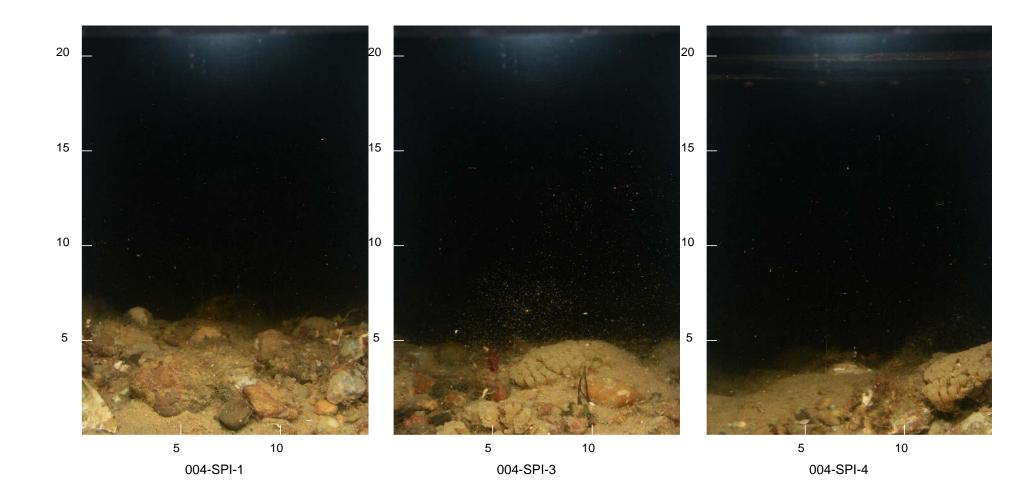


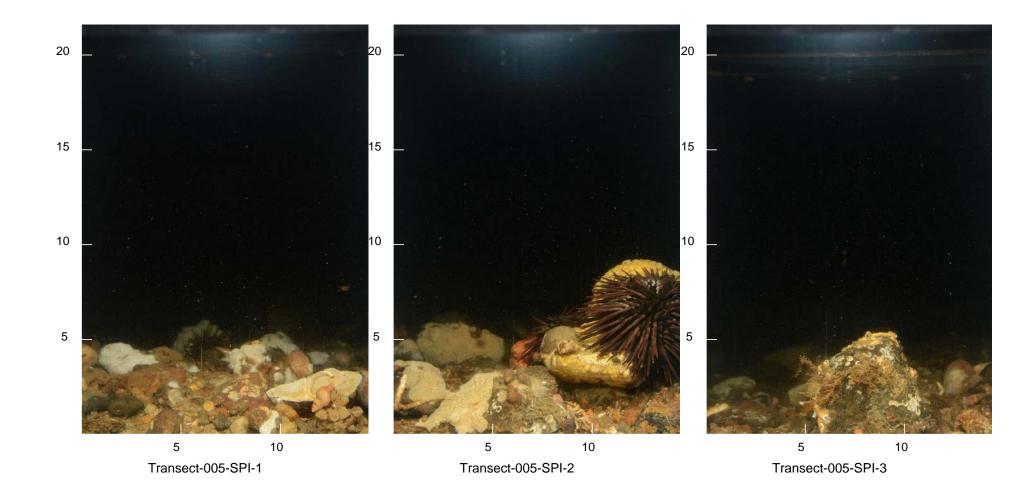


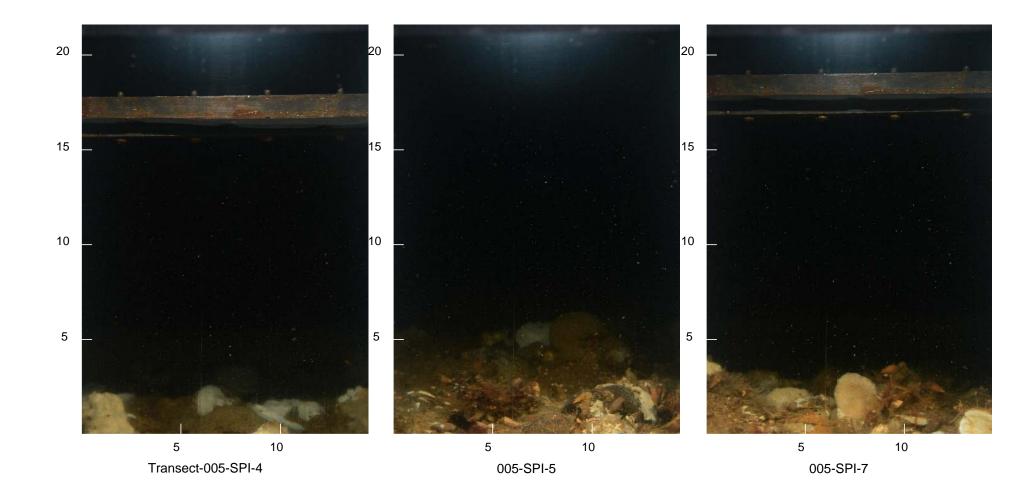


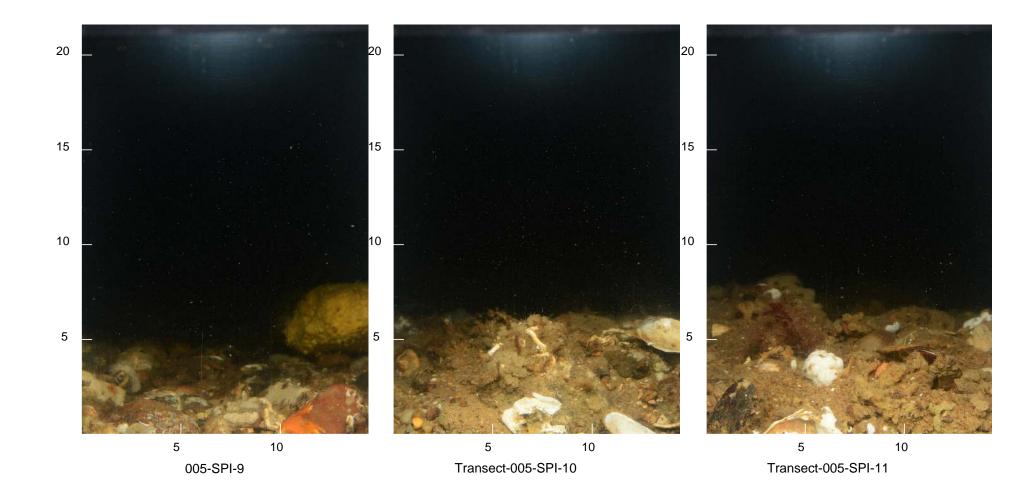


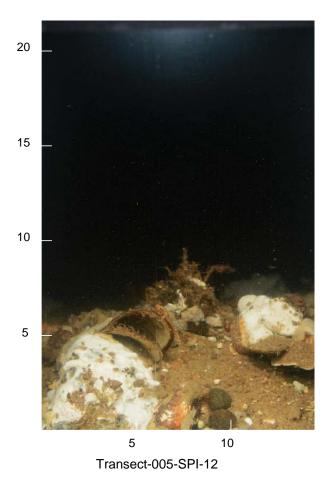


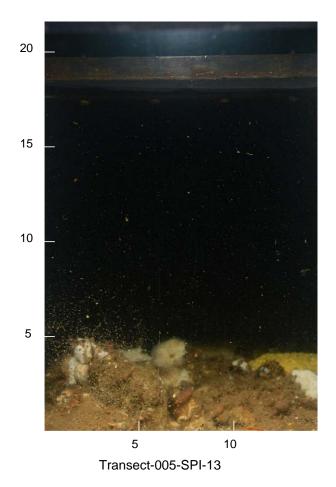


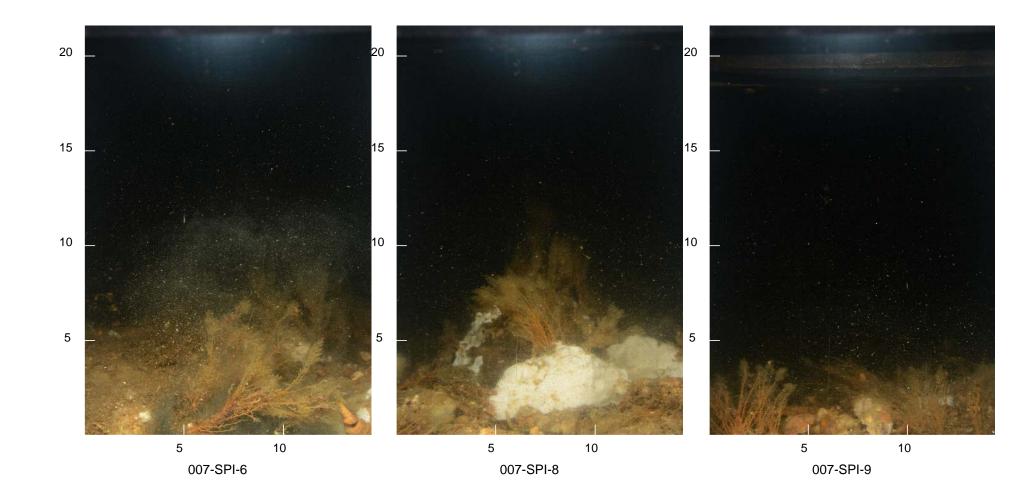


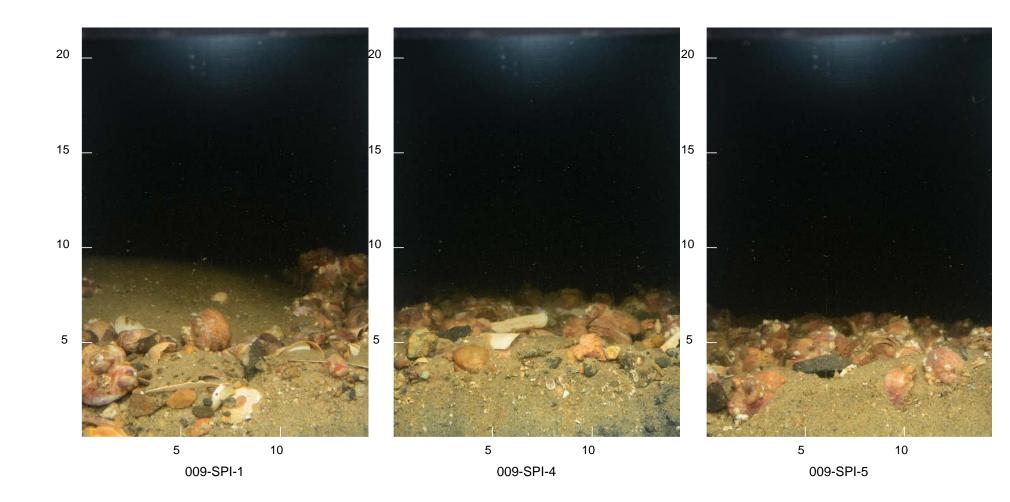


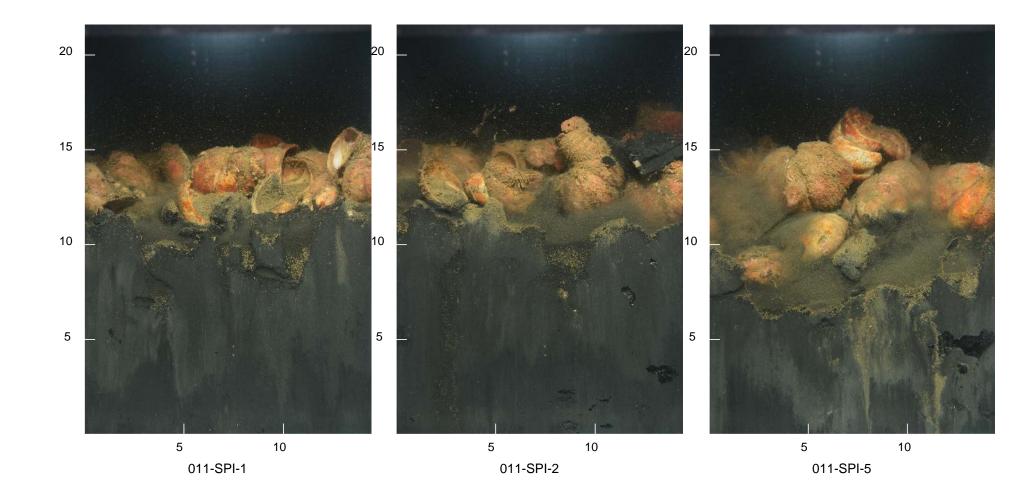


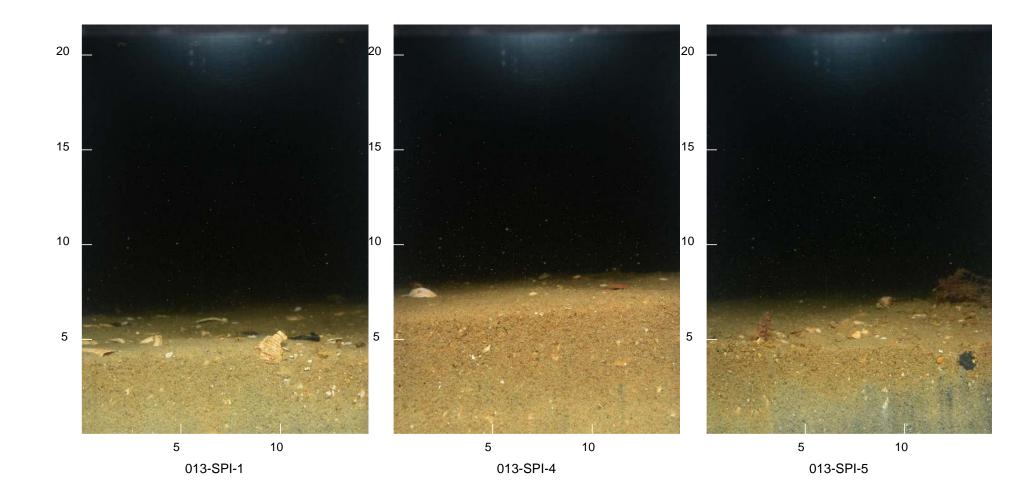


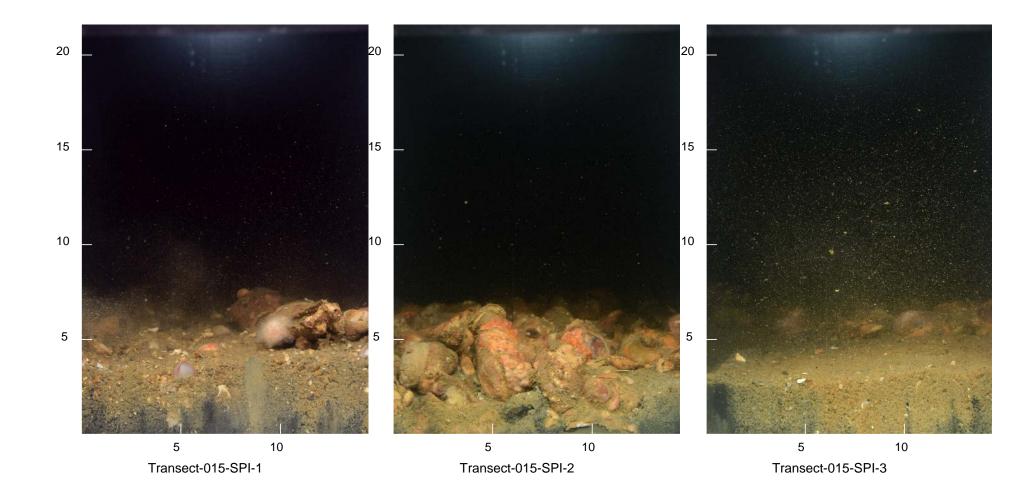


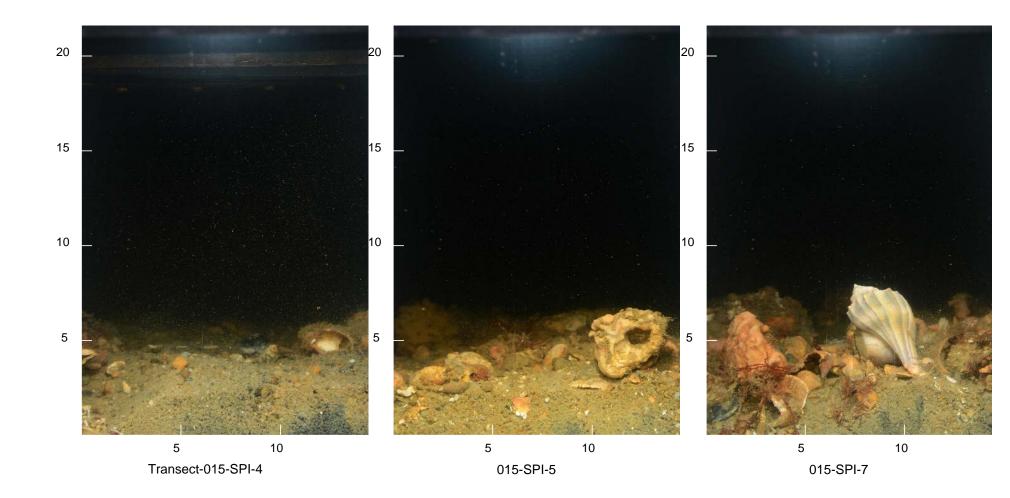


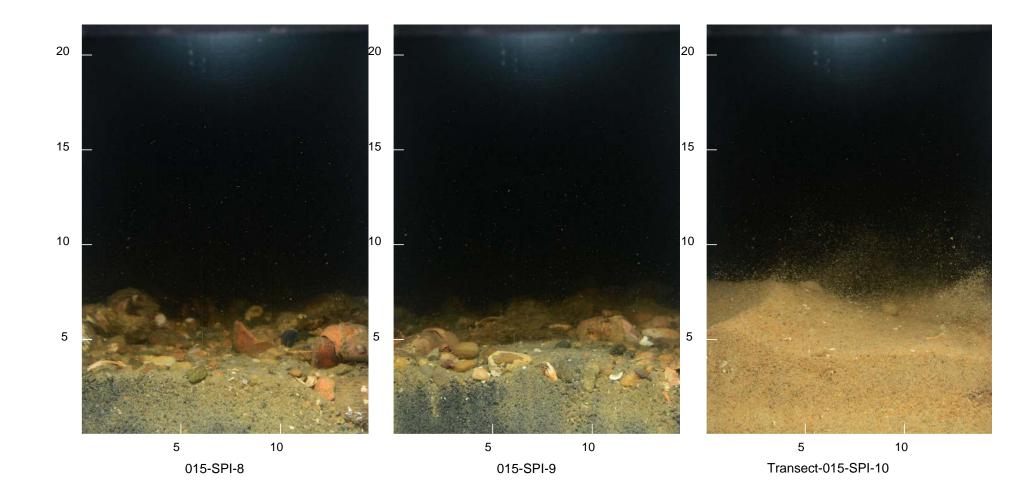


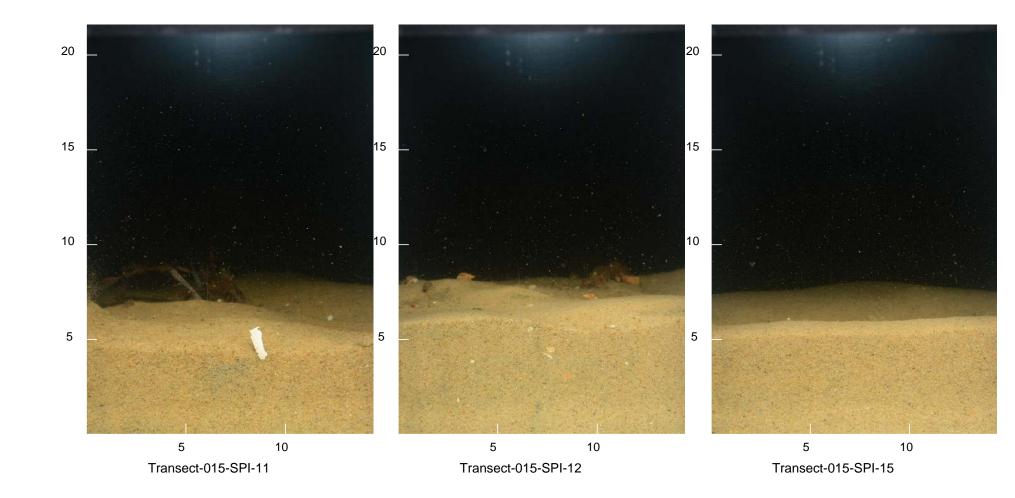


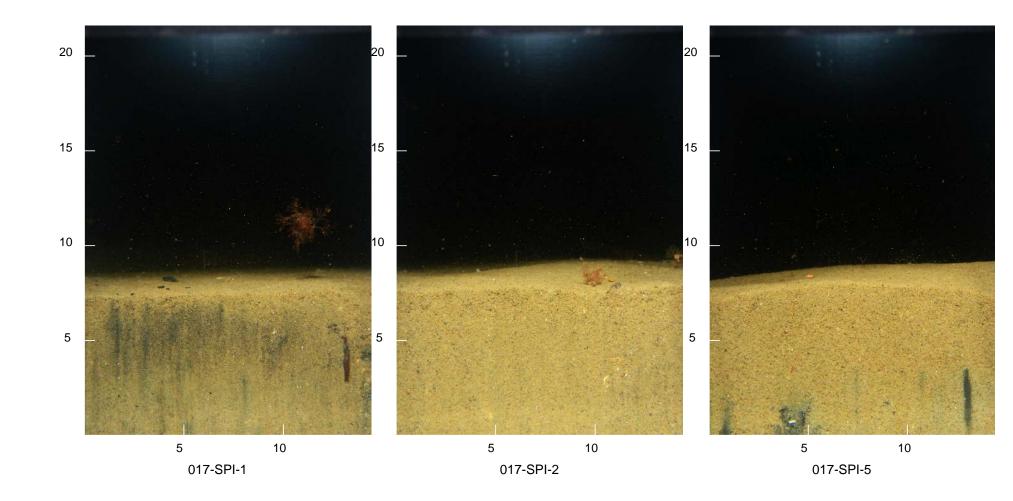


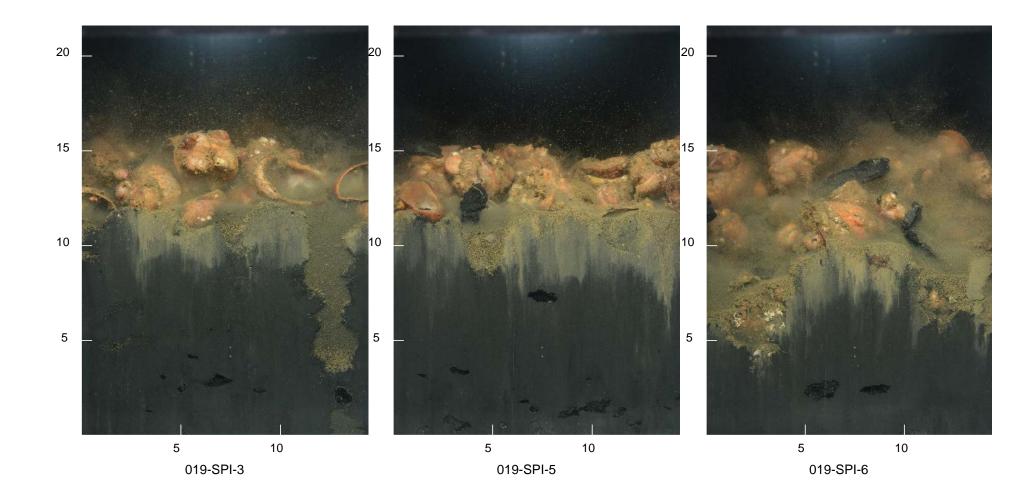


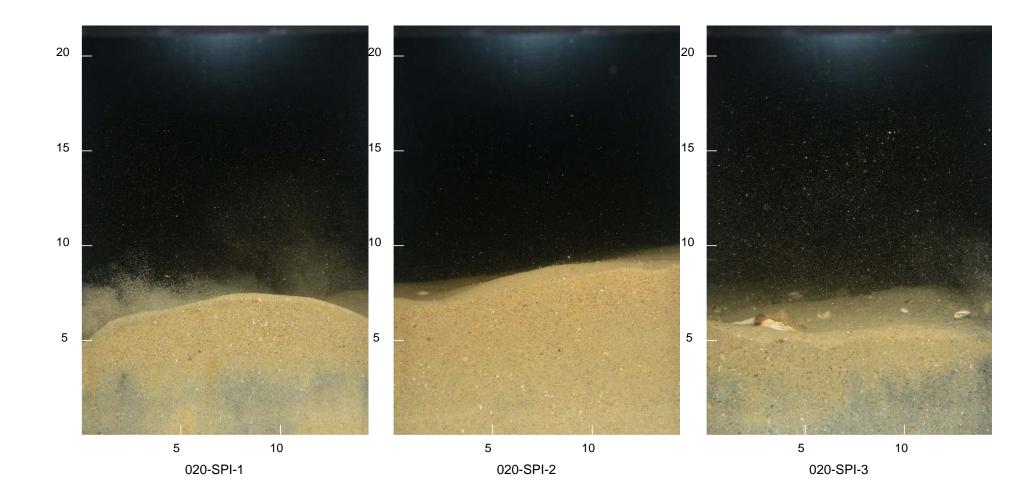


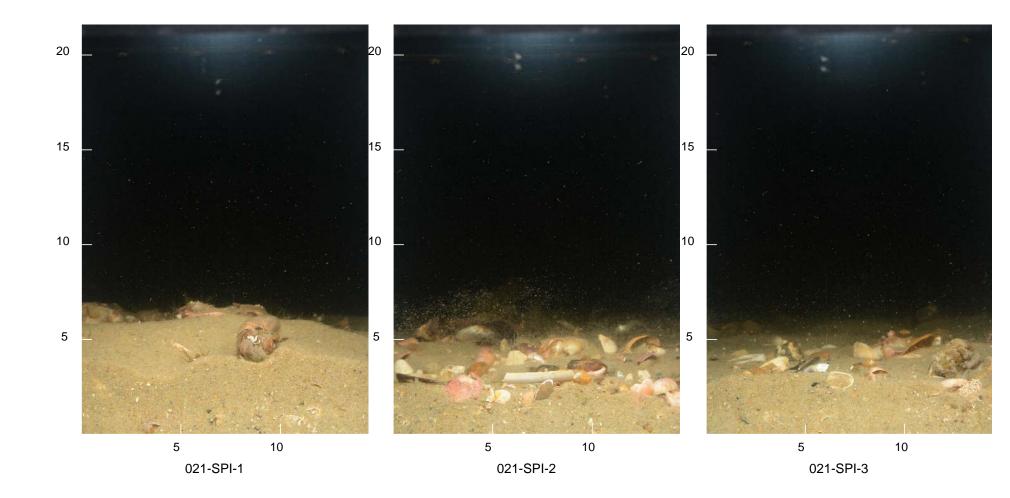


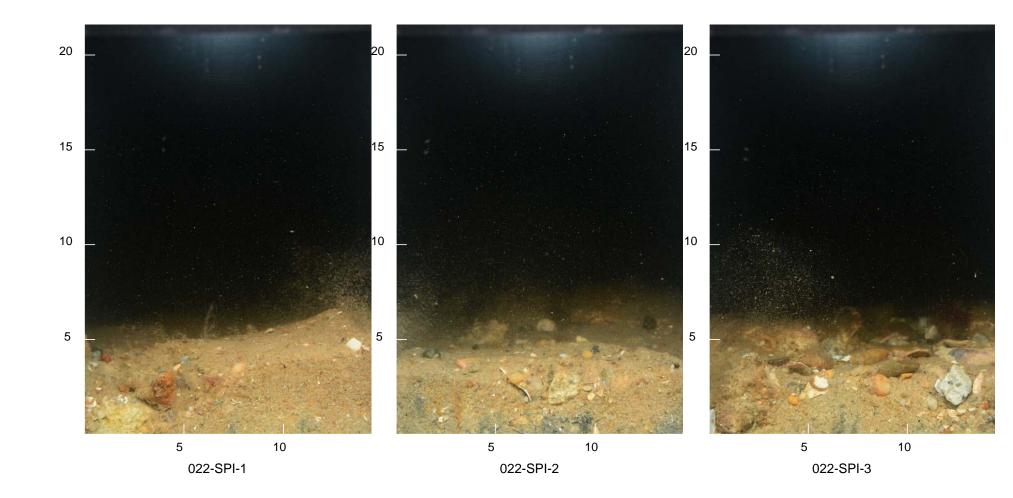


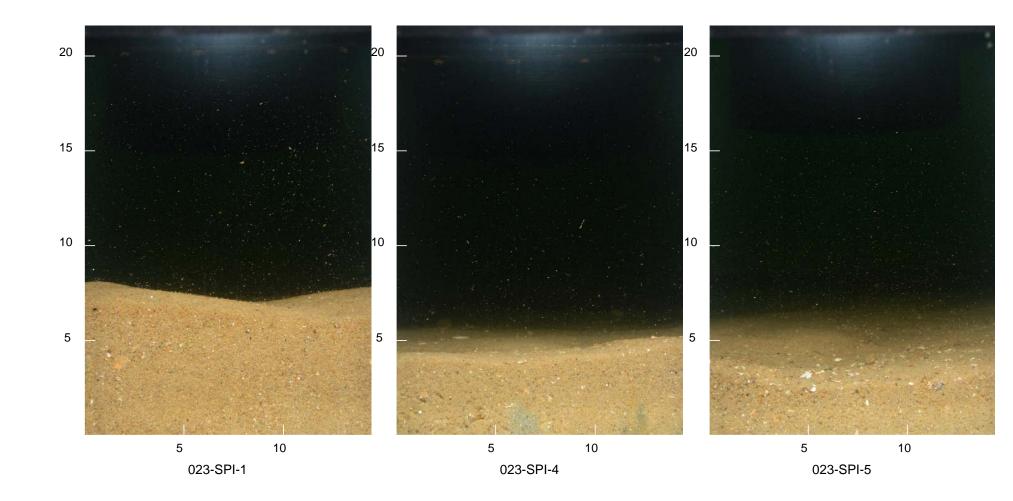


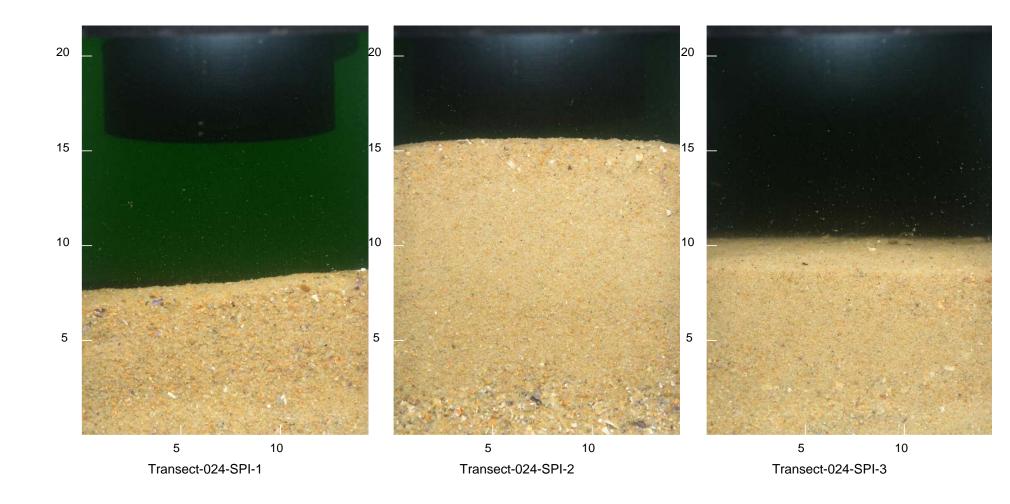


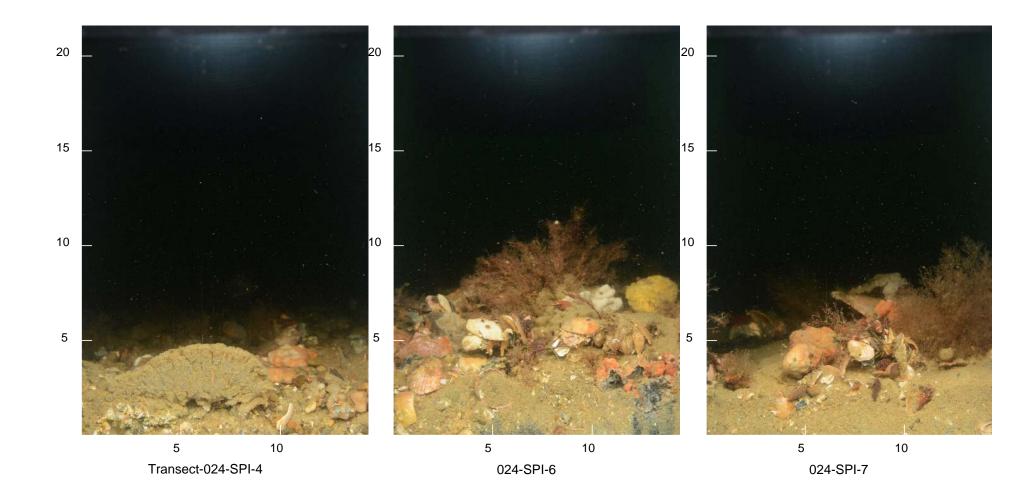


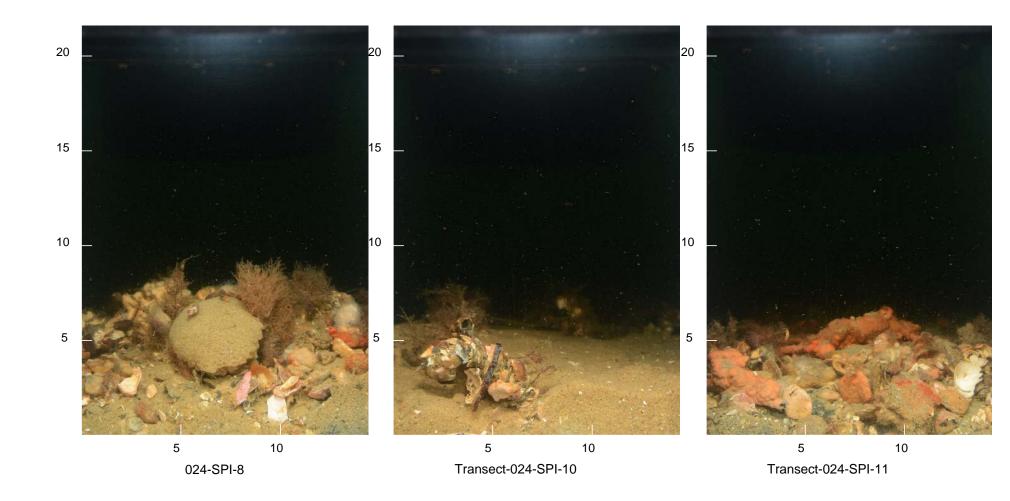


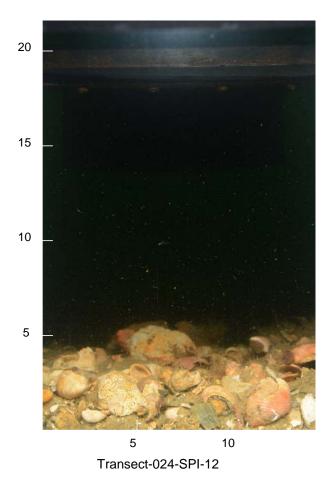


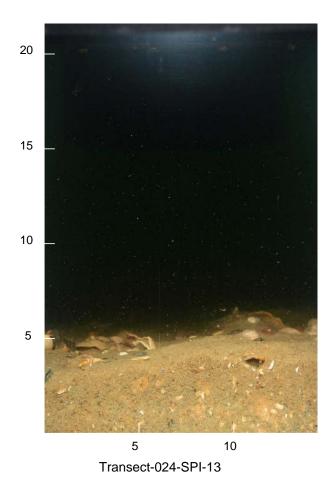


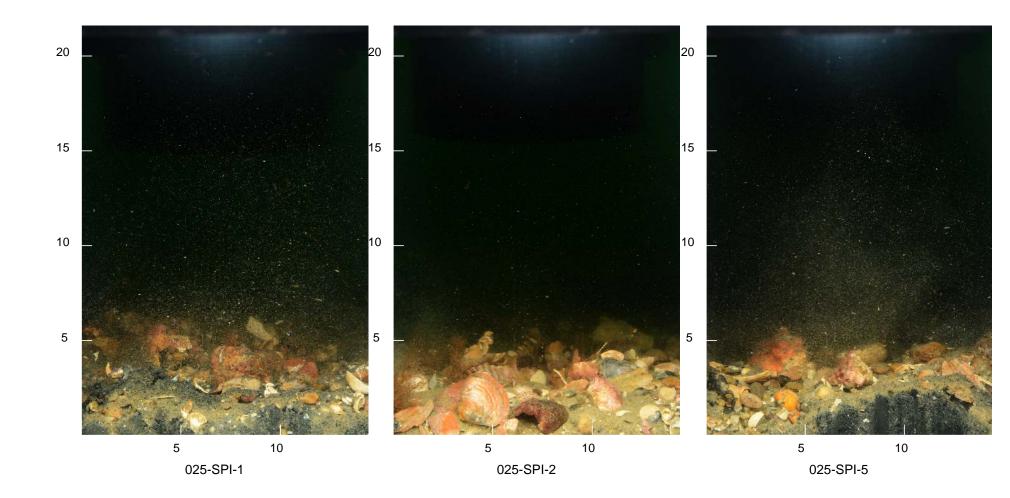


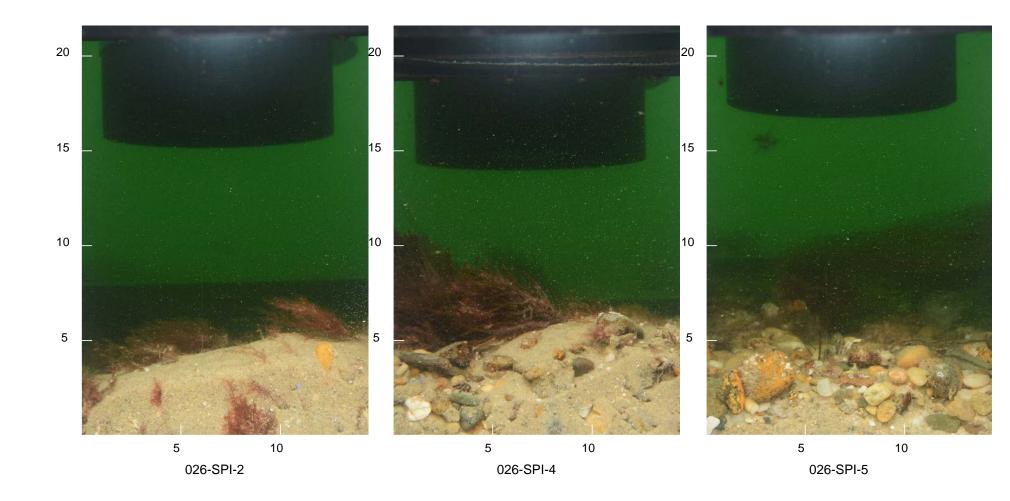


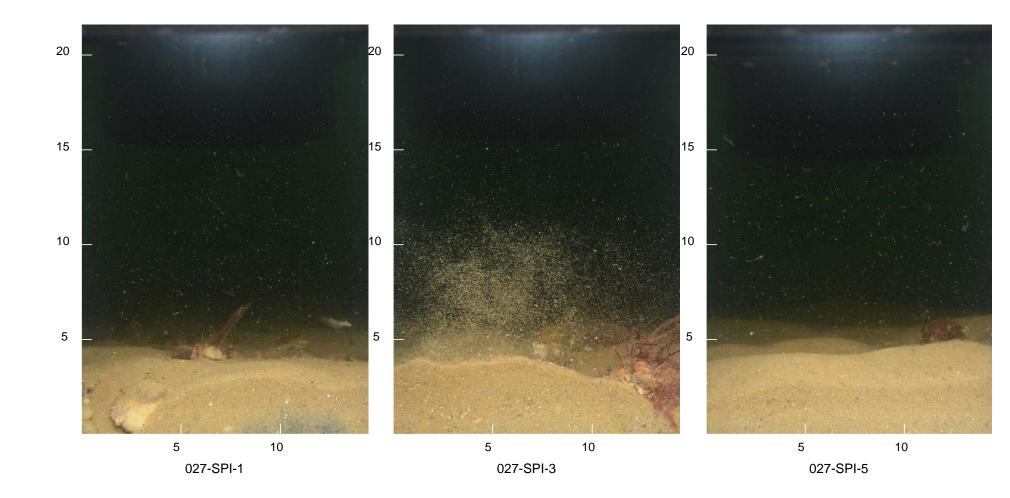


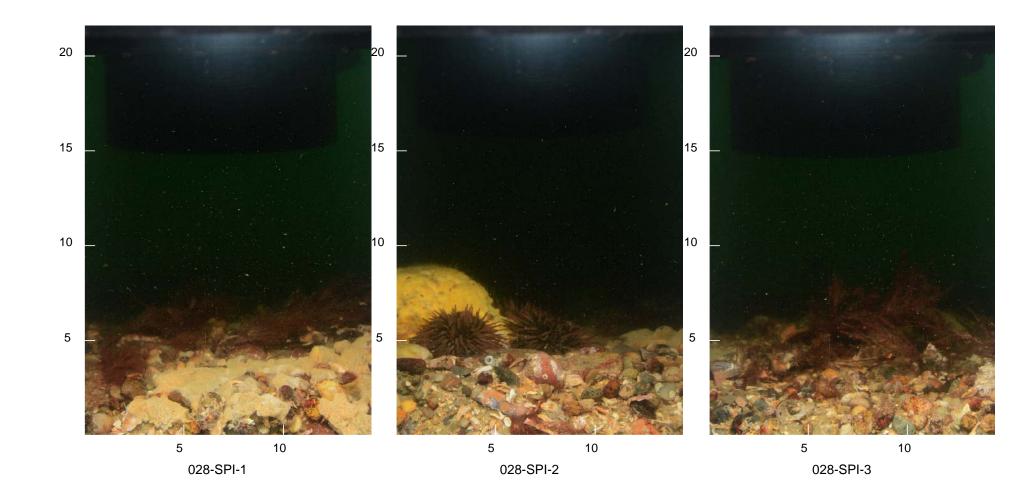


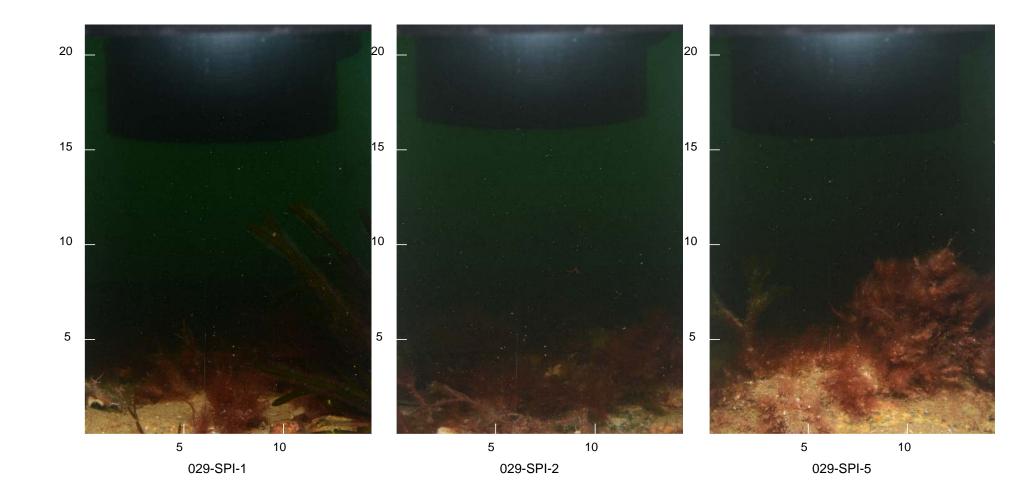


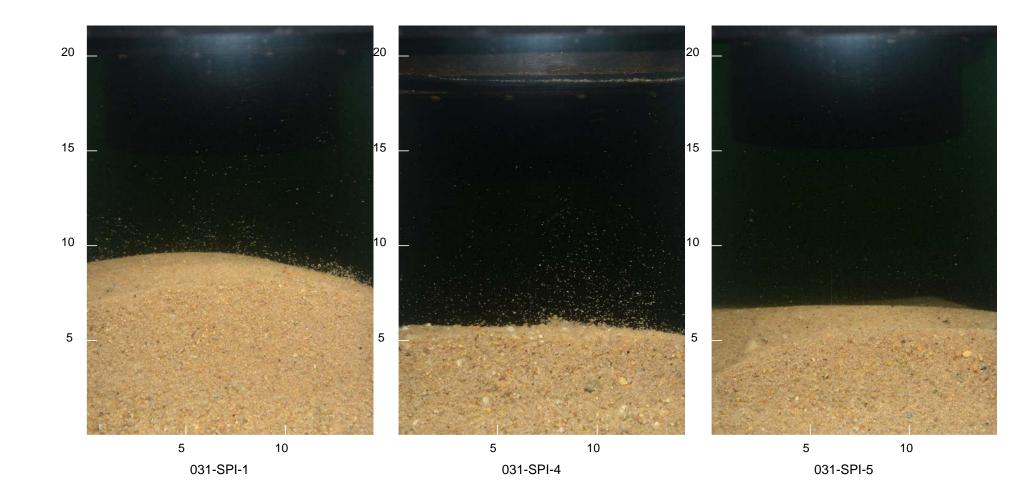


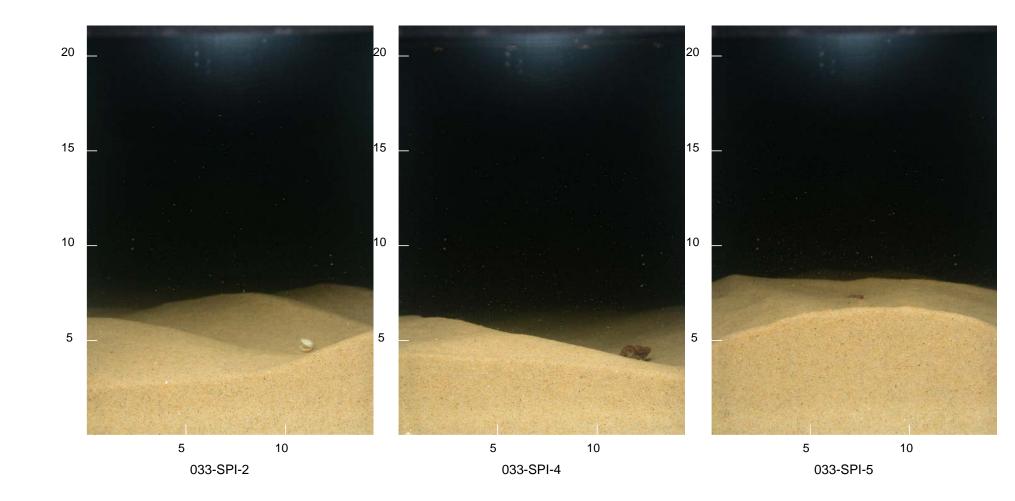


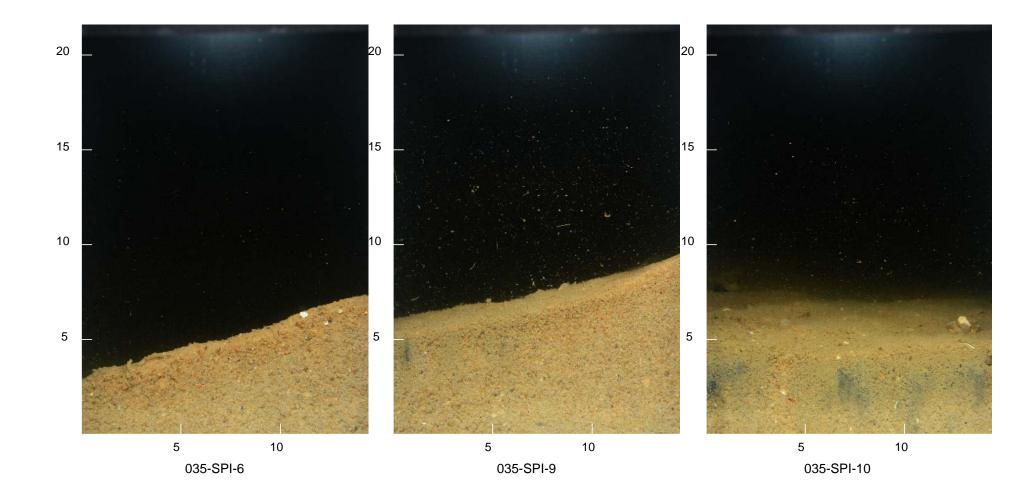


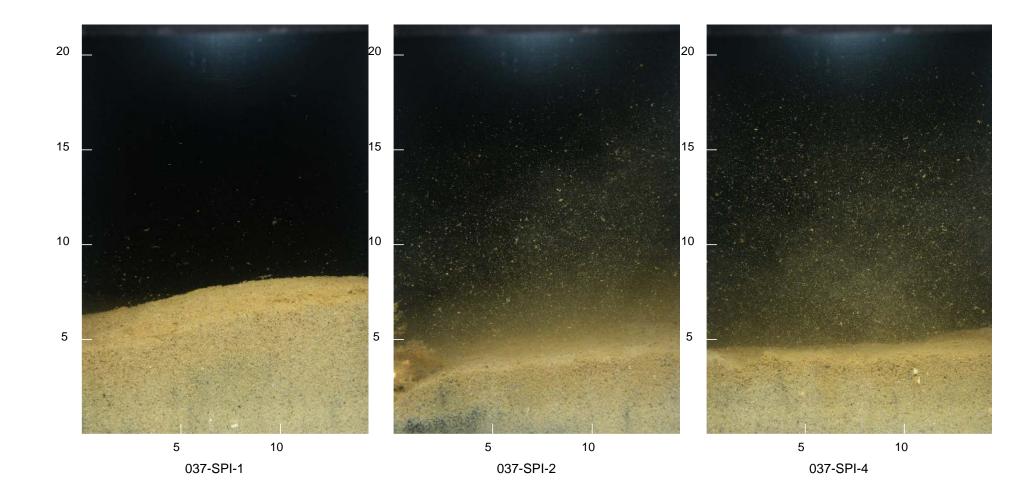


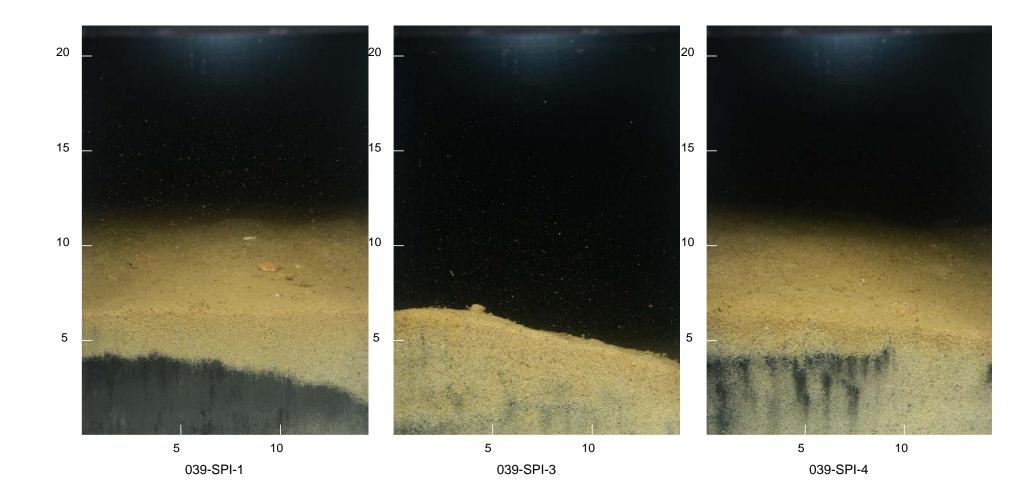


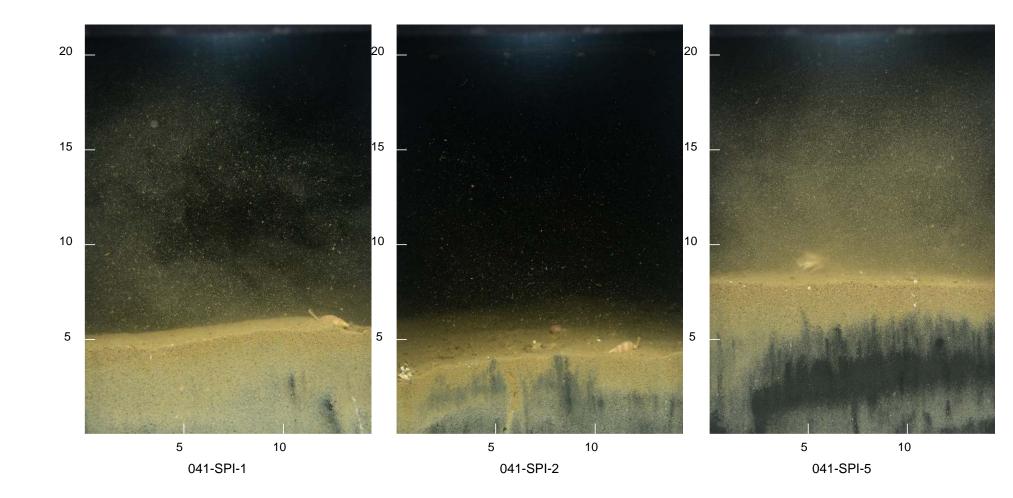


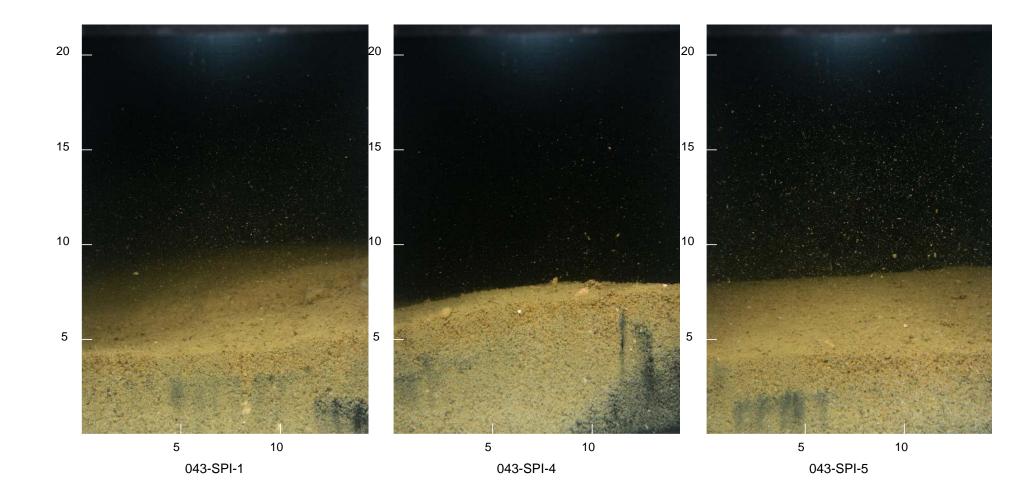


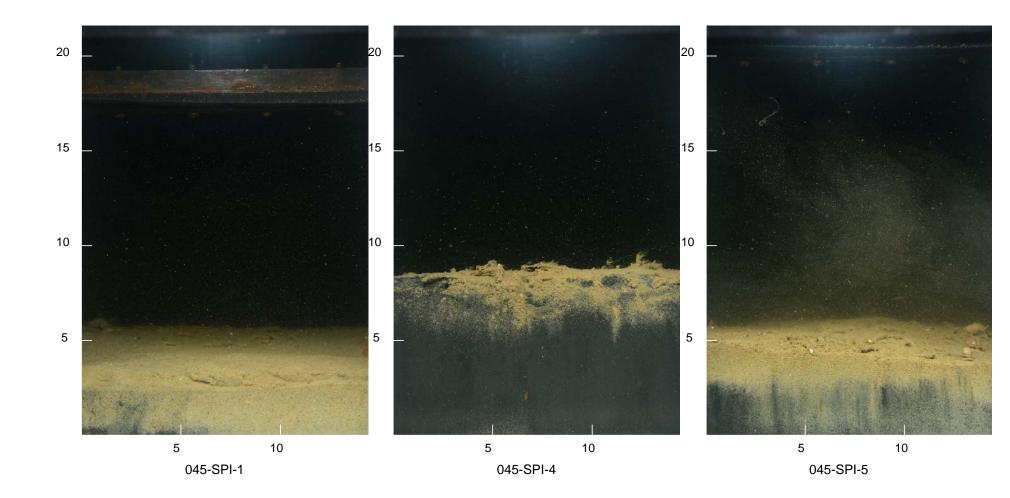


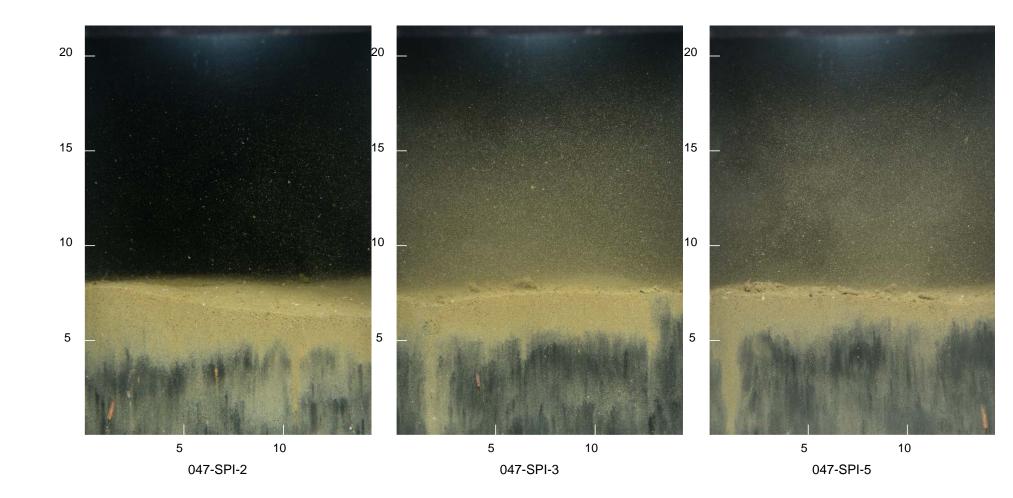


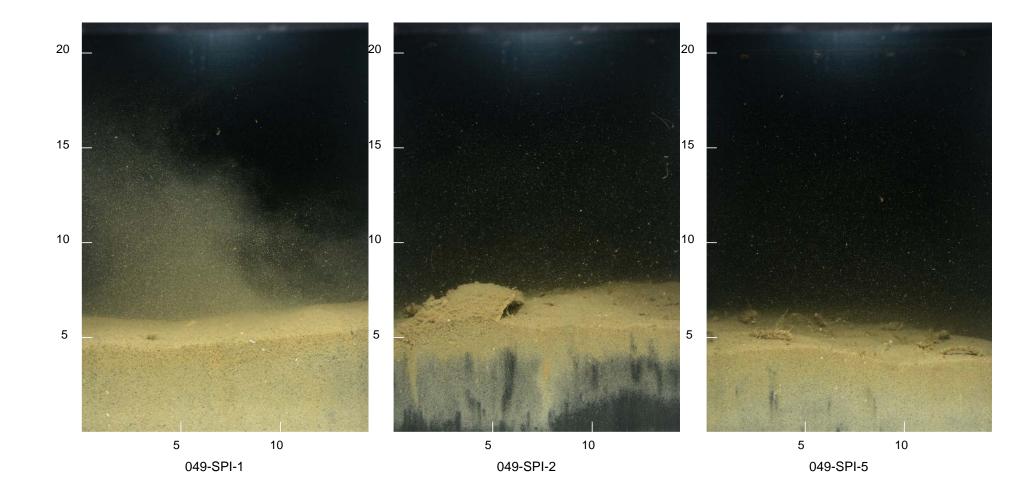


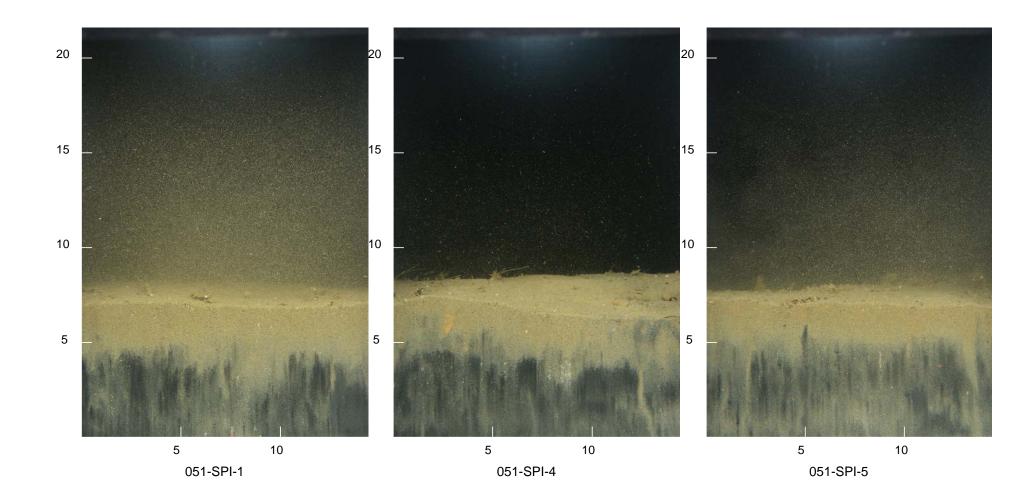


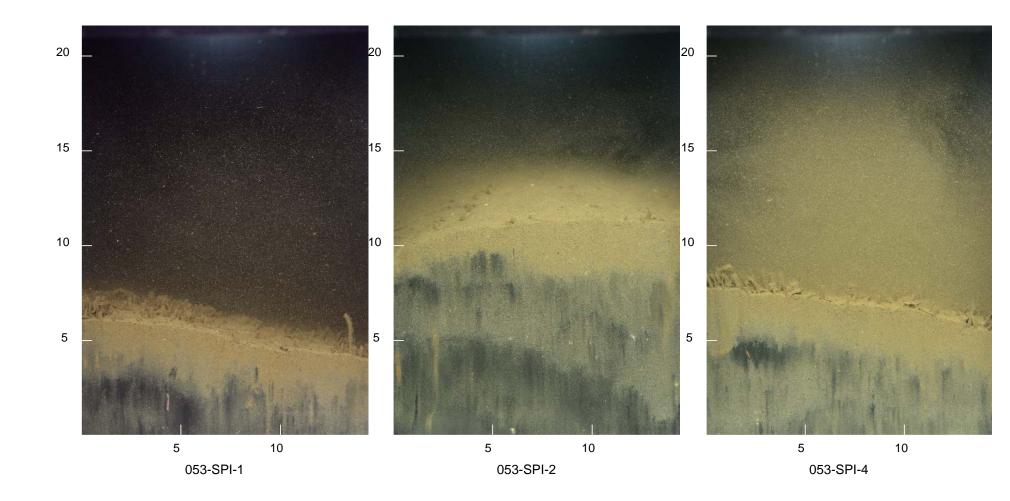


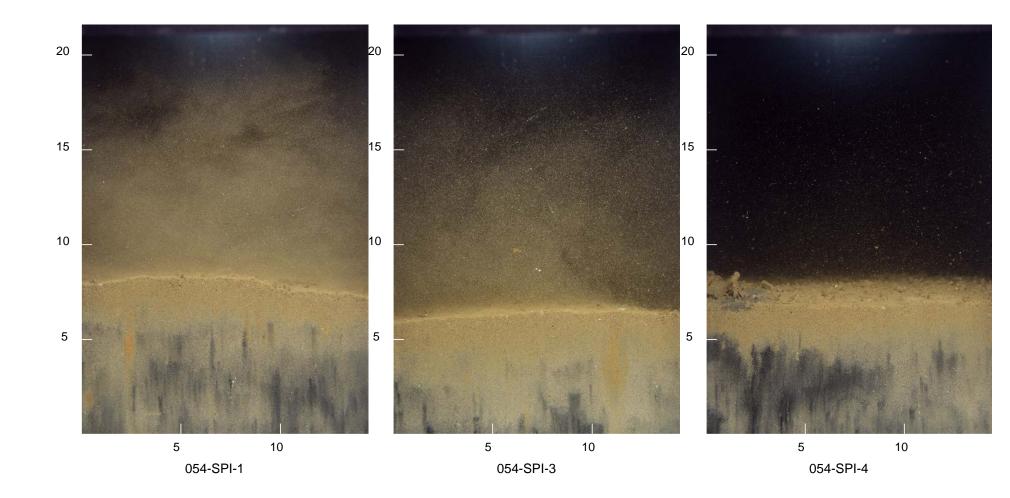


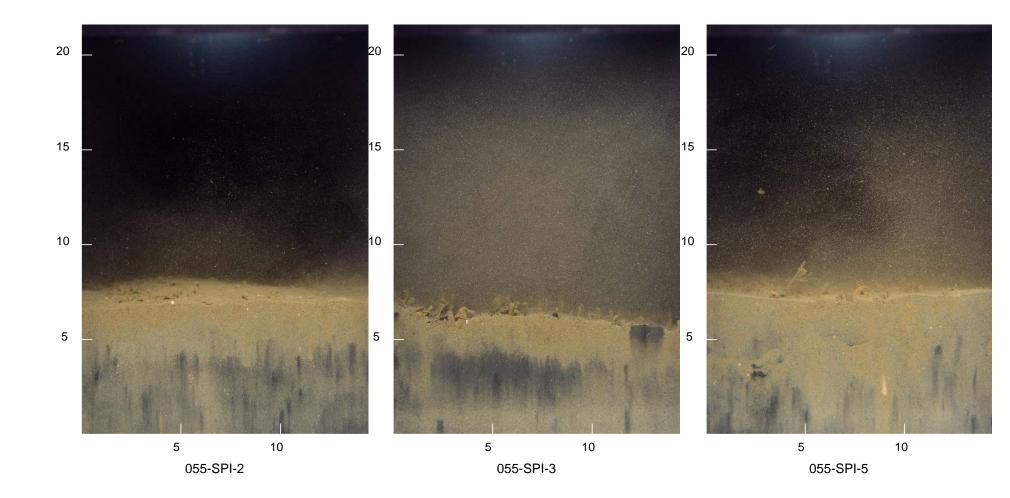


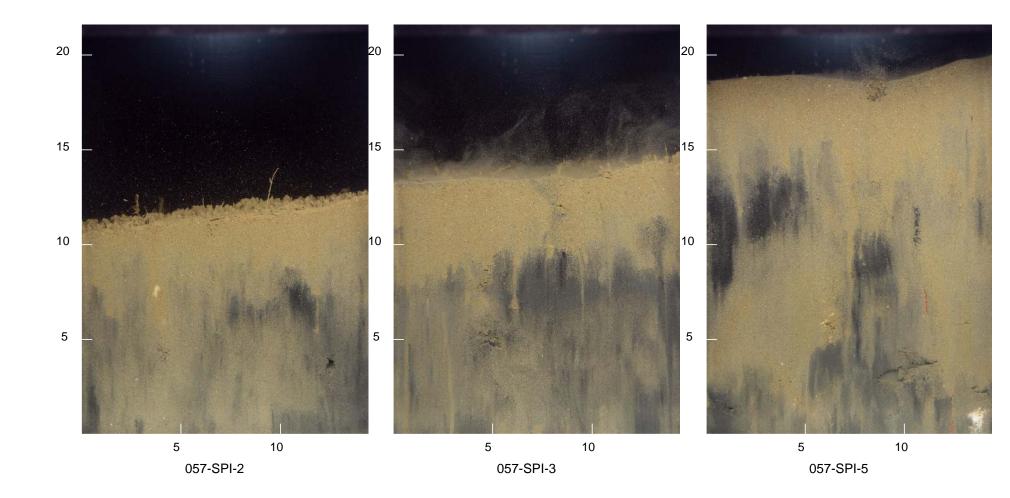


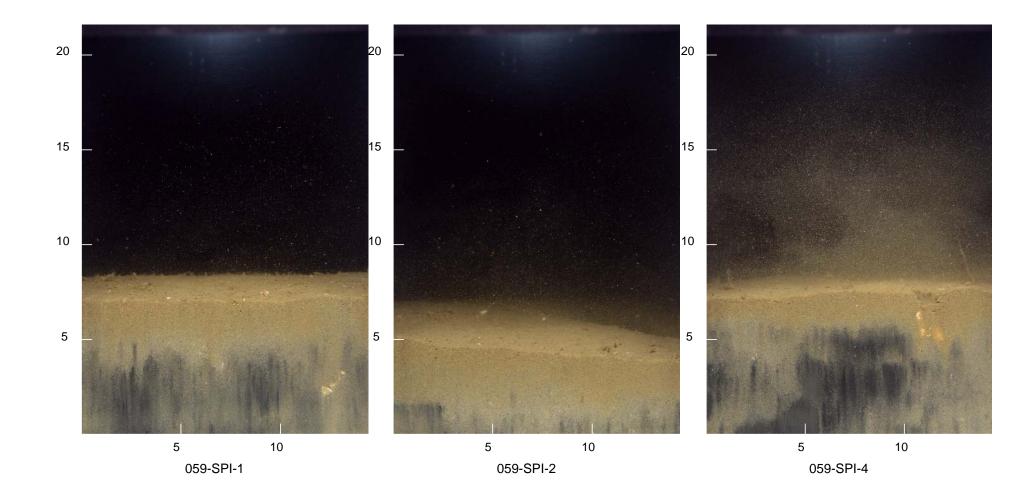


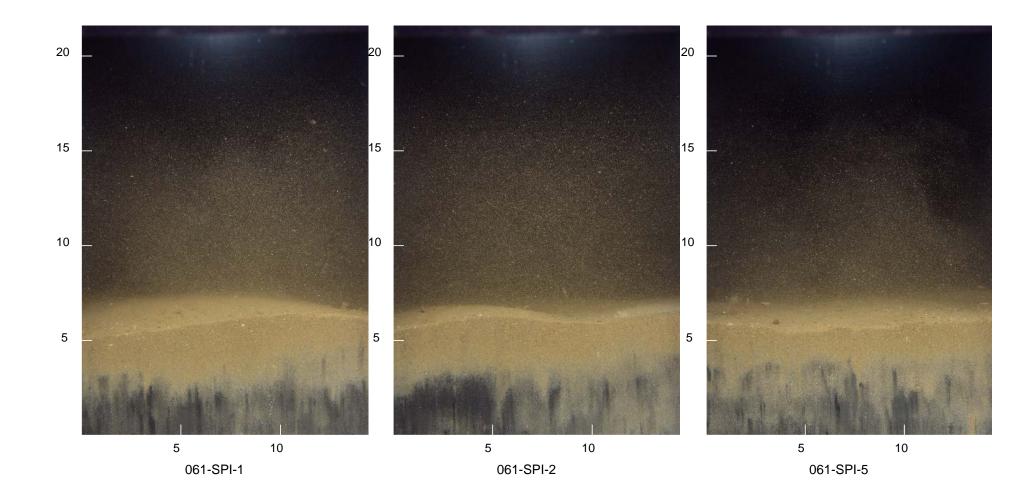


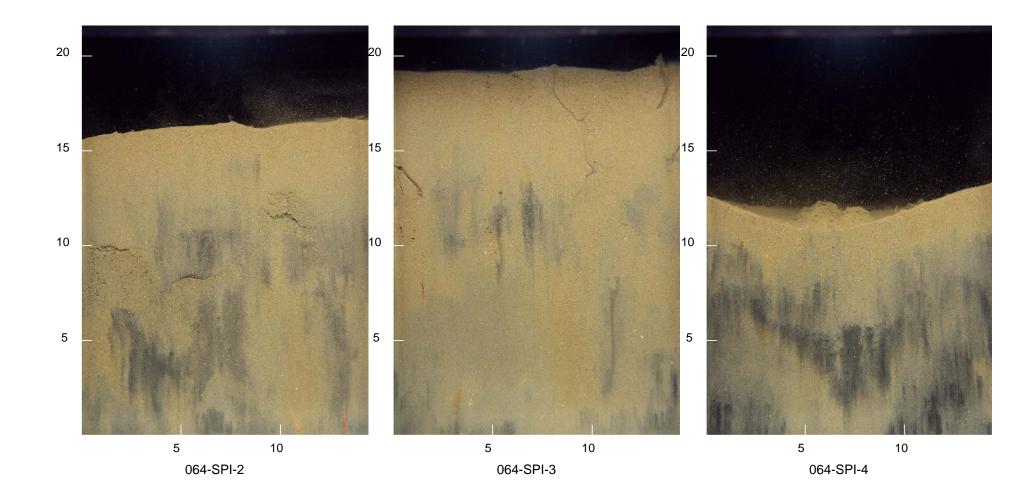


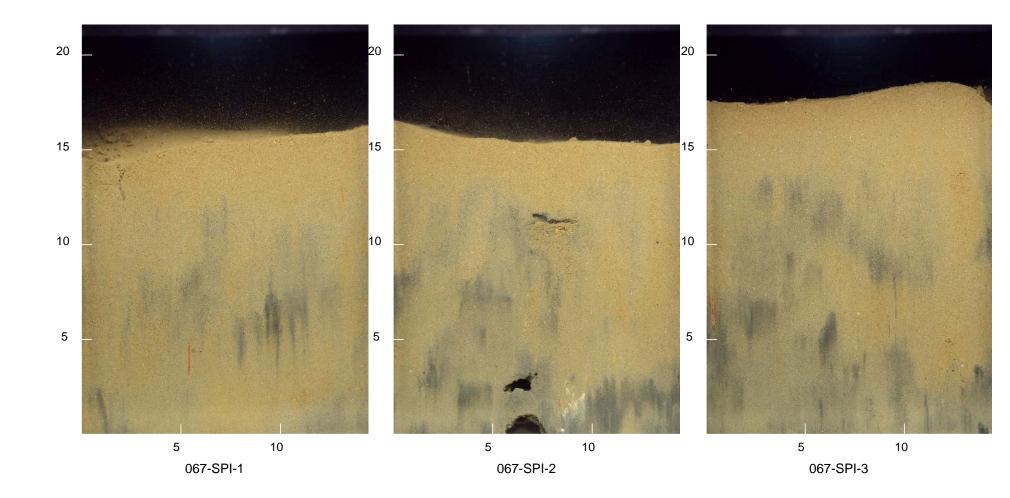


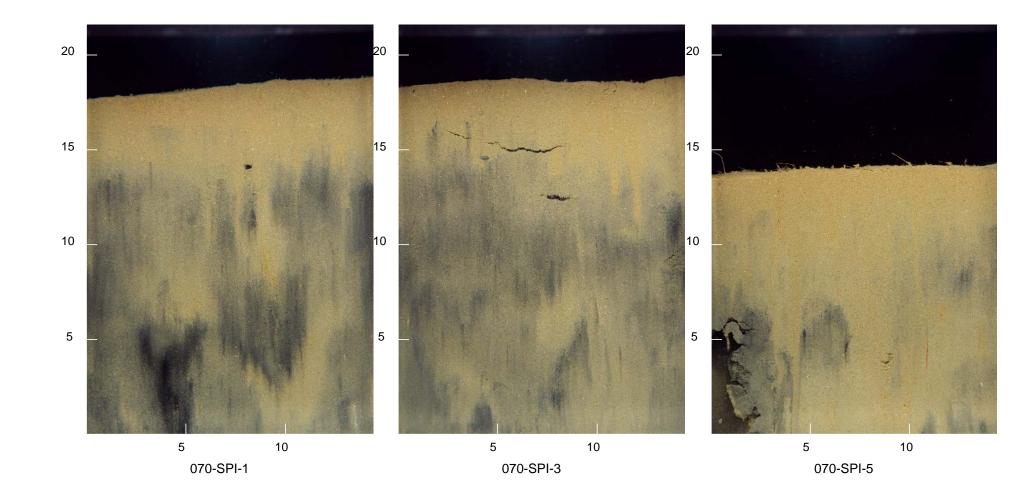


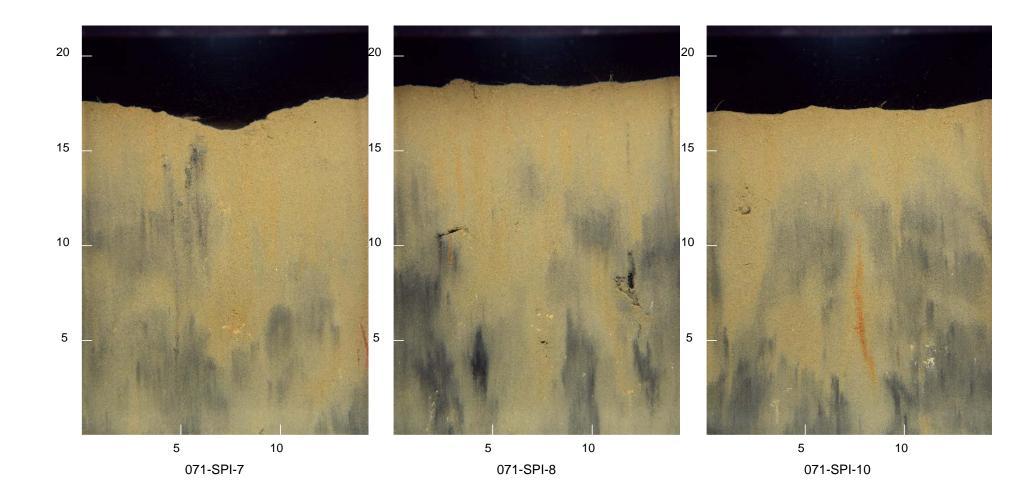


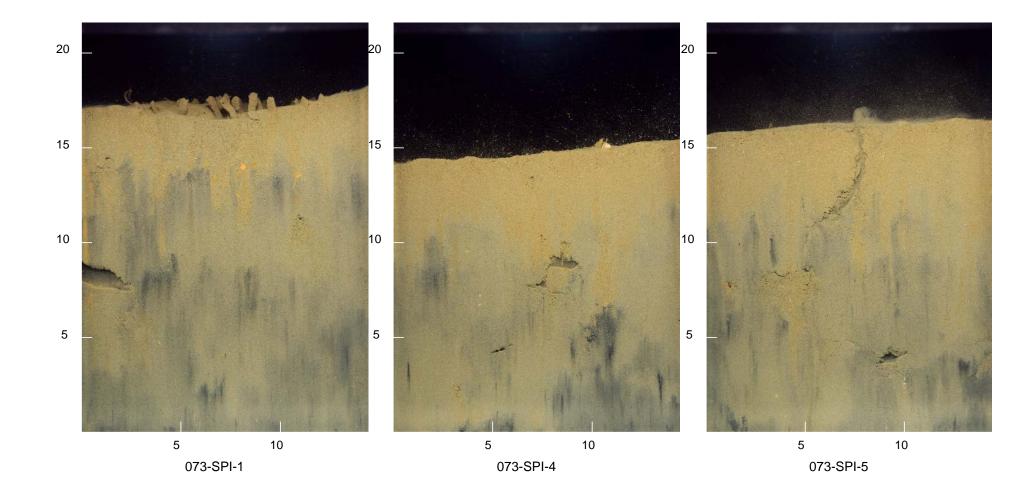


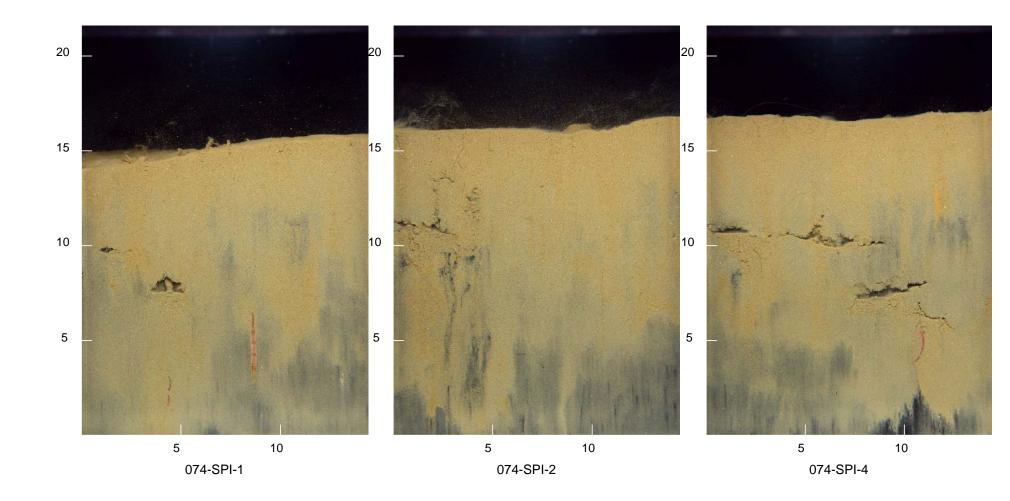


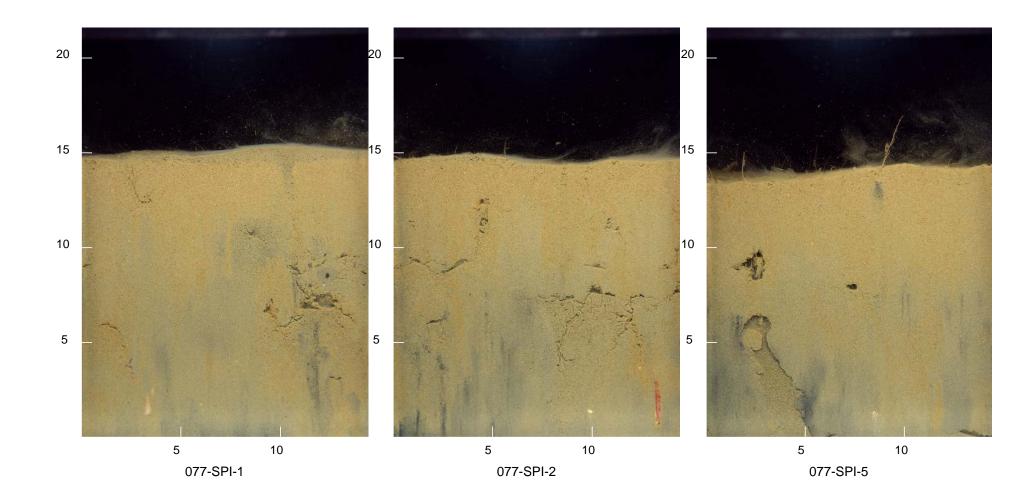


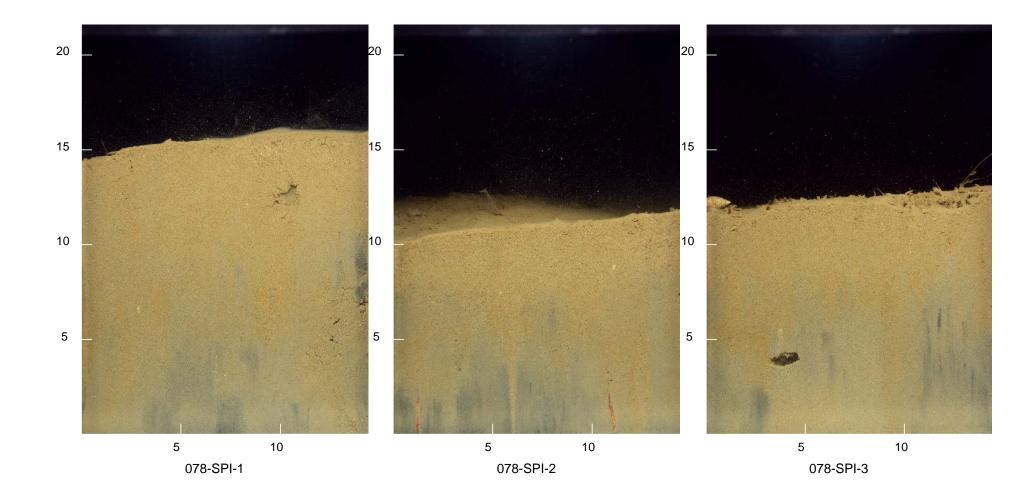


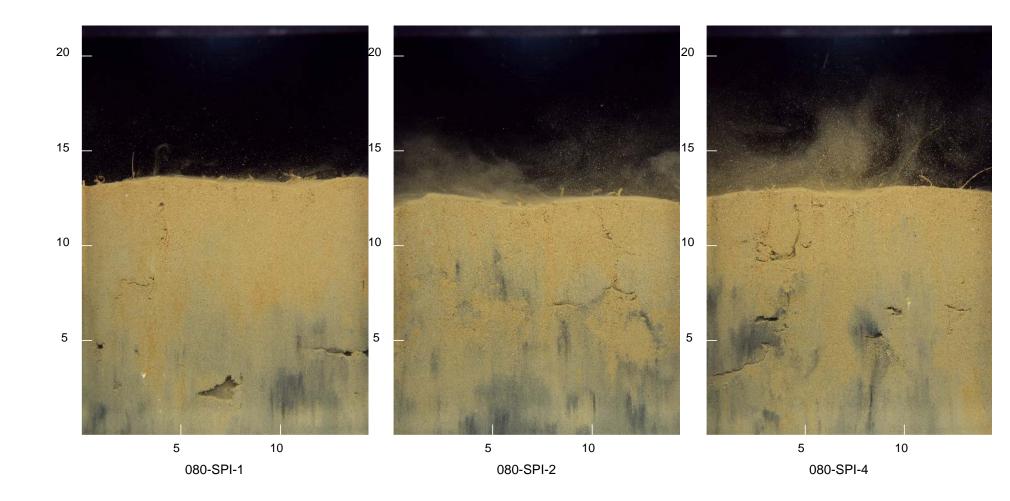


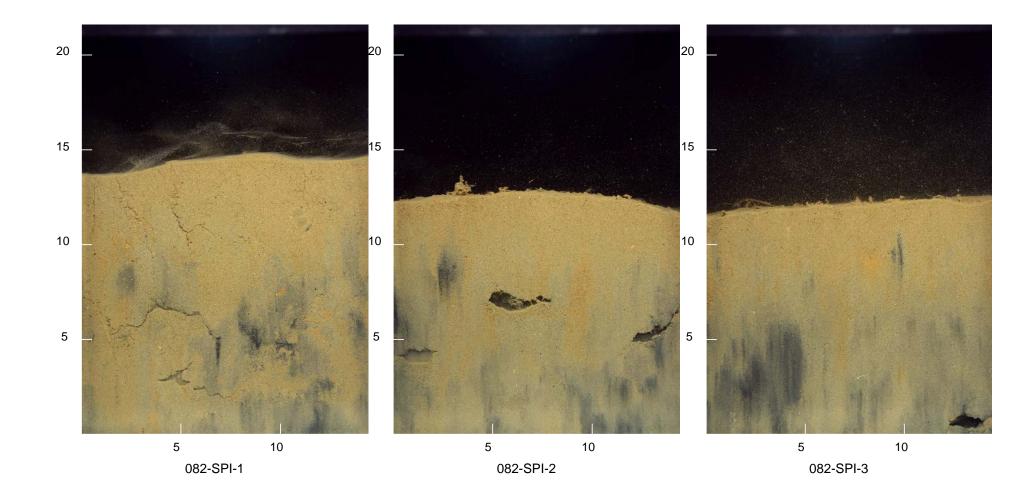


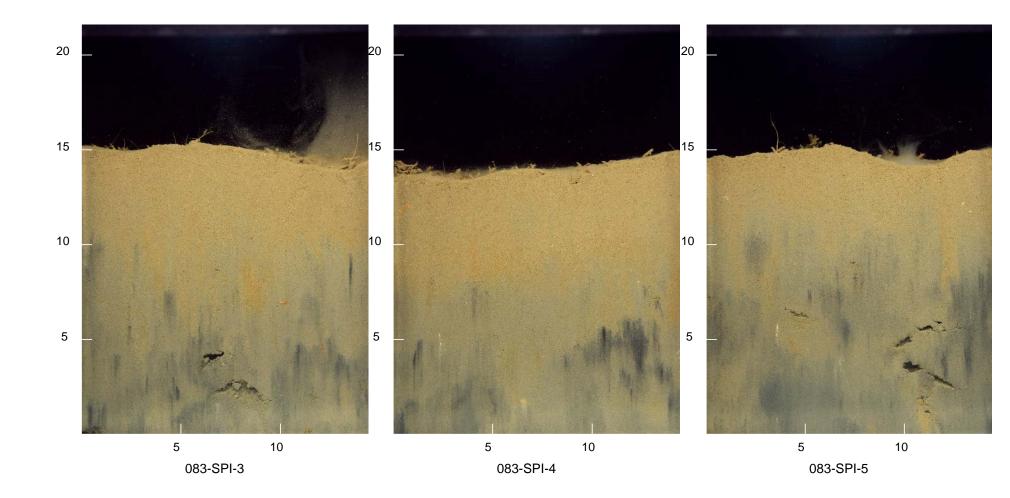


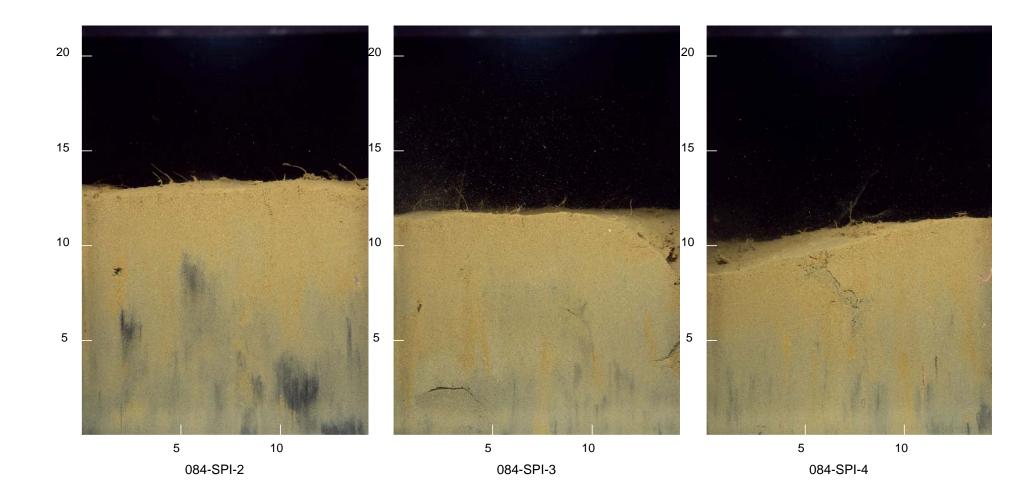


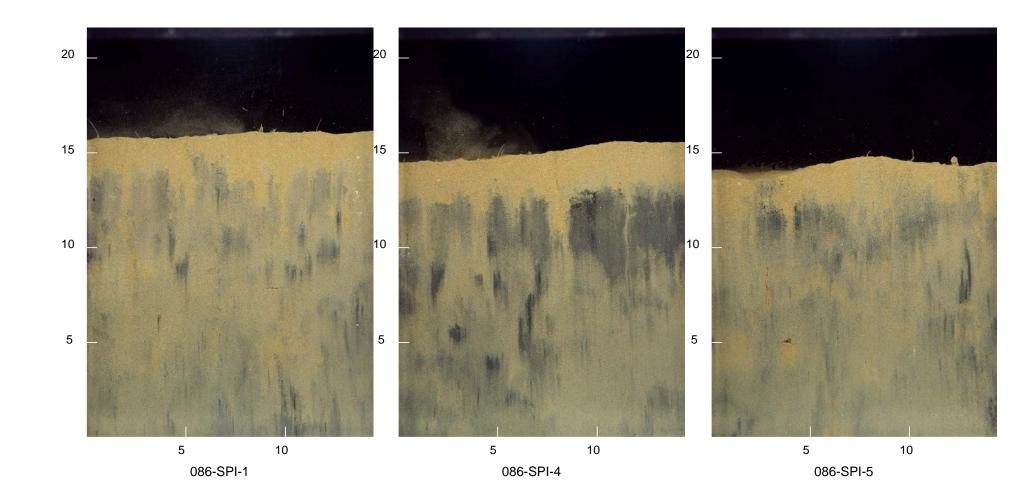


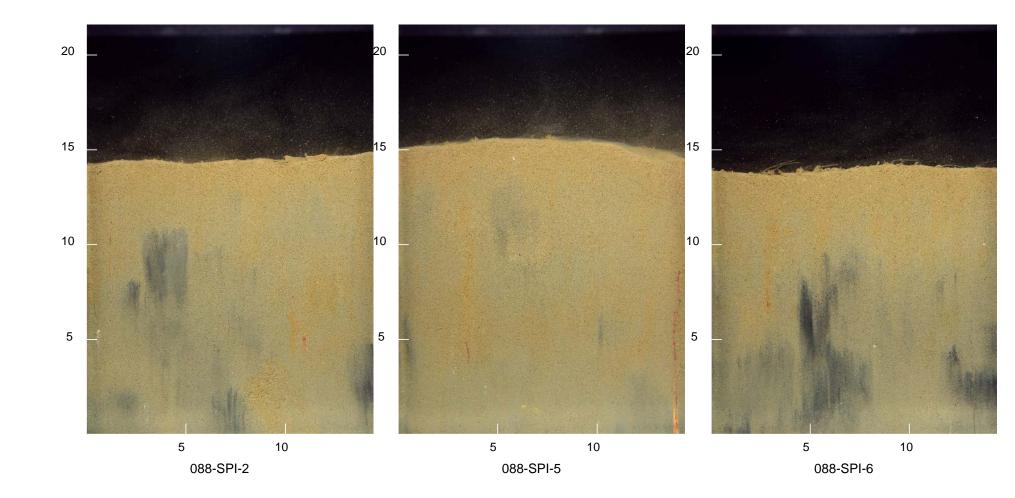


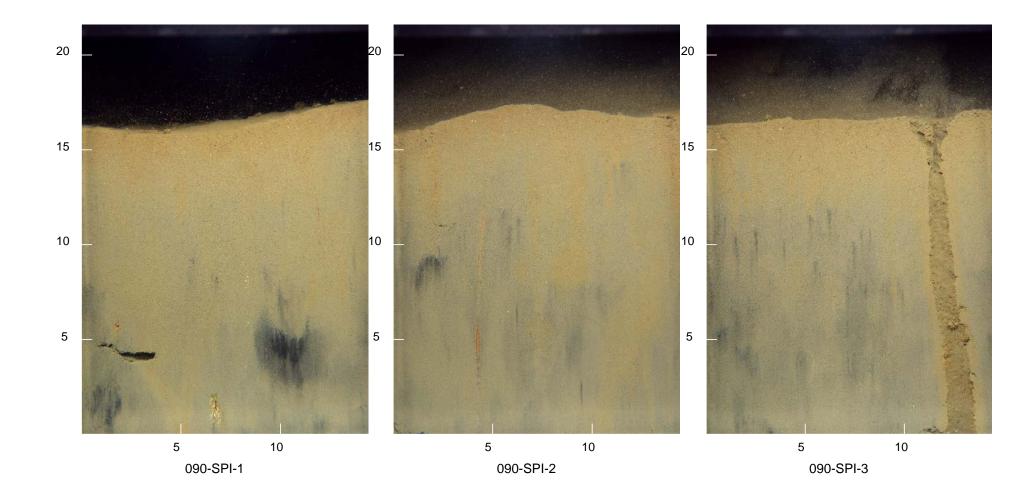


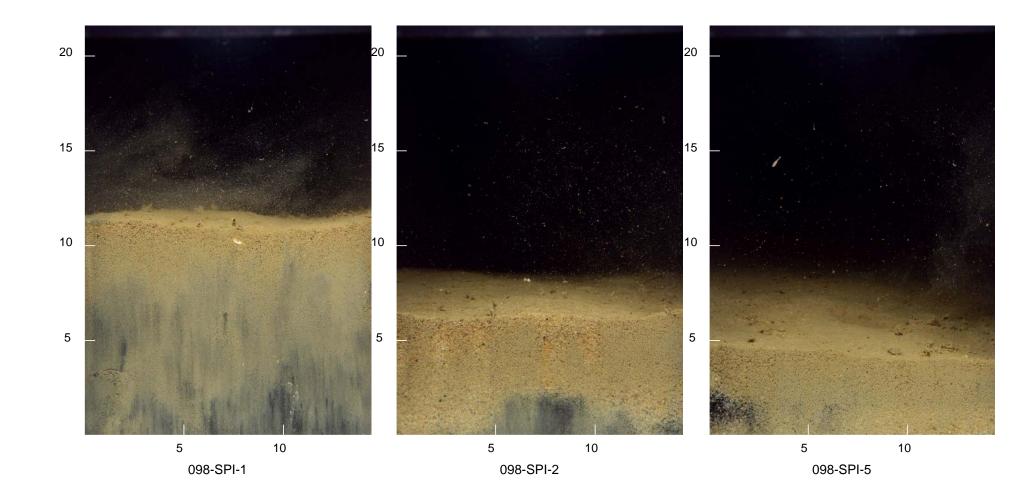


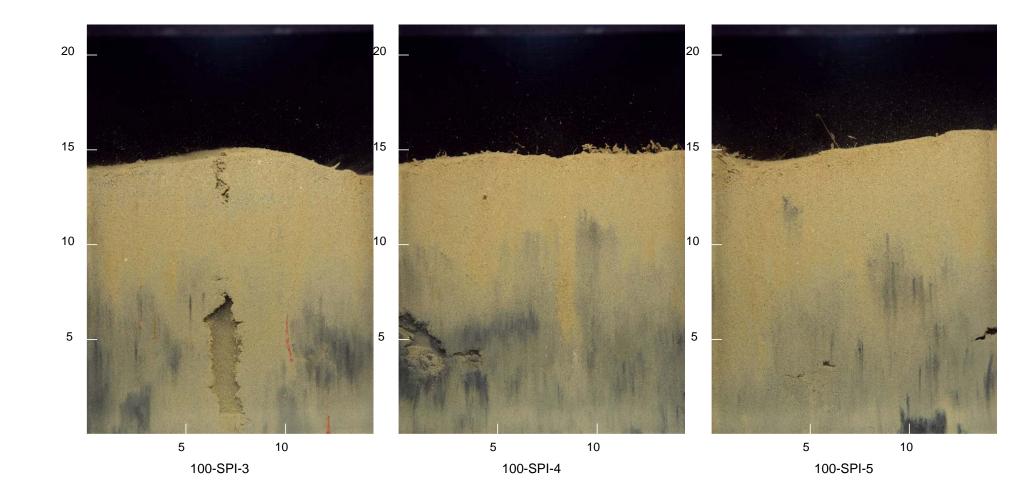


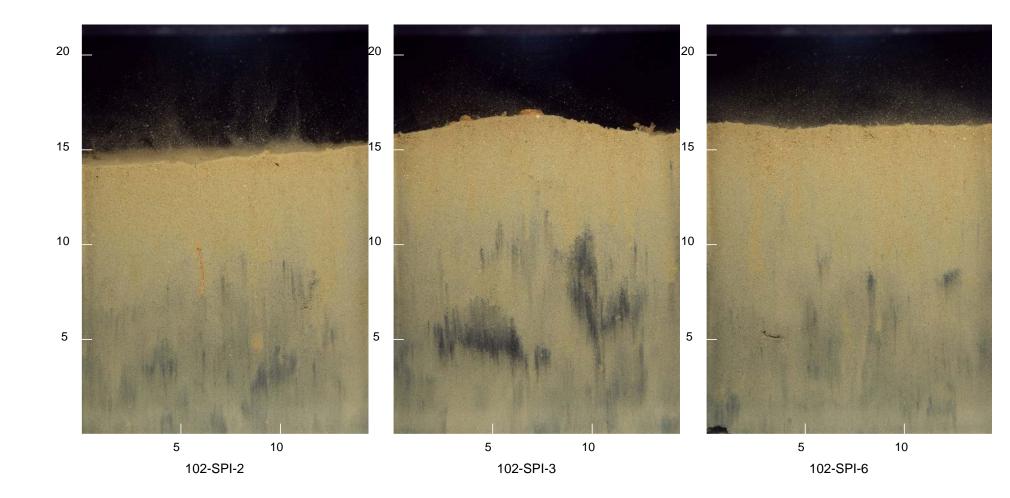


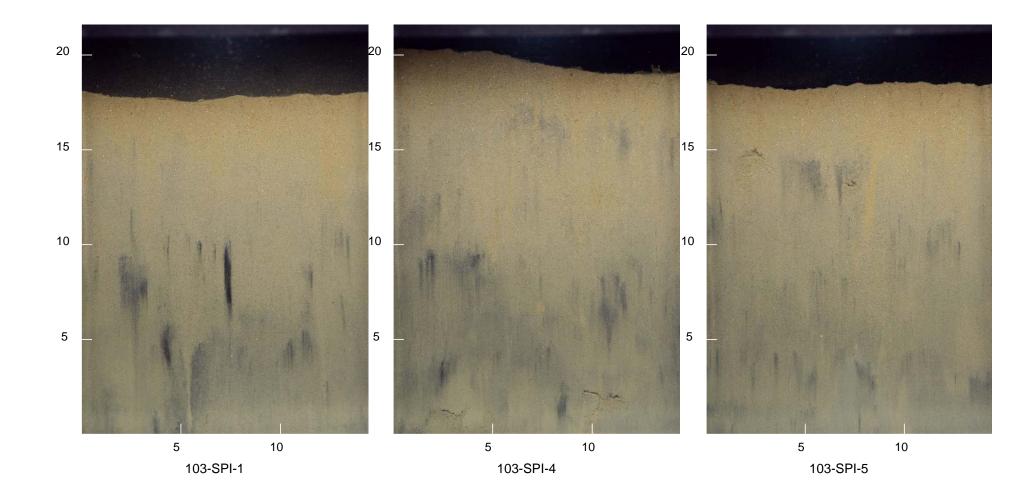


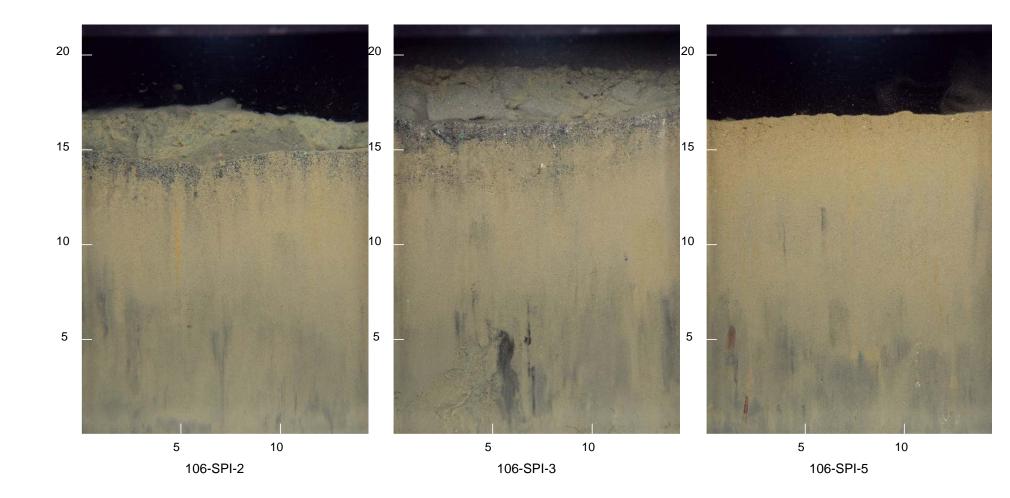


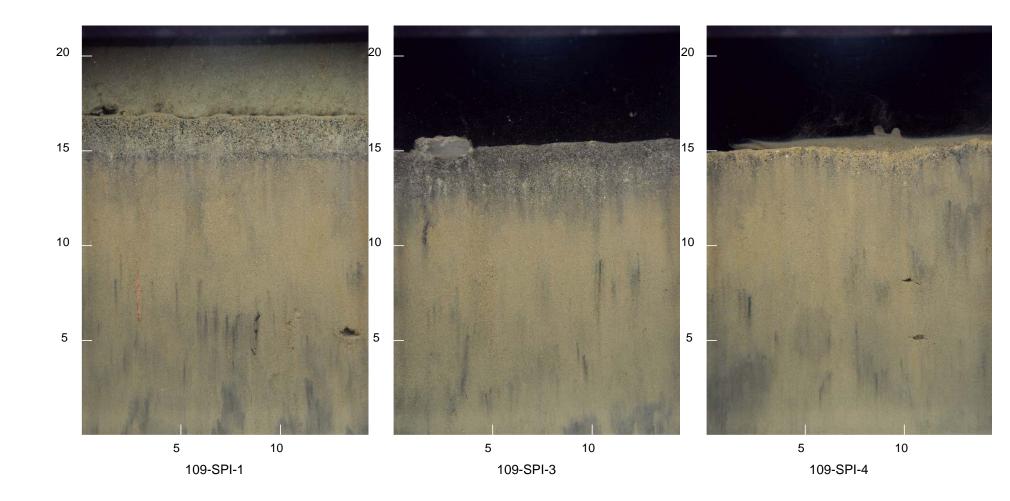


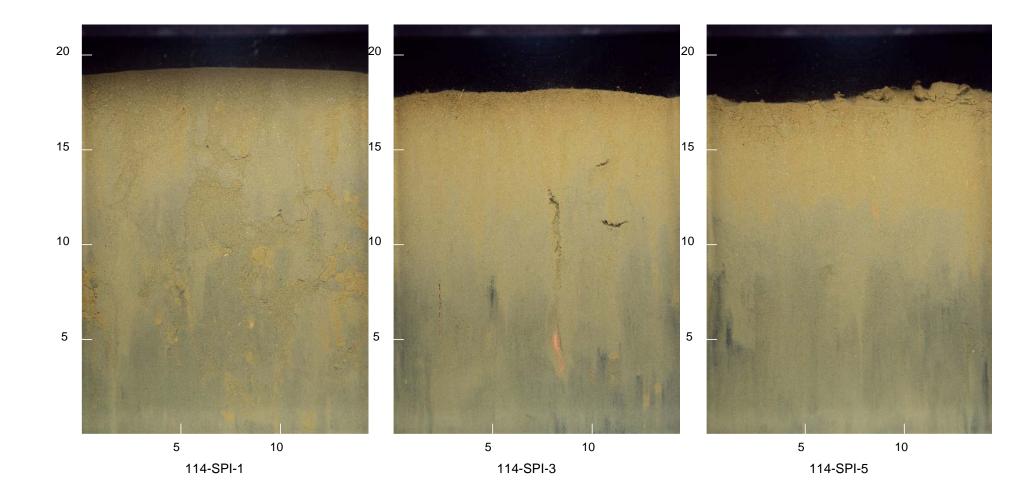


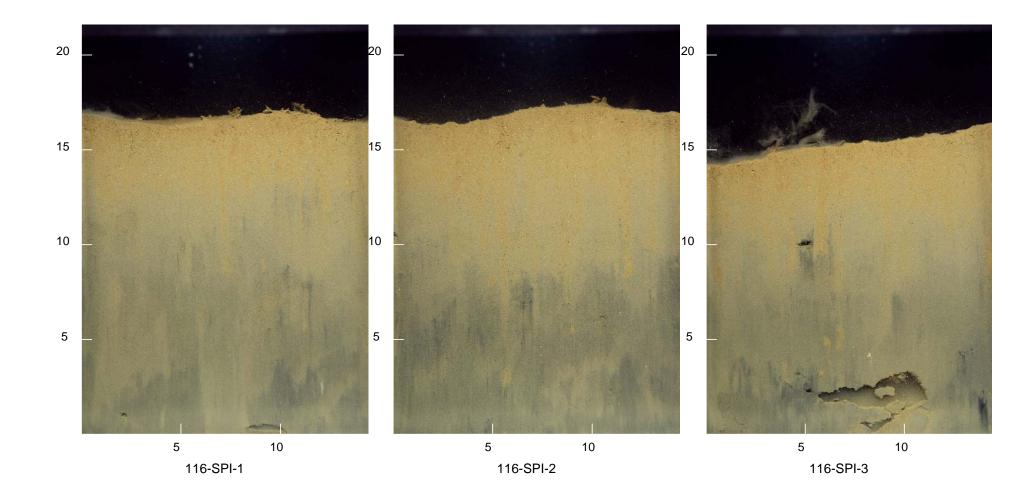


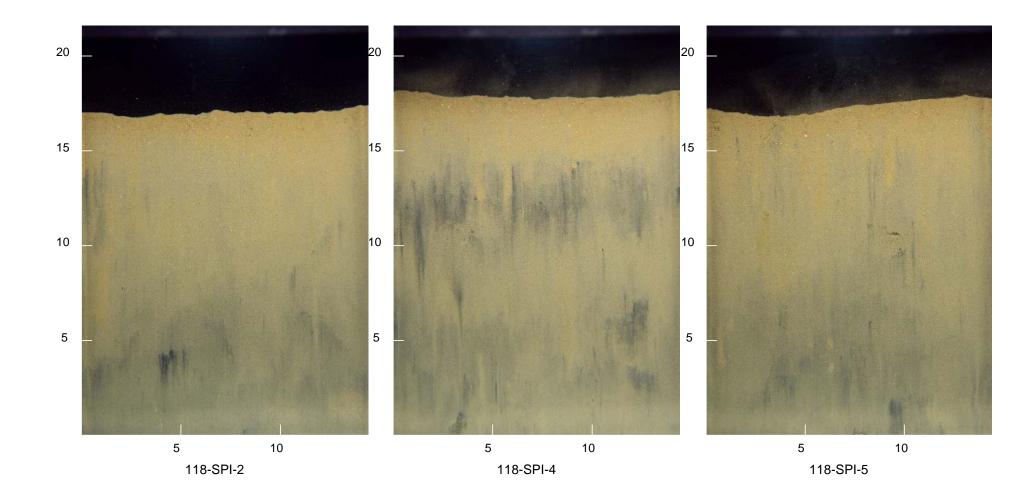


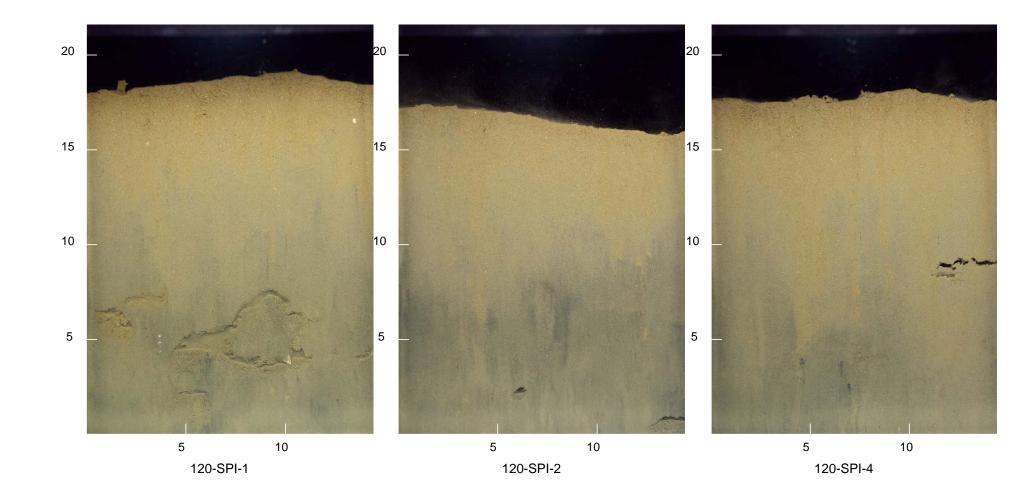


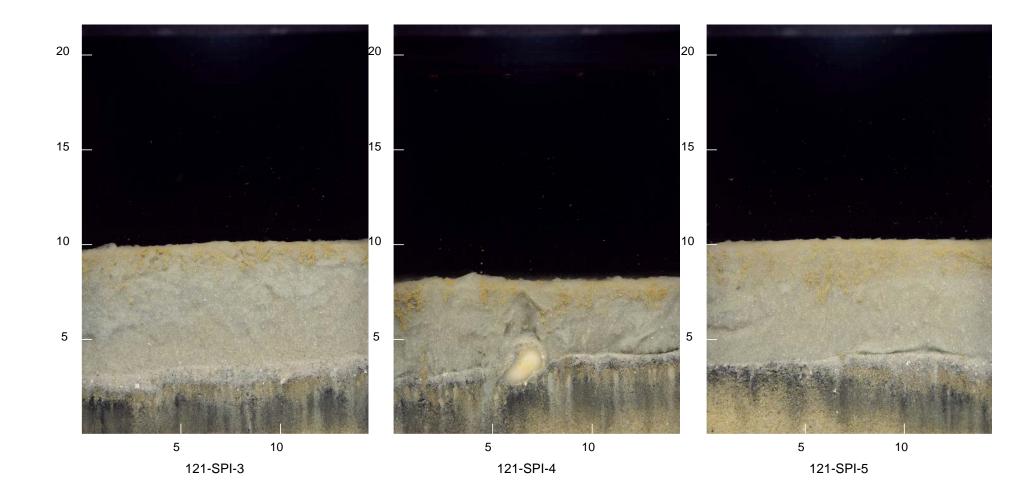


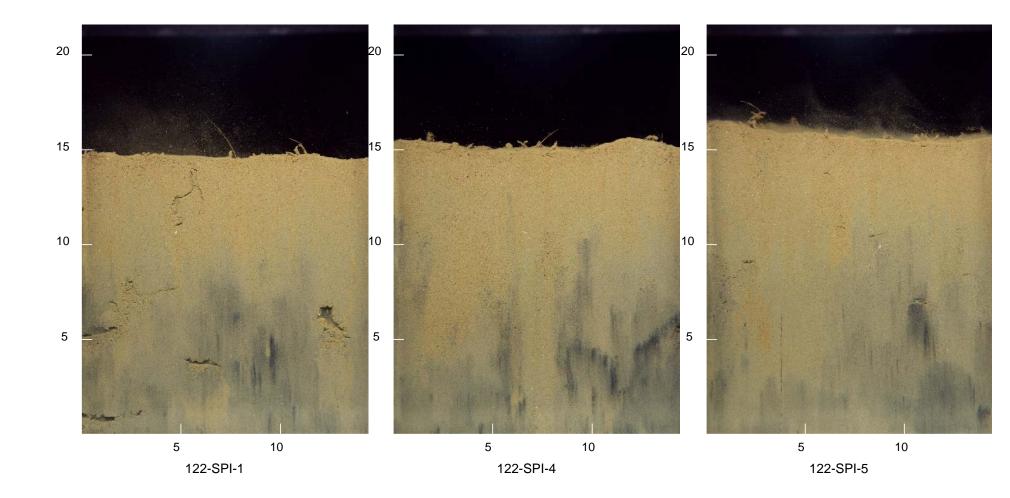


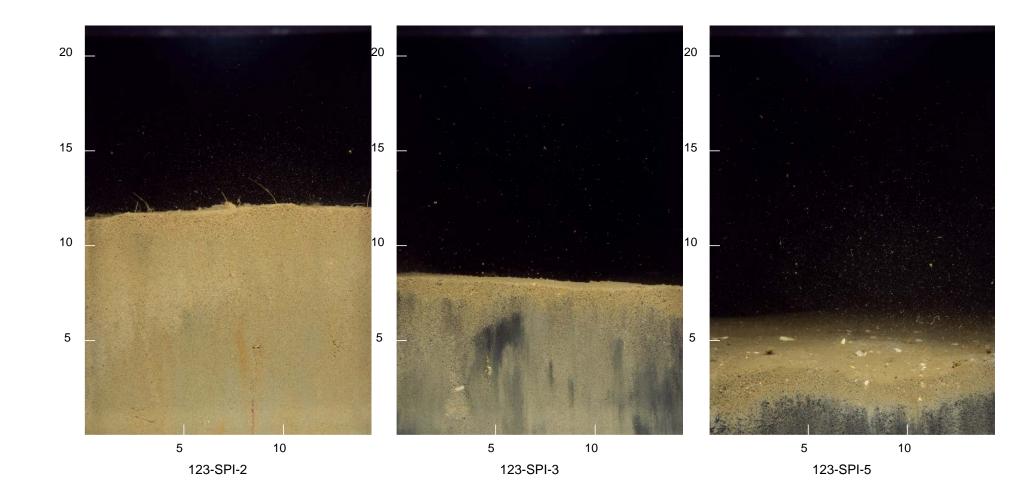


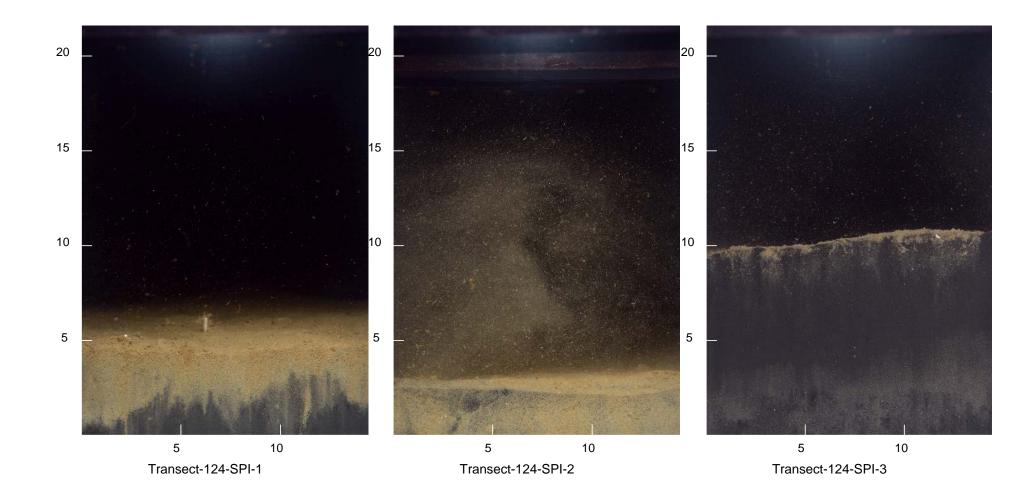


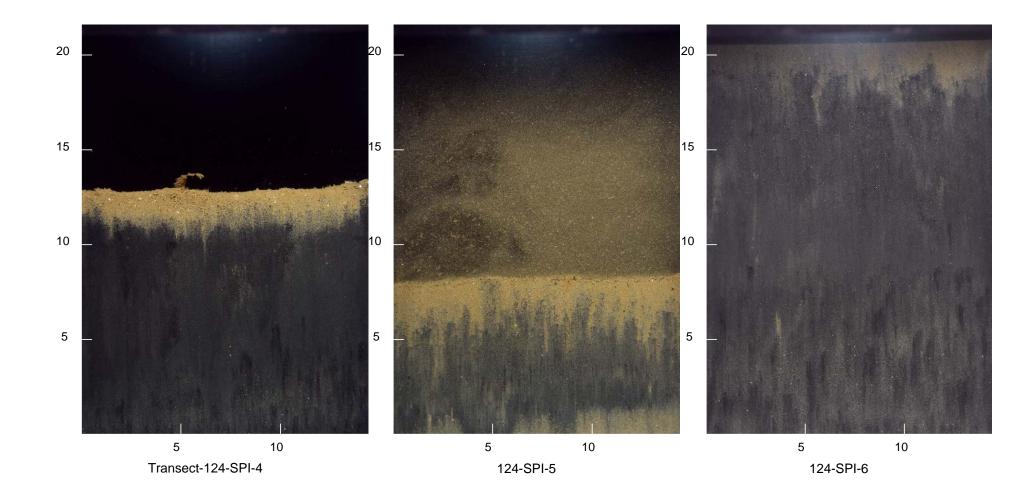


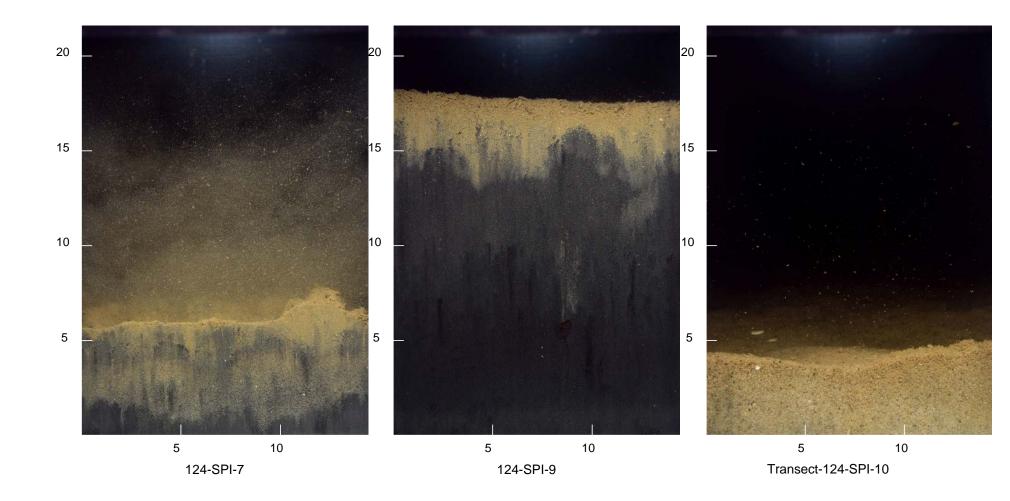


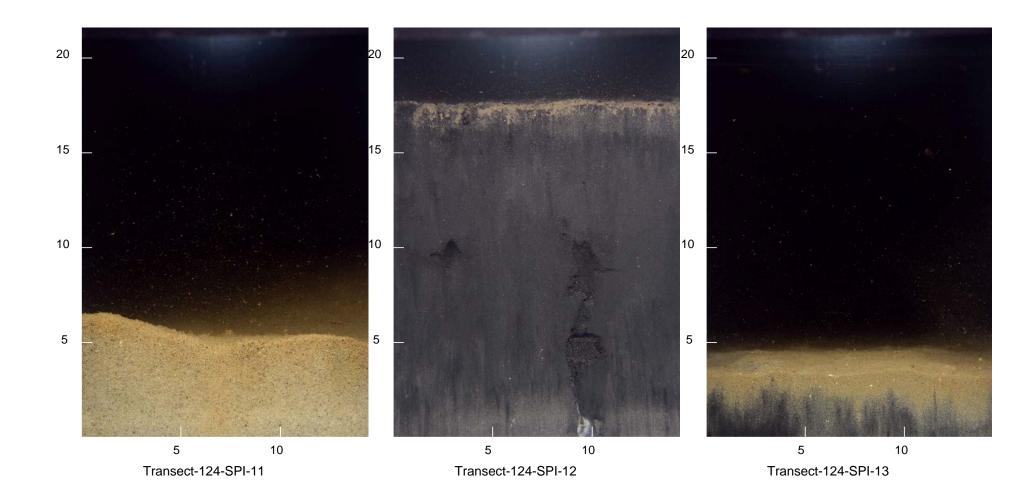


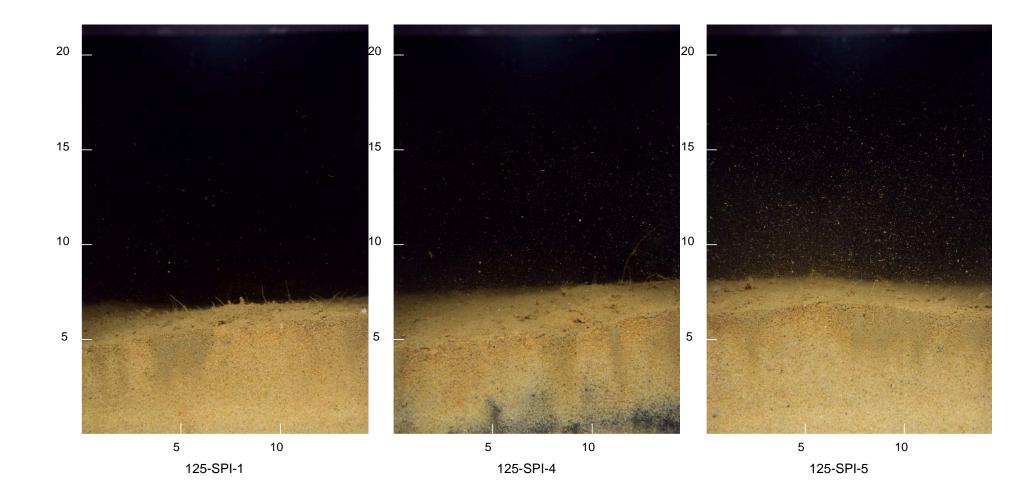


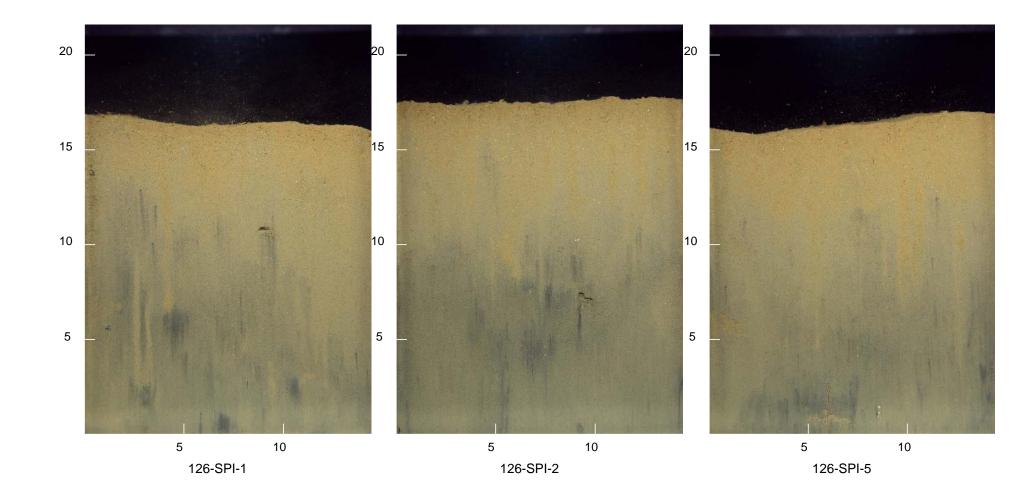


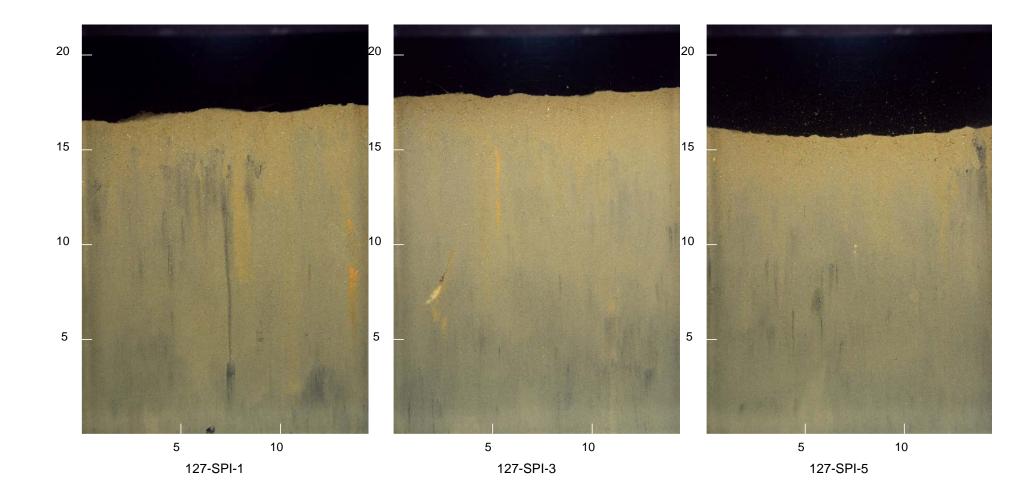


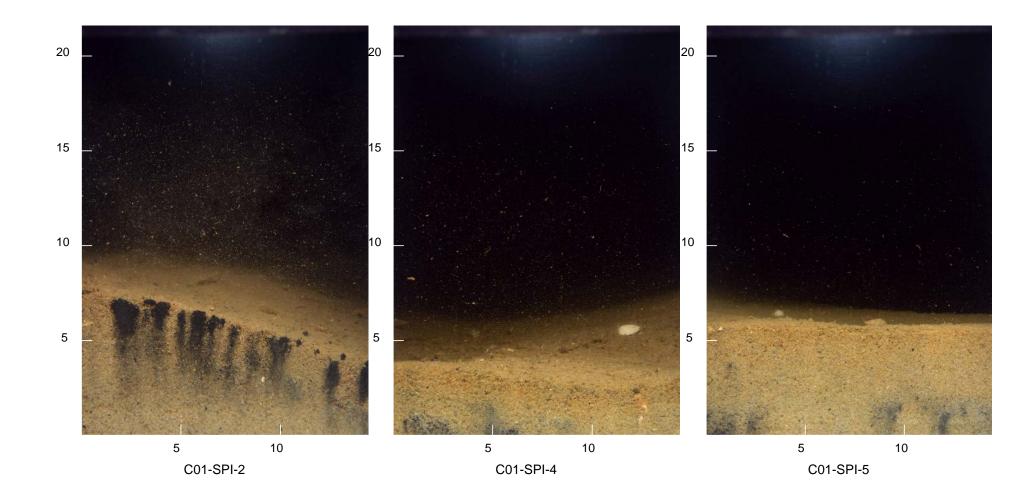


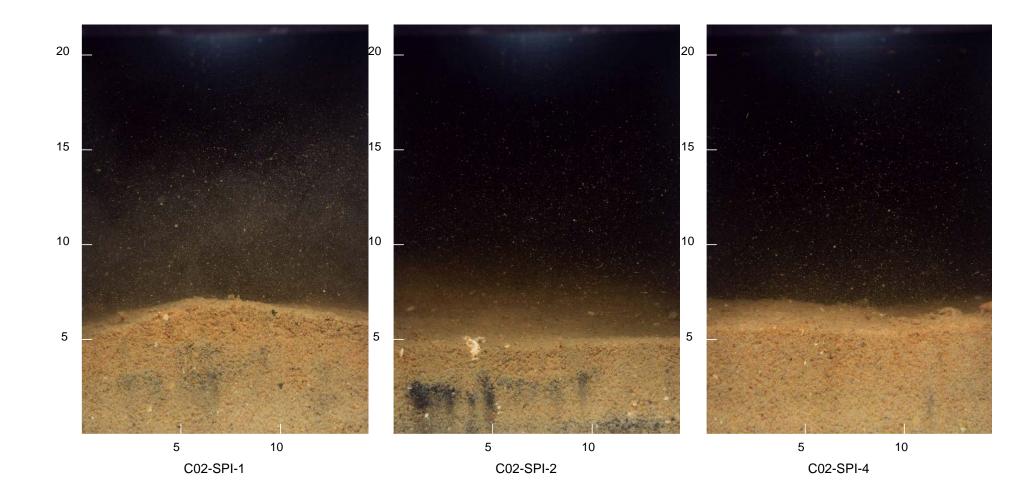


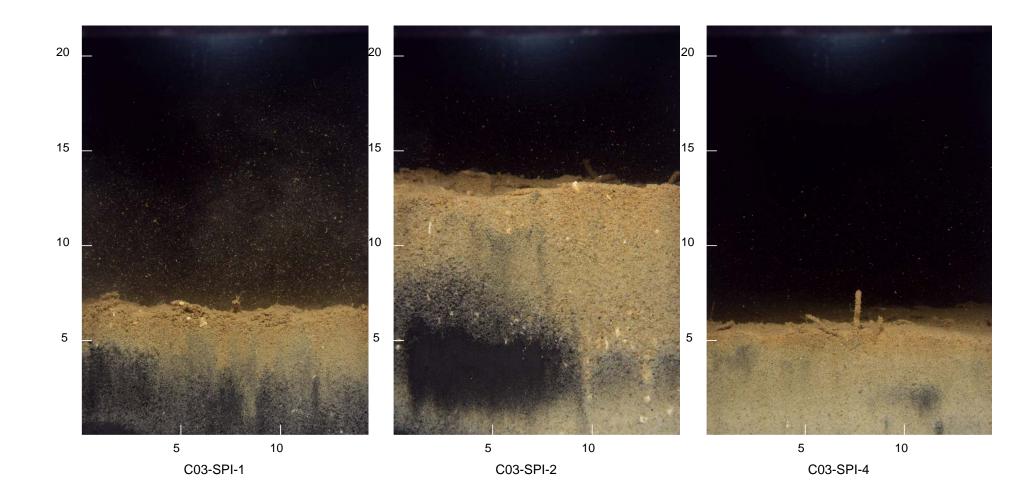


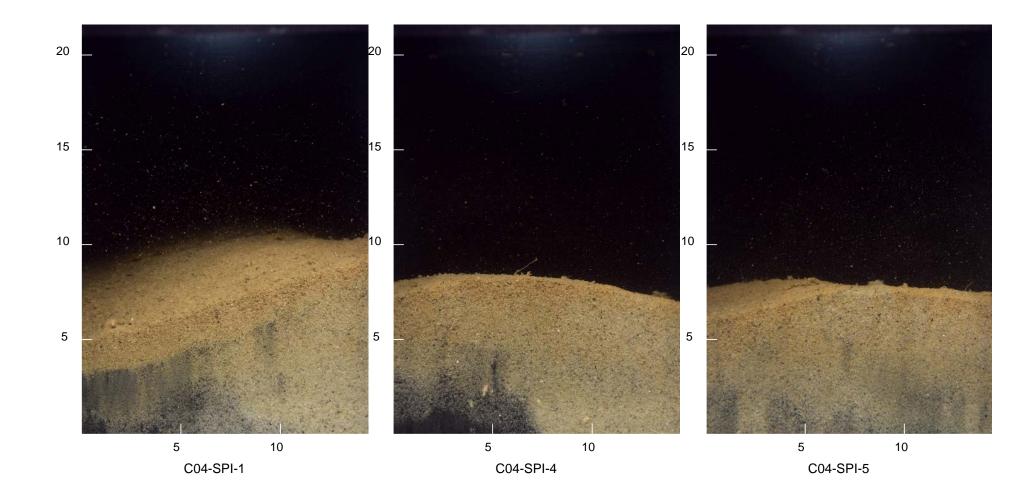


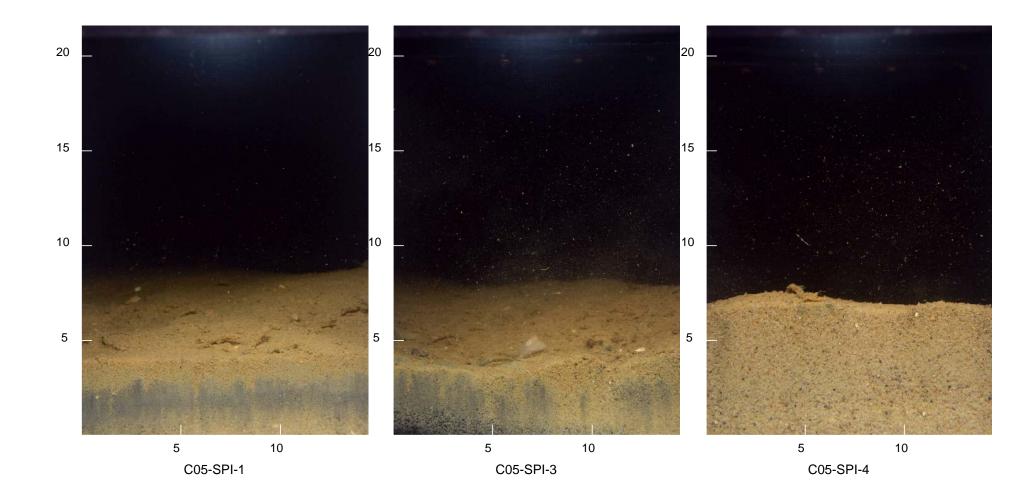


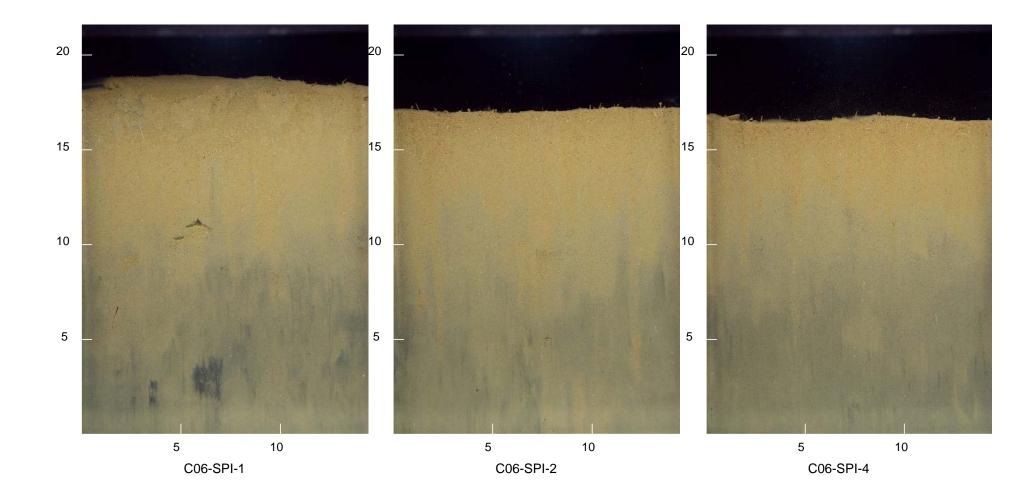


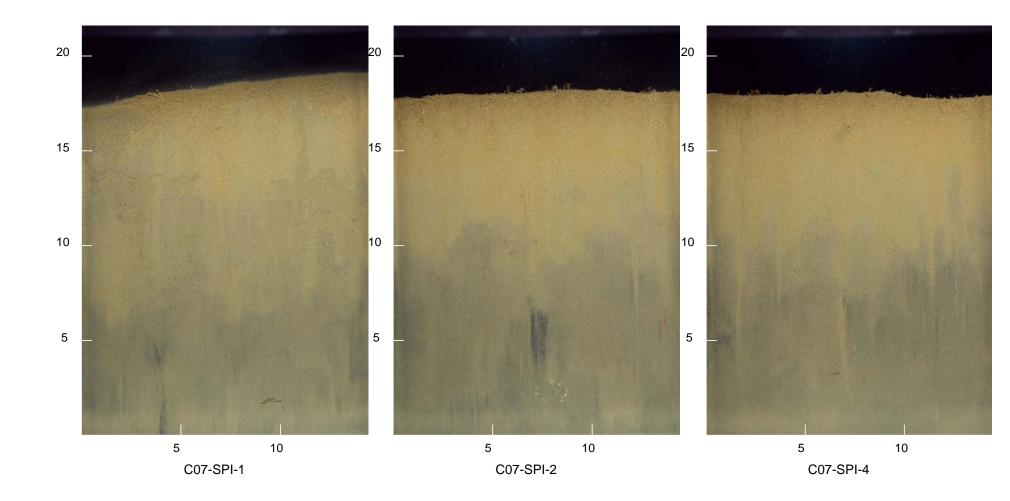


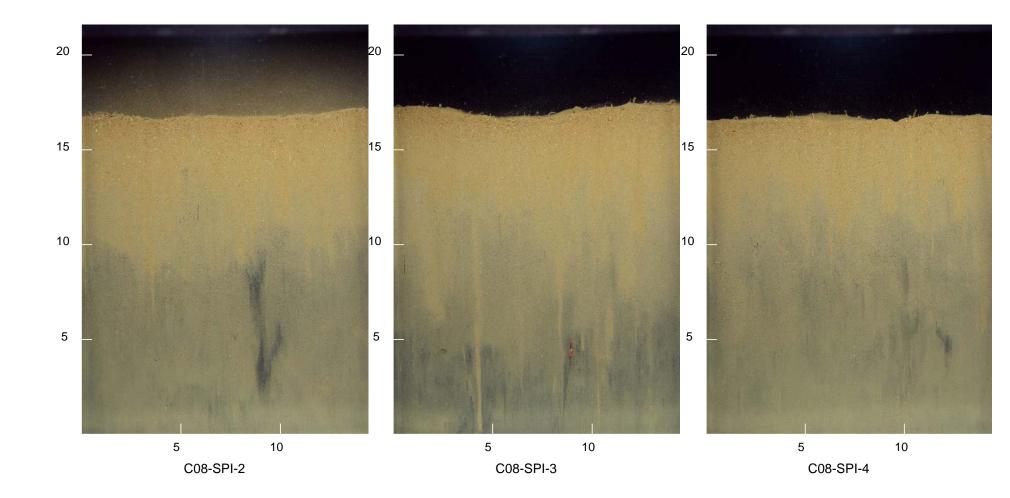


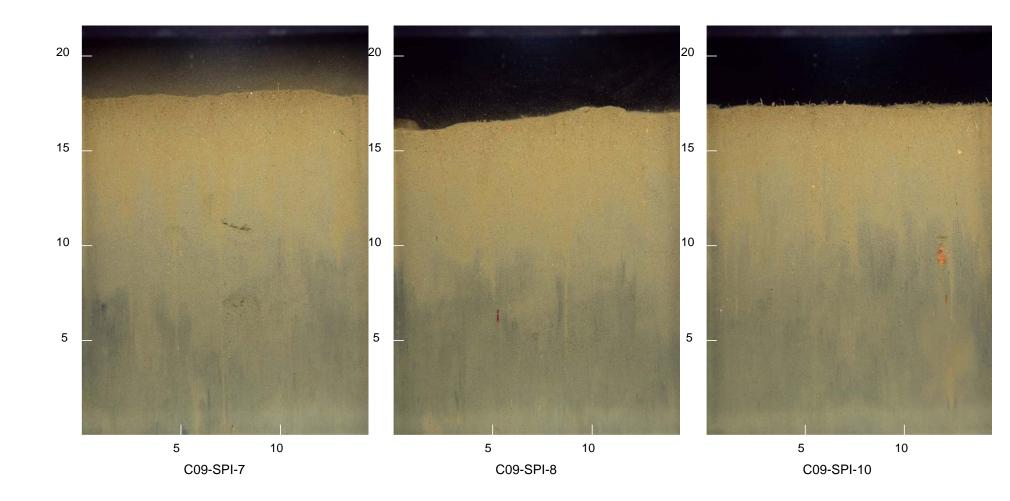


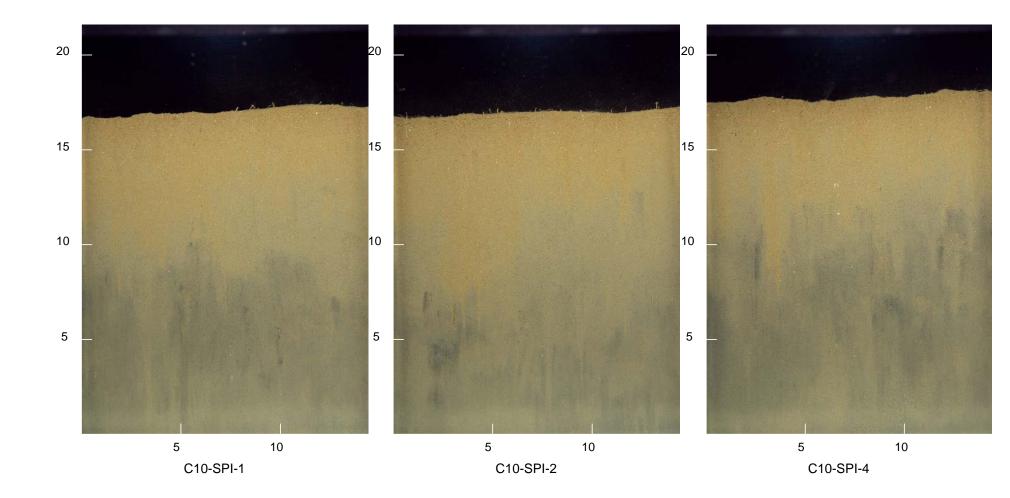


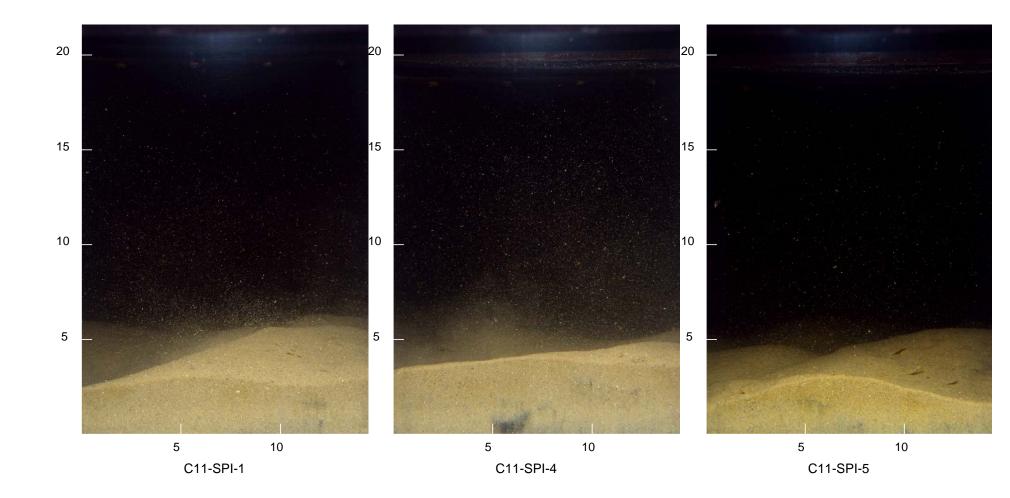


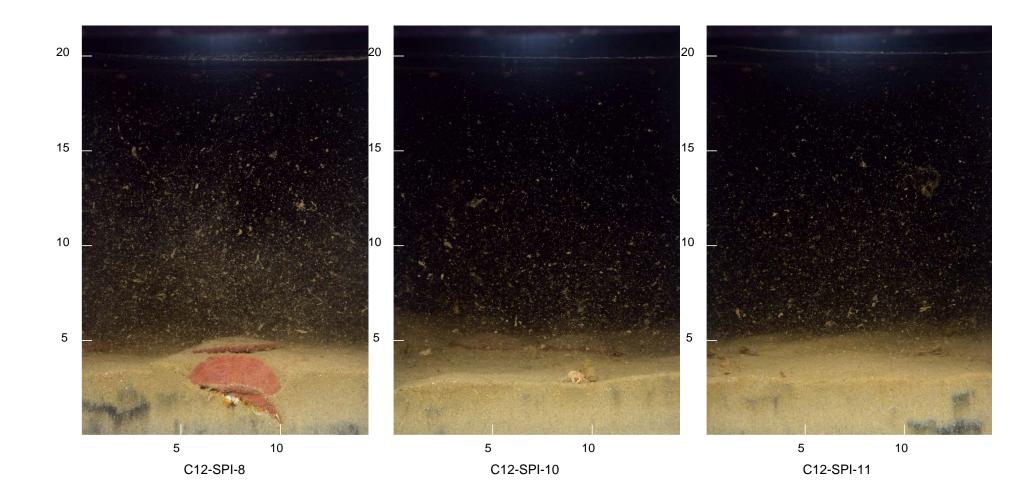


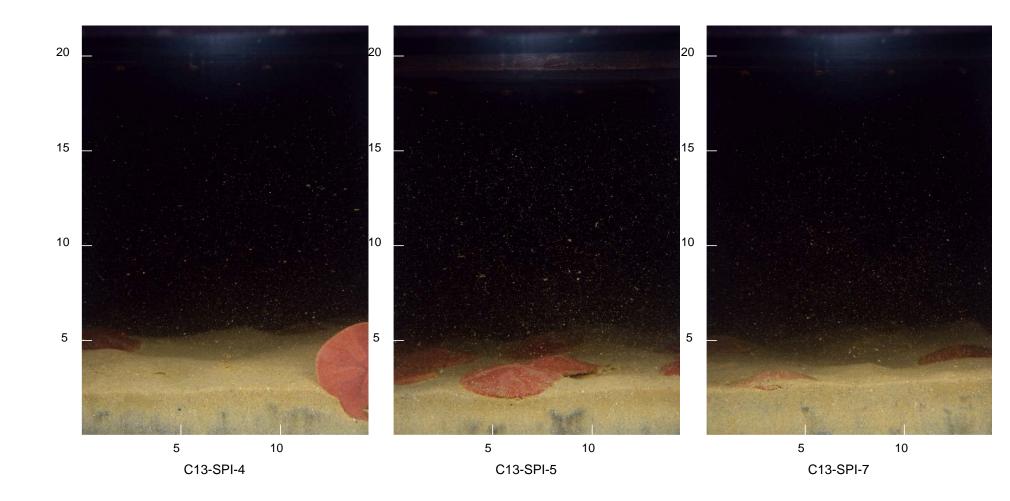


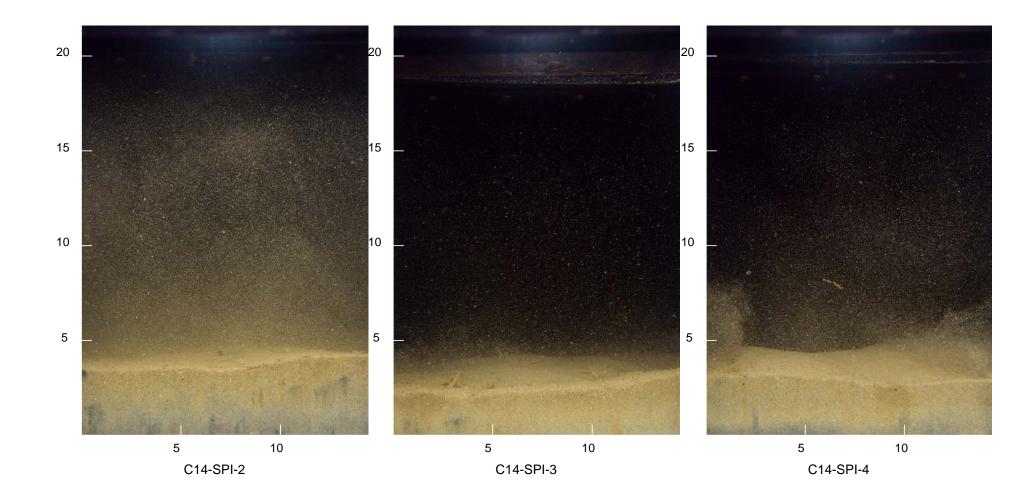


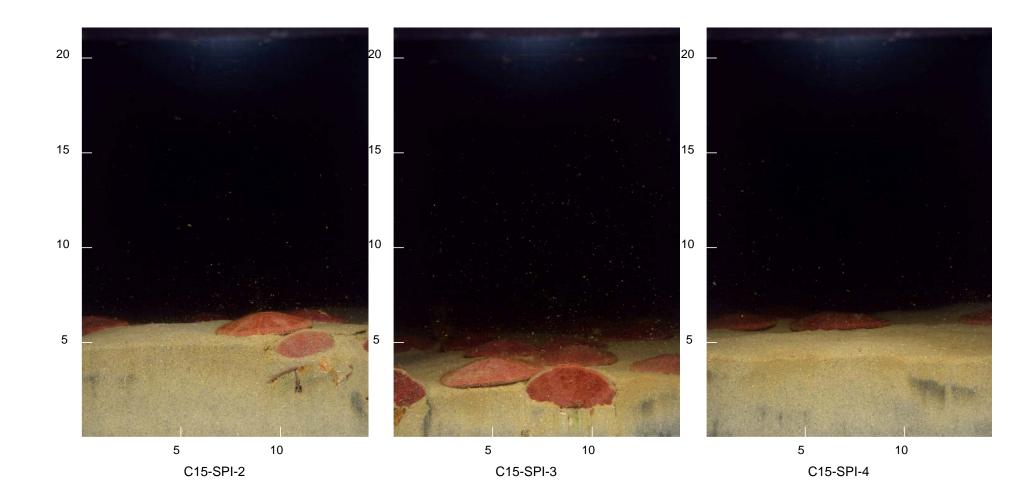


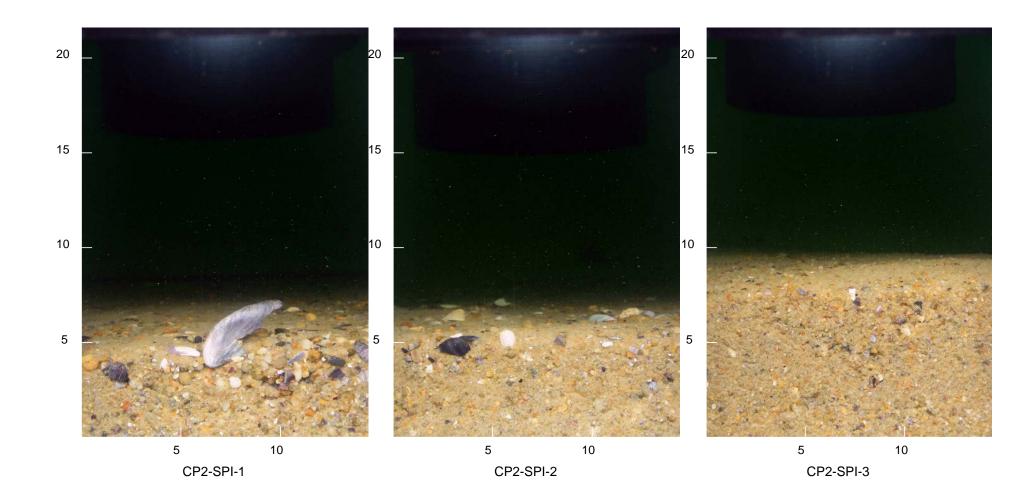








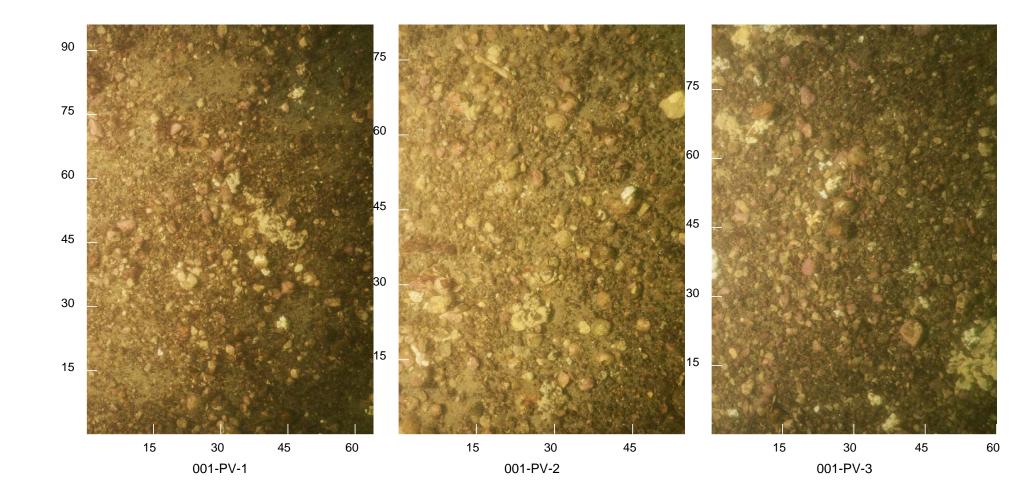


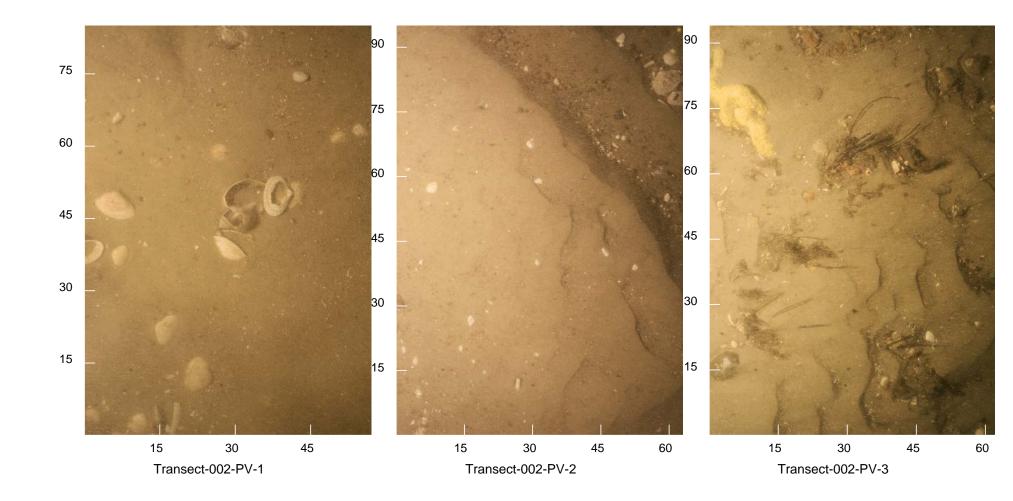


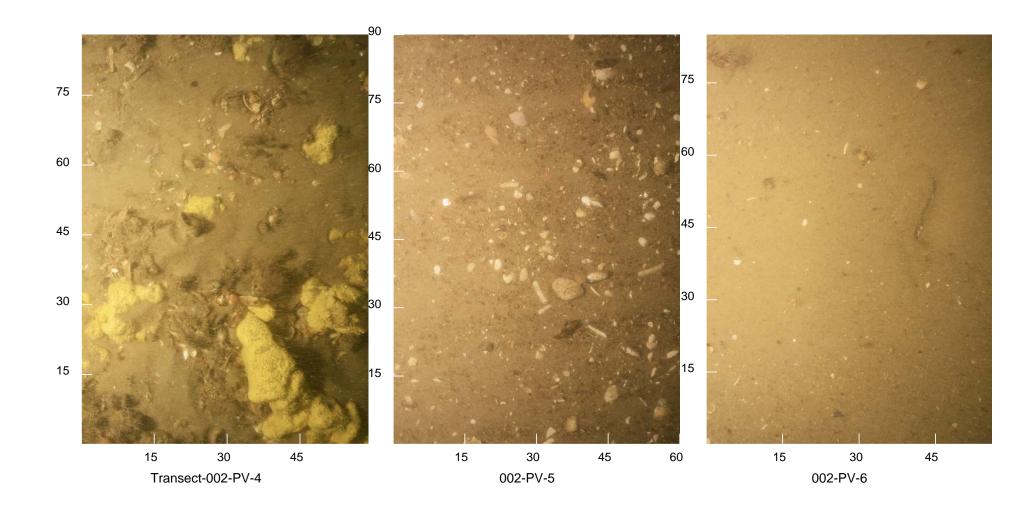
Appendix B2

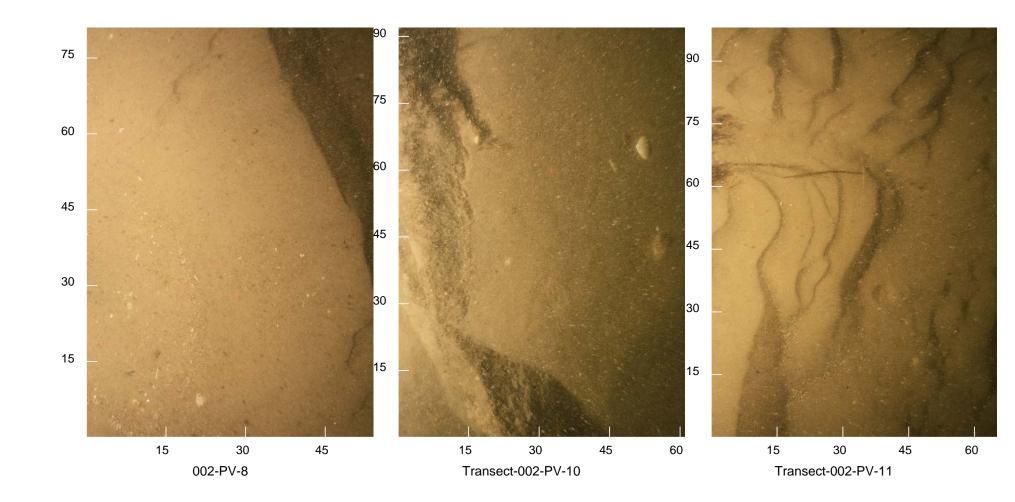
Plan View Images

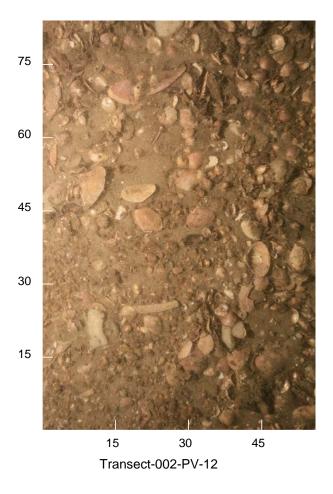
Scale: The width and height of each PV image is provided in Appendix C2 (PV Image Data Set).

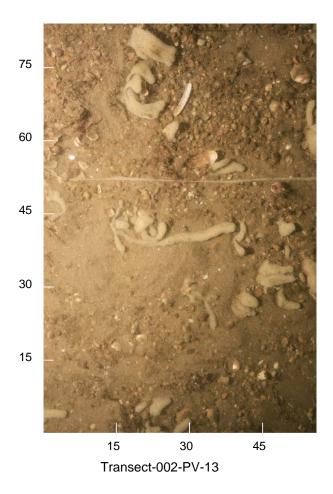


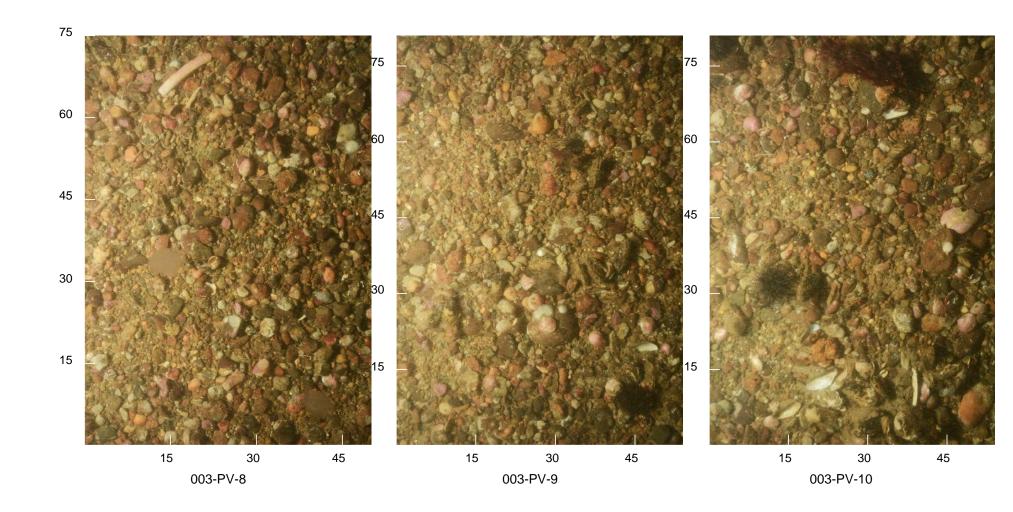


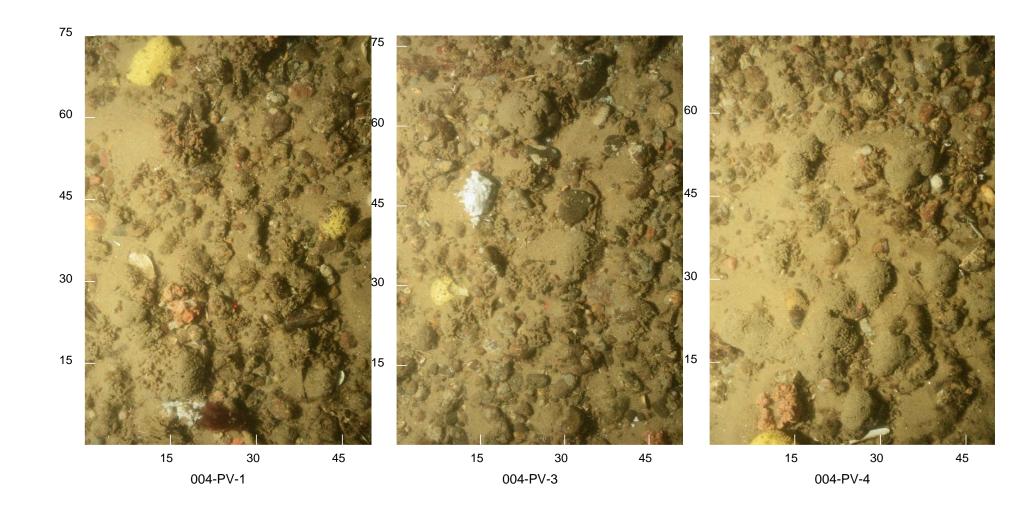


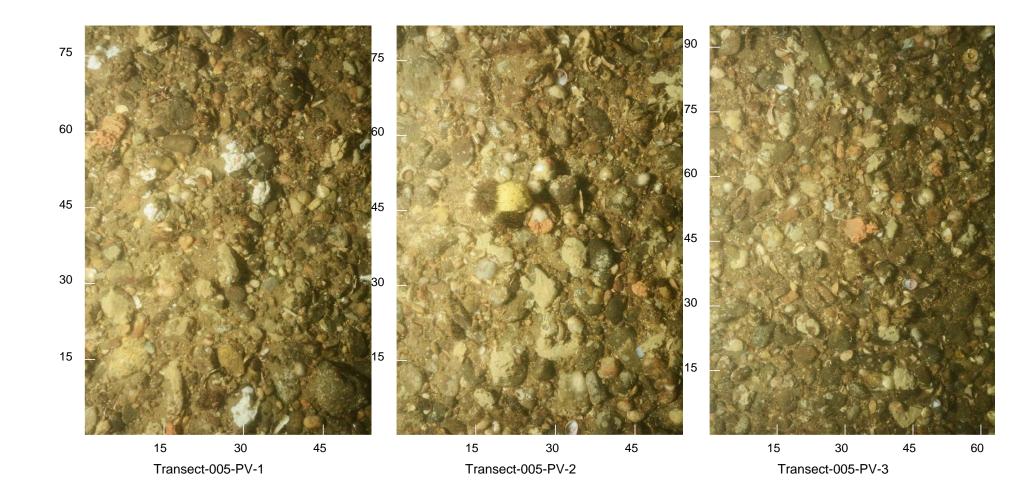


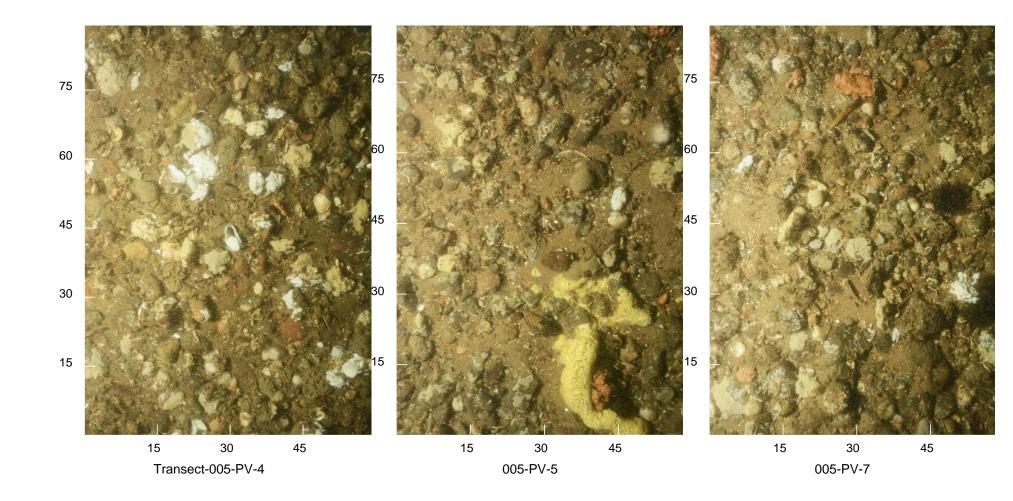


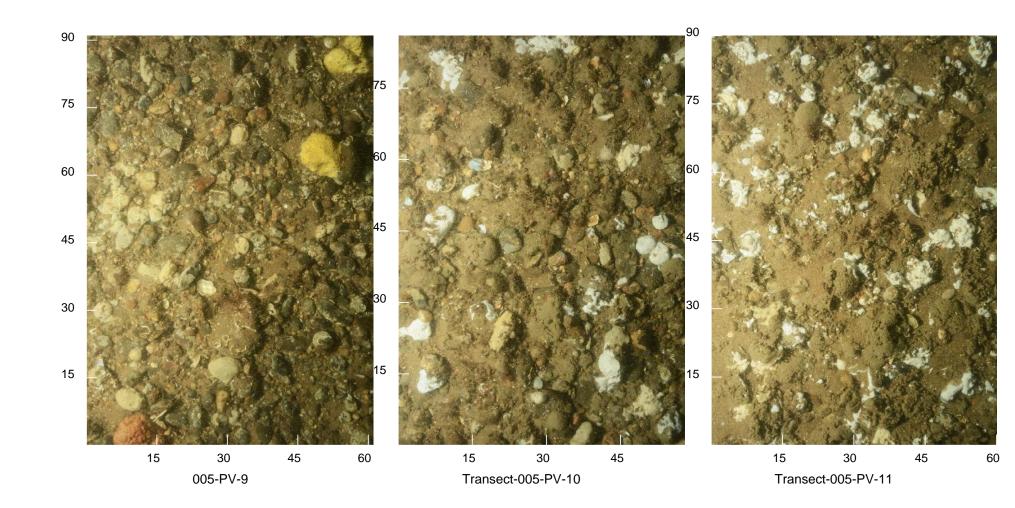


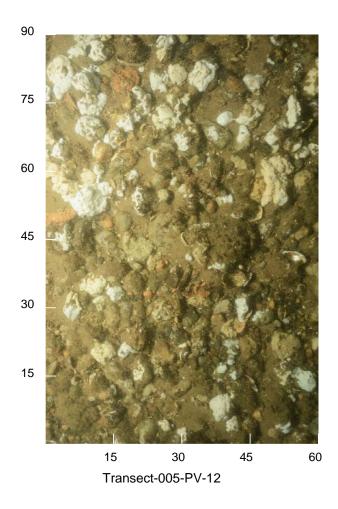


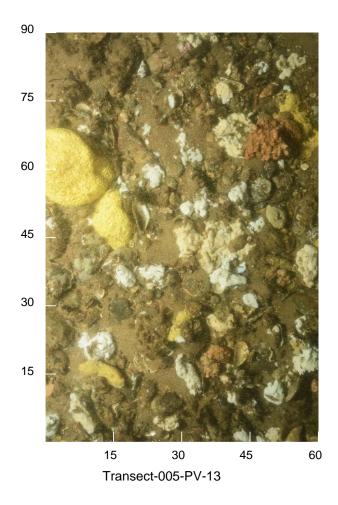


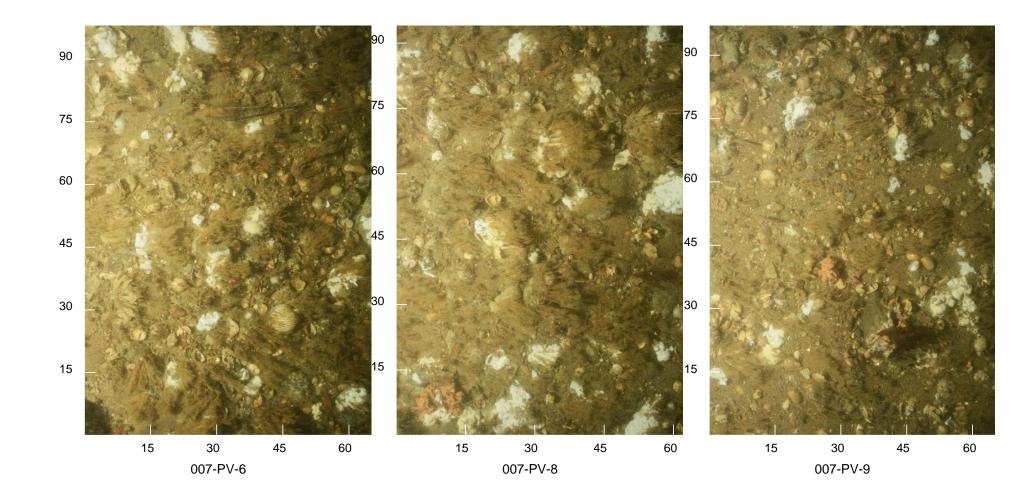


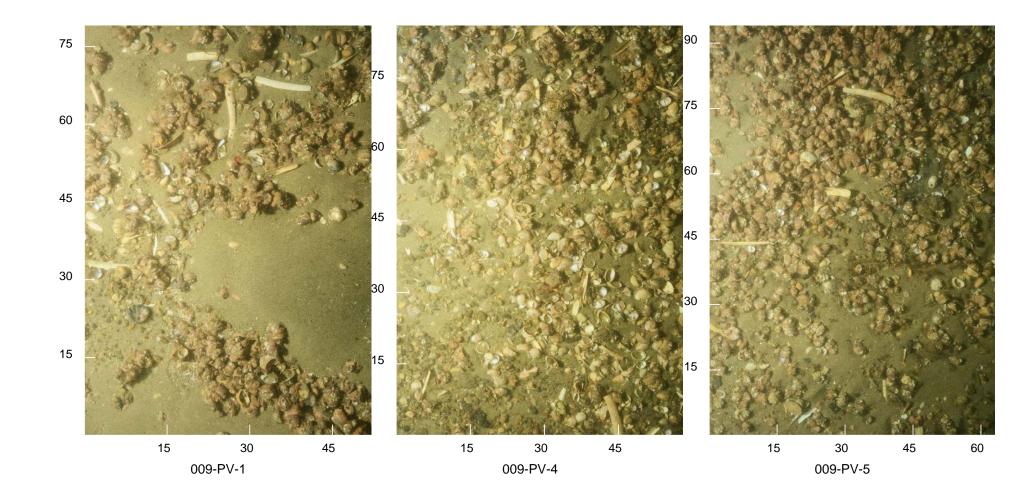


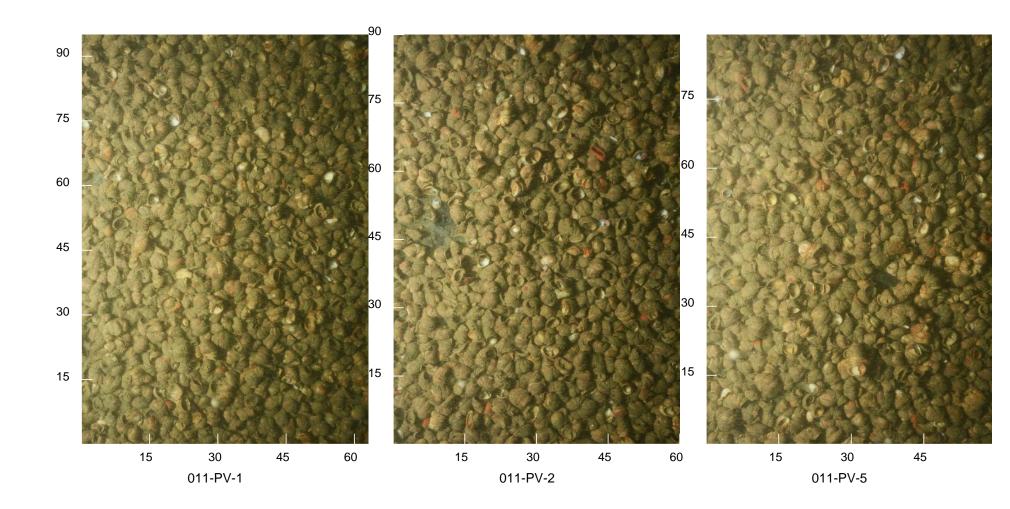


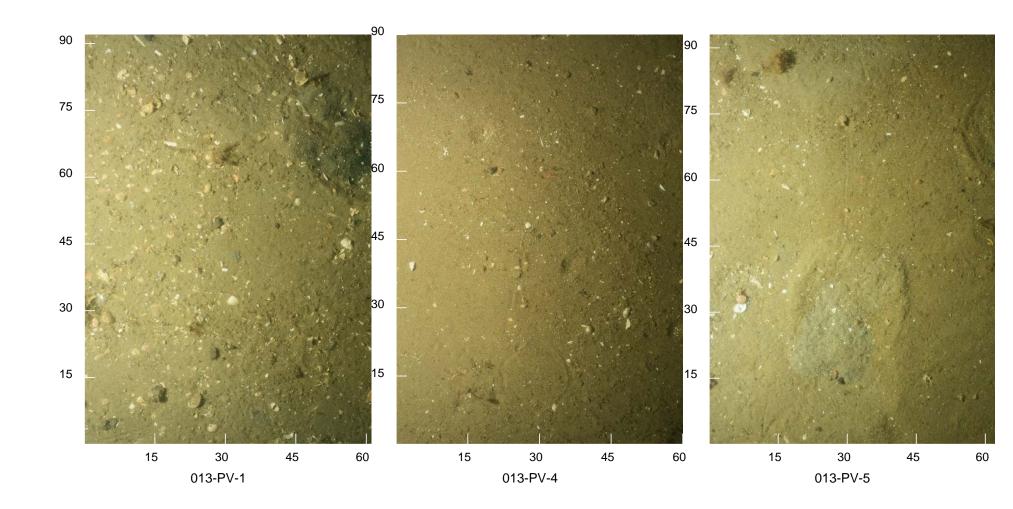


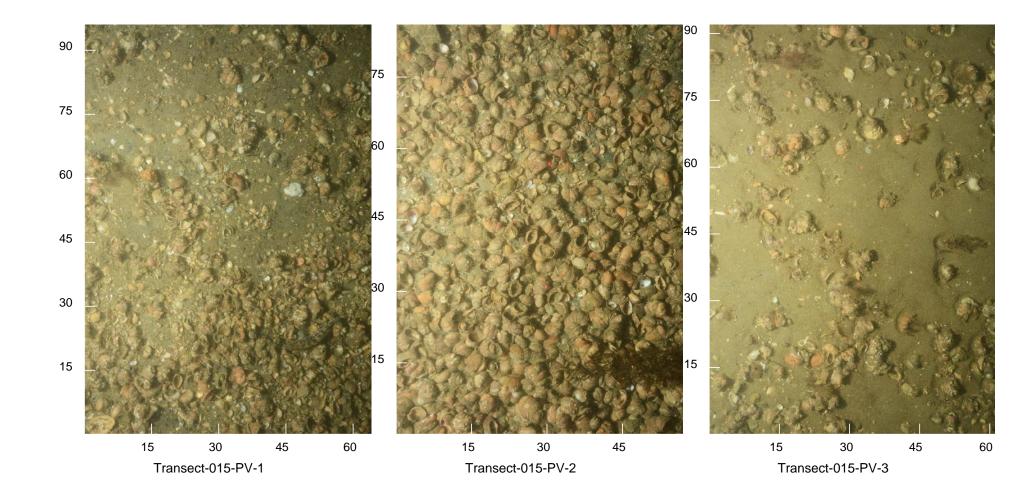


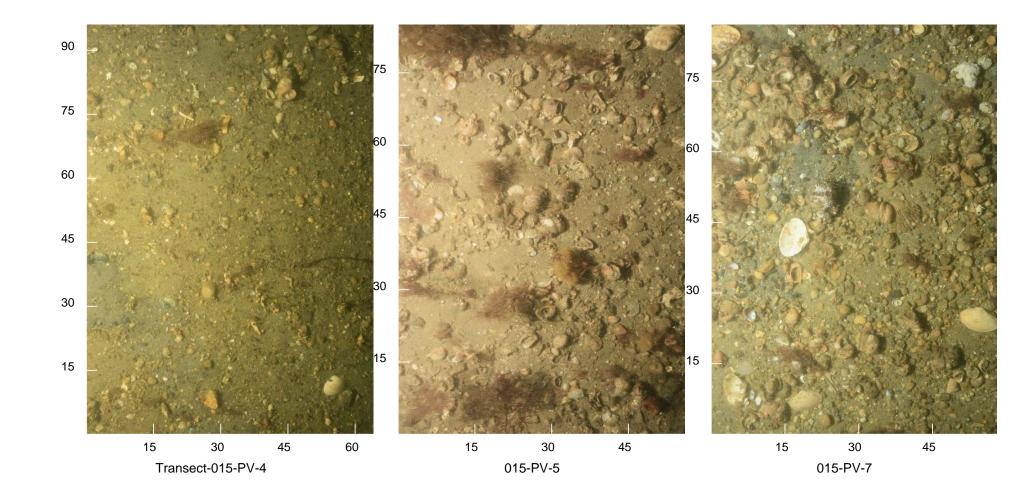


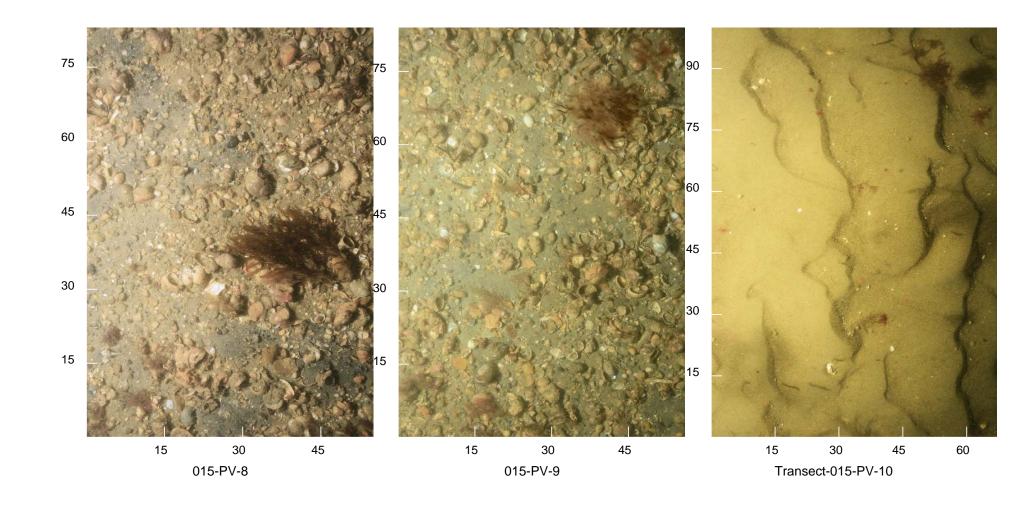


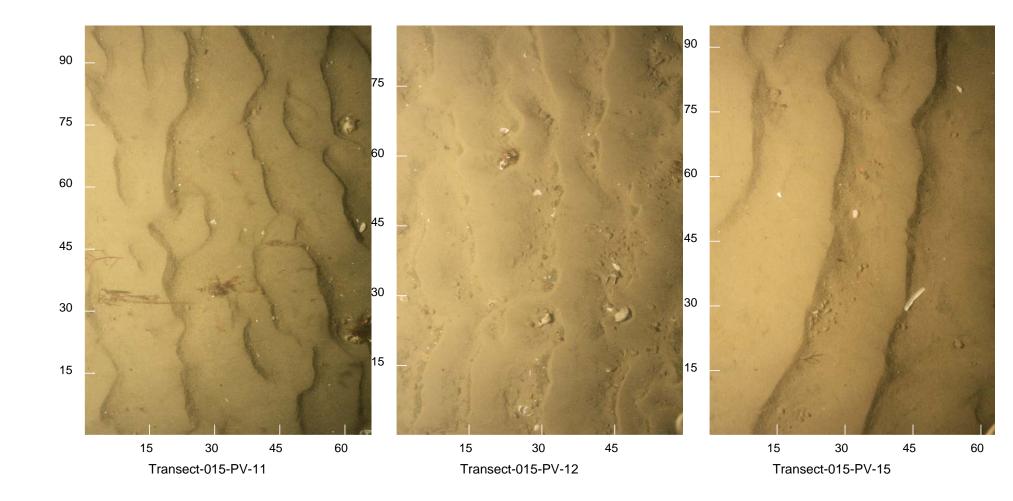


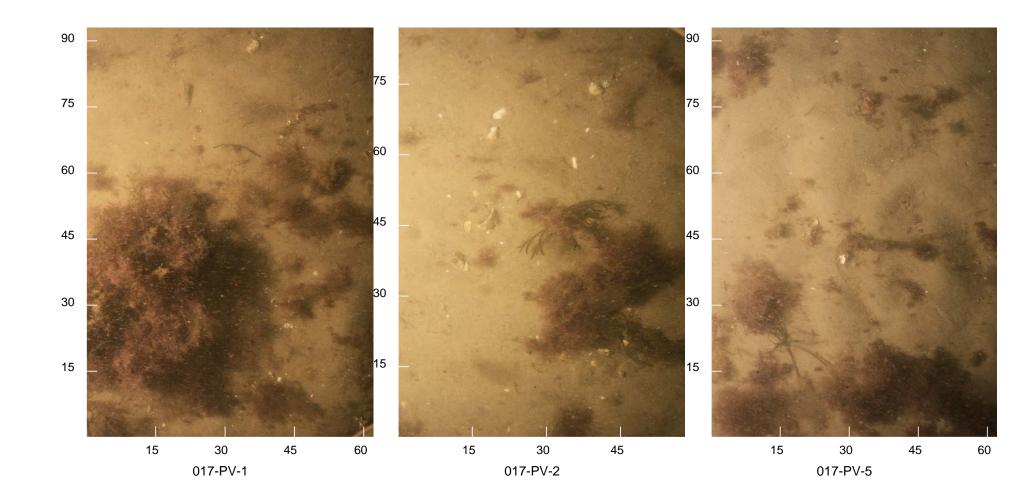


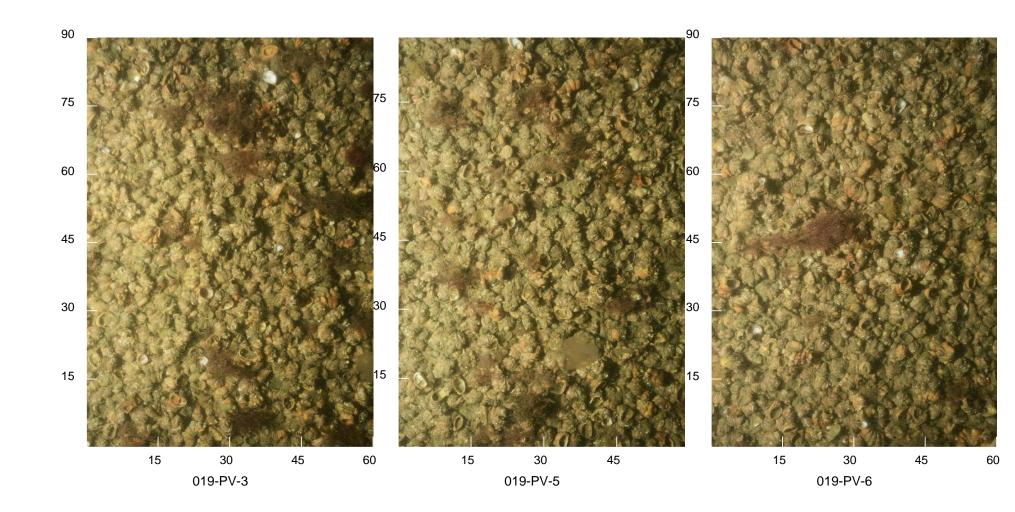


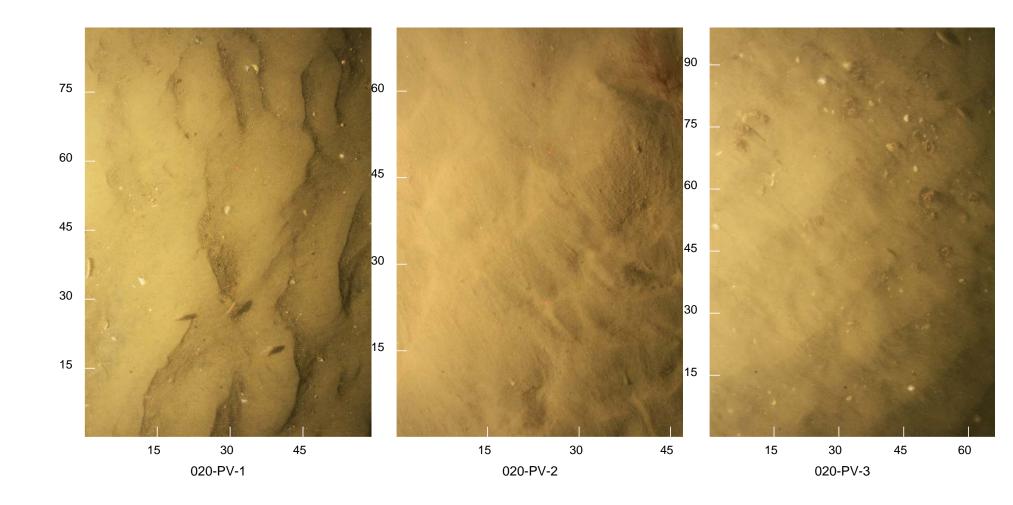


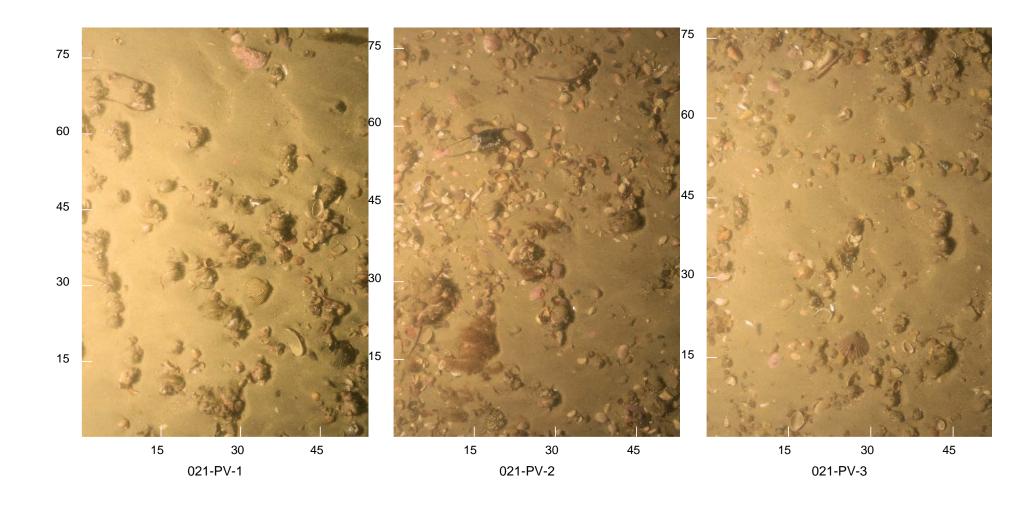


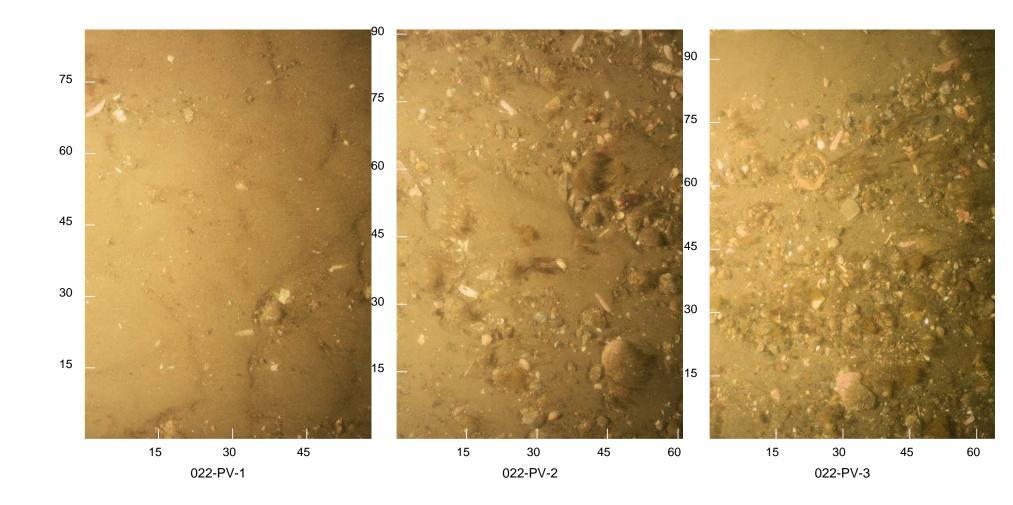


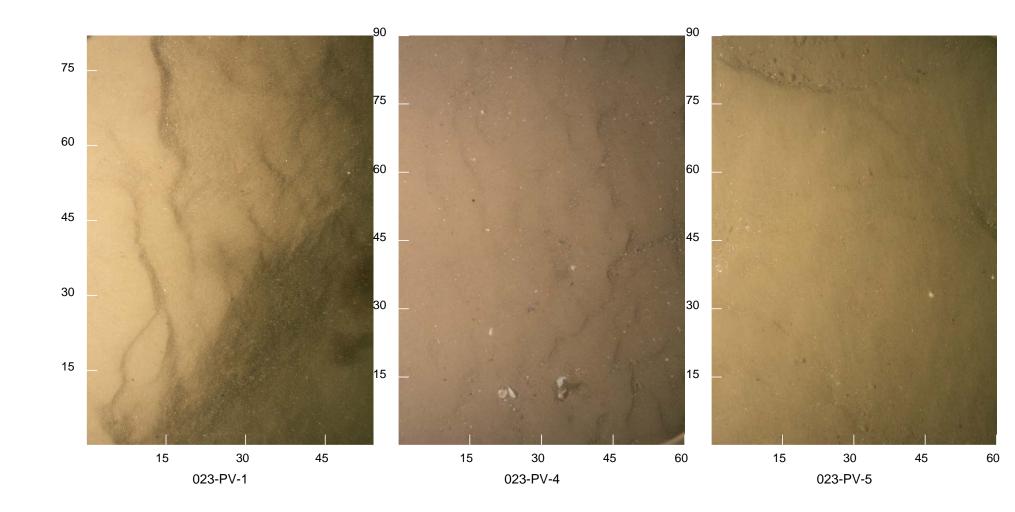


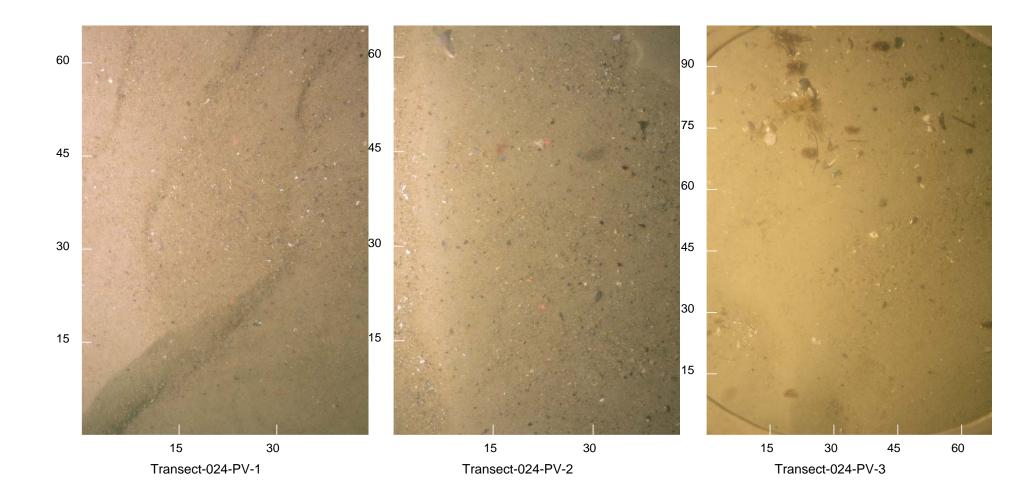


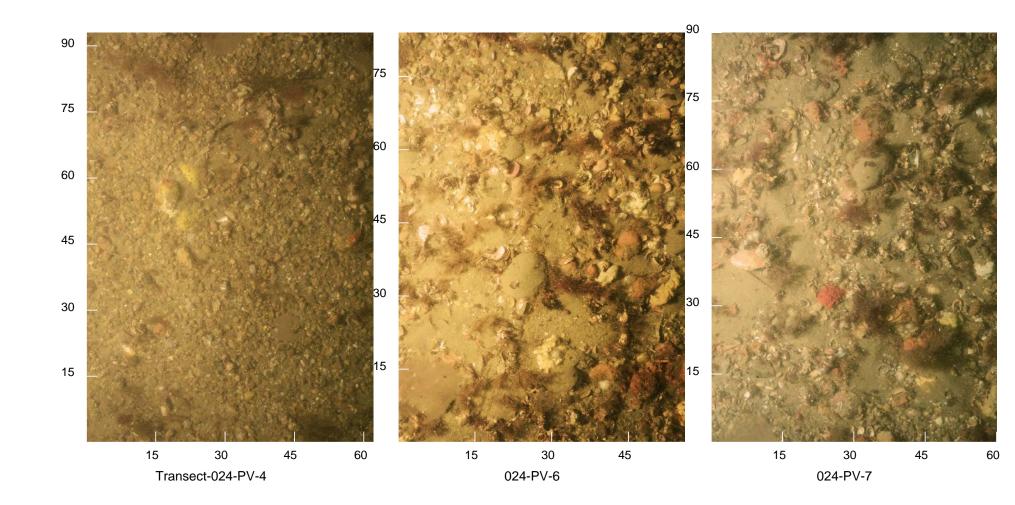


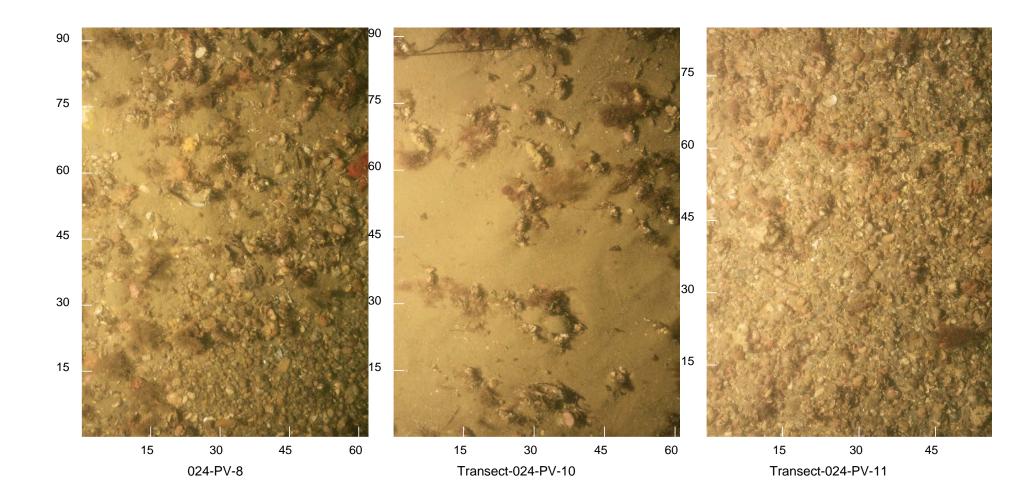


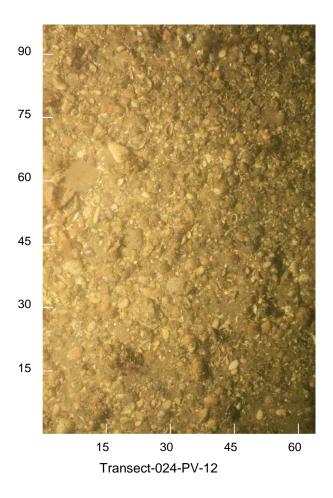


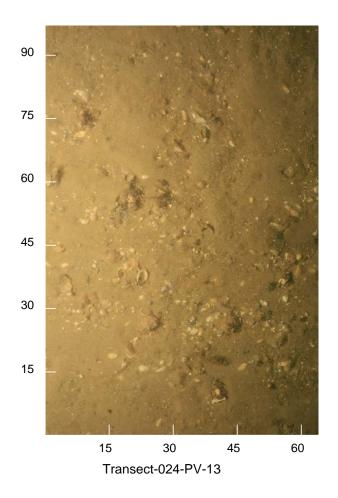


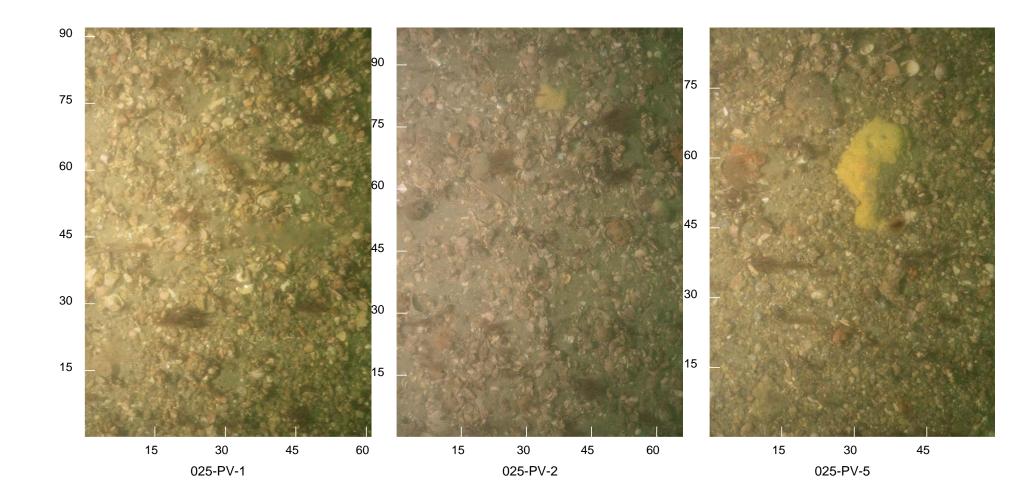


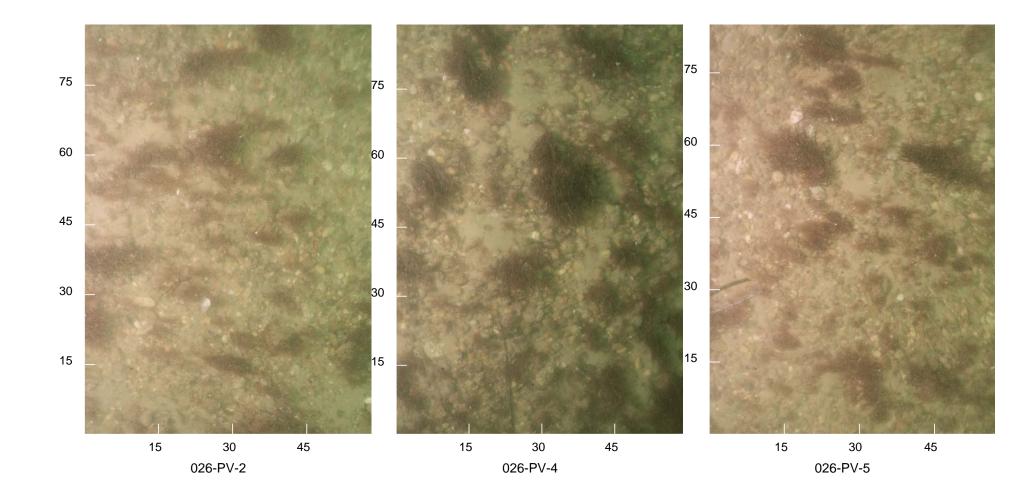


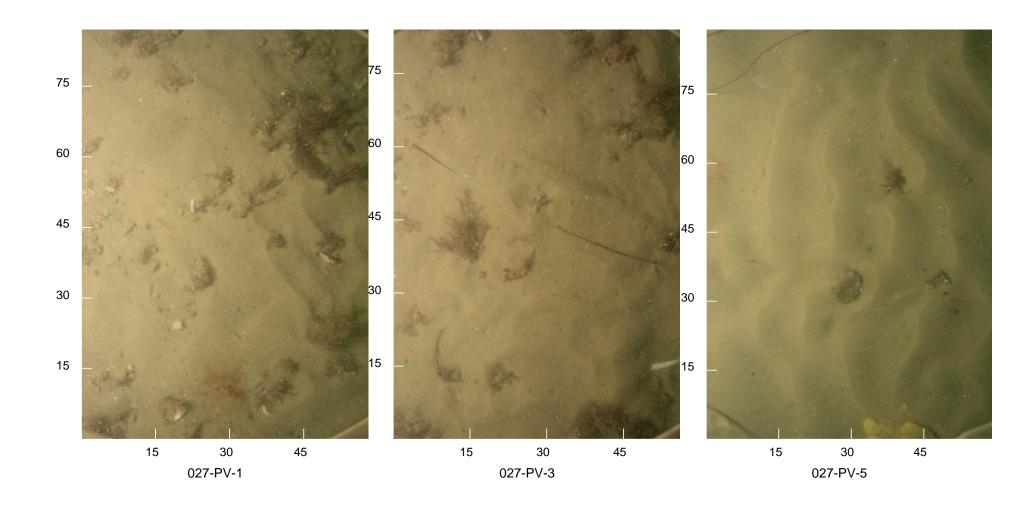


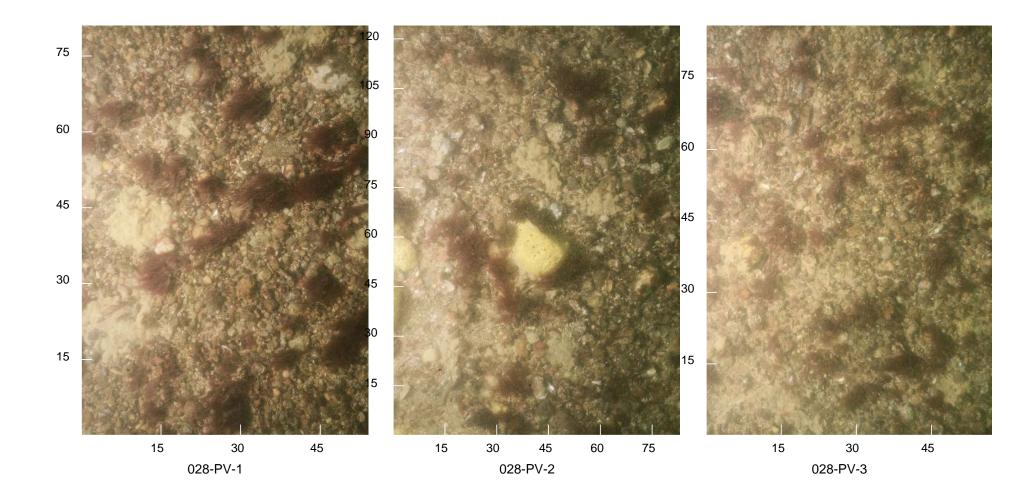


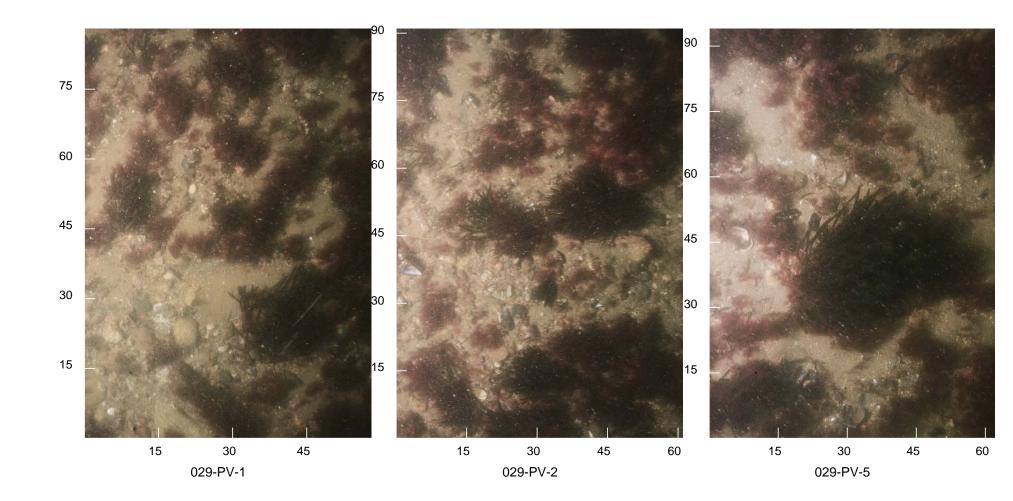


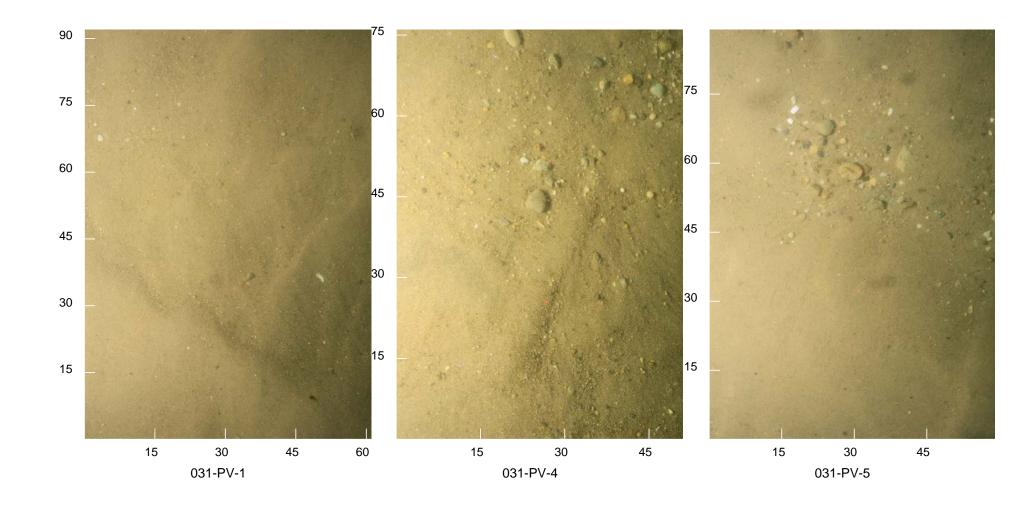


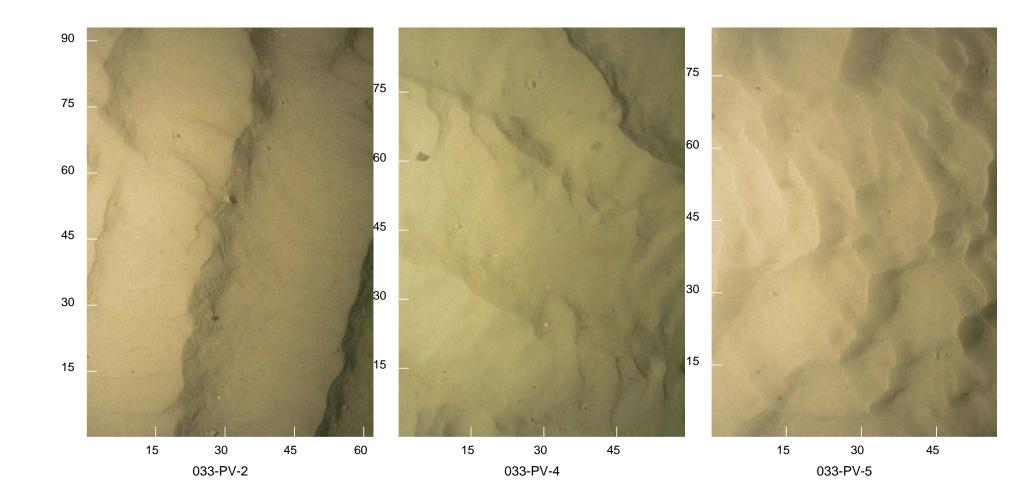


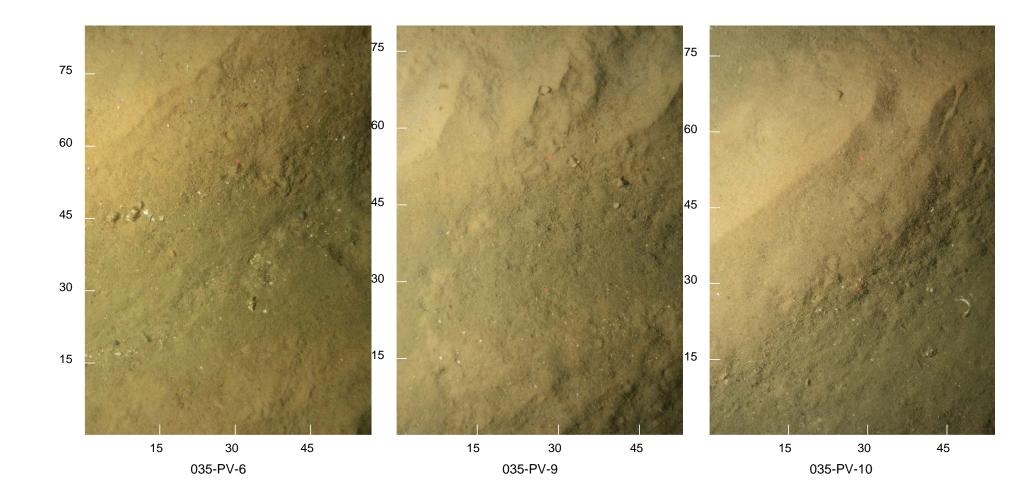


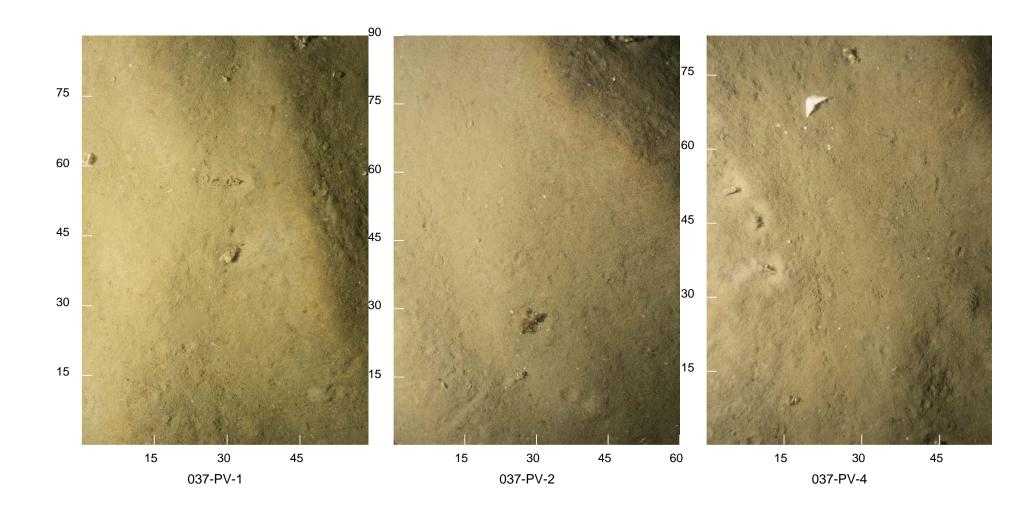


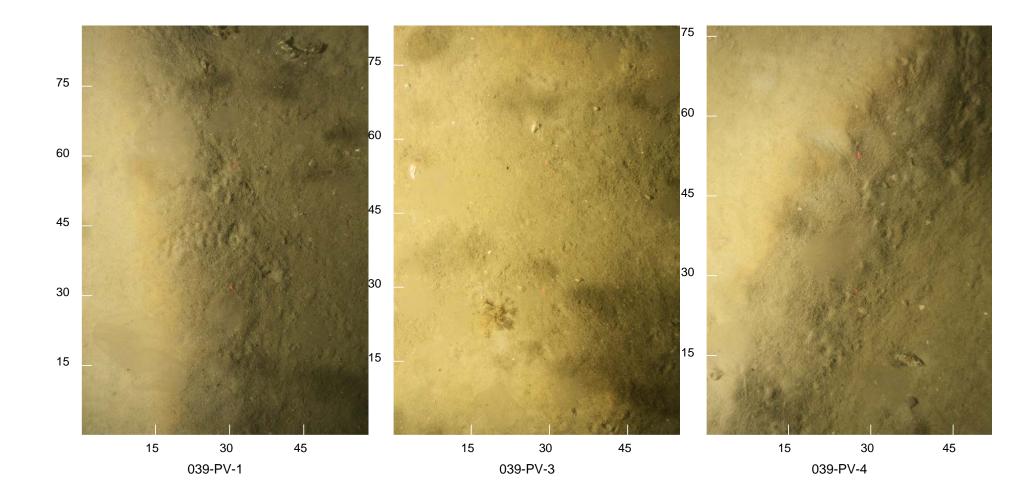


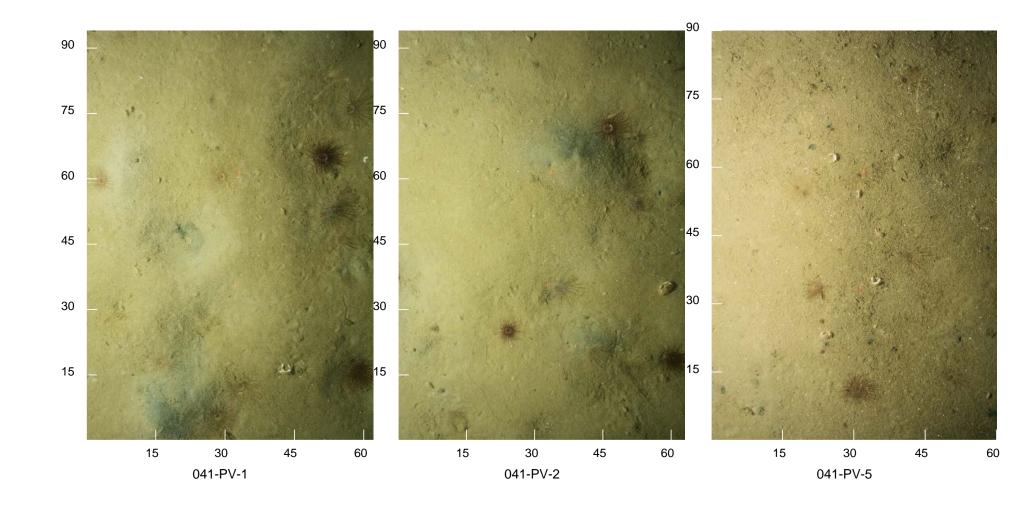


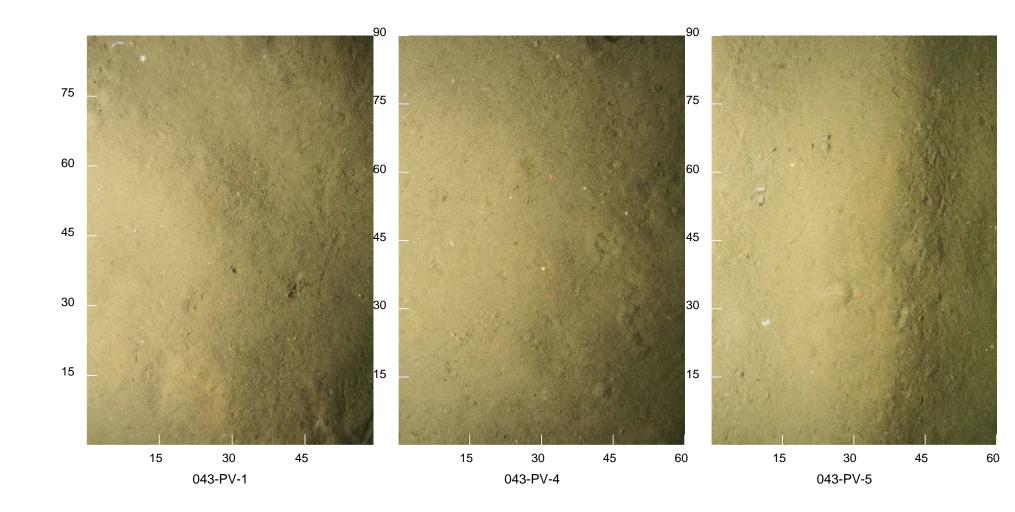


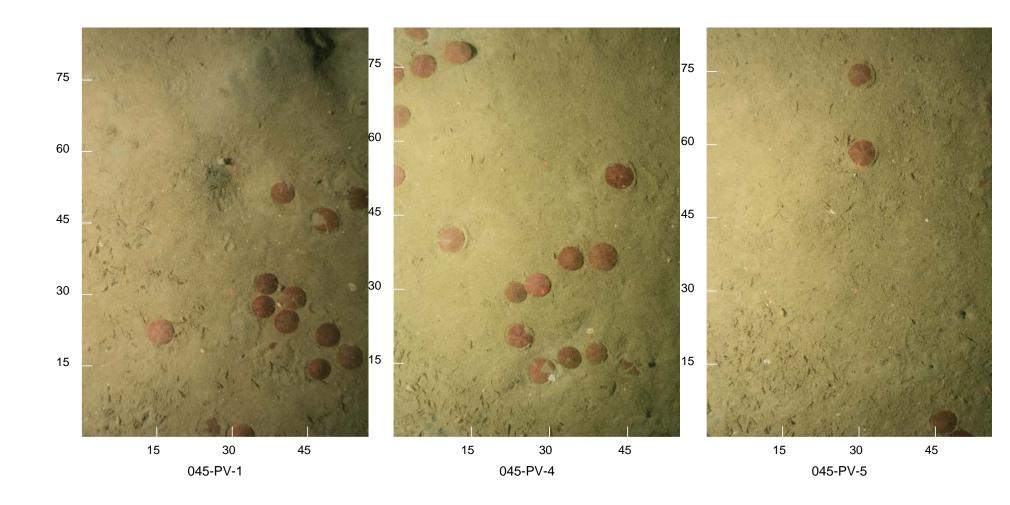


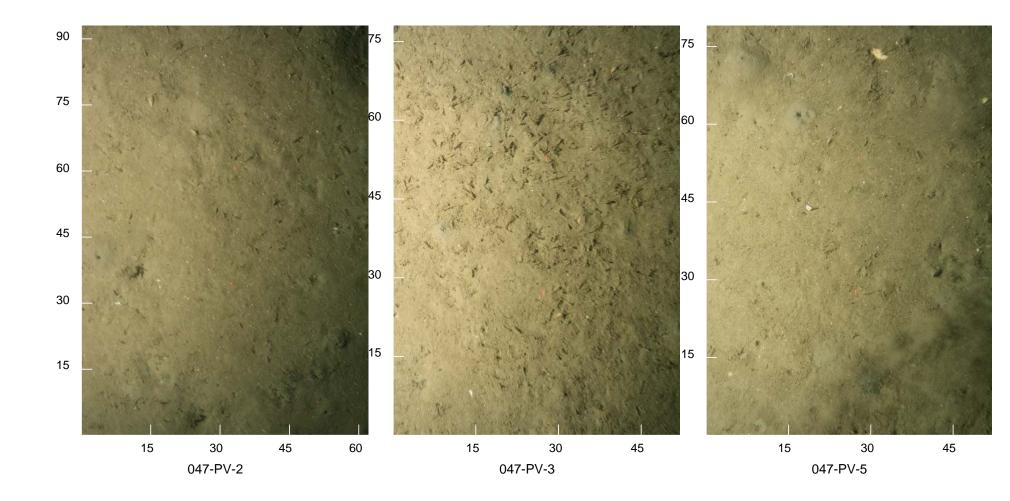


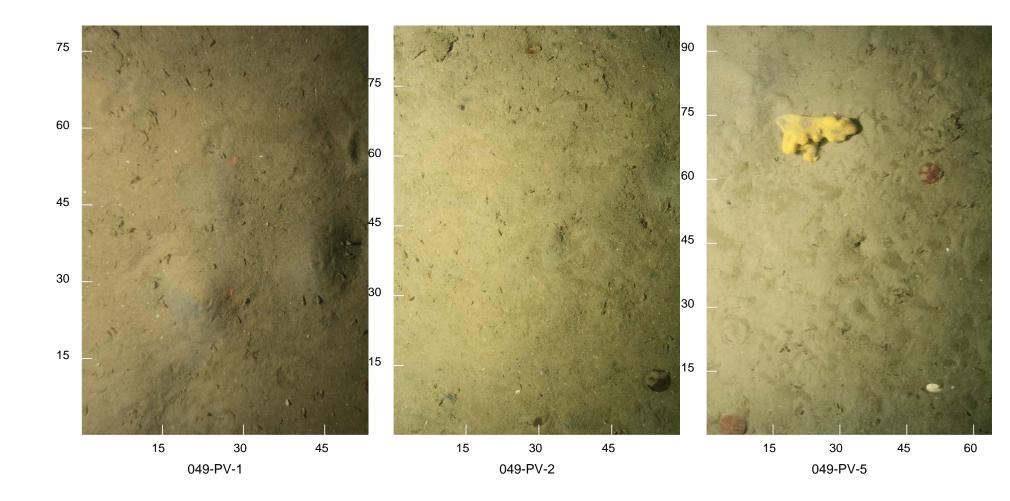


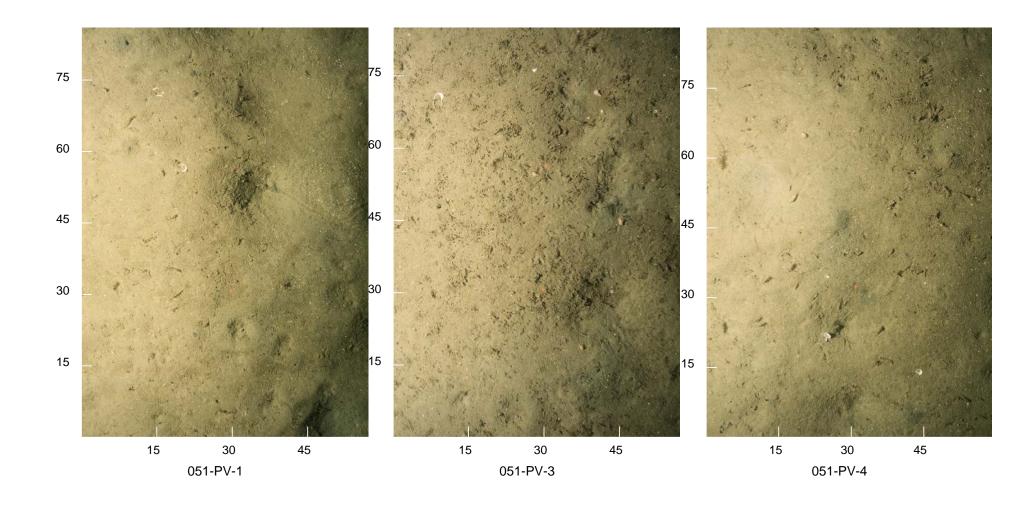


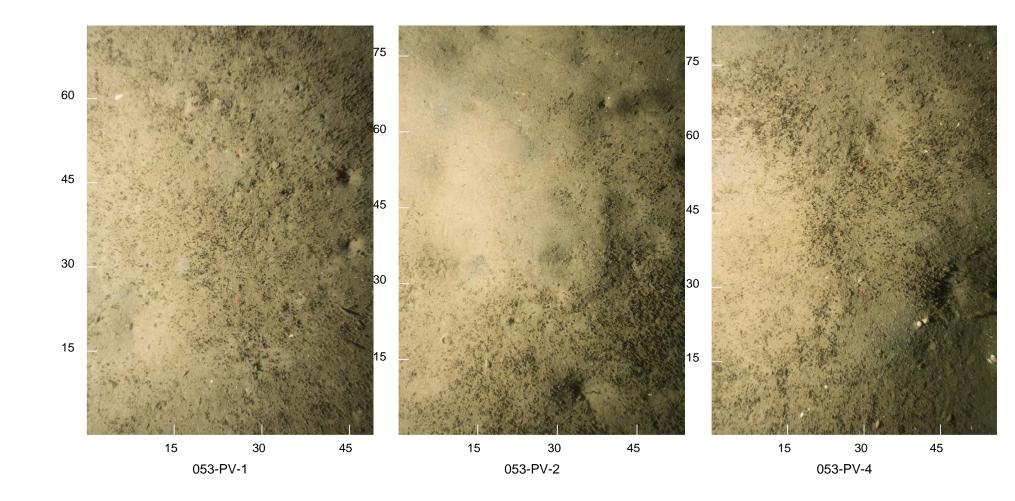


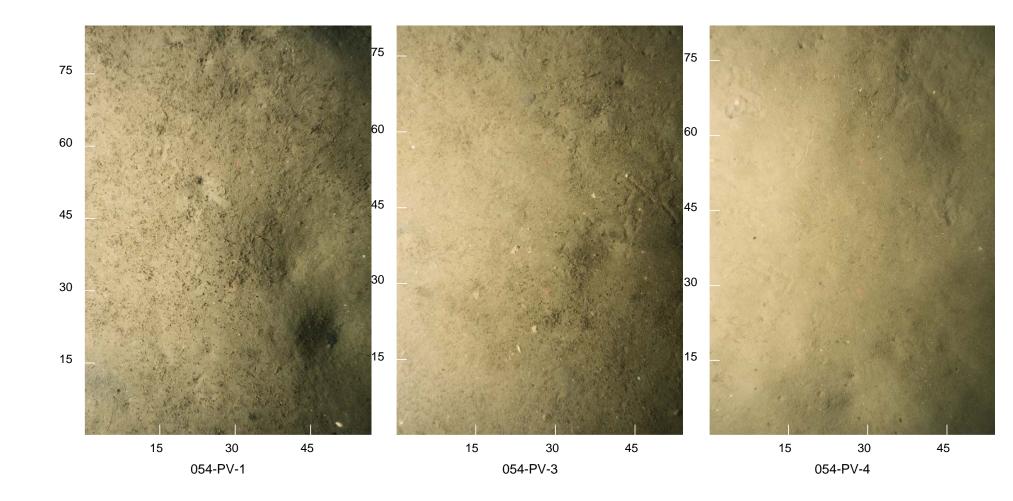


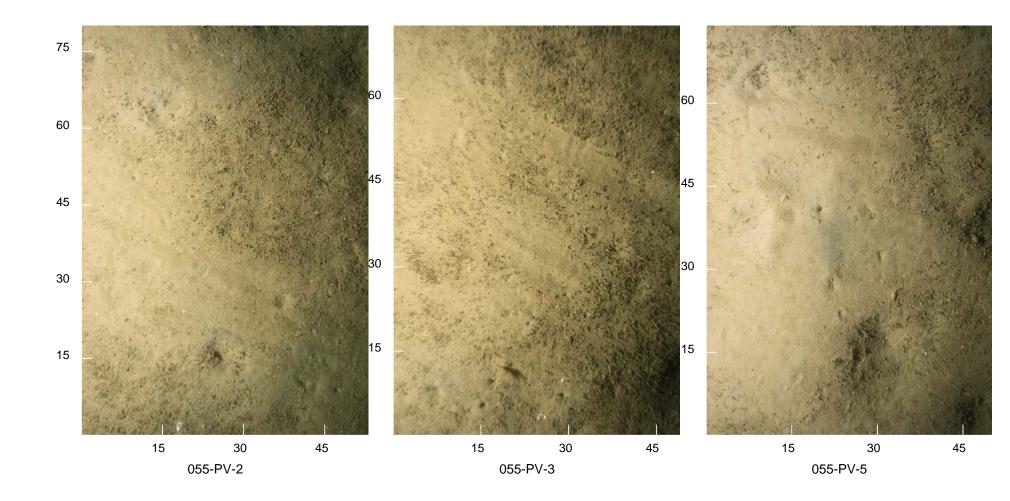


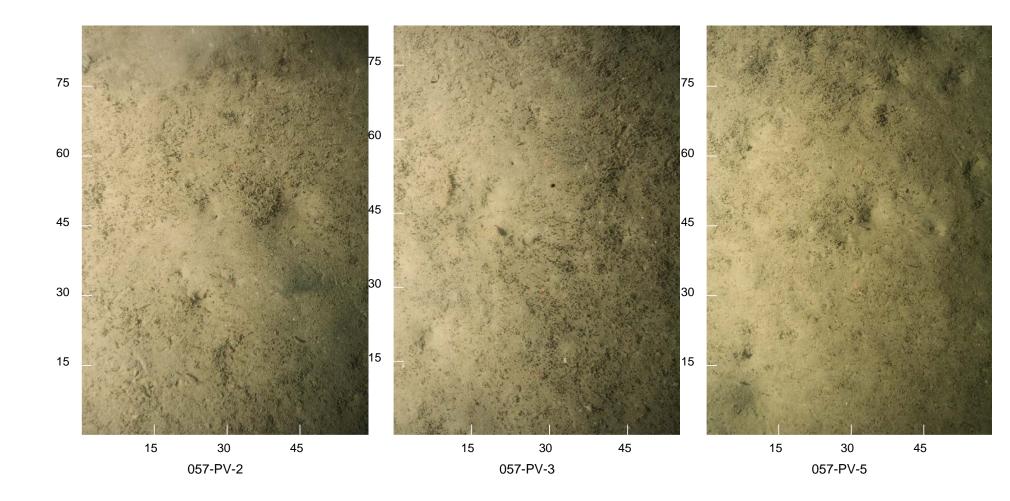


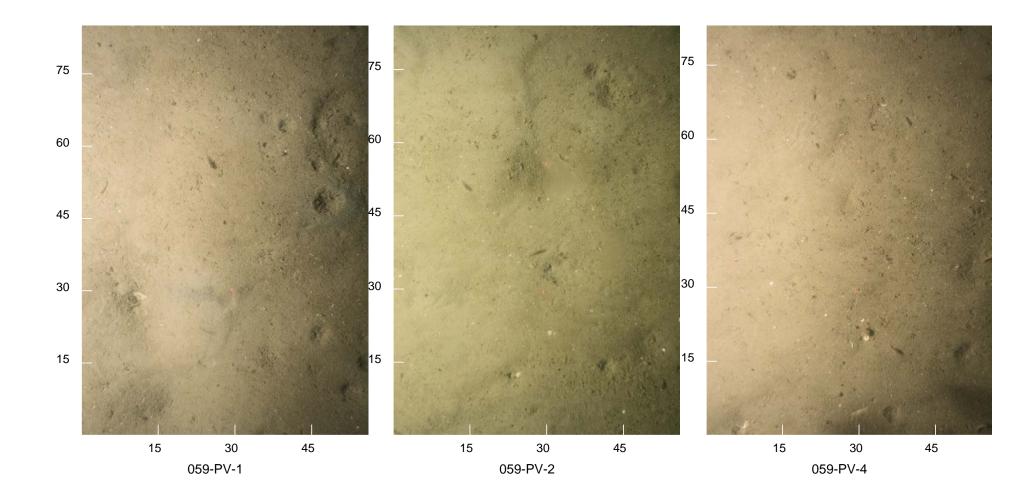


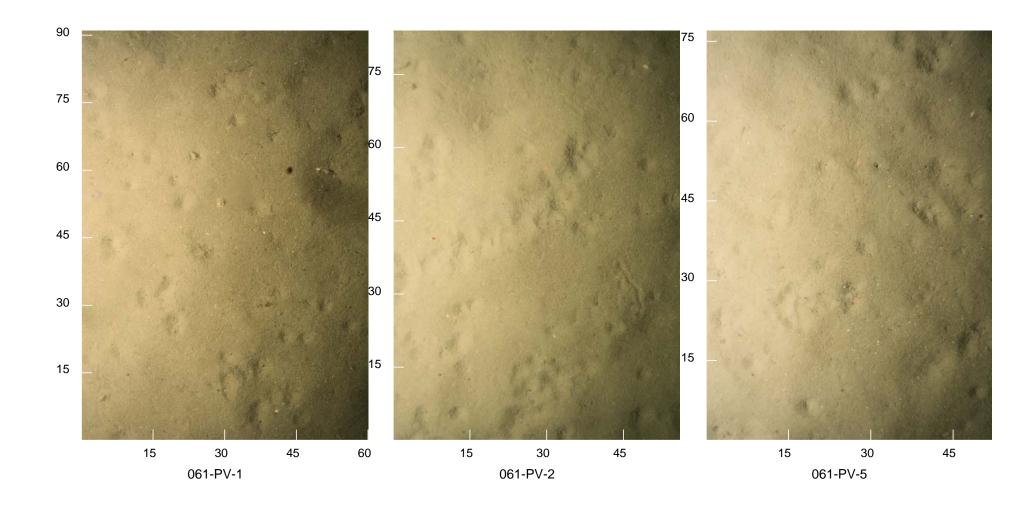


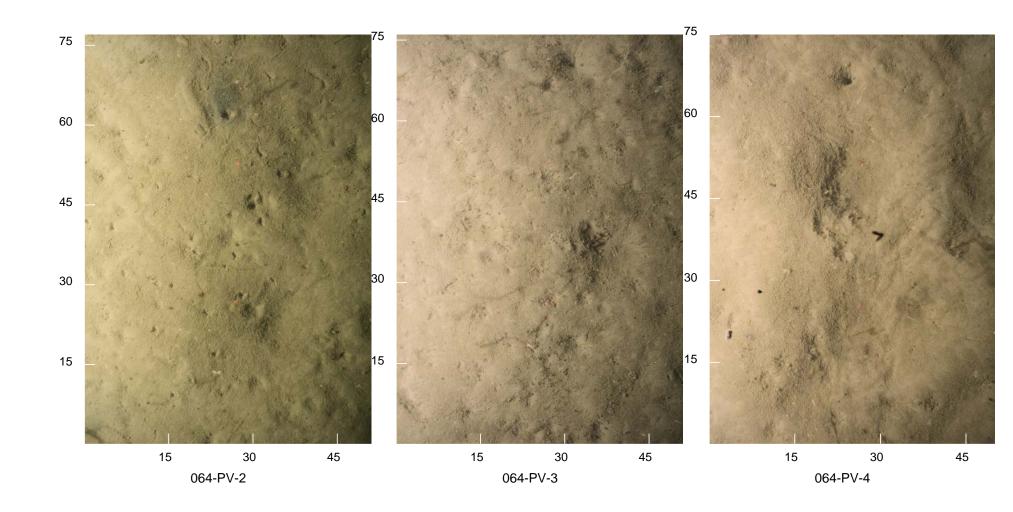


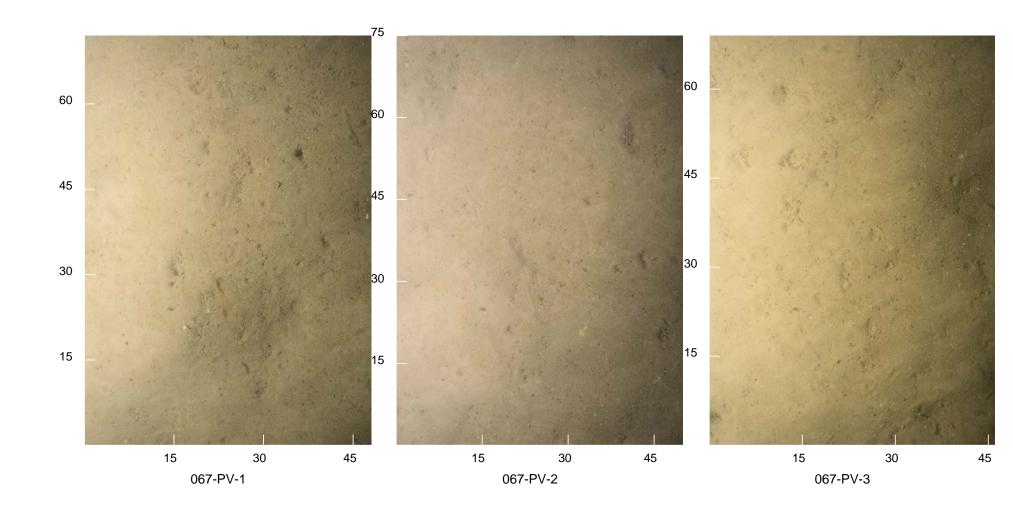


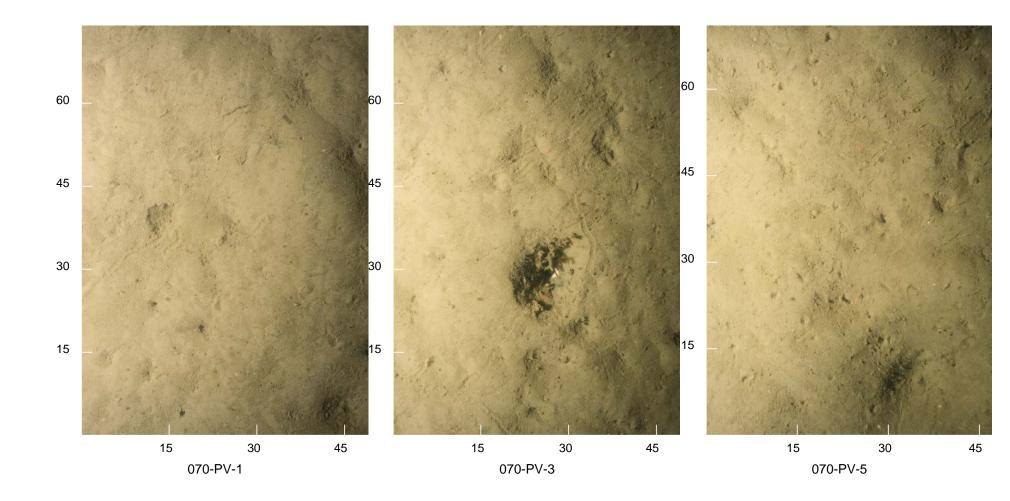


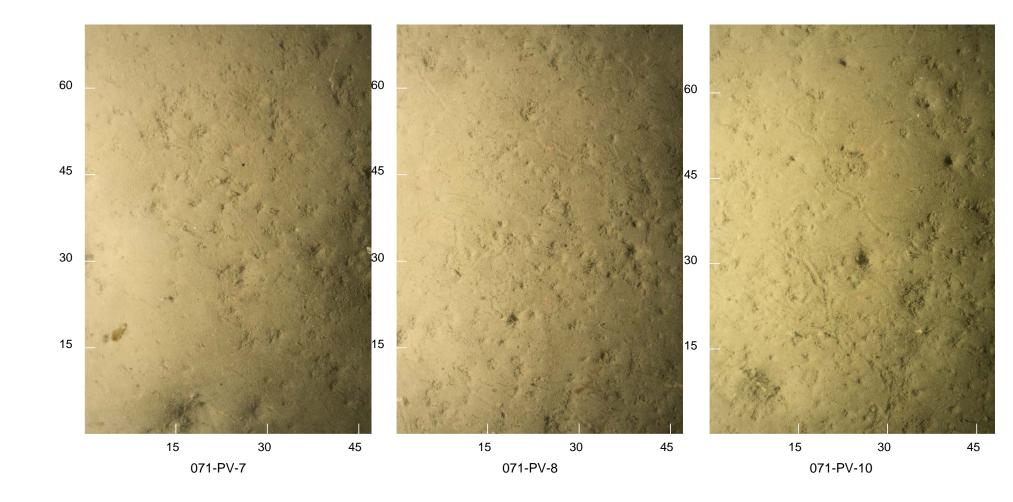


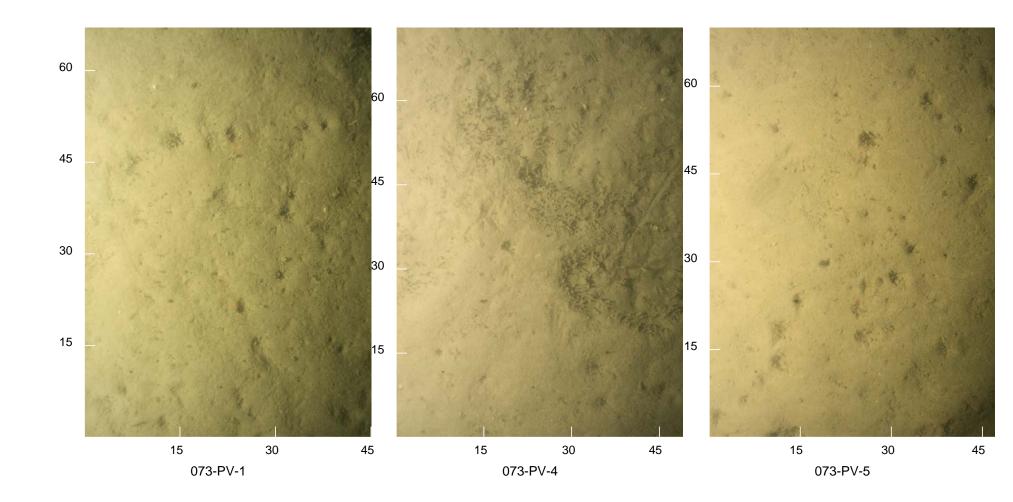


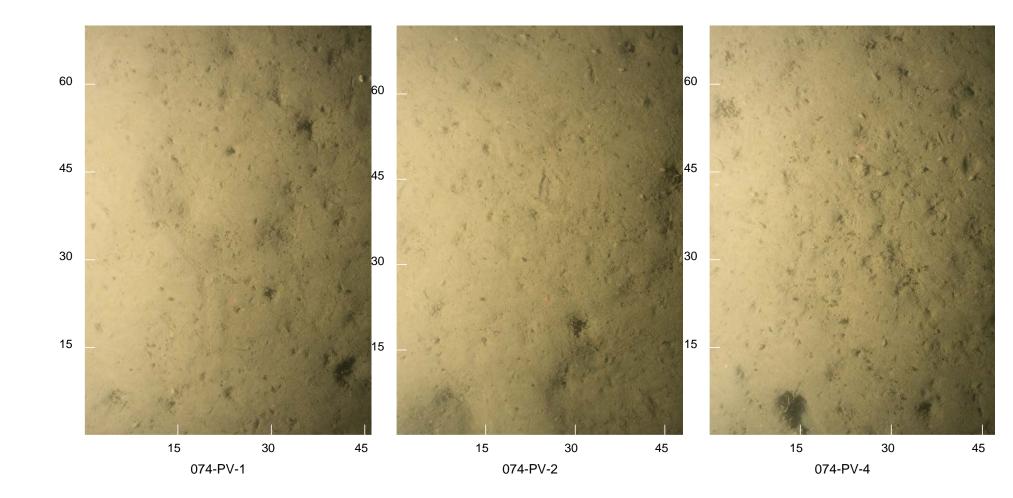


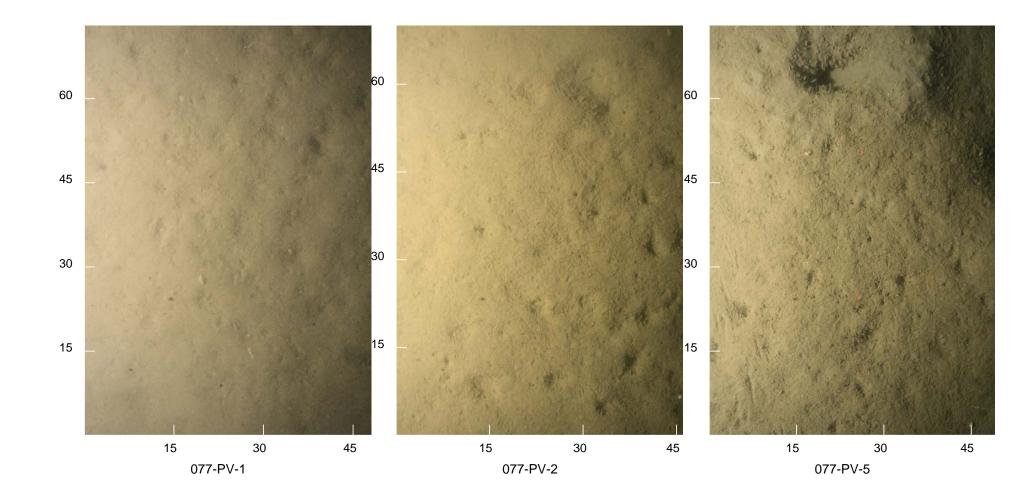


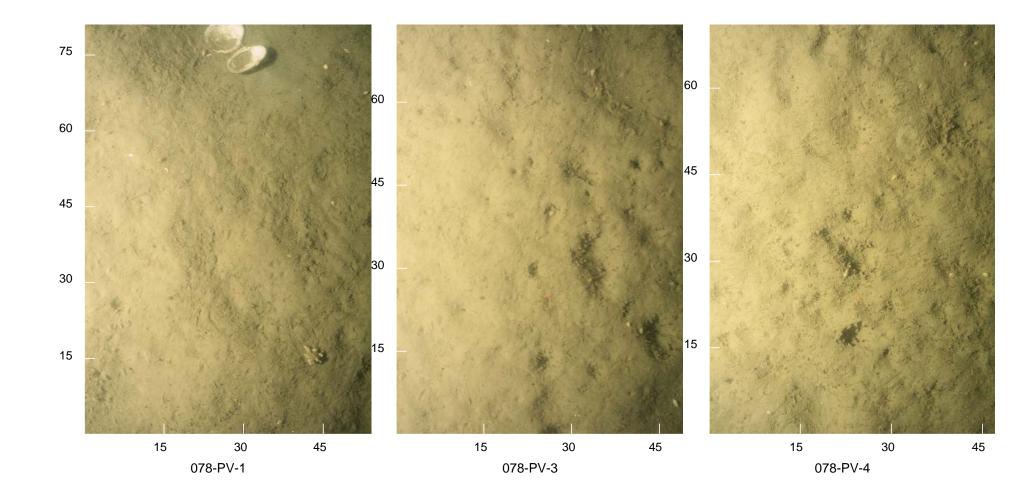


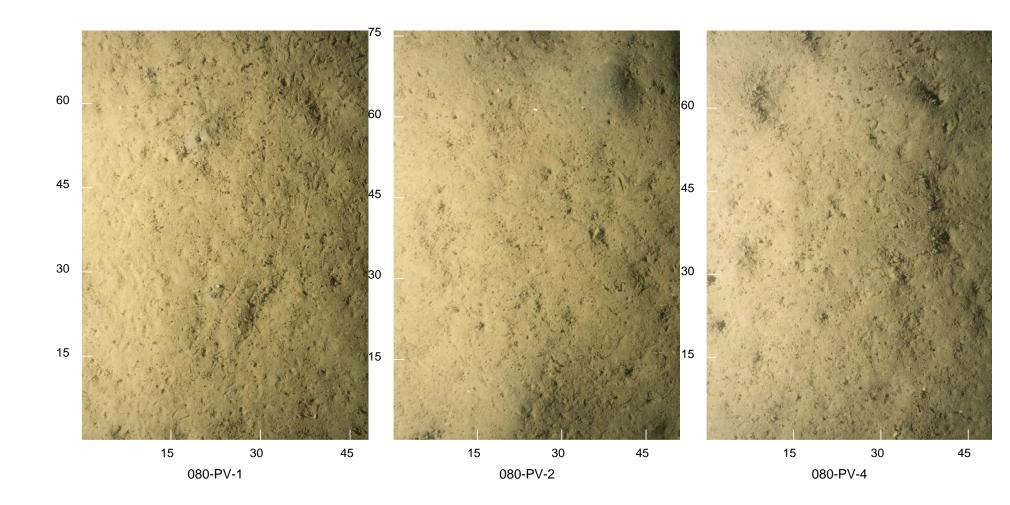


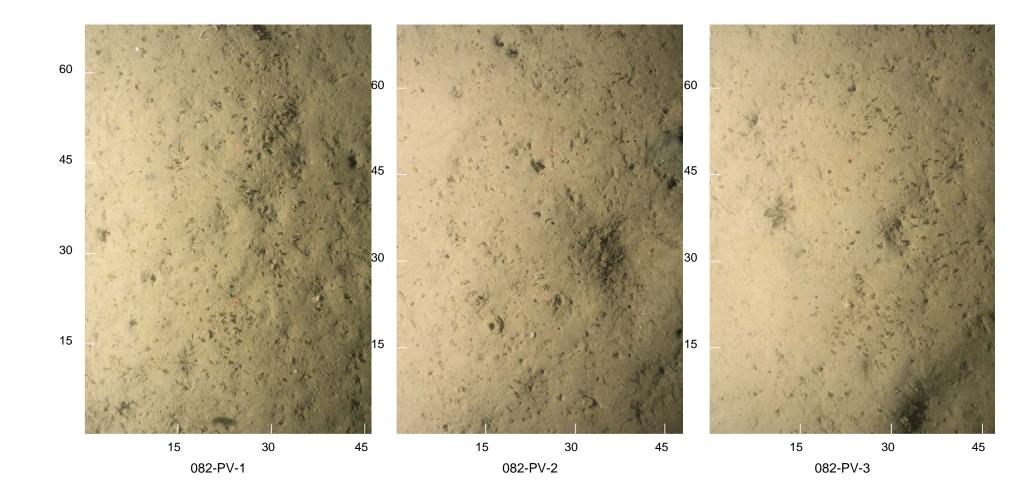


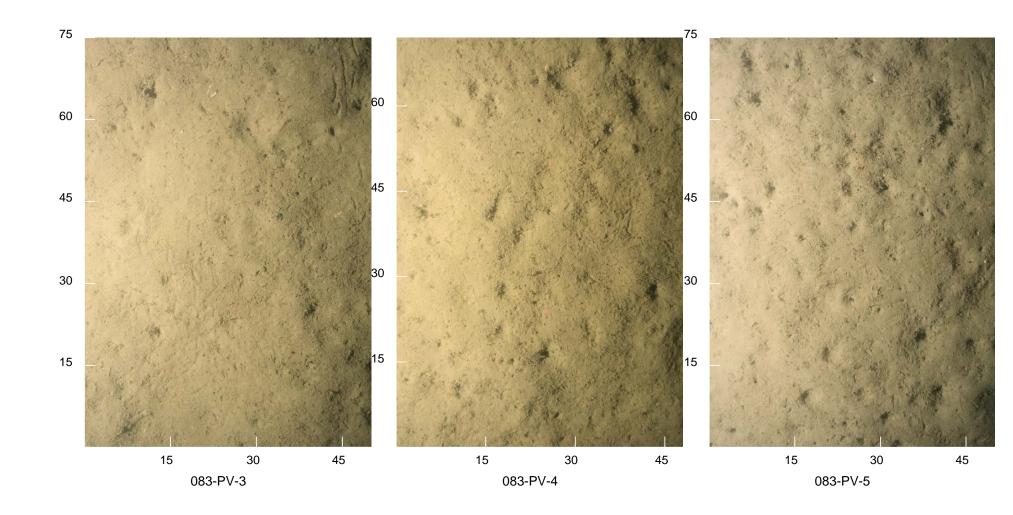


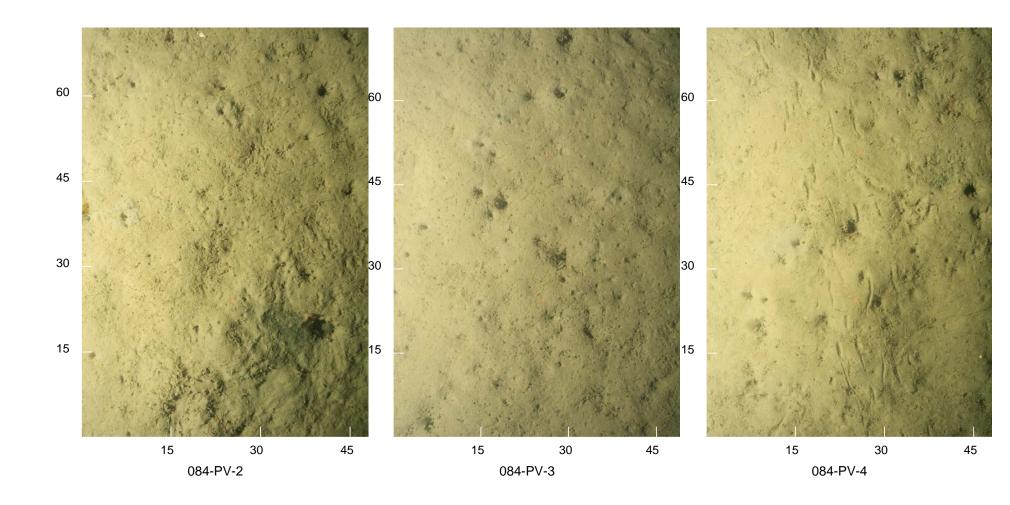


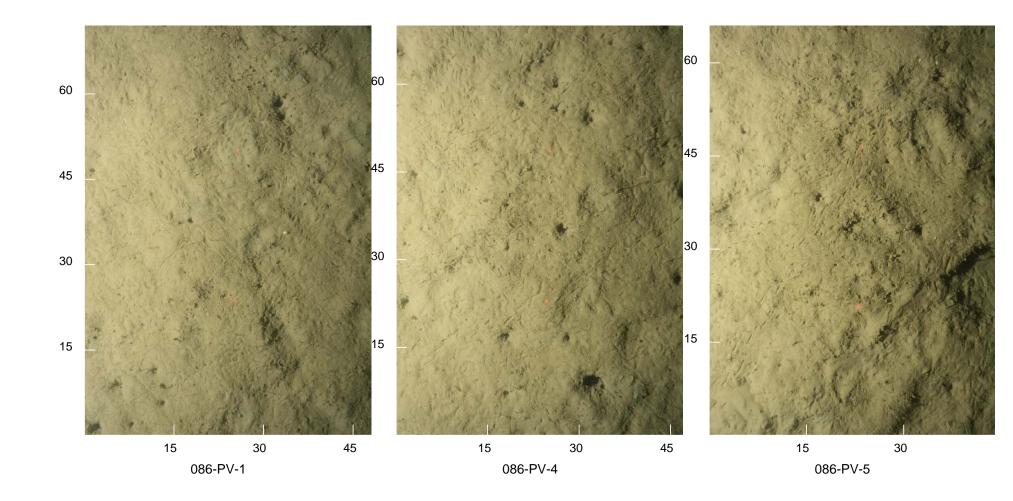


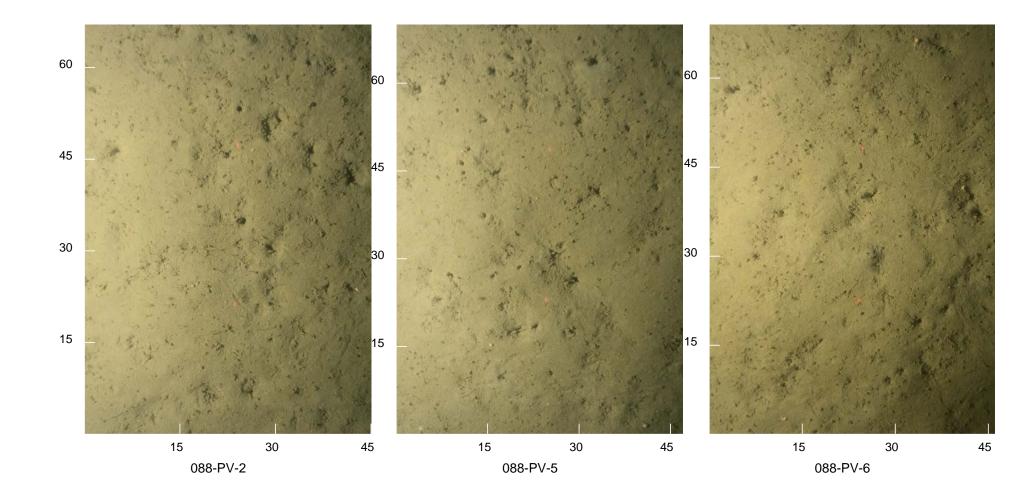


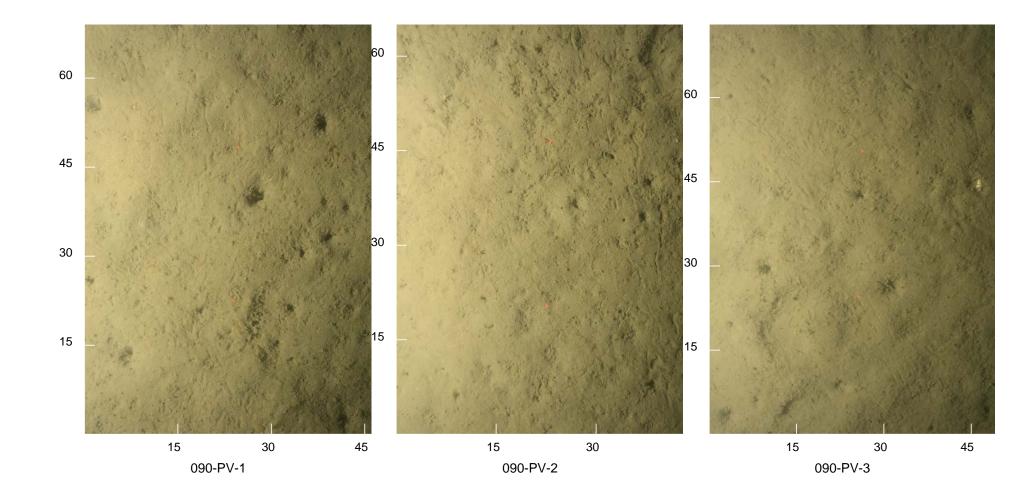


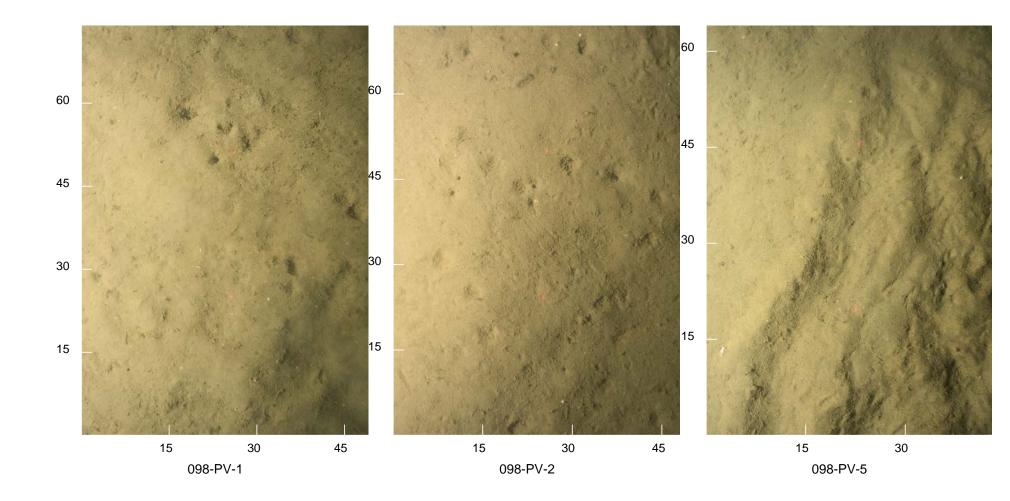


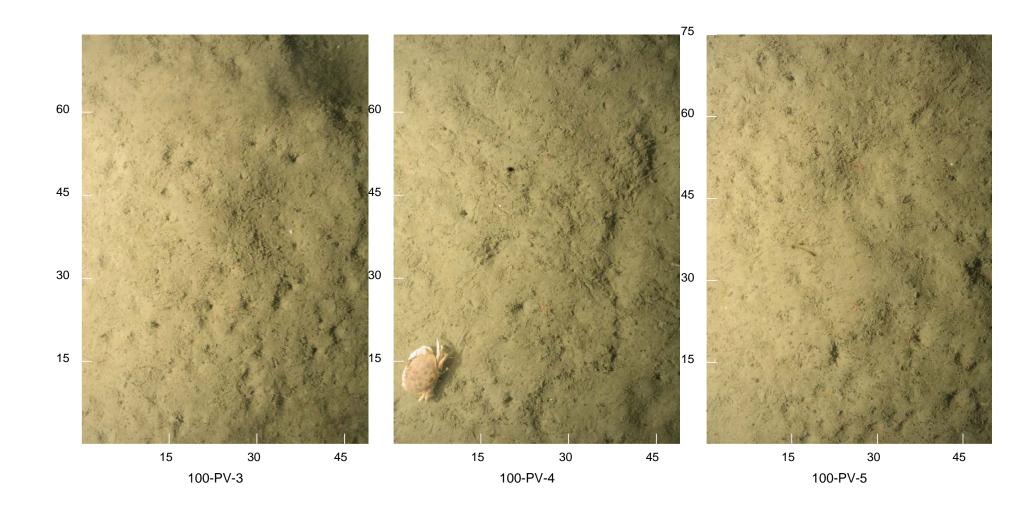


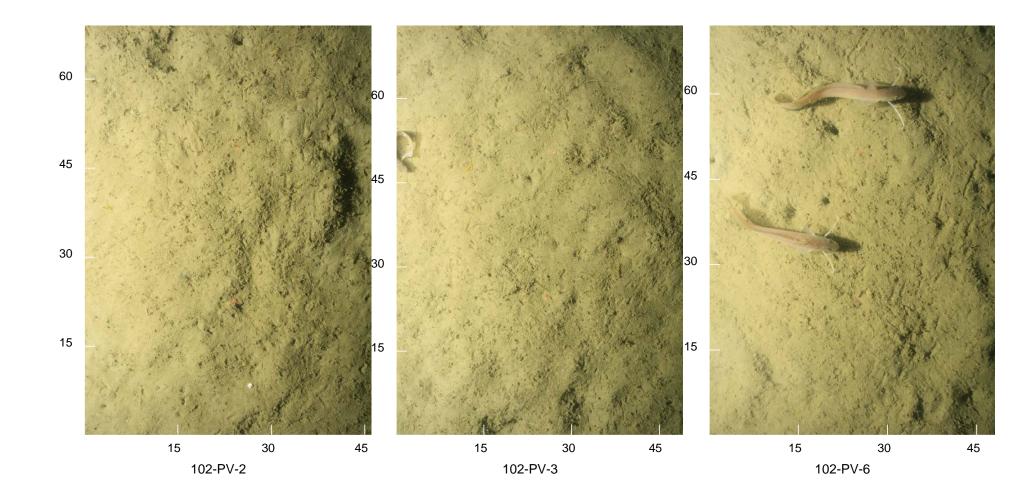


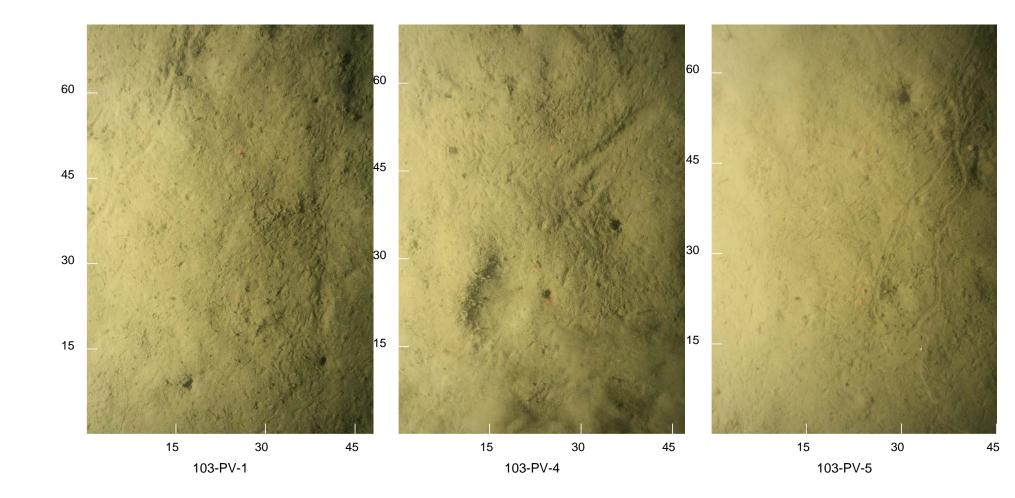


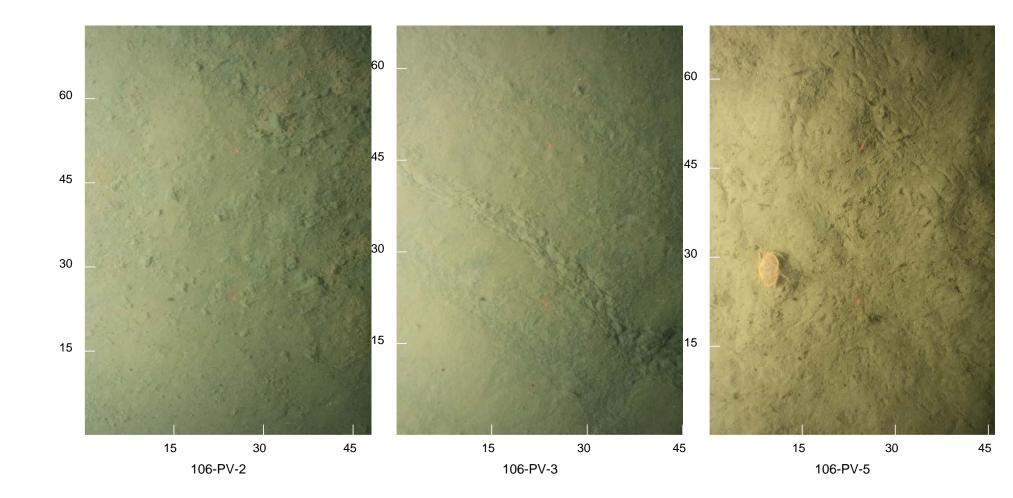


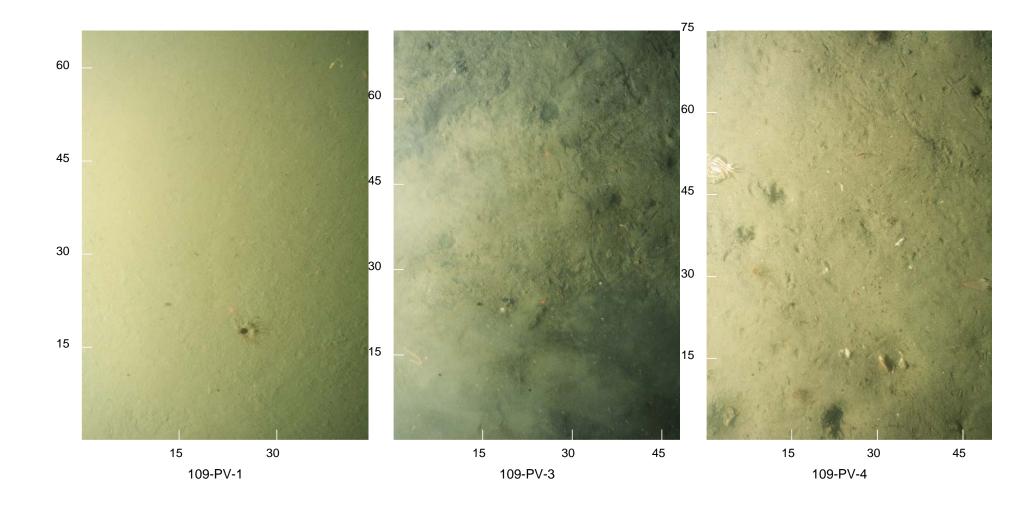


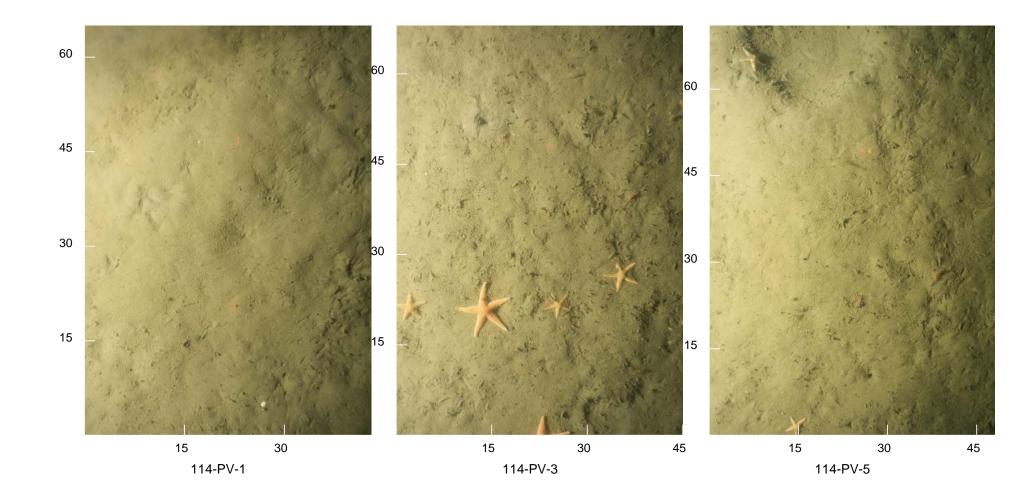


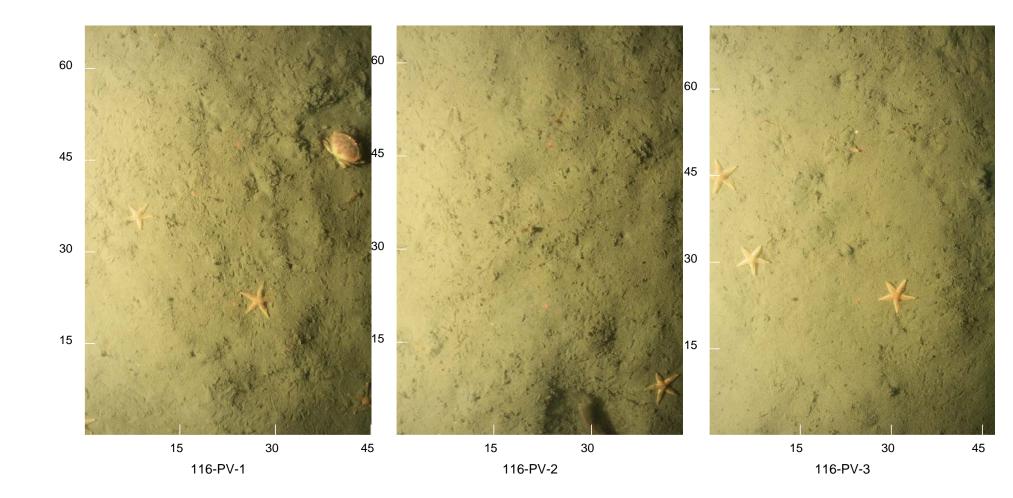


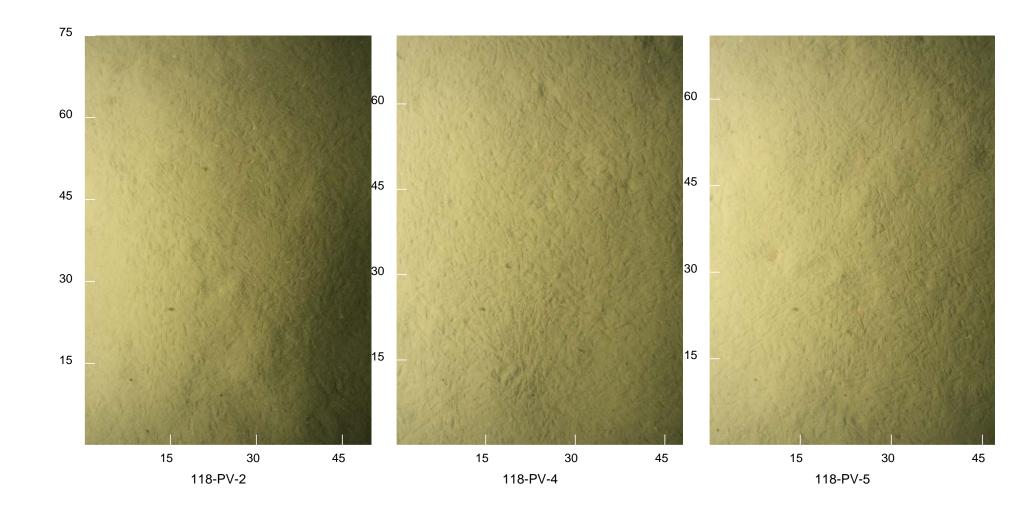


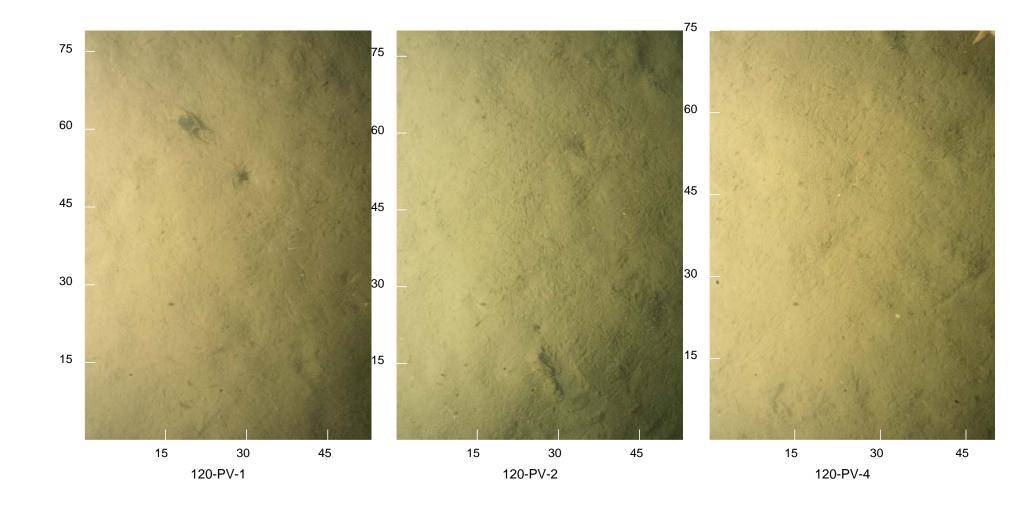


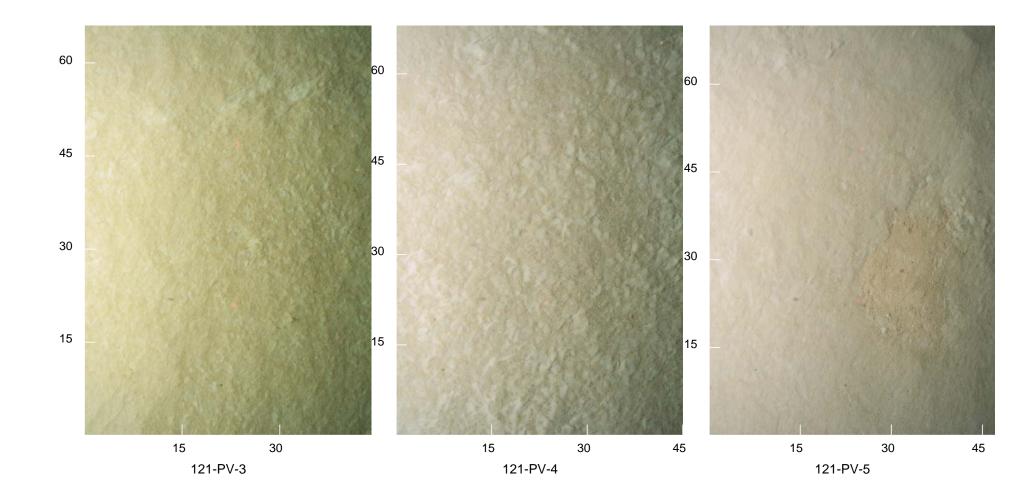


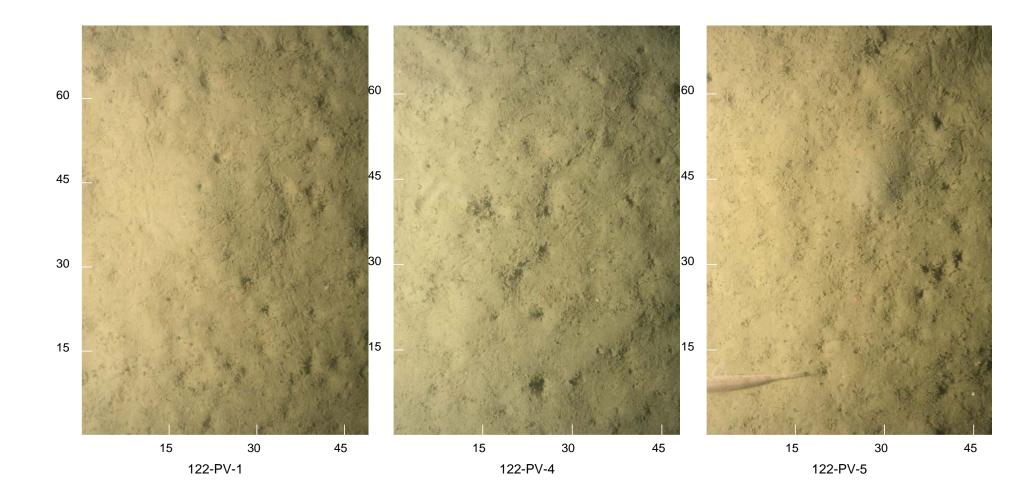


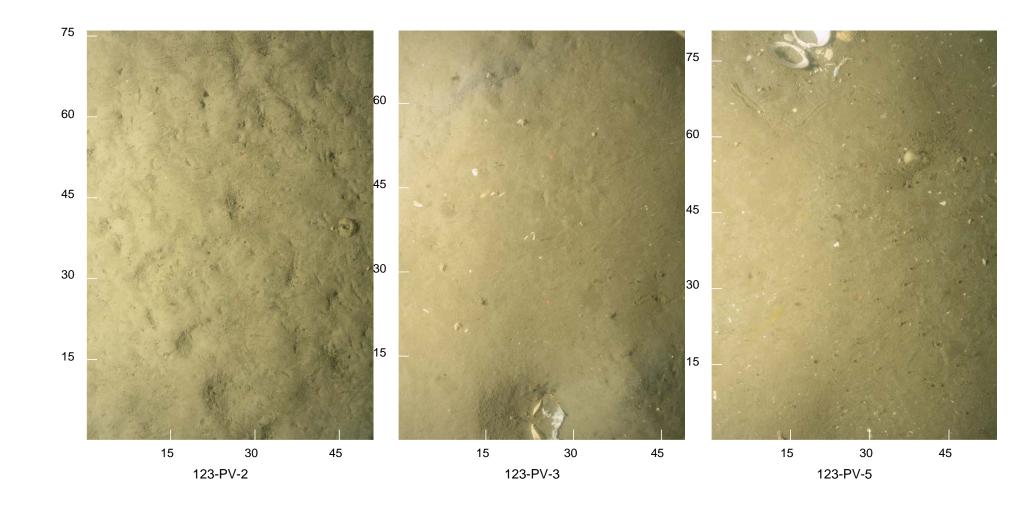


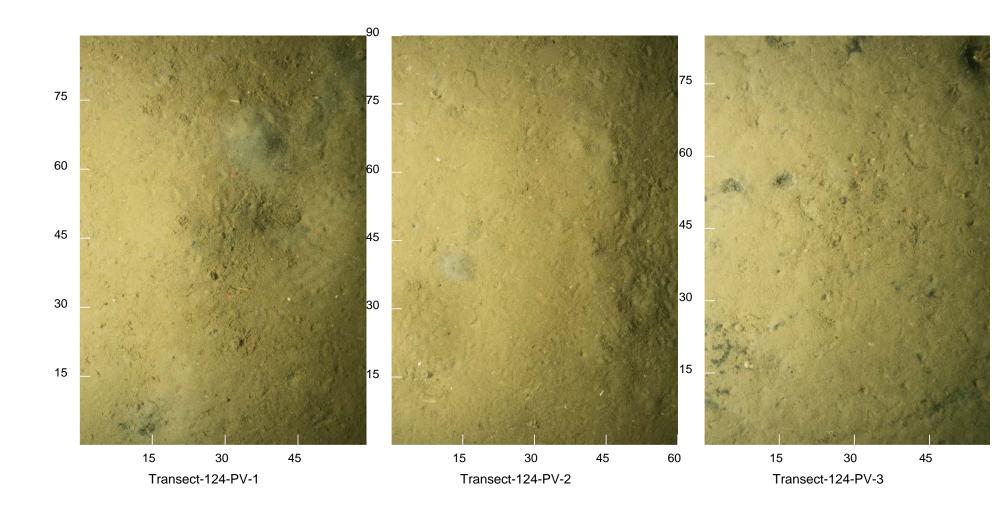


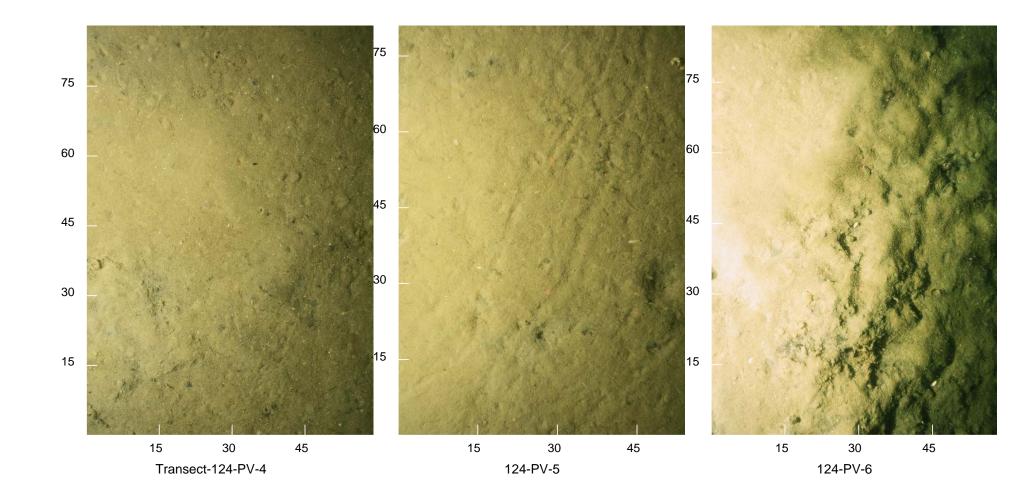


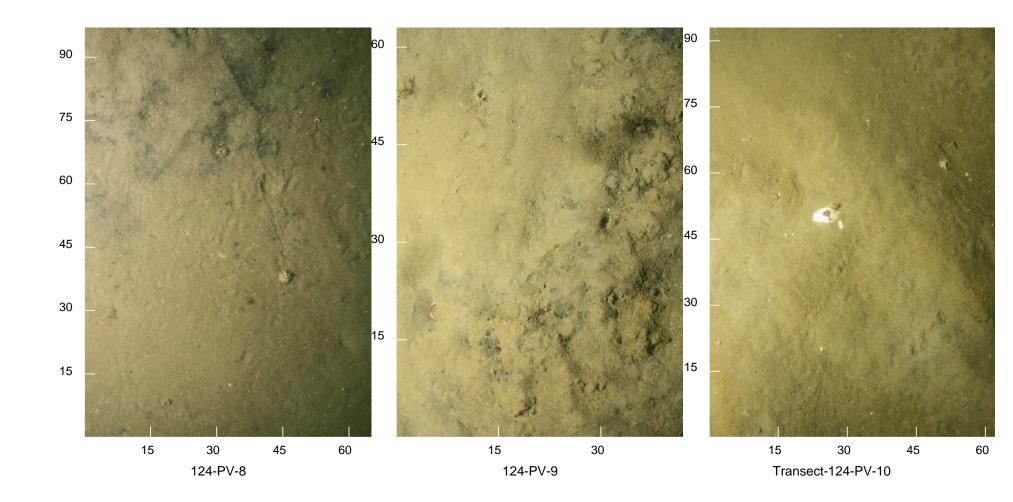


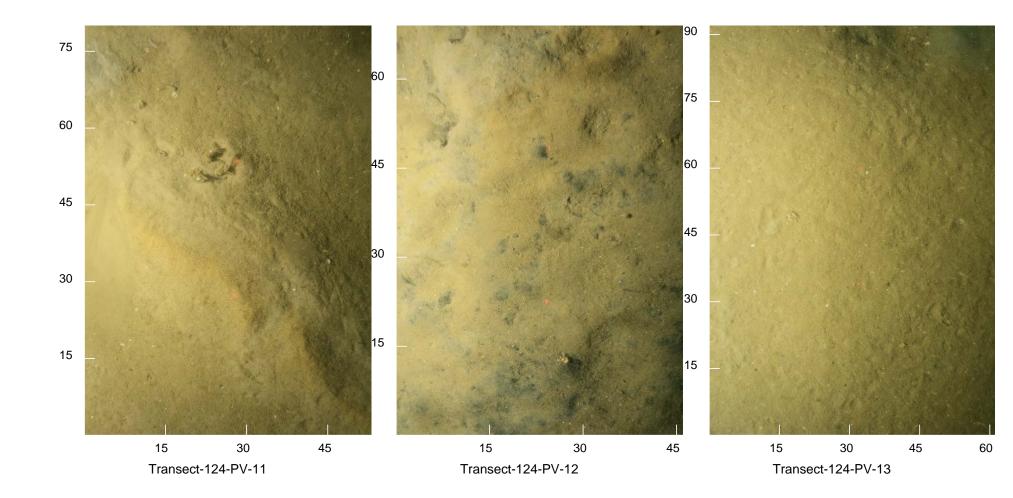


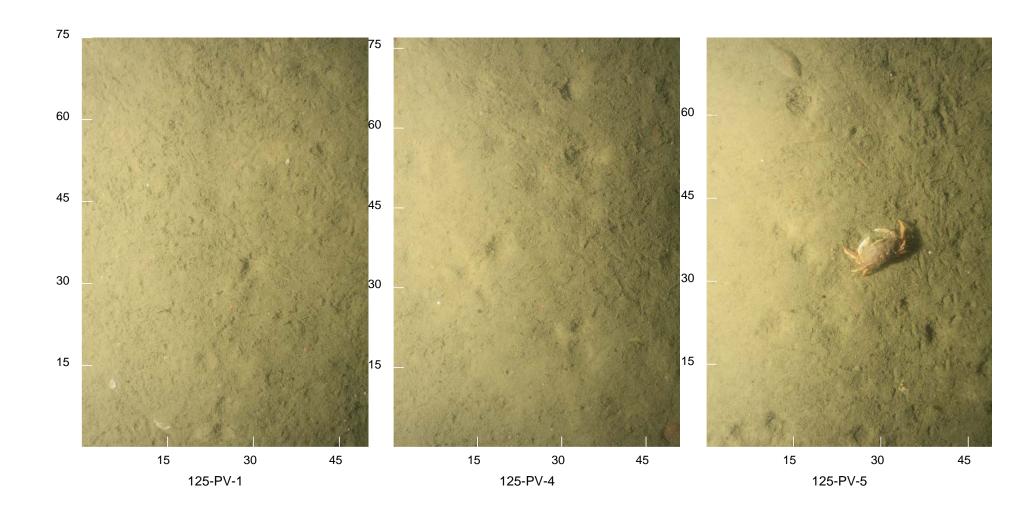


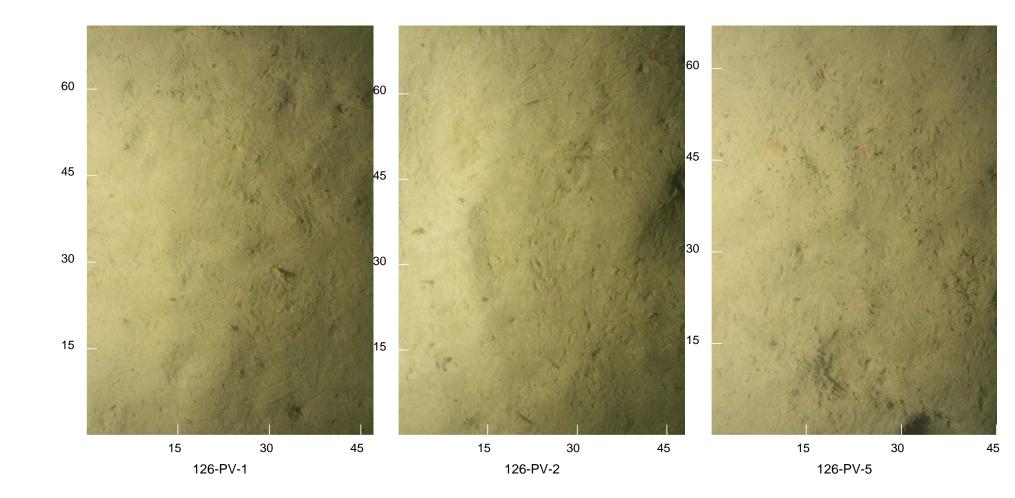


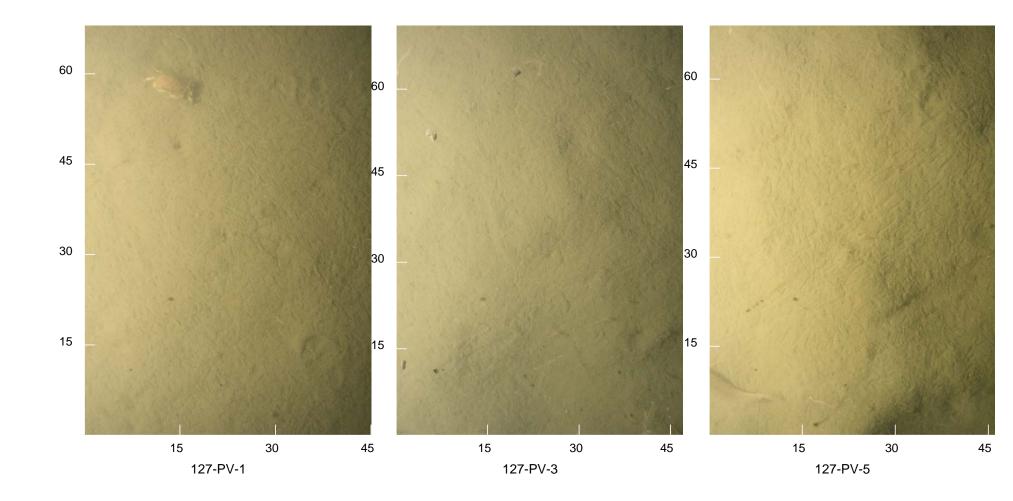


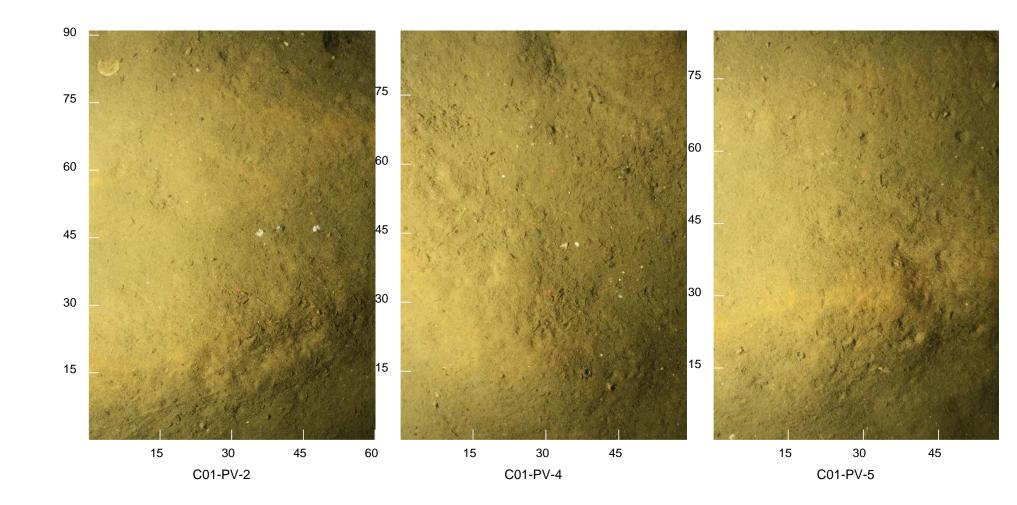


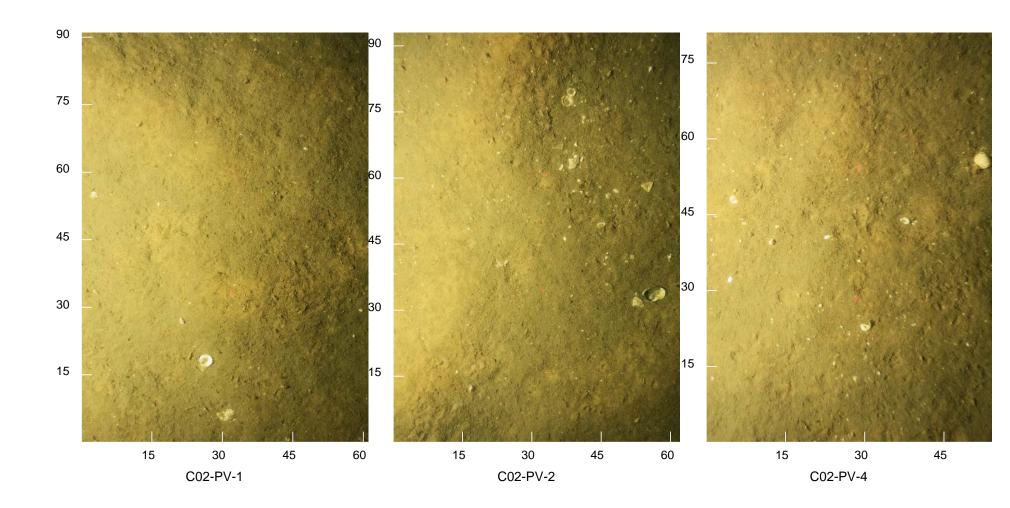


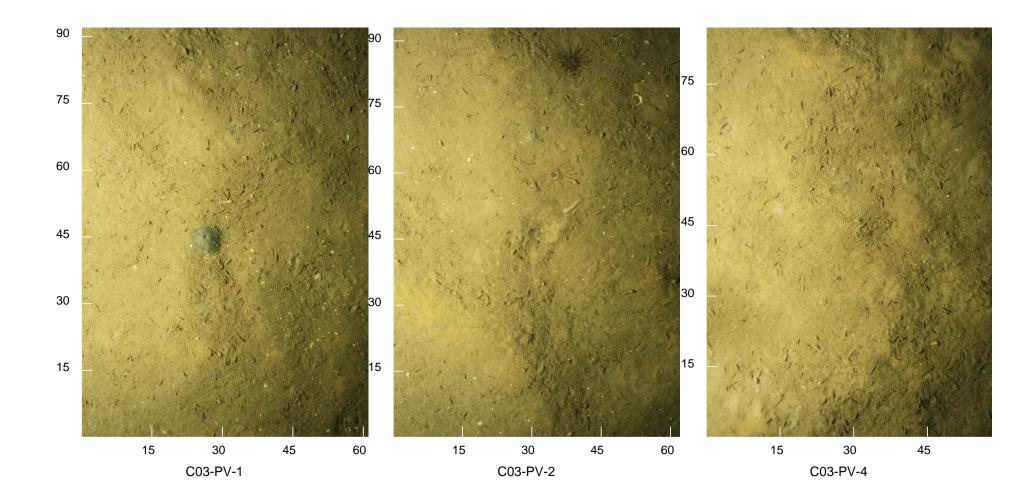


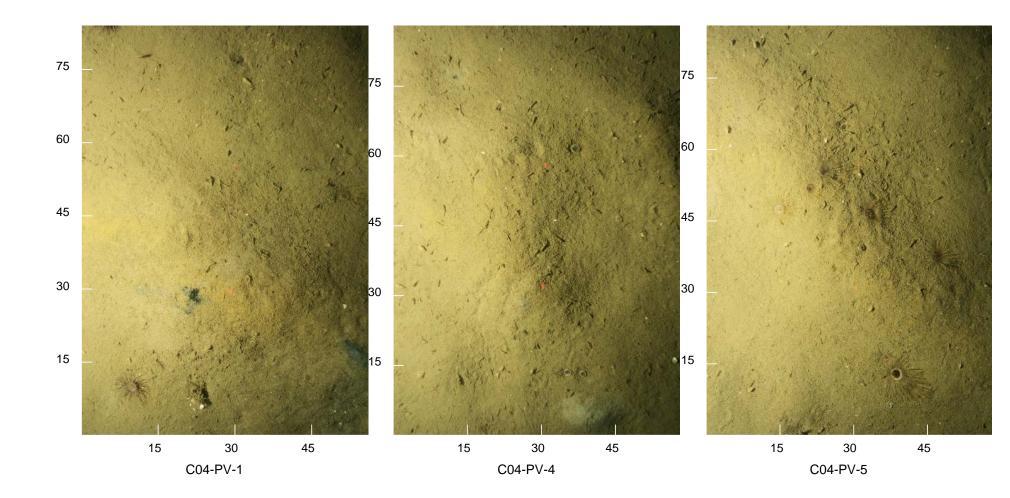


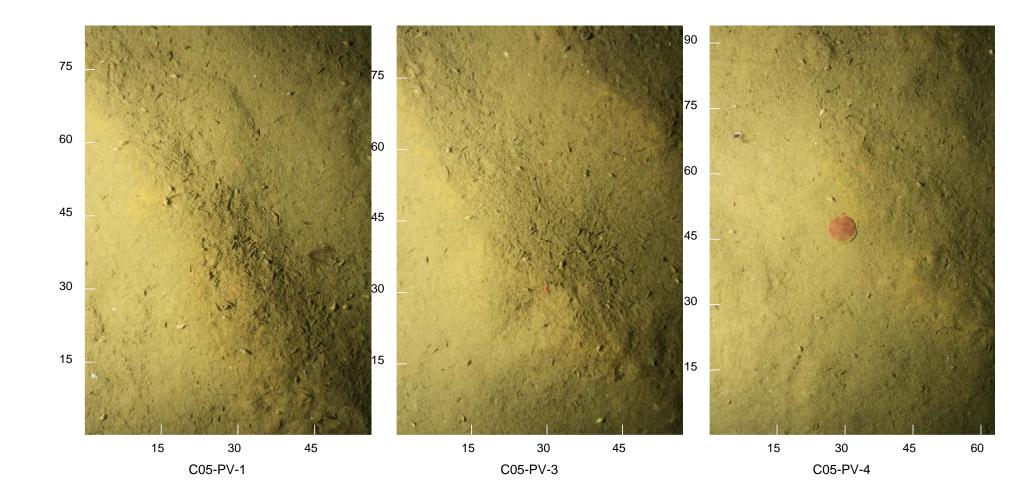


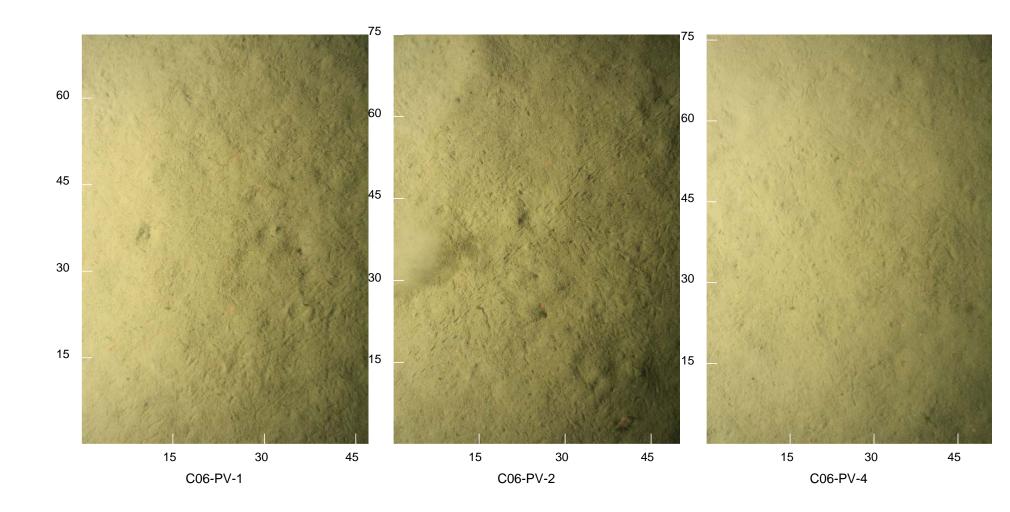


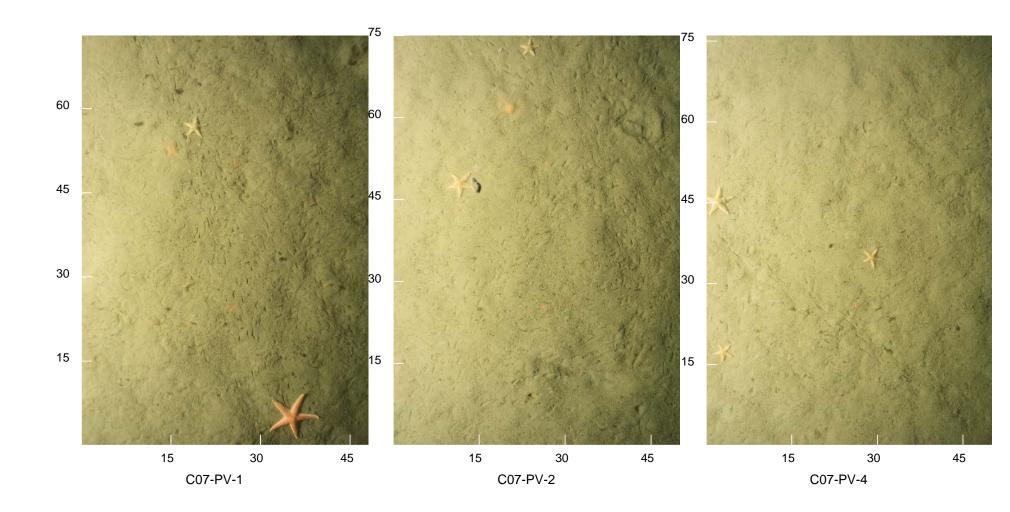


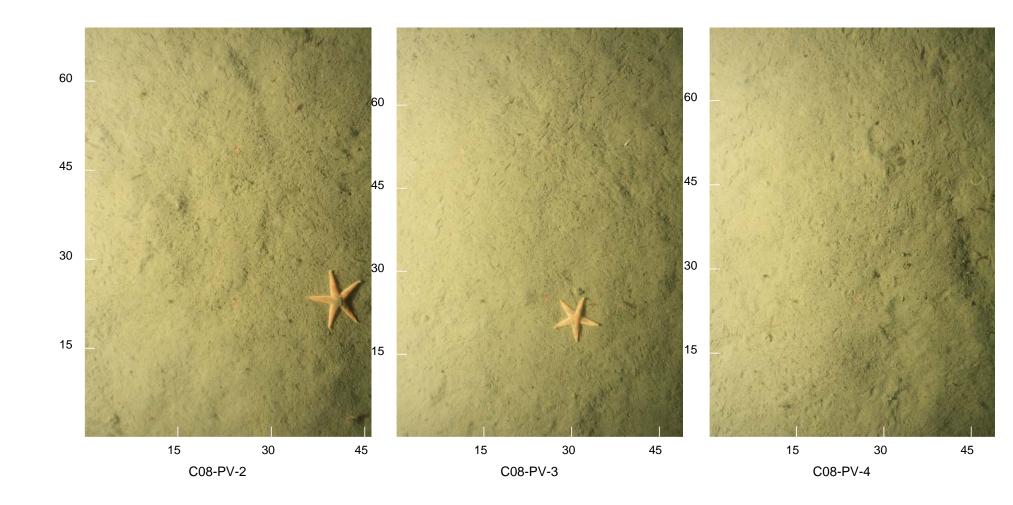


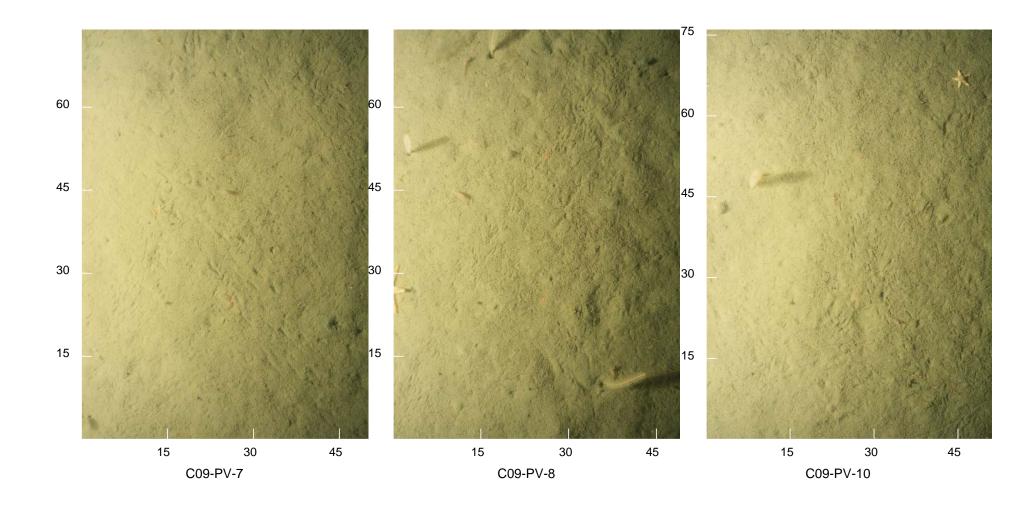


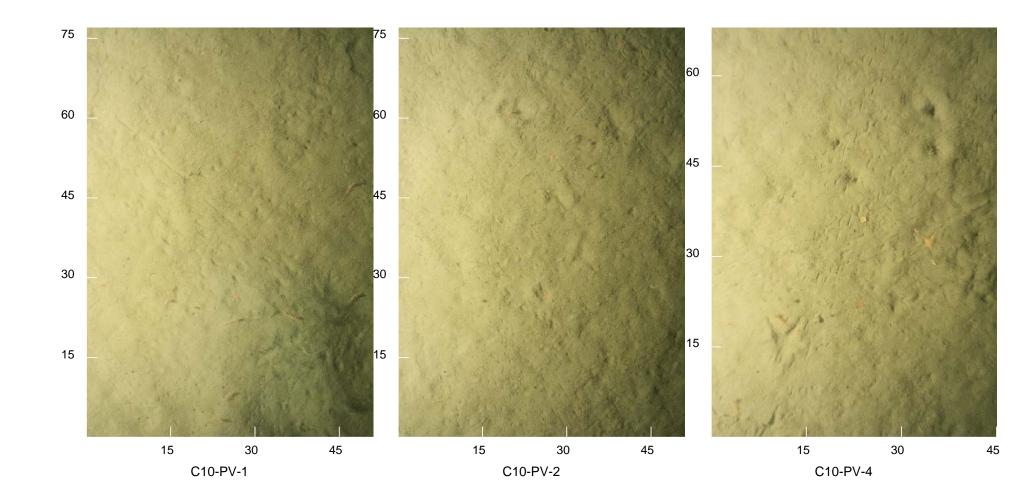


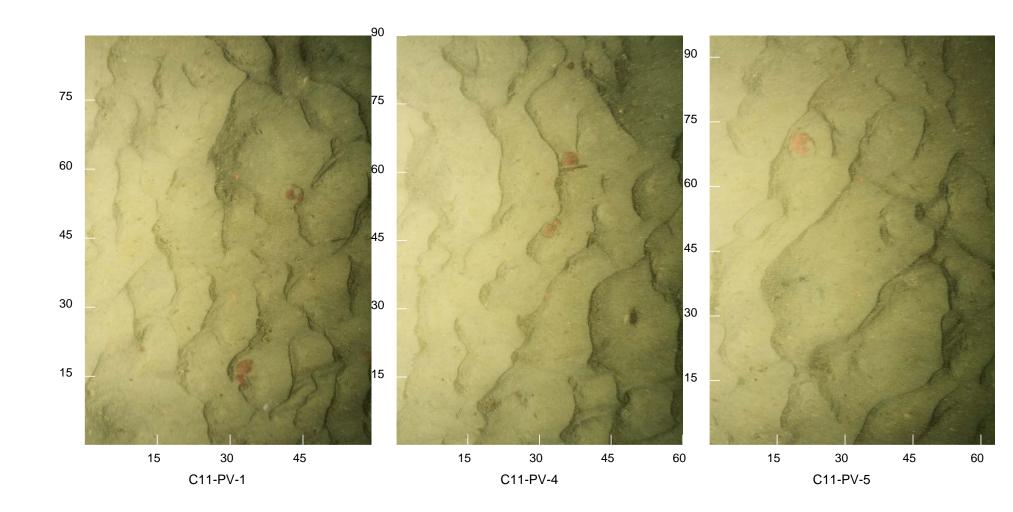


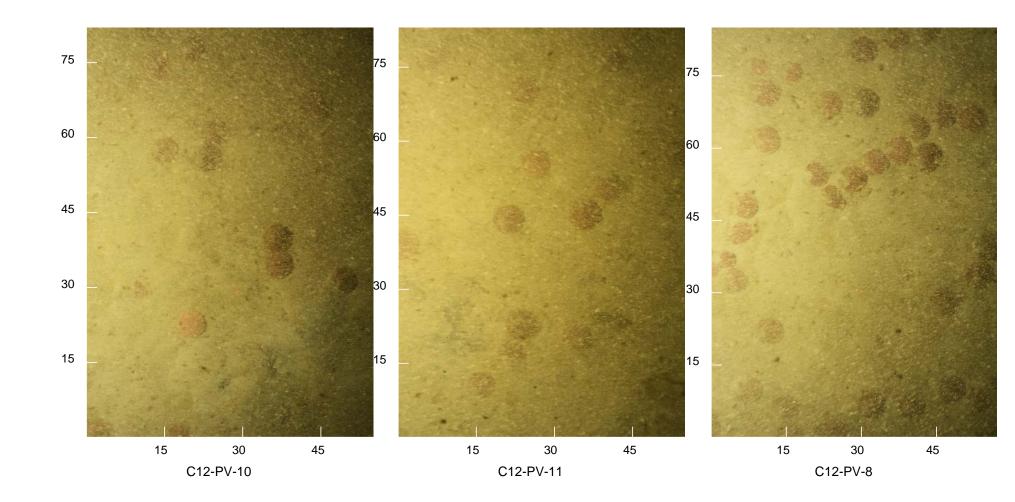


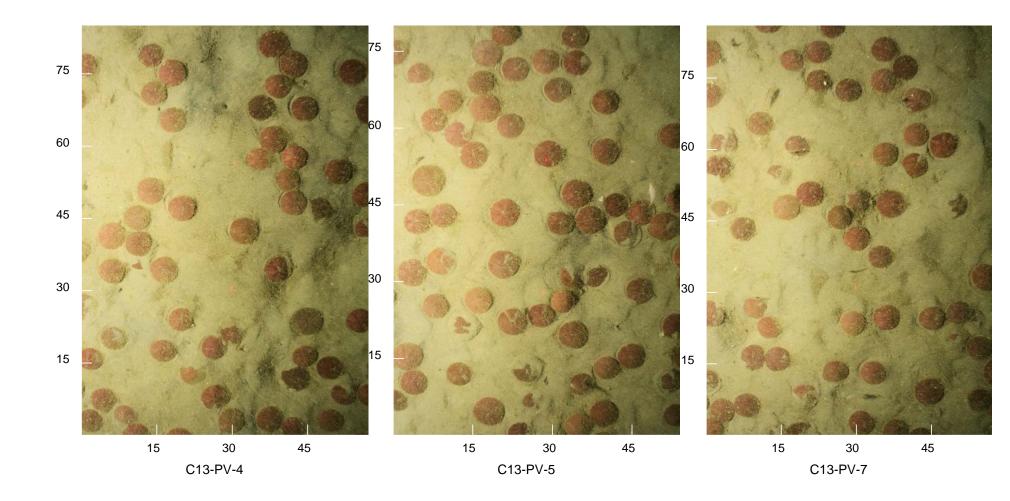


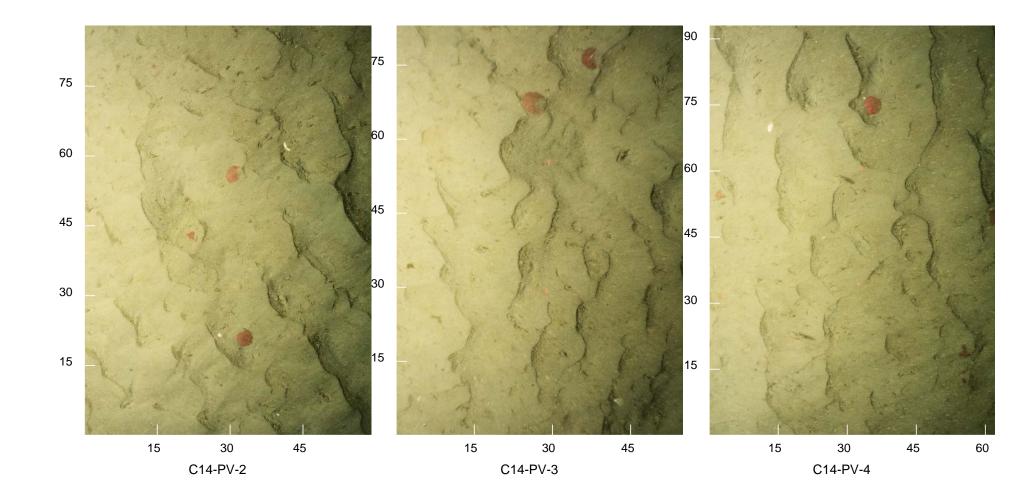


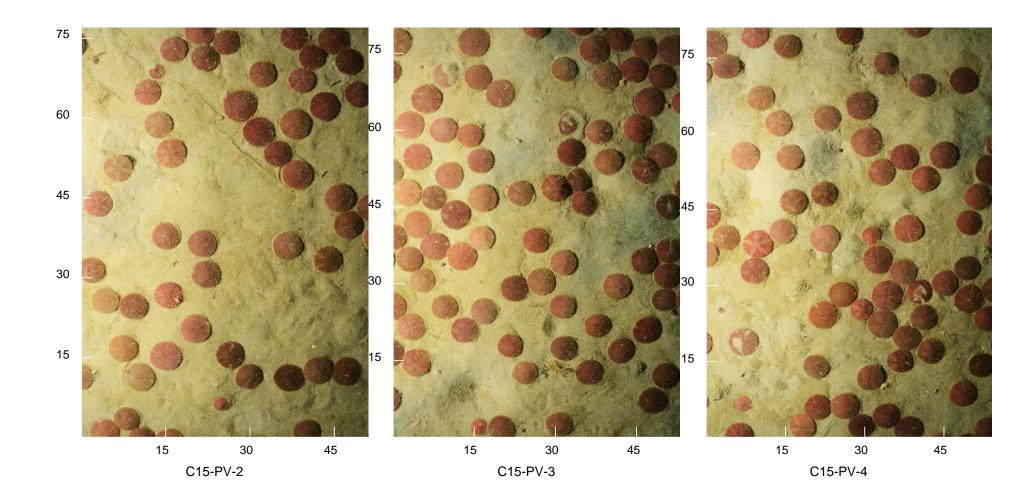


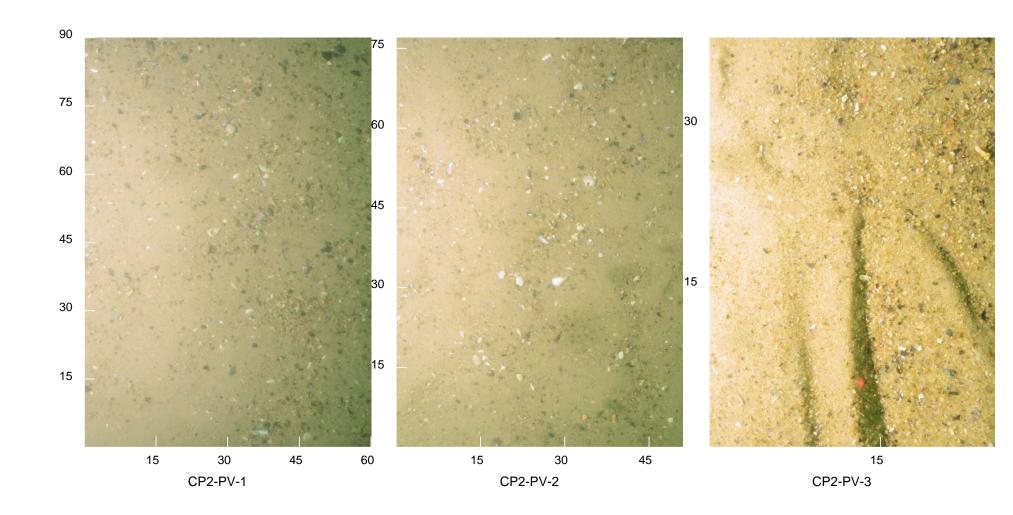












Appendix C

Sediment Profile Imaging and Plan View Data

- Appendix C1. SPI Data Set
- Appendix C2. PV Image Data Set

Appendix C1 SPI Data Set

Appendix C2: SPI Data Set Sediment Profile and Plan View Imaging Survey Mayflower Wind Farm, Summer 2020

			Boundary			Grain Size	Grain Size				Methane				
		Penetration		aRPD Depth	Grain Size Major	Maximum	Minimum	CMECS Substrate	CMECS Substrate	Roughness	Present			Successional	
Station ID	Replicate	Depth (cm)	(cm)	(cm)	Mode (phi units)	(phi units)	(phi units)	Group	Subgroup	Origin	Y/N	Beggiato	a Epifauna	Stage	Comments
20SU-MW0521-001	1	2.7	1.4	Ind	-2 to -3/3-2	-5	4	Gravels	Gravel Pavement	P	N	N	None	Ind	Pebble/granules over fine sand, red algae, possible hydroids.
20SU-MW0521-001	2	3.9	2.3	Ind	-2 to -3/3-2	-5	4	Gravels	Gravel Pavement	P	N	N	Sponge, gastropod	Ind	Pebble/granules over fine sand, red algae.
															, ,
20SU-MW0521-001	3	3.2	1.7	Ind	-2 to -3	-5	1	Gravels	Gravel Pavement	Р	N	N	Hydroids	Ind	Pebble/granules, red algae.
20SU-MW0521-002	1	4.9	2.4	Ind	3-2	-1	4	Sand	Fine/Very Fine Sand	Р	N	N	Barnacles	Ind	Fine sand with medium-coarse sand lenses, shell fragments/hash with barnacles.
20SU-MW0521-002	2	6.8	0.8	Ind	3-2/1-0	-2	4	Sand	Fine/Very Fine Sand	Р	N	N	None	Ind	Find sand (5 cm) over coarse sand (2 cm), shell hash in coarse layer.
20SU-MW0521-002	3	2.4	3.4	Ind	2-1	-5	3	Sand	Medium Sand	Р	N	N	Sponge	Ind	Scattered coarse pebbles on fine to coarse sand, sponge encrusted cobble
													. 0		on SWI.
20SU-MW0521-002	4	2.8	1.6	Ind	2-1	-3	3	Sand	Medium Sand	Р	N	N	Hydroids	Ind	Shell fragments on rippled medium sand.
20SU-MW0521-002	5	4.9	1.4	Ind	1-0	-4	3	Sand	Very Coarse/Coarse Sand	Р	N	N	Barnacles	Ind	Shell hash over coarse sand grading to fine sand with depth, red algae.
20SU-MW0521-002	6	5.3	0.4	Ind	0 to -1	-2	2	Sand	Very Coarse/Coarse Sand	Р	N	N	None	Ind	Very coarse/coarse sand and shell hash.
20SU-MW0521-002	8	5.3	0.7	Ind	2-1	-2	3	Sand	Medium Sand	Р	N	N	None	Ind	Thin (1 cm) layer of granules over medium sand, shell hash.
20SU-MW0521-002	11	5.3	1.0	Ind	2-1	-1	3	Sand	Medium Sand	Р	N	N	None	Ind	Rippled medium/coarse sand, fine sand at depth.
20SU-MW0521-002	12	4.4	1.5	Ind	3-2	-5	4	Sand	Fine/Very Fine Sand	Р	N	N	None	Ind	Large shell, cobbles over fine sand.
20SU-MW0521-002	13	3.8	1.3	2.4	3-2	-4	4	Sand	Fine/Very Fine Sand	Р	N	N	Tunicates	Ind	Pebbles on fine sand, tunicate, reduced sands at depth.
20SU-MW0521-003	8	1.3	1.1	Ind	-4 to -5	-5	-2	Gravels	Gravel Pavement	Р	N	N	None	Ind	Coarse pebbles, some shell.
20SU-MW0521-003	9	3.8	2.9	Ind	-3 to -4/2-1	-5	4	Gravels	Gravel Pavement	Р	N	N	Sponges, Hydroids	Ind	Medium pebbles over medium sand, encrusting sponges, hydroids.
20SU-MW0521-003	10	2.5	1.9	Ind	-1 to -2	-5	2	Gravels	Gravel Pavement	Р	N	N	Gastropods,	Ind	Pebbles over coarse sand.
20SU-MW0521-004	1	3.1	2.1	Ind	2 to 4/2 2	6	3	Crovel Miyee	Sandy Craval	Р	N	N	Hydroids	Ind	Vary aggregation group over fine good, energiating eniforms
	3		2.1 2.2		-3 to -4/3-2	-6 -	ა 3	Gravel Mixes	Sandy Gravel	P P	N N	N	Hydroids		Very coarse/coarse gravel over fine sand, encrusting epifauna.
20SU-MW0521-004	3	2.0	2.2	Ind	3-2	-5	3	Gravel Mixes	Sandy Gravel	Р	IN	N	Sponges	Ind	Scattered pebbles over fine sand; green and red algae, sponges, hydroids.
20SU-MW0521-004	4	0.9	2.0	Ind	Ind	-4	3	Gravel Mixes	Sandy Gravel	Р	N	N	Sponges, Hydroids	Ind	Pebbles on fine sand, major mode = Ind due to minimal penetration, spong hydroids.
20SU-MW0521-005	1	1.3	1.0	Ind	-2 to -3	-4	0	Gravels	Gravel Pavement	Р	N	N	Gastropod, Urchin,	Ind	Fine to coarse pebbles, red algae, urchin.
00011 MW0504 005	0	4.0	4 7	11	5 to 0	-	4	0	One of Branch and	Б			Hydroids	11	Ballic and calling confirm bonds become an 25 consequence
20SU-MW0521-005	2	1.6	1.7	Ind	-5 to -6	-7	-1	Gravels	Gravel Pavement	Р	N	N	Gastropods, Urchins, Sponges	Ind	Pebble and cobbles, urchins, hard tube worms, snails, sponges.
20SU-MW0521-005	3	0.6	0.9	Ind	Ind	-7	-3	Gravels	Gravel Pavement	Р	N	N	Hard tube worms,	Ind	Minimal penetration, cobbles and pebbles.
													Hydroids		
20SU-MW0521-005	4	0	Ind	Ind	Ind	Ind	Ind	Gravels	Gravel Pavement	Р	N	N	Sponges (white crust)	Ind	No penetration, sponges on cobbles, pebbles.
20SU-MW0521-005	5	0.7	0.6	Ind	-3 to -4	-5	-2	Gravels	Gravel Pavement	Р	N	N	Hydroids, Snails,	Ind	Coarse pebbles on sand, red algae.
	_									_			Sponges		
20SU-MW0521-005	7	8.0	1.0	Ind	Ind	Ind	Ind	Gravels	Gravel Pavement	Р	N	N	Hydroids, Snails,	Ind	Grain sizes Ind due to minimal penetration.
20SU-MW0521-005	9	0	Ind	Ind	Ind	-6	-4	Gravels	Gravel Pavement	Р	N	N	Sponges Hydroids, Chiton,	Ind	No penetration on cobble, pebble bottom.
													Sponge		
20SU-MW0521-005	10	1.9	1.7	Ind	-1 to -2	-5	3	Gravels	Gravel Pavement	Р	N	N	Sponge, Hydroids, Hard tube worms	Ind	Gravel and coarse sand, diverse epifauna.
20SU-MW0521-005	11	2.7	1.2	Ind	0 to -1	-5	2	Gravel Mixes	Sandy Gravel	Р	N	N	Snails, Sponges,	Ind	Gravel on coarse sand, red algae and diverse epifauna.
2000 111110021 000			1.2	u	0.01	•	_	CIGTOI MINOS	Janay Javol	•	. •	14	Mussel, Hydroids	iiiu	2.2 2 source saira, roa argue aria diverse opinadia.
20SU-MW0521-005	12	3.7	2.8	Ind	1-0	-4	2	Gravel Mixes	Sandy Gravel	Р	N	N	Snails, Sponges,	Ind	Encrusted pebbles over coarse sand.
20SU-MW0521-005	13	1.9	1.2	Ind	Ind	-5	2	Gravel Mixes	Sandy Gravel	Р	N	N	Hydroids, Chiton Sponges, Snails	Ind	Minimal penetrations, gravel on sand, sponges.
20SU-MW0521-007	6	0	Ind	Ind	Ind	Ind	Ind	Ind	Ind	Ind	N	N	Gastropods,	Ind	No penetrations, graver on sand, sponges.
2000-IVIVV 002 I-007	U		iilu		mu	iilu	iiiu	IIIG	mu	iilu		IN	Bryozoans	illu	no poneration, bryozoans.
20SU-MW0521-007	8	0	Ind	Ind	Ind	Ind	Ind	Ind	Ind	Ind	N	N	Sponges, Bryozoans	Ind	No penetration, encrusting sponges and attached bushy bryozoans.
20SU-MW0521-007	9	0	Ind	Ind	Ind	Ind	Ind	Ind	Ind	Ind	N	N	Bryozoans	Ind	No penetration, bryozoans.
20SU-MW0521-009	1	3.4	1.5	Ind	2-1	-4	4	Sand	Medium Sand	P	N	N	Crepidula	Ind	Scattered Crepidula on medium sand, shell fragments.
20SU-MW0521-009	4	4.4	1.4	Ind	2-1	-4	4	Crepidula Reef	NA	Р	N	N	Crepidula	Ind	Crepidula reef and pebbles on fine to medium sand, shell hash.
20SU-MW0521-009	5	2.6	3.2	Ind	3-2	-5	4	Crepidula Reef	NA	P	N	N	Crepidula,	Ind	Crepidula on fine to medium sand.
2000 111110021 000	Ü	2.0	0.2	iiid	0.2	Ü	•	Oropidala recoi				.,	Barnacles,	iiid	oropicula ori fino to modulii odila.
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Appendix C2: SPI Data Set Sediment Profile and Plan View Imaging Survey Mayflower Wind Farm, Summer 2020

			Boundary			Grain Size	Grain Size				Methane				
		Penetration	Roughness	•	Grain Size Major	Maximum	Minimum	CMECS Substrate	CMECS Substrate	Roughness	Present			Successional	
Station ID	Replicate	Depth (cm)	(cm)	(cm)	Mode (phi units)	(phi units)	(phi units)	Group	Subgroup	Origin	Y/N	Beggiatoa	<u>Epifauna</u>	Stage	Comments
20SU-MW0521-011	1	11.6	2.4	Ind	>4	3	>4	Crepidula Reef	NA	В	Υ	N	Crepidula	3	Crepidula reef over reduced mud. aRPD = 0, feeding voids may be relic.
20SU-MW0521-011	2	11.2	2.2	0.3	>4	3	>4	Crepidula Reef	NA	В	Υ	N	Crepidula, hydroids	1	Crepidula over reduced mud.
20SU-MW0521-011	5	7.8	4.1	0.2	>4	3	>4	Crepidula Reef	NA	В	Υ	N	Crepidula, hydroids	1	Crepidula reef on reduced mud, possible relict void.
20SU-MW0521-013	1	4.0	0.6	1.8	3-2	-1	4	Sand	Fine/Very Fine Sand	Р	N	N	None	Ind	Fine to medium sand, shell hash, subtle redox boundary.
20SU-MW0521-013	4	6.0	1.6	Ind	2-1	-1	4	Sand	Medium Sand	Р	N	N	None	Ind	Coarse sand grading to fine sand with depth, shell hash, aRPD = Ind.
20SU-MW0521-013	5	4.6	0.6	1.7	2-1	-1	4	Sand	Medium Sand	Р	N	N	Hydroids, Gastropod	Ind	Mediums grading to finer with depth, possible red algae.
20SU-MW0521-015	1	3.8	1.2	1.5	2-1	-2	>4	Sand	Medium Sand	Р	N	N	Crepidula, Barnacles, Anemone	Ind	Scattered Crepidula over sand, shell hash.
20SU-MW0521-015	2	1.6	1.8	Ind	4-3	1	>4	Crepidula Reef	NA	В	N	N	Crepidula, Barnacles	Ind	Crepidula over very fine sand and silt.
20SU-MW0521-015	3	2.8	1.3	1.2	2-1	-1	>4	Sand	Medium Sand	Р	N	N	Crepidula	Ind	Scattered Crepidula on medium sand.
20SU-MW0521-015	4	2	2.7	Ind	2-1	-3	3	Sand	Medium Sand	Р	N	N	Crepidula, Hydroids	Ind	Crepidula and pebbles on fine to coarse sand.
20SU-MW0521-015	5	2.5	1.4	Ind	3-2	-3	4	Sand	Fine/Very Fine Sand	Р	N	N	Hydroids, Sponge	Ind	Large shell debris on fine to medium sand.
20SU-MW0521-015	7	2.5	0.5	Ind	3-2	-3	4	Sand	Fine/Very Fine Sand	Р	N	N	Hydroids	Ind	Shell rubble on fine sand, red algae.
20SU-MW0521-015	8	2.8	2.9	Ind	2-1	-4	4	Gravelly	Gravelly Sand	Р	N	N	Hydroids, Bryozoans, Hermit	Ind	Gravel and Crepidula shells on fine to coarse sand, macroalgae.
20SU-MW0521-015	9	3.1	0.8	1.2	2-1	-4	4	Gravelly	Gravelly Sand	Р	N	N	crabs Hermit crabs, Bryozoans	Ind	Gravel and Crepidula on fine to medium sand.
20SU-MW0521-015	10	4.5	1.9	Ind	3-2	0	4	Sand	Fine/Very Fine Sand	Р	N	N	None	Ind	Rippled fine to medium sand, sand clasts on surface.
20SU-MW0521-015	11	4.4	0.7	Ind	3-2	0	4	Sand	Fine/Very Fine Sand	Р	N	N	None	Ind	Rippled well-sorted fine sand.
20SU-MW0521-015	12	5.8	0.9	Ind	3-2	1	4	Sand	Fine/Very Fine Sand	Р	N	N	Hermit crabs	Ind	Rippled very well-sorted fine sand.
20SU-MW0521-015	15	5.3	0.8	Ind	3-2	1	4	Sand	Fine/Very Fine Sand	Р	N	N	None	Ind	Rippled very well-sorted fine sand.
20SU-MW0521-017	1	7.2	0.6	0.9	3-2	0	>4	Sand	Fine/Very Fine Sand	Р	N	N	Bryozoans	3	Fine sand, reduced sediment layer from 1-3 cm, feeding void/burrow, nematode.
20SU-MW0521-017	2	7.5	0.5	Ind	'3-2	0	4	Sand	Fine/Very Fine Sand	Р	N	N	Bryozoans, Hydroids	Ind	Gently rippled fine sand.
20SU-MW0521-017	5	7.6	1.1	3.5	3-2	0	>4	Sand	Fine/Very Fine Sand	Р	N	N	Hermit crab	2 -> 3	Rippled well-sorted fine sand, reduced sediment patches below 4-6 cm.
20SU-MW0521-019	3	11.7	1.5	0.8	>4	1	>4	Crepidula Reef	NA	Р	Υ	N	Crepidula, Barnacles	1	Crepidula over reduced mud, relict voids, methane.
20SU-MW0521-019	5	11.6	1.2	0.6	>4	1	>4	Crepidula Reef	NA	В	Υ	N	Crepidula, Barnacles, Hydroids	1	Crepidula over reduced mud, red algae, methane.
20SU-MW0521-019	6	8.7	3.8	0.8	>4	1	>4	Crepidula Reef	NA	В	Υ	N	Crepidula, Barnacles	1	Crepidula over reduced mud, methane, angular/reduced mud clasts appe to be artifacts of previous drops.
20SU-MW0521-020	1	6.5	2.2	2.4	3-2	0	>4	Sand	Fine/Very Fine Sand	Р	N	N	None	Ind	Rippled fine sand, shell hash.
20SU-MW0521-020	2	7.7	2.4	Ind	3-2	0	4	Sand	Fine/Very Fine Sand	Р	N	N	None	Ind	Rippled fine sand, shell hash.
20SU-MW0521-020	3	5.1	1.0	1.5	3-2	-1	>4	Sand	Fine/Very Fine Sand	Р	N	N	Gastropod	Ind	Rippled fine sand, shell debris.
20SU-MW0521-021	1	3.7	1.5	Ind	3-2	0	4	Sand	Fine/Very Fine Sand	Р	N	N	Crepidula, Hard tube worms,	Ind	Rippled fine sand with scattered Crepidula clusters, red algae.
													Hydroids, Sponge		
20SU-MW0521-021	2	2.1	1.3	Ind	3-2	0	4	Sand	Fine/Very Fine Sand	Р	N	N	Mussel, Hydroids	Ind	Fine sand with lots of shell debris.
20SU-MW0521-021	3	2.8	1.1	Ind	3-2	0	4	Sand	Fine/Very Fine Sand	Р	N	N	Crepidula	Ind	Fine sand with surface shell debris.
20SU-MW0521-022	1	3.1	2.7	Ind	3-2	-4	4	Sand	Fine/Very Fine Sand	Р	N	N	Hydroids	Ind	Pebbles and sand, rippled.
20SU-MW0521-022	2	2.8	1.8	1.5	2-1	-4	4	Sand	Medium Sand	Р	N	N	None	Ind	Poorly sorted sand and pebbles, shell.
20SU-MW0521-022	3	2.6	2.1	Ind	3-2	-4	3	Gravelly	Sandy Gravel	Р	N	N	Hydroids, Bryozoans	Ind	Gravel on fine sand, shell debris.
20SU-MW0521-023	1	6.5	1.1	Ind	3-2	0	4	Sand	Fine/Very Fine Sand	Р	N	N	None	Ind	Rippled fine sand, medium sand in top cm, shell hash.
20SU-MW0521-023	4	4.0	1.2	Ind	3-2	0	>4	Sand	Fine/Very Fine Sand	Р	N	N	None	Ind	Rippled fine sand, shell hash.

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Appendix C2: SPI Data Set Sediment Profile and Plan View Imaging Survey Mayflower Wind Farm, Summer 2020

SPI Image Analysis Re	courto, ournine	or 2020 Mayrion				0 : 0:	0 : 0:								
		Donatration	Boundary	aRPD Depth	Crain Ciza Major	Grain Size	Grain Size Minimum	CMECS Substrate	CMECS Substrate	Doughnoon	Methane			Cupagaianal	
Station ID	Replicate	Penetration Depth (cm)	Roughness (cm)	cm)	Grain Size Major Mode (phi units)	Maximum (phi units)	(phi units)	Group	Subgroup	Roughness Origin	Present Y/N	Beggiato	a Epifauna	Successional Stage	Comments
20SU-MW0521-024			, ,			· · · /		Sand		P	N	N Beggiator	None	Ind	Rippled well-sorted very coarse/coarse sand, shell hash.
	1 2	7.4	1.4	Ind	0 to -1	-2 -2	2 4		Very Coarse/Coarse Sand	P	N N	N N	None	Ind	Rippled fine sand (12 cm) over very coarse sand, shell hash in very coarse
20SU-MW0521-024	2	15.3	0.6	Ind	3-2/0 to -1	-2	4	Sand	Fine/Very Fine Sand	Р	IN	IN	None	ina	sand and at surface.
20SU-MW0521-024	3	8.7	0.5	Ind	3-2/2-1	0	3	Sand	Fine/Very Fine Sand	Р	N	N	None	Ind	5-6 cm of fine sand over medium sand.
20SU-MW0521-024	4	1.8	1.1	Ind	-1 to -2	-5	3	Gravel Mixes	Sandy Gravel	P	N	N	Sponge	Ind	Granules and pebbles on sand, sponge-encrusted pebble.
20SU-MW0521-024	6	3.2	1.4	2.2	3-2	-5	4	Gravel Mixes	Sandy Gravel	<u>.</u> Р	N	N N	Sponges,	Ind	Gravel on fine sand, diopatra, a variety of sponges, aRPD is estimate.
2000 11111 0021 024	Ü	0.2	1.4	2.2	02	J	-	Graver Wilkes	Sundy Stavel		14	11	Hydroids,	iiid	Craver on time cana, diopana, a variety of openigos, and D to contract.
													Bryozoans		
20SU-MW0521-024	7	2.7	1.4	Ind	3-2	-5	3	Gravelly	Gravelly Sand	Р	N	N	Hydroids,	Ind	Scattered gravel on fine sand, Diopatra, shell debris.
													Bryozoans,		
00011111110504 004								0 115		_			Gastropods		Occupies Conserved about delice
20SU-MW0521-024	8	2.3	1.4	Ind	3-2	-4	4	Gravel Mixes	Sandy Gravel	Р	N	N	Hydroids,	Ind	Gravel on fine sand, shell debris.
													Bryozoans, Sponges		
20SU-MW0521-024	10	1.7	2.4	Ind	3-2	-1	4	Sand	Fine/Very Fine Sand	P	N	N	Hydroids,	Ind	Rippled well-sorted fine sand, Diopatra.
2000 002 . 02 .	.0				V =	•	·		c, verye cana	•		• • •	Bryozoans		
20SU-MW0521-024	11	2.3	1.2	Ind	-3 to -4	-5	3	Gravels	Gravel Pavement	Р	N	N	Sponges,	Ind	Gravel cover over sand, shell.
													Bryozoans, Hard		
													Tube Worms,		
000111111100004 004	40	2.2	4.0	la d	0.4- 0	4	2	Oraciala	Constal Double and	Б	NI.	NI.	Hydroids	la al	Crovel/abell on cond
20SU-MW0521-024	12	2.2	1.3	Ind	-2 to -3	-4	3	Gravels	Gravel Pavement	Р	N	N	Sponge, Hydroid	Ind	Gravel/shell on sand.
20SU-MW0521-024	13	3.5	2.0	Ind	3-2	-1	4	Sand	Fine/Very Fine Sand	P	N	N N	None	Ind	Fine to medium sand, shell hash.
20SU-MW0521-025	1	2.5	1.3	Ind	2-1	-5	>4	Gravel Mixes	Sandy Gravel	Р	N	N	Crepidula	Ind	Gravel/Crepidula over reduced medium sand, possibly high SOD.
20SU-MW0521-025	2	1.3	1.1	Ind	'3-2	-4	3	Shell Hash	NA	Р	N	N	Bryozoans,	Ind	Shell debris on sand.
20SU-MW0521-025	5	1.6	1.6	Ind	2-1	-4	>4	Gravels	Gravel Pavement	Р	N	N	Crepidula Sponge	Ind	Gravel over reduced medium sand, med-high SOD, shell hash.
20SU-MW0521-026	2	2.8	3.0	Ind	3-2	0	3	Sand	Fine/Very Fine Sand	<u>'</u> Р	N	N N	None	Ind	Rippled fine sand with red algae.
20SU-MW0521-026	4	2.9	2.4	Ind	3-2 and -3 to -4	-4	3	Gravel Mixes	Sandy Gravel	ı P	N	N	Barnacles	Ind	Gravel and fine sand mix, red algae.
20SU-MW0521-026	5	3.4	2.5	Ind	-3 to -4/3-2	-4	3	Gravels	Gravel Pavement	r P	N	N	Barnacles	Ind	Gravel over fine sand, red algae.
20SU-MW0521-027	1	2.1	3.1	Ind	3-2	-3	4	Sand	Fine/Very Fine Sand	P	N N			Ind	
20SU-MW0521-027	3		3. i 1.7	Ind	3-2 3-2		4		•	P	N N	N	None		Rippled fine sand with scattered pebbles.
		3.2				-1	4	Sand	Fine/Very Fine Sand	P	N N	N	None None	Ind	Rippled fine sand, red algae.
20SU-MW0521-027	5	2.5	1.3	Ind	3-2	-1	4	Sand	Fine/Very Fine Sand	<u>Р</u>		N N		Ind	Rippled fine sand, red algae.
20SU-MW0521-028	1	1.8	0.8	Ind	-3 to -4	-5	-2	Gravels	Gravel Pavement	P	N	N	Sponges	Ind	Gravel with encrusting sponges, red algae.
20SU-MW0521-028	2	3.8	1.1	Ind	-2 to -3	-5	1	Gravels	Gravel Pavement	P	N	N	Sponge, Urchins	Ind 	Gravel and shell.
20SU-MW0521-028	3	1.7	0.7	Ind	-2 to -3	-4	2	Gravels	Gravel Pavement	P	N	N	None	Ind	Fine pebble-sized gravel, red algae.
20SU-MW0521-029	1	0	Ind	Ind	Ind	Ind	Ind	Sand	Ind	Ind	N	N	None	Ind	No penetration, red and green algae on hard-packed sand with scattered
20SU-MW0521-029	2	0	Ind	Ind	Ind	Ind	Ind	Ind	Ind	Ind	N	N	None	Ind	gravel. No penetration, red and green algae on hard-packed sand with scattered
2030-101000321-029	2	U	IIIu	iiiu	IIIu	IIIu	iiiu	IIIU	ind	IIIG	IN	IN	None	IIIu	gravel.
20SU-MW0521-029	5	0	Ind	Ind	Ind	Ind	Ind	Sand	Ind	Ind	N	N	Possible	Ind	No penetration, red and green algae on hard-packed sand with scattered
			-										Bryozoans		gravel.
20SU-MW0521-031	1	7.6	1.4	Ind	2-1	-1	3	Sand	Medium Sand	Р	N	N	None	Ind	Rippled medium to coarse sand.
20SU-MW0521-031	4	5.4	0.6	Ind	1-0	-2	3	Sand	Very Coarse/Coarse Sand	Р	N	N	None	Ind	Rippled coarse to very coarse sand.
20SU-MW0521-031	5	5.0	3.0	Ind	2-1	-3	3	Sand	Medium Sand	Р	N	N	None	Ind	Rippled medium to coarse sand.
20SU-MW0521-033	2	3.3	3.2	Ind	3-2	0	4	Sand	Fine/Very Fine Sand	Р	N	N	None	Ind	Rippled very well-sorted fine sand.
20SU-MW0521-033	4	3.8	1.2	Ind	3-2	0	4	Sand	Fine/Very Fine Sand	Р	N	N	Hermit crab	Ind	Rippled very well-sorted fine sand.
20SU-MW0521-033	5	6.1	1.9	Ind	3-2	1	4	Sand	Fine/Very Fine Sand	Р	N	N	Sand Dollar	Ind	Rippled very well-sorted fine sand.
20SU-MW0521-035	6	5.1	4.5	Ind	2-1	-1	3	Sand	Medium Sand	P	N	N	None	Ind	Medium sand, sand waves.
20SU-MW0521-035	9	6.7	4.3	Ind	2-1	-1	3	Sand	Medium Sand	Р	N	N	None	Ind	Coarse sand, sand waves.
20SU-MW0521-035	10	4.3	0.7	1.2	3-2	-1	>4	Sand	Fine/Very Fine Sand	Р	N	N	None	Ind	Rippled sand with silt fraction, Diopatra.
20SU-MW0521-037	1	6.0	2.8	1.8	3-2	0	4	Sand	Fine/Very Fine Sand	Р	N	N	None	Ind	Rippled well-sorted fine sand.
20SU-MW0521-037	2	3.5	3.0	1.6	3-2	0	>4	Sand	Fine/Very Fine Sand	Р	N	N	Hydroids	Ind	Rippled well-sorted fine sand.
20SU-MW0521-037	4	3.9	0.7	1.2	3-2	0	>4	Sand	Fine/Very Fine Sand	P	N	N	None	Ind	Fine sand with silt subfraction.
20SU-MW0521-039	1	6.4	0.7	2.8	3-2/>4	1	>4	Sand	Fine/Very Fine Sand	P	N	N N	Sand Dollar	1	Fine sand layer (2-4 cm) over highly reduced silt.
20SU-MW0521-039	3	5.4	3.1	1.9	3-2/>4	0	>4	Sand	Fine/Very Fine Sand	P	N	IN	Nassariid Snail	Ind	Rippled fine to medium sand.
	3 4					0			•	P P		K I			
20SU-MW0521-039	4	5.8	1.1	1.7	3-2	0	>4	Sand	Fine/Very Fine Sand	٢	N	N	Nassariid Snail	Ind	Rippled well-sorted fine sand, reduce silt band at 2 cm.

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Appendix C2: SPI Data Set Sediment Profile and Plan View Imaging Survey Mayflower Wind Farm, Summer 2020

			Boundary			Grain Size	Grain Size				Methane				
		Penetration	Roughness	aRPD Depth	Grain Size Major	Maximum	Minimum	CMECS Substrate	CMECS Substrate	Roughness	Present			Successional	
Station ID	Replicate	Depth (cm)	(cm)	(cm)	Mode (phi units)	(phi units)	(phi units)	Group	Subgroup	Origin	Y/N	Beggiatoa	e Epifauna	Stage	Comments
20SU-MW0521-041	1	5.0	1.1	1.4	3-2	0	>4	Sand	Fine/Very Fine Sand	Р	N	Ind	Nassariid Snail	Ind	Rippled fine sand.
20SU-MW0521-041	2	3.8	1.6	1.1	3-2	0	>4	Sand	Fine/Very Fine Sand	Р	N		Nassariid Snail	Ind	Fine sand, diopatra, high contrast redox.
20SU-MW0521-041	5	7.8	0.4	1.9	3-2/>4/3-2	0	>4	Sand	Fine/Very Fine Sand	Р	N		None	1 -> 2	Fine sand over reduced silt layer over fine sand.
20SU-MW0521-043	1	4.6	1.3	1.5	2-1	-1	>4	Sand	Medium Sand	Р	N	N	None	Ind	Rippled fine to medium sand with silt subfraction.
20SU-MW0521-043	4	6.9	2.2	1.5	2-1	1	>4	Sand	Medium Sand	Р	N	N	Nassariid Snails	1 -> 2	Rippled fine to medium sand, large worm tube at surface.
20SU-MW0521-043	5	4.1	0.5	1.4	2-1	0	>4	Sand	Medium Sand	Р	N	N	None	Ind	Fine and medium sand, reduced sediment patch.
20SU-MW0521-045	1	2.6	0.4	Ind	3-2	0	>4	Sand	Fine/Very Fine Sand	Р	N	N	Sand Dollars	Ind	Rippled well-sorted fine sand, sand clasts, worm tubes.
20SU-MW0521-045	4	8.6	0.5	1.1	4-3/>4	1	>4	Sandy Mud	NA	Р	N	N	None	2	Sand over reduced mud, tube-dwelling amphipods at SWI.
20SU-MW0521-045	5	4.2	1.1	1.2	4-3	1	>4	Sand	Fine/Very Fine Sand	В	N	N	Nassariid Snails	1 -> 2	Very fine/fine sand and silt mix, tubes or fecal casts on SWI.
20SU-MW0521-047	2	6.9	1.7	1.7	4-3	1	>4	Sandy Mud	NA	P	N	N	None	2 -> 3	Very fine sand and silt mix, large worms at depth.
20SU-MW0521-047	3	7.2	0.9	1.8	4-3	1	>4	Sand	Fine/Very Fine Sand	В	N	N	None	2 -> 3	Very fine sand and silt mix, possible silt/sand layering, surface tubes.
20SU-MW0521-047	5	7.3	0.6	1.4	>4	2	>4	Sandy Mud	NA	В	N	N	None	2 -> 3	Silt with very/fine sand subfraction, surface tubes/fecal casts.
20SU-MW0521-049	1	4.8	1.4	1.4	4-3		>4	Sand	Fine/Very Fine Sand	P	N	N	None	Ind	Very fine/fine sand and silt mix, subtle redox boundary.
	2	4.0 5.7	0.9	1.4	4-3 4-3	1			•	В			Snails	iliu	
20SU-MW0521-049	2	5.7	0.9	1.7	4-3	1	>4	Sand	Fine/Very Fine Sand	В	N	N	Snails	2	Very fine sand and silt, organic debris with snails, rebounded aRPD from about 4 cm depth.
20SU-MW0521-049	5	4.0	1.0	1.1	3-2	1	>4	Sand	Fine/Very Fine Sand	Р	N	N	None	Ind	Rippled very and fine sand, large surface tubes, stick amphipods.
20SU-MW0521-051	1	6.9	0.3	1.7	4-3	1	>4	Sand	Fine/Very Fine Sand	P	N	N	None	1 -> 2	Very fine sand and silt, worm at depth.
20SU-MW0521-051	4	6.8	1.2	1.7	4-3 4-3	1	>4	Sand	Fine/Very Fine Sand	В	N	N	None	2	Very fine/fine sand and silt, worm at depth. Very fine/fine sand and silt, possible rebounding aRPD, stick amphipod,
2000-IVIVV 002 I=00 I	4	0.0	1.4	1.2	4-0	'	24	Janu	i ilio/ voiy i ilio Sallu	ь	IN	IN	INOTIC	۷	diopatra.
20SU-MW0521-051	5	7.0	0.4	1.4	4-3	1	>4	Sand	Fine/Very Fine Sand	В	N	N	None	2	Very fine/fine sand and silt, stick amphipod, diopatra.
20SU-MW0521-053	1	5.1	2.1	1.3	4-3	2	>4	Sand	Fine/Very Fine Sand	В	N	N	None	2	Very fine sand/silt, ampelisca tube mat at surface.
20SU-MW0521-053	2	10.9	1.9	2.0	4-3	1	>4	Sand	Fine/Very Fine Sand	P	N	N	None	2	Very fine sand and silt, ampelisca tubes, possible rebounding aRPD.
20SU-MW0521-053	4	6.9	2.3	1.7	>4	2	>4	Sandy Mud	NA	В	N	N	None	2	Silt with some very fine sand, ampelisca tubes at surface.
20SU-MW0521-054	1	7.9	1.2	1.7	4-3	1	>4	Sand	Fine/Very Fine Sand	В	N	N	None	2	Very fine/fine sand and silt, ampelisca tubes.
20SU-MW0521-054	3	6.3	0.5	2.0	4-3	1	>4	Sand	•	P	N	N	None	2	Very fine sand and silt.
	4					1			Fine/Very Fine Sand	•				2	•
20SU-MW0521-054	•	6.7	0.6	1.4	4-3	1	>4	Sand	Fine/Very Fine Sand	В	N N	N	None	2	Very fine/fine sand and silt, ampelisca tubes.
20SU-MW0521-055	2	6.9	0.4	1.2	4-3	1	>4	Sand	Fine/Very Fine Sand	В	N	N	None	2	Very fine/fine sand and silt, scattered ampelisca tubes.
20SU-MW0521-055	3	6.0	1.3	1.4	4-3	1	>4	Sand	Fine/Very Fine Sand	В	N	N	None	2	Very fine/fine sand and silt, ampelisca tubes.
20SU-MW0521-055	5	7.2	0.7	1.4	> 4	2	>4	Sandy Mud	NA	В	N	N	None	2 on 3	Silt with very fine sand, diverse surface tubes, ampelisca, stick amphipod.
20SU-MW0521-057	2	11.4	2.1	1.7	>4	2	>4	Sandy Mud	NA	В	N	N	None	2 on 3	Fine sand/mud, dark silty streaks, ampelisca tubes at surface, stick
2030-101000321-037	2	11.4	2.1	1.7	>4	2	>4	Sariuy iviuu	INA	ь	IN	IN	None	2 011 3	amphipods.
20SU-MW0521-057	3	13.6	1.2	3.2	>4	2	>4	Sandy Mud	NA	В	N	В	None	2 on 3	Silt with very fine sand, ampelisca tubes, stick amphipods.
20SU-MW0521-057	5	18.9	1.6	3.1	>4	2	>4	Sandy Mud	NA	В	N	N	None	2 on 3	Silt with some sand, feeding voids, worms, ampelisca.
20SU-MW0521-059	1	7.1	0.3	1.8	4-3	1	>4	Sand	Fine/Very Fine Sand	В	N	N	Hermit crab	1 -> 2	Very fine sand and silt, diverse surface tubes.
20SU-MW0521-059	2	4.4	1.2	2.2	4-3	1	>4	Sand	Fine/Very Fine Sand	P	N	N	None	Ind	Very fine sand.
20SU-MW0521-059	4	7.3	0.7	1.4	4-3	1	>4	Sand	Fine/Very Fine Sand	P	N	N	None	1 -> 2	Very fine sand, large burrow at surface.
20SU-MW0521-061	4			2.3	4-3	1			,	P	N N				-
	0	5.9	1.3		4-3 4-3	2	>4	Sand	Fine/Very Fine Sand	P D		N	None	2	Fine sand over dark sandy silt, ampelisca tube.
20SU-MW0521-061	2	6.1	1.1	2.3		_	>4	Sand	Fine/Very Fine Sand	P	N	N N	None	4 0	Rippled very fine sand and silt.
20SU-MW0521-061	5	5.7	0.6	1.6	4-3	2	>4	Sand	Fine/Very Fine Sand	!	N	N N	None	1 -> 2	Very fine/fine sand and silt.
20SU-MW0521-064	2	16.2	1.2	2.5	>4	2	>4	Sandy Mud	NA	В	N	N	None	1 on 3	Highly bioturbated silt bottom.
20SU-MW0521-064	3	19.2	0.6	3.4	>4	2	>4	Sandy Mud	NA	B -	N	N	None	3	Silt with several burrows.
20SU-MW0521-064	4	11.7	2.4	2.0	4-3	2	>4	Sand	Fine/Very Fine Sand	В	N	N	None	2 -> 3	Very/fine sand and silt, burrow excavation at surface.
20SU-MW0521-067	1	15.3	1.7	2.9	>4	2	>4	Sandy Mud	NA	В	N	N	None	2 -> 3	Silt with very fine sand, worm at depth.
20SU-MW0521-067	2	15.5	1.1	2.3	>4	2	>4	Sandy Mud	NA	В	N	N	None	1 on 3	Silt, large feeding void and burrows.
20SU-MW0521-067	3	17.8	1.1	2.8	>4	2	>4	Sandy Mud	NA	В	N	N	None	1 on 3	Silt with fine sand subfraction, small voids, worm at depth.
20SU-MW0521-070	1	18.3	1.0	3.3	>4	2	>4	Sandy Mud	NA	В	N	N	None	1 on 3	Silt with some sand, worms at depth.
20SU-MW0521-070	3	18.6	0.5	2.7	>4	2	>4	Sandy Mud	NA	В	N	N	None	1 on 3	Silt with some sand.
20SU-MW0521-070	5	14.0	1.0	2.8	>4	2	>4	Mud	NA	В	N	N	None	1 on 3	Silt, stick amphipods, large feeding void or borrow.
20SU-MW0521-071	7	17.0	1.6	2.4	>4	2	>4	Mud	NA	В	N	N N	None	2 -> 3	Silt, large worm at depth.
20SU-MW0521-071	8	18.6	0.5	3.2	>4	2	>4	Mud	NA	В	N	N	None	1 on 3	Silt.
20SU-MW0521-071	10	17.1	0.7	3.4	>4	2	>4	Mud	NA	В	N	N	None	1 on 3	Silt, stick amphipods, orange streak at depth.
20SU-MW0521-073	10	17.1	1.7	2.5	>4	1	>4	Mud	NA	В	N N	N	None		Silt, ampelisca tubes at surface.
	1					1								2 on 3	•
20SU-MW0521-073	4	14.7	1.3	2.9	>4	2	>4	Mud	NA	В	N	N	Hermit crab	1 on 3	Silt, feeding voids.
20SU-MW0521-073	5	16.1	1.0	3.4	>4	2	>4	Mud	NA	В	N	N	None	1 on 3	Silt, feeding voids and burrows.

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Appendix C2: SPI Data Set Sediment Profile and Plan View Imaging Survey Mayflower Wind Farm, Summer 2020

SPI Image Analysis Re	esults, Summe	er 2020 Mayflow	er Survey												
			Boundary			Grain Size	Grain Size				Methane				
		Penetration	Roughness	•	•	Maximum	Minimum	CMECS Substrate	CMECS Substrate	Roughness	Present			Successional	
Station ID	Replicate	Depth (cm)	(cm)	(cm)	Mode (phi units)	(phi units)	(phi units)	Group	Subgroup	Origin	Y/N	Beggiatoa	Epifauna	Stage	Comments
20SU-MW0521-074	1	15.0	1.9	3.0	>4	2	>4	Mud	NA	В	N	N	None	1 on 3	Soft silt, tubes at surface, feeding voids, worms at depth.
20SU-MW0521-074	2	16.1	1.1	2.8	>4	2	>4	Mud	NA	В	N	N	None	3	Silt, feeding voids.
20SU-MW0521-074	4	16.8	0.5	3.3	>4	2	>4	Mud	NA	В	N	N	None	3	Silt, feeding voids throughout.
20SU-MW0521-077	1	14.9	8.0	3.4	>4	1	>4	Mud	NA	В	N	N	None	1 on 3	Silt, feeding voids, reduced sediment from depth deposited on surface.
20SU-MW0521-077	2	14.4	0.6	3.2	>4	2	>4	Mud	NA	В	N	N	None	3	Silt, stick amphipods, worm at depth, feeding voids throughout.
20SU-MW0521-077	5	13.8	1.0	4.9	>4	2	>4	Mud	NA	В	N	N	None	1 on 3	Silt, stick amphipods, feeding voids/burrows.
20SU-MW0521-078	1	15.4	1.4	3.7	>4	2	4	Mud	NA	В	N	N	None	1 on 3	Silt.
20SU-MW0521-078	2	10.8	1.6	3.5	3-2/4	1	4	Sand	Fine/Very Fine Sand	В	N	N	None	2 -> 3	Very fine sand over silt, worms at depth.
20SU-MW0521-078	3	11.9	1.4	3.3	>4	1	>4	Mud	NA	В	N	N	Snail	2 on 3	Silt, stick amphipods, tubes at surface, burrow or feeding void at depth.
20SU-MW0521-080	1	13.3	0.4	3.4	>4	2	>4	Mud	NA	В	N	N	None	1 on 3	Soft silt, stick amphipods, tubes at surface, feeding voids.
20SU-MW0521-080	2	12.1	0.7	2.5	>4	2	>4	Mud	NA	В	N	N	None	3	Soft silt, tubes at surface, feeding voids.
20SU-MW0521-080	4	12.7	0.5	3.3	>4	2	>4	Mud	NA	В	N	N	None	3	Soft silt, stick amphipods, feeding voids throughout.
20SU-MW0521-082	1	14.1	1.1	3.7	>4	2	>4	Mud	NA	В	N	N	None	3	Soft silt, feeding voids and burrows.
20SU-MW0521-082	2	12.4	1.3	2.6	>4	2	>4	Mud	NA	В	N	N	None	1 on 3	Soft silt, feeding voids.
20SU-MW0521-082	3	12.0	1.0	2.3	>4	2	>4	Mud	NA	В	N	N	None	1 on 3	Silt, stick amphipods and tubes at the surface.
20SU-MW0521-083	3	14.8	1.4	3.7	>4	2	>4	Mud	NA	В	N	N N	None	1 on 3	Silt, stick amphipods and tubes at the surface.
20SU-MW0521-083	4	13.9	1.6	4.7	>4	2	>4	Mud	NA	В	N	N	None	2 on 3	Soft silt, diverse worms at surface.
20SU-MW0521-083	5	14.7	1.0	3.1	>4	2	>4	Mud	NA	В	N	N	None	1 on 3	Silt, stick amphipods and tubes at the surface.
20SU-MW0521-084	2	13.0	0.6	3.6	>4	2	>4	Mud	NA	В	N	N N	None	3	Silt, stick amphipods.
20SU-MW0521-084	3	11.2	3.4	2.8	>4	2	>4	Mud	NA	В	N	N	None	3	Soft silt, stick amphipods.
20SU-MW0521-084	4	9.9	3.1	2.9	>4	2	>4	Mud	NA	В	N	N	None	3	Silt, stick amphipods.
20SU-MW0521-086	1	15.9	0.5	1.7	>4	2	>4	Mud	NA	В	N	N N	None	3	Silt, stick amphipods, tube at surface.
20SU-MW0521-086	1	14.9	1.2	2.2	>4	2	>4	Mud	NA	В	N	N	None	1 on 3	Silt, stick amphipods, dark sediment band from 2 to 5 cm.
20SU-MW0521-086	5	14.3	1.2	1.6	>4	2	>4	Mud	NA	В	N	N NI	None	1 on 3	Silt, stick amphipods, large tube at surface.
20SU-MW0521-088	2	14.4	0.7	3.2	>4	2	>4	Sandy Mud	NA	В	N N	N N	None	2 -> 3	Very fine sand and silt.
20SU-MW0521-088	5	15.2	1.2	2.2	>4	1	>4	Sandy Mud	NA	В	N N	IN NI		2->3	•
20SU-MW0521-088	6	13.9	0.6	2.7	>4	2		•	NA	В	N N	IN NI	None None	2->3	Silt, large worm at depth.
	1	16.3		2.7	>4	2	>4	Sandy Mud	NA	P	N N	N N			Silt, stick amphipods, diverse tubes at surface. Silt.
20SU-MW0521-090	1		2.0			_	>4	Mud		В		IN N	None	1 on 3	
20SU-MW0521-090	3	16.7 16.6	1.6 0.7	2.0	>4 >4	2	>4	Mud	NA NA	В	N	IN N	None	ა ი	Silt, large worm at depth.
20SU-MW0521-090				3.2			>4	Mud			N N	N N	None	3	Soft silt, large feeding void or burrow is pull down artifact.
20SU-MW0521-098	1	10.9	0.7	1.7	>4	1	>4	Sandy Mud	NA	В	N	N	None	1 on 3	Fine sand over silt, tubes at surface, filled in feeding void.
20SU-MW0521-098	2	10.8	1.1	1.5	3-2	1	>4	Sandy Mud	NA Fire Avera Fire Order	Ρ	N	N	None	1 on 3	Rippled fine sand, reduced silt at 4 cm.
20SU-MW0521-098	5	3.6	3.5	Ind	3-2	1	4	Sand	Fine/Very Fine Sand	P	N N	N N	None	Ind	Fine sand and silt.
20SU-MW0521-100	3	14.3	1.4	4.6	>4	2	>4	Mud	NA	В	N	N	None	3	Silt, large feeding void and worms.
20SU-MW0521-100	4	14.7	1.0	4.8	>4	2	>4	Mud	NA	В	N	N	None	1 on 3	Silt, large feeding void, diverse tubes at surface.
20SU-MW0521-100	5	15.0	2.4	4.5	>4	2	>4	Mud	NA	В	N N	N N	None	1 on 3	Silt, feeding voids at depth, stick amphipods.
20SU-MW0521-102	2	14.5	1.2	4.0	>4	2	>4	Mud	NA	В	N	N	None	1 on 3	Silt, stick amphipod, worm.
20SU-MW0521-102	3	16.3	1.1	4.2	>4	2	>4	Mud	NA	В	N	N	None	2 -> 3	Silt, diverse surface tubes.
20SU-MW0521-102	6	16.3	0.4	2.3	>4	2	>4	Mud	NA	В	N	N	None	1 on 3	Silt, small worms at surface, feeding voids at depth.
20SU-MW0521-103	1	17.7	0.5	2.7	>4	2	>4	Mud	NA	В	N	N	None	1 -> 2	Silt, feature-less.
20SU-MW0521-103	4	19.6	1.4	2.8	>4	1	>4	Mud	NA	В	N	N	None	1 on 3	Silt.
20SU-MW0521-103	5	18.3	0.3	3.5	> 4	2	>2	Mud	NA	В	N	N	None	1 on 3	Silt.
20SU-MW0521-106	2	14.7	1.0	3.6	>4	1	>4	Mud	NA	Р	N	N	None	3	2-3 cm gel-like depositional, dark fine sand layer (transported by deposit/) over silt.
20SU-MW0521-106	3	16.7	1.0	3.4	>4	1	>4	Mud	NA	Р	N	N	None	3	4 cm gel-like layer, dark sand layer over silt, feeding void at depth.
20SU-MW0521-106	5	16.8	0.6	4.1	>4	2	>4	Mud	NA	В	N	N	None	1 on 3	Silt, worms at depth.
20SU-MW0521-109	1	16.8	0.0	Ind	>4	1	>4	Mud	19/1	Р	N N	N N	None	3	Minimum of 4 cm gel-like deposit at surface (overpenetration of gel-layer),
2000 1000021 100		10.0	0.0	iliu	27	•	24	Maa		•	IN	11	None	9	aRPD = Ind, deposit of fine black sand over silt.
20SU-MW0521-109	3	15.2	1.1	Ind	3-2/> 4	1	>4	Sandy Mud	NA	Р	N	N	None	Ind	Isolated piece of gel deposit on surface, 4 cm thick layer of dark fine sand
								•							over silt, aRPD and successional stage = Ind.
20SU-MW0521-109	4	15.1	0.7	0.6	>4	0	>4	Mud	NA	Р	N	N	None	3	Thin layer of fine/medium sand over silt, thin aRPD may be due to scour.
00011111110504 44 :		40.0						NAI	NIA.				News		Out the feed to end to end to end to end to
20SU-MW0521-114	1	19.2	0.5	3.0	>4	2	>4	Mud	NA	Р	N	N	None	3	Soft silt, feeding voids and burrows throughout image.
20SU-MW0521-114	3	18.0	0.5	4.7	>4	2	>4	Mud	NA	В	N	N	None	3	Silt, feeding voids, large errant worm, fecal pellet layer at surface.
20SU-MW0521-114	5	17.4	0.5	4.6	>4	2	>4	Mud	NA	В	N	N	None	1 on 3	Silt.

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Appendix C2: SPI Data Set Sediment Profile and Plan View Imaging Survey Mayflower Wind Farm, Summer 2020

			Boundary	<u> </u>		Grain Size	Grain Size	<u> </u>			Methane			<u> </u>	
		Penetration	Roughness	aRPD Depth	Grain Size Major	Maximum	Minimum	CMECS Substrate	CMECS Substrate	Roughness	Present			Successional	
Station ID	Replicate	Depth (cm)	(cm)	(cm)	Mode (phi units)	(phi units)	(phi units)	Group	Subgroup	Origin	Y/N	Beggiato	a Epifauna	Stage	Comments
OSU-MW0521-116	1	16.6	0.7	3.5	>4	1	>4	Mud	NA	В	N	N	None	1 on 3	Silt, diverse surface tubes.
SU-MW0521-116	2	16.9	1.3	3.9	>4	1	>4	Mud	NA	В	N	N	None	1 on 3	Silt, diverse surface tubes.
SU-MW0521-116	3	15.2	2.3	3.4	>4	2	>4	Mud	NA	В	N	N	None	1 on 3	Silt, large feeding void.
SU-MW0521-118	2	17.0	0.6	2.6	>4	2	>4	Mud	NA	В	N	N	None	2 -> 3	Silt, trace of a small feeding void.
SU-MW0521-118	4	17.8	0.6	3.2	>4	2	>4	Mud	NA	В	N	N	None	2 -> 3	Silt, trace of small feeding void.
SU-MW0521-118	5	17.2	1.1	2.9	>4	2	>4	Mud	NA	В	N	N	None	1 on 3	Silt, small feeding void.
SU-MW0521-120	1	18.6	1.3	3.7	>4	2	>4	Mud	NA	В	N	N	None	1 on 3	Soft silt, feeding voids.
SU-MW0521-120	2	16.5	1.7	4.0	>4	2	>4	Mud	NA	В	N	N	None	1 on 3	Soft silt, feeding void.
SU-MW0521-120	4	17.7	0.9	5.4	>4	2	>4	Mud	NA	В	N	N	None	1 on 3	Silt. tubes, fecal pellets at surface.
SU-MW0521-121	3	2.9	1.3	0.9	4-3		>4	Sand	Fine/Very Fine Sand	P	N	N	None	Ind	7 cm layer of gel-like material above sediment, aRPD is relict.
SU-MW0521-121	4	3.6	2.0	1.0	3-2	1	>4	Sand	Fine/Very Fine Sand	Р	N	N	None	Ind	5 cm layer of gel-like material above very/fine sand, whit- colored organis
000 WW 0021 121	-	0.0	2.0	1.0	0.2		24	Caria	i inc/ very i ine dana	•	14		TONC	ma	(or cobble?) in gel layer, aRPD = relict.
SU-MW0521-121	5	4.0	0.8	1.1	3-2	0	4	Sand	Fine/Very Fine Sand	Р	N	N	None	Ind	6 cm layer of gel-like material above sediment, aRPD = relict.
SU-MW0521-122	1	14.6	0.3	3.4	>4	2	>4	Sandy Mud	NA	В	N	N	None	1 on 3	Silt with some sand, stick amphipods, many feeding voids.
SU-MW0521-122	4	15.2	0.6	3.6	>4	1	>4	Sandy Mud	NA	В	N	N	None	2 -> 3	Silt with very/fine sand, diverse surface tubes.
SU-MW0521-122	5	15.7	1.0	3.2	>4	1	>4	Sandy Mud	NA	В	N	N	None	1 on 3	Silt, diverse surface tubes.
SU-MW0521-123	2	11.7	0.8	3.8	3-2	1	4	Sandy Mud	NA	В	N	N		1 on 3	Fine sand, stick amphipods, worm at depth.
SU-MW0521-123	3	8.0	0.5	0.9	3-2/> 4	1	>4	Sandy Mud	NA	P	N	N	None	1	Fine sand over silt.
SU-MW0521-123	5	3.3	1.2	1.7	3-2	1	>4	Sand	Fine/Very Fine Sand	Р	N	N	None	Ind	Rippled silt and fine sand coarser with depth, shell hash.
SU-MW0521-124	1	4.6	0.6	1.8	3-2/>4	1	>4	Sand	Fine/Very Fine Sand	В	N	N N	None	Ind	2-3 cm fine sand layer over reduced silt.
SU-MW0521-124	2	2.3	0.5	Ind	3-2	1	>4	Sand	Fine/Very Fine Sand	P	N	N	None	Ind	Very fine/fine sand, aRPD = Ind.
SU-MW0521-124	3	10.3	1.2	0.2	>4	2	>4	Sandy Mud	NA	В	N	N	None	1	High sediment oxygen demand, reduced silt, fine sand at 6-7 cm depth.
30-10100 032 1-124	3	10.3	1.2	0.2	24	2	24	Saridy Widd	NA .	ь	IN	IN	None	1	riigii sediinent oxygen demand, reddced siit, iine sand at 6-7 cm deptii.
SU-MW0521-124	4	12.8	0.7	0.8	>4	2	>4	Mud	NA	В	N	N	None	1	High redox contrast between surface sandy silt and reduced sand at dep sand layer at 10 cm depth.
SU-MW0521-124	5	8.0	0.6	0.8	>4	1	>4	Sandy Mud	NA	Р	N	N	None	1	Silt with sand subfraction, dark sand band underlain by high-reflectance
								•							sediment at 7 cm.
SU-MW0521-124	6	> 21	Ind	Ind	> 4/3-2	1	>4	Sandy Mud	NA	Ind			Ind	Ind	Over-penetration, aRPD = Ind, 15 cm + of silt over fine sand.
SU-MW0521-124	7	6.2	1.4	0.7	> 4/3-2/> 4	1	>4	Sandy Mud	NA	В	N	N	None	1	Silt over fine sand over reduced silt at depth (>5 cm).
SU-MW0521-124	9	17.7	1.0	2.0	>4	2	>4	Mud	NA	В	N	N	None	1 on 3	High contrast aRPD, active feeding void.
SU-MW0521-124	10	3.9	1.4	Ind	3-2	1	4	Sand	Fine/Very Fine Sand	Р	N	N	None	Ind	Rippled fine sand, dense small tube mat at surface.
SU-MW0521-124	11	5.3	1.6	1.9	3-2	0	4	Sand	Fine/Very Fine Sand	Р	N	N	None	1	Rippled fine sand.
SU-MW0521-124	12	17.7	0.4	0.4	>4	2	>4	Mud	NA	В	N	N	None	1	High SOD silt, feeding voids appear to be relict, no oxidized halos.
SU-MW0521-124	13	3.2	0.6	1.0	3-2	1	>4	Sand	Fine/Very Fine Sand	Р	N	N	None	Ind	Well-sorted very fine/fine sand.
SU-MW0521-125	1	5.5	1.9	Ind	3-2	1	>4	Sand	Fine/Very Fine Sand	В	N	N	None	Ind	Fine sand, silt on surface, stick amphipods, tubes, RPD = Ind.
SU-MW0521-125	4	5.3	2.1	2.9	3-2	1	>4	Sand	Fine/Very Fine Sand	В	N	N	None	Ind	Fine sand, stick amphipods.
SU-MW0521-125	5	6.5	1.0	2.3	3-2	1	>4	Sand	Fine/Very Fine Sand	В	N	N	None	1 -> 2	Fine/very fine sand, stick amphipods, diverse tubes.
SU-MW0521-126	1	16.4	0.9	2.6	>4	1	>4	Mud	NA	В	N	N	None	1 on 3	Silt, some sand in top few cm.
SU-MW0521-126	2	17.5	0.4	3.4	>4	1	>4	Mud	NA	В	N	N	None	1 on 3	Silt, feeding void.
SU-MW0521-126	5	16.4	1.2	4.1	>4	2	>4	Mud	NA	В	N	N	None	1 on 3	Silt, worm at depth.
SU-MW0521-127	1	16.9	1.0	2.6	>4	3	>4	Mud	NA	В	N	N	None	1 on 3	Silt, evidence of worm activity.
SU-MW0521-127	3	17.9	0.6	2.3	>4	3	>4	Mud	NA	В	N	N	None	1 on 3	Soft silt, large worm 10-12 cm deep.
SU-MW0521-127	5	15.7	0.5	2.6	>4	3	>4	Mud	NA	В	N	N	None	2 -> 3	Silt, trace of void.
SU-MW0521-C01	2	5.9	3.5	Ind	2-1	-1	>4	Sand	Medium Sand	Р	N	N	None	Ind	Rippled fine to medium sand, reduced mud clast smears, aRPD = Ind.
SU-MW0521-C01	4	3.1	1.3	1.8	3-2	-1	4	Sand	Very Coarse/Coarse Sand	Р	N	N	None	Ind	Rippled medium (fine to coarse) sand.
SU-MW0521-C01	5	5.6	0.4	2.2	3-2	0	>4	Sand	Fine/Very Fine Sand	Р	N	N	Snail	Ind	Rippled fine to medium sand.
SU-MW0521-C02	1	6.0	2.2	Ind	2-1	<u>-1</u>	>4	Sand	Medium Sand	 P	N	N	None	Ind	Rippled medium to coarse sand, finer at depth.
SU-MW0521-C02	2	4.6	0.7	1.7	2-1	-1 -1	>4	Sand	Medium Sand	ı P	N	N	None	Ind	Medium to coarse sand.
SU-MW0521-C02	<u>ν</u>	5.3	0.7	Ind	2-1 2-1	0	>4 4	Sand	Medium Sand	P	N	N	Snail	Ind	Fine to coarse sand.
SU-MW0521-C02 SU-MW0521-C03	4	6.7	0.5	1.9	2-1	1	>4	Sand	Medium Sand Medium Sand	<u>Р</u>			None	Ind	Fine to coarse sand. Fine to medium sand, tubes at surface.
	1					1				·	N	N			
SU-MW0521-C03	2	12.8	0.8	2.0	2-1	-1	>4	Sand	Medium Sand	Р	N	N	None	1 -> 2	Medium sand, reduced silt at 8 cm depth, large tubes at the surface.
SU-MW0521-C03	4	5.0	0.7	1.1	3-2	1	>4	Sand	Fine/Very Fine Sand	В	N	N	None	Ind	Fine to medium sand, large tubes at the surface.
SU-MW0521-C04	1	6.8	4.2	1.7	3-2	0	>4	Sand	Fine/Very Fine Sand	Р	N	N	None	Ind	Rippled fine to medium sand.
SU-MW0521-C04	4	7.9	1.4	2.9	2-1	0	>4	Sand	Medium Sand	Р	N	N	None	1 -> 2	Rippled medium sand, reduced silt at 8 cm depth.
OSU-MW0521-C04	5	7.1	1.5	2.1	3-2	-1	>4	Sand	Fine/Very Fine Sand	Р	N	N	None	Ind	Rippled medium sand.

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Appendix C2: SPI Data Set Sediment Profile and Plan View Imaging Survey Mayflower Wind Farm, Summer 2020

			Boundary			Grain Size	Grain Size				Methane				
Station ID	Replicate	Penetration Depth (cm)	Roughness (cm)	aRPD Depth (cm)	n Grain Size Major Mode (phi units)	Maximum (phi units)	Minimum (phi units)	CMECS Substrate Group	CMECS Substrate Subgroup	Roughness Origin	Present Y/N	Beggiatoa	Epifauna	Successional Stage	Comments
20SU-MW0521-C05	1	4.0	0.8	1.2	3-2	0	4	Sand	Fine/Very Fine Sand	P	N	N	Snails	Ind	Fine sand with thin finer dark band from 2-4 cm.
20SU-MW0521-C05	3	3.8	1.3	0.9	3-2	0	>4	Sand	Fine/Very Fine Sand	Р	N	N	None	Ind	Fine sand and silt over darker medium sand.
20SU-MW0521-C05	4	6.9	0.5	Ind	2-1	4	-1	Sand	Medium Sand	Р	N	N	None	Ind	Rippled medium to coarse sand.
20SU-MW0521-C06	1	18.6	1.2	5.7	>4	2	>4	Mud	NA	В	N	N	None	1 on 3	Silt, diverse small tubes at sediment surface.
20SU-MW0521-C06	2	17.1	0.3	4.0	>4	2	>4	Mud	NA	В	N	N	None	1 on 3	Silt, diverse small tubes at surface.
20SU-MW0521-C06	4	16.6	0.4	4.7	>4	2	>4	Mud	NA	В	N	N	None	2 -> 3	Silt, diverse small tubes at surface.
20SU-MW0521-C07	1	18.3	1.9	4.4	>4	2	>4	Mud	NA	В	N	N	None	1 on 3	Silt, diverse small tubes at sediment surface.
20SU-MW0521-C07	2	18.0	0.5	4.5	>4	2	>4	Mud	NA	В	N	N	None	1 on 3	Silt, diverse small tubes at sediment surface.
20SU-MW0521-C07	4	18.0	0.5	4.9	>4	3	>4	Mud	NA	В	N	N	None	1 on 3	Silt, diverse small tubes at sediment surface.
20SU-MW0521-C08	2	16.8	0.5	3.7	>4	2	>4	Mud	NA	В	N	N	None	1 on 3	Silt, diverse small tubes at sediment surface.
20SU-MW0521-C08	3	17.1	0.9	5.3	>4	2	>4	Mud	NA	В	N	N	None	1 on 3	Silt, diverse small tubes at sediment surface.
20SU-MW0521-C08	4	16.7	0.3	4.0	>4	2	>4	Mud	NA	В	N	N	None	2 -> 3	Silt, diverse small tubes at sediment surface.
20SU-MW0521-C09	7	17.9	0.6	4.6	>4	2	>4	Mud	NA	В	N	N	None	1 on 3	Silt, diverse small tubes at sediment surface.
20SU-MW0521-C09	8	16.7	1.3	4.2	>4	2	>4	Mud	NA	В	N	N	None	1 on 3	Silt, diverse small tubes at sediment surface.
20SU-MW0521-C09	10	17.4	0.2	3.9	>4	2	>4	Mud	NA	В	N	N	None	1 on 3	Silt, diverse small tubes at sediment surface.
20SU-MW0521-C10	1	17.0	0.6	4.4	>4	2	>4	Mud	NA	В	N	N	None	2 -> 3	Silt, diverse small tubes at sediment surface.
20SU-MW0521-C10	2	16.9	0.5	4.8	>4	2	>4	Mud	NA	В	N	N	None	2 -> 3	Silt, diverse small tubes at sediment surface.
20SU-MW0521-C10	4	17.7	0.6	4.4	>4	2	>4	Mud	NA	В	N	N	None	2 -> 3	Silt.
20SU-MW0521-C11	1	2.6	0.6	Ind	3-2	1	4	Sand	Fine/Very Fine Sand	Р	N	N	None	Ind	Rippled fine sand.
20SU-MW0521-C11	4	3.9	0.9	1.7	3-2	1	4	Sand	Fine/Very Fine Sand	Р	N	N	None	Ind	Rippled fine sand.
20SU-MW0521-C11	5	2.3	1.7	1.4	3-2	1	4	Sand	Fine/Very Fine Sand	Р	N	N	None	Ind	Rippled fine sand.
20SU-MW0521-C12	8	2.9	2.9	1.0	3-2	1	>4	Sand	Fine/Very Fine Sand	Р	N	N	Sand dollars	Ind	Very well-sorted fine sand, roughness is artifact of sand dollar pull down.
20SU-MW0521-C12	10	2.7	0.6	Ind	3-2	1	>4	Sand	Fine/Very Fine Sand	Р	N	N	Hermit crab	Ind	Rippled well-sorted fine sand.
20SU-MW0521-C12	11	2.8	0.6	Ind	3-2	1	>4	Sand	Fine/Very Fine Sand	Р	N	N	None	Ind	Well-sorted fine sand.
20SU-MW0521-C13	4	2.2	1.9	1.2	3-2	1	4	Sand	Fine/Very Fine Sand	В	N	N	Sand dollar	Ind	Well-sorted rippled fine sand, roughness is artifact of sand dollar pull down.
20SU-MW0521-C13	5	2.2	0.7	1.3	3-2	1	4	Sand	Fine/Very Fine Sand	Р	N	N	Sand dollar	Ind	Well-sorted rippled fine sand.
20SU-MW0521-C13	7	2.6	0.6	Ind	3-2	1	4	Sand	Fine/Very Fine Sand	Р	N	N	Sand dollars	Ind	Well-sorted rippled fine sand.
20SU-MW0521-C14	2	3.5	1.0	1.5	3-2	1	4	Sand	Fine/Very Fine Sand	Р	N	N	None	Ind	Rippled fine sand, surface tubes.
20SU-MW0521-C14	3	2.2	1.3	1.1	3-2	1	4	Sand	Fine/Very Fine Sand	Р	N	N	None	Ind	Rippled fine sand, surface tubes.
20SU-MW0521-C14	4	2.8	0.6	1.8	3-2	1	4	Sand	Fine/Very Fine Sand	Р	N	N	None	Ind	Rippled fine sand.
20SU-MW0521-C15	2	4.7	0.9	2.0	3-2	1	4	Sand	Fine/Very Fine Sand	Р	N	N	Sand dollars	Ind	Very well-sorted fine sand.
20SU-MW0521-C15	3	2.1	1.3	1.1	3-2	1	4	Sand	Fine/Very Fine Sand	Р	N	N	Sand dollars	Ind	Fine sand.
20SU-MW0521-C15	4	4.1	0.5	2.0	3-2	1	4	Sand	Fine/Very Fine Sand	Р	N	N	Sand dollars	Ind	Fine sand.
20SU-MW0521-CP2	1	4.0	1.8	Ind	1 to -2	3	2	Gravelly	Gravelly Sand	Р	N	N	None	Ind	Fine pebbles and granules grading to coarse sand, shell fragments.
20SU-MW0521-CP2	2	4.4	1.0	Ind	1 to -2	3	2	Gravelly	Gravelly Sand	Р	N	N	None	Ind	Granules grading to medium sand, shell fragments.
20SU-MW0521-CP2	3	7.5	0.9	Ind	1 to -2	3	2	Gravelly	Gravelly Sand	Р	N	N	None	Ind	Granules grading to coarse/medium sand.

Notes:

aRPD = apparent redox potential discontinuity

B = biogenic

CMECS = Coastal and Marine Ecological Classification Standard

Ind = indeterminate

P = physical

SOD = sediment oxygen demand

SPI = sediment profile imaging

SWI = sediment-water interface

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Appendix C2
PV Image Data Set

Appendix C2: PV Image Data Set Sediment Profile and Plan View Imaging Survey Mayflower Wind Farm, Summer 2020

Plan View Image Analysis Results, Summer 2020 Mayflower Survey

										C/\	MECS Biotic Components		-
Station ID	Replicate	Image Width	Image Height (cm)	Image FOV	, Habitat Type	Epifauna/Infauna Types and Counts	Fish Types and Count	Biological Information	Macroalgae Cover	Co-occuring Biotic Subclass Biotic Subclass	s Biotic Group	Co-occurring Biotic Group	Comments
20SU-MW0521-001	1	96	64	0.61	Hard Bottom Substrate with Shells and Macroalgae	Sponges (7)	None	E, MA	C	Attached Fauna None	Attached Sponges	Attached Bryozoans	Mostly gravel over sand. Red algae common and sponges. Some pink shell fragments.
20SU-MW0521-001	2	82	55	0.4508	Hard Bottom Substrate with Shells and Macroalgae	Sponges (5); Hydroids (2	?) None	E, MA	Т	Attached Fauna None	Attached Sponges	Attached Hydroids	Mostly gravel with some sand and shell fragments. Some red algae and various sponges.
20SU-MW0521-001	3	89	60	0.5326	Hard Bottom Substrate with Macroalgae	Sponges (11)	None	E, MA	Т	Attached Fauna None	Attached Sponges	None	Mostly all gravel over sand. Bivalve shell fragments in SPI image and possible hydroids.
20SU-MW0521-002	1	85	57	0.4841	Rippled Sand with Shells	Barnacles (8)	None	E		Attached Fauna None	Barnacles	None	Mostly sand with bivalve and snail shell fragments. Barnacles present on one shell fragment.
20SU-MW0521-002	2	95	63	0.604	Rippled Sand	Barnacles (15)	None	E, MA	Т	Attached Fauna None	Barnacles	None	Mostly rippled sand with scattered shell fragments and pebbles. One shell fragments with barnacles. Detached red algae.
20SU-MW0521-002	3	94	62	0.5854	Sandy Bottom with Gravel and Macroalgae	Sponges (2); Bryozoans (5)	None	E, MA	S	Attached Fauna None	Diverse Colonizers	None	Mostly rippled sand with gravel, pebbles, shell fragments in troughs. Isolated, detrital, and possibly rooted eelgrass, 4-5 plants, mostly brown, one green shoot. Possible epifauna on rocks. Some macroalgae.
20SU-MW0521-002	4	88	59	0.522	Rippled Sand with Shells	Sponges (6); Bryozoans (6)	None	E		Attached Fauna None	Diverse Colonizers	None	Mostly sand with dispersed epifauna and shell fragments.
20SU-MW0521-002	5	90	60	0.5416	Sand with Gravel, Shells, and Macroalgae	Barnacles (10)	None	E, MA	Т	Attached Fauna None	Barnacles	None	Mostly sand with dispersed shell fragments and pebbles. Some red algae present. Small barnacles evident in SPI.
20SU-MW0521-002	6	85	56	0.4779	Rippled Sand	Hermit crab (1)	None	E, MA	Т	Soft Sediment None Fauna	Mobile Crustaceans on Soft Sediments	None	Mostly all sand, one ripple. Some detached macroalgae present.
20SU-MW0521-002	8	81	54	0.4382	Rippled Sand	None	None	None		Inferred Fauna None	Tracks and Trails	None	Sandy bottom with one big ripple, shell fragments in troughs. Apparent biogenic depression.
20SU-MW0521-002	10	92	61	0.5611	Rippled Sand	Bryozoans	None	E		Attached Fauna Inferred Fauna	Attached Bryozoans	Tracks and Trails	Mostly sand. Large ripple, possibly due to underlying wood or hydroid shelf.
20SU-MW0521-002	11	98	65	0.6349	Rippled Sand with Macroalgae	None	None	MA	Т	Inferred Fauna None	Tracks and Trails	None	Rippled sand with some eelgrass. Biogenic depression middle-left. Two detrital eelgrass shoots: one brown, one green.
20SU-MW0521-002	12	84	56	0.4667	Sand with Gravel and Shells	Barnacles (10); Sea Pork (2)	None	E		Attached Fauna None	Attached Tunicates	Barnacles	Mostly medium to fine sand with gravels and shell fragments. A few barnacles on shell fragments.
20SU-MW0521-002	13	92	62	0.5692	Sand with Gravel, Shells, and Macroalgae	Tunicates (20); Diopatra (1)	None	E, MA	Т	Attached Fauna Soft Sediment Fauna	Attached Tunicates	Larger Tube-Building Fauna	Sand and gravel mix, strange stringy sponges or sea pork. Patches of apparent hydroids and trace red algae.
20SU-MW0521-003	8	75	50	0.3791	Hard Bottom Substrate with Epifauna	Barnacles (50); Chitons (2)	Comb Jellyfish (2)	E		Attached Fauna None	Barnacles	Chitons	Mostly gravel and pebbles. Some epifauna on rocks and bivalve shell fragments. Two suspended jellyfish.
20SU-MW0521-003	9	81	54	0.4323	Hard Bottom Substrate with Macroalgae and Epifauna	Sponges (2); Snail (1); Urchin (1); Mussels (5); Hermit crab (1)	None	E, MA	Т	Attached Fauna None	Diverse Colonizers	Mobile Crustaceans on Hard or Mixed Substrates	Mixed gravel bottom with diverse epifauna. Trace red macroalgae.
20SU-MW0521-003	10	81	54	0.4335	Hard Bottom Substrate with Shells, Macroalgae and Epifauna	Urchin (2); Sponge (1); Mussels (15); Barnacles	None	E, MA	Т	Mollusk Reef Attached Fauna Biota	a Mussel Reef	Attached Sea Urchins	Mixed gravel bottom with diverse epifauna. Trace red macroalgae. Live mussel bed.
20SU-MW0521-004	1	75	50	0.3785	Hard Bottom Substrate with Shells and Macroalgae	Sponges (4); Bryozoans (20)	None	E, MA	Т	Attached Fauna None	Diverse Colonizers	None	Settled sand atop gravels. Numerous diverse bryozoans and trace macroalgae.
20SU-MW0521-004	3	77	51	0.3915	Hard Bottom Substrate with Shells and Macroalgae	Sponges (3); Bryozoans (10)	None	E, MA	Т	Attached Fauna None	Diverse Colonizers	None	Settled sand atop gravels. Numerous diverse bryozoans and trace macroalgae.
20SU-MW0521-004	4	74	50	0.369	Hard Bottom Substrate with Shells and Macroalgae	Sponges (2); Bryozoans (15)	None	E, MA	Т	Attached Fauna None	Diverse Colonizers	None	Settled sand over gravels. Numerous diverse bryozoans and trace macroalgae.

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										C	MECS Biotic Component	s	-
Station ID	Replicate	Image Width	Image Height (cm)	Image FOV	/ Habitat Tvpe	Epifauna/Infauna Types and Counts	Fish Types and Count	Biological Information	Macroalgae Cover	Co-occuring Biotic Subclass Biotic Subclas		Co-occurring Biotic Group	Comments
20SU-MW0521-005	1	81	54	0.4427	Hard Bottom Substrate with	Bryozoans (5); Sponges	71	E. MA	T	Attached Fauna None	Diverse Colonizers	Mobile Crustaceans on	Gravels with settled sand and shell fragments. Diverse fauna and colonizers.
2000 111110021 000	·	01	04	0.4421	Sand and Shells	(8); Urchin (1); Hermit crabs (3); Snail (2); Chitons (2)	THORE	Σ, ΙΨΙ	,	Autorica i dana Noric	Diverse Colonizers	Hard or Mixed Substrates	<u> </u>
20SU-MW0521-005	2	82	54	0.4443	Hard Bottom Substrate with Sand, Shells and Macroalgae	Sponges (3); Urchin (3); Chitons (10); Bryozoans (8)	None	E, MA	Т	Attached Fauna None	Diverse Colonizers	Chitons	Gravels with sand and shell fragments. Diverse fauna and colonizers, trace macroalgae.
20SU-MW0521-005	3	95	63	0.6023	Hard Bottom Substrate with Sand and Shells	Sponge (1); Chitons (5); Bryozoans (10); Urchin (1)	None	E, MA	Т	Attached Fauna None	Diverse Colonizers	Chitons	Mostly gravel under shell fragments and sand. Diverse fauna and colonizers. Trace macroalgae.
20SU-MW0521-005	4	89	59	0.5225	Hard Bottom Substrate with Sand and Shells	· ·	None	E, MA	Т	Attached Fauna None	Diverse Colonizers	Chitons	Gravels with settled sand and shell fragments. Trace macroalgae.
20SU-MW0521-005	5	87	58	0.503	Hard Bottom Substrate with Sand, Shells and Macroalgae	Sponges (5); Urchin (2); Snail (10); Chiton (3); Bryozoans (10)	None	E, MA	Т	Attached Fauna None	Diverse Colonizers	Mobile Mollusks on Hard or Mixed Substrates	Gravels and hard substrate below settled sand. Diverse fauna and colonizers. Trace macroalgae present.
20SU-MW0521-005	7	87	58	0.5053	Hard Bottom Substrate with Sand and Shells	Sponges (5); Urchin (3); Snail (3); Chiton (1); Bryozoans (10)	None	E, MA	Т	Attached Fauna None	Diverse Colonizers	Mobile Mollusks on Hard or Mixed Substrates	Sand and shell fragments over hard substrate. Diverse colonizers and bryozoans. Trace macroalgae present.
20SU-MW0521-005	9	91	61	0.5539	Hard Bottom Substrate with Sand and Macroalgae	Sponges (3); Chitons (4); Bryozoans (15)	None	E, MA	Т	Attached Fauna None	Diverse Colonizers	Chitons	Mostly gravel and hard substrate with some sand and trace macroalgae. Worm tubes or casts on rocks.
20SU-MW0521-005	10	86	58	0.4974	Hard Bottom Substrate with Sand and Shells	Sponges (15); Chitons(1); Snail (1); Bryozoans (10)	None	E, MA	Т	Attached Fauna None	Diverse Colonizers	Chitons	Settled sand atop mostly gravels. Numerous sponges and other fauna. Trace macroalgae present.
20SU-MW0521-005	11	90	60	0.5346	Hard Bottom Substrate with Sand, Macroalgae and Epifauna	Sponges (20); Bryozoans (20); Snail (15)	Small finfish (1)	E, MA	Т	Attached Fauna None	Diverse Colonizers	Mobile Mollusks on Hard or Mixed Substrates	Mostly sponges and bryozoan colonies over hard substrate with some settled sand. Trace macroalgae.
20SU-MW0521-005	12	90	60	0.5413	Hard Bottom Substrate with Sand and Shells	Sponges (20); Snail (10); Bryozoans (10)	None	E, MA	Т	Attached Fauna None	Diverse Colonizers	Mobile Mollusks on Hard or Mixed Substrates	Sponge covering 20% of surface. Sand and shell fragments over gravels and hard substrate.
20SU-MW0521-005	13	91	61	0.5574	Hard Bottom Substrate with Sand and Shells	Sponges (20); Snail (10); Bryozoans (5)	None	E, MA	Т	Attached Fauna None	Diverse Colonizers	Mobile Mollusks on Hard or Mixed Substrates	Sponges covering 35% of surface. Sand settled on gravels and hard substrate.
20SU-MW0521-007	6	98	65	0.6359	Hard Bottom Substrate with Shells and Epifauna	Bryozoans (25); Sponges (12); Barnacles (25)	Large finfish (1)	E		Attached Fauna None	Diverse Colonizers	Barnacles	Gravel and sand with large shell fragments. Bryozoans covering 50% of surface.
20SU-MW0521-007	8	94	62	0.5837	Hard Bottom Substrate with Shells and Epifauna	(1); Bryozoan (3)	None	E		Attached Fauna None	Diverse Colonizers	Barnacles	Gravel and sand with shell fragments. Bryozoans covering 50% of surface, sponges covering 15%.
20SU-MW0521-007	9	97	65	0.6332	Hard Bottom Substrate with Shells and Epifauna	Bryozoans (25); Sponges (12); Barnacles (25)	Small finfish (2)	E, MA	Т	Attached Fauna None	Diverse Colonizers	Barnacles	Gravel and sand with shell fragments. Red algae growing off larger cobble.
20SU-MW0521-009	1	79	52	0.411	Sand and Crepidula with Gravel and Shells	Crepidula; Barnacles (50); Snail (2); Bryozoans (2)	None	Е		Mollusk Reef Attached Faur Biota	a Gastropod Reef	Barnacles	Mostly sand, with pebbles and shell fragments in the trough around Crepidula. Numerous limpets. Long white shell fragments.
20SU-MW0521-009	4	86	58	0.4974	Shell Reef with Sand	Crepidula; Barnacles (200); Hydroid (2); Sponge (1)	None	E		Mollusk Reef Attached Faur Biota	a Gastropod Reef	Barnacles	Crepidula shell fragments over sand and gravel. Numerous barnacles on shell fragments. Some long white shell fragments.
20SU-MW0521-009	5	94	63	0.5867	Shell Reef with Sand	Sand dollar (1); Bryozoan (5); Barnacles (200); Crepidula	None	E		Mollusk Reef Attached Faur Biota	a Gastropod Reef	Barnacles	Mostly Crepidula shell fragments over sand with attached fauna.
20SU-MW0521-011	1	95	63	0.5993	Shell Reef	Crepidula; Bryozoan (1); Barnacles (50)	None	E		Biota	a Gastropod Reef	Barnacles	Entire surface covered with Crepidula shell fragments, silt on surface.
20SU-MW0521-011	2	90	60	0.5363	Shell Reef	Crepidula	None	E		Biota	a Gastropod Reef	None	Entire surface covered with Crepidula shell fragments, silt on surface. One biogenic disturbance.
20SU-MW0521-011	5	89	59	0.5299	Shell Reef	Crepidula; Sponges (2); Barnacles (50)	None	E		Mollusk Reef Attached Faur Biota	a Gastropod Reef	Barnacles	Entire surface covered with Crepidula shell fragments, silt on surface. One biogenic disturbance. Sponges.

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											Civ	IECS Blotic Components		<u>-</u>
		Image Width	Image	Image FOV	<i>'</i>	Epifauna/Infauna Types		Biological	Macroalgae		Co-occuring		Co-occurring Biotic	
Station ID	Replicate	U	Height (cm)	(m ²)	Habitat Type	and Counts	Fish Types and Count	Information	Cover	Biotic Subclass	Biotic Subclass	Biotic Group	Group	Comments
20SU-MW0521-013	1	92	61	0.5609	Sand with Shells	Bryozoans (3); Barnacles	None	E, I		Attached Fauna	None	Attached Bryozoans	Barnacles	Mostly sand with shell fragments. Worm tubes evident. Biogenic depression bottom right.
20SU-MW0521-013	4	90	60	0.5433	Sand	Hermit crabs (4)	None	Е		Soft Sediment Fauna	None	Mobile Crustaceans on Soft Sediments	None	Mostly sand with shell fragments. Possible young bryozoans.
20SU-MW0521-013	5	93	62	0.5738	Sand with Shells	Hermit crabs (10); Bryozoan (1)	None	E, MA, I	Т		Attached Fauna	Mobile Crustaceans on Soft Sediments	Attached Bryozoans	Mostly sand with shell fragments. Numerous tracks and trails. Biogenic depression with apparent worm tubes. Some red algae.
20SU-MW0521-015	1	96	64	0.6091	Shell Reef with Sand and Gravel	,	Larger finfish (1)	E			Attached Fauna	Gastropod Reef	Attached Sponges	Mostly Crepidula over sand and pebbles. Some sponges, one large finfish, and diverse colonizers on shell fragments.
20SU-MW0521-015	2	86	57	0.4959	Shell Reef with Macroalgae	Crepidula; Barnacles (50)	None	E, MA	Т		Attached Fauna	Gastropod Reef	Barnacles	Mostly Crepidula over sand with macroalgae and barnacles. Possible nudibranch.
20SU-MW0521-015	3	92	61	0.5616	Sand with Shells and Gravel	Snail (3); Bryozoans (2)	Small finfish (1)	E, MA	Т			Attached Bryozoans	Mobile Mollusks on Soft Sediments	Mostly sand with Crepidula shell fragments and trace red macroalgae.
20SU-MW0521-015	4	96	64	0.6156	Sand with Gravel, Shells,	Bryozoans (5); Snail (2)	None	E, MA	Т	Attached Fauna		Attached Bryozoans	Mobile Mollusks on Soft	Pebble/granule over sand with Crepidula and large bivalve shell fragments.
20SU-MW0521-015	5	85	56	0.4771	and Macroalgae Sand with Gravel, Shells,	Bryozoans (2); Snail (2);	None	E, MA, I	Т	Attached Fauna		Attached Bryozoans	Sediments Mobile Mollusks on Soft	Trace macroalgae present. Sand and gravel with Crepidula and shell fragments. Possible nudibranch,
20SU-MW0521-015	7	87	58	0.4989	and Macroalgae Sand and Gravel with Shells	Diopatra (1) Sponge (3); Tunicate (1);	None	E, MA	Т	Attached Fauna	Fauna None	Barnacles	Sediments Diverse Colonizers	worm tubes, and unidentified attached fauna. Sand and gravel with Crepidula and bivalve shell fragments and trace red
					and Macroalgae	Snail (1); Barnacles (20)								macroalgae.
20SU-MW0521-015	8	83	55	0.4598	Sand with Gravel, Shells, and Macroalgae	Crab (1); Snail (3); Sponge (1); Bryozoan (4)	None ;	E, MA	Т	Attached Fauna	None	Barnacles	Diverse Colonizers	Pebble/granule over sand with Crepidula and bivalve shell fragments. Red algae present. Some unidentified fauna.
20SU-MW0521-015	9	84	56	0.4745	Sand with Gravel, Shells,	Barnacles (20) Snail (2); Sponge (1)	Small finfish (1)	E, MA	Т	Attached Fauna	Soft Sediment	Attached Sponges	Mobile Mollusks on Soft	Pebble/granule with Crepidula and bivalve shell fragments and sand. Trace
20SU-MW0521-015	10	100	67	0.6717	and Macroalgae Rippled Sand	None	None	MA	Т	Inferred Fauna	Fauna None	Tracks and Trails	Sediments None	macroalgae present. Variable rippled sand with finer sediment and shell fragments deposited in
20SU-MW0521-015	11	99	66	0.6583	Rippled Sand	Hermit crabs (2)	None	E, MA	Т	Soft Sediment	None	Mobile Crustaceans on	None	troughs. Red algae present. Variable rippled sand with finer sediment deposited in troughs. Trace red
20SU-MW0521-015	12	88	59	0.5158	Rippled Sand	Hermit crabs (30)	None	E, MA	Т	Fauna Soft Sediment	None	Soft Sediments Mobile Crustaceans on	None	algae present. Rippled sand with finer sediment and shell fragments deposited in troughs.
20SU-MW0521-015	15	95	63	0.5977	Rippled Sand	Hermit crabs (2)	None	E, MA	т	Fauna		Soft Sediments Mobile Crustaceans on	Tracks and Trails	Fine rippled sand with shell fragments deposited in troughs.
	10	00	00	0.0077	rappiou Garia	Tromit orabo (2)	110110	L, 140 (•	Fauna	inionoa i aana	Soft Sediments	Tracke and Traile	The hppica cana with choir hagmente appeared in troughe.
20SU-MW0521-017	1	93	62	0.5743	Sandy Bottom with Macroalgae	Bryozoans (1)	Small finfish (1), Comb Jellyfish (2)	E, MA	С	Attached Fauna	Inferred Fauna	Attached Bryozoans	Tracks and Trails	Sand bottom with dense macroalgae coverage. Suspended particles in water column. One detached, detrital brown eelgrass shoot.
20SU-MW0521-017	2	87	58	0.5071	Sand Bottom with Macroalgae	Barnacles (20)	Comb Jellyfish (1)	E, MA	S	Attached Fauna	Inferred Fauna	Barnacles	Tracks and Trails	Mostly sand with red and green macroalgae cover. Barnacles on shell fragments. High energy environment with suspended particulates.
20SU-MW0521-017	5	93	62	0.5787	Rippled Sand with Macroalgae	Bryozoans (5); Snail (4)	Jellyfish (3)	E, MA	S	Attached Fauna	Soft Sediment Fauna	Attached Bryozoans	Mobile Mollusks on Soft Sediments	Mostly sand with macroalgae. High energy environment causing particle suspension. Four detached, detrital eelgrass shoots, two green and two
														brown.
20SU-MW0521-019	3	90	60	0.5399	Shell Reef with Macroalgae	Crepidula; Barnacles (100); Bryozoans (5)	None	E, MA	Ţ	Mollusk Reef Biota	Attached Fauna	Gastropod Reef	Barnacles	Entire surface covered with Crepidula shell fragments, silt on surface. Attached red algae.
20SU-MW0521-019	5	89	59	0.5283	Shell Reef with Macroalgae	Crepidula; Bryozoans	Comb Jellyfish (1), Small	E, MA	Т	Mollusk Reef	Attached Fauna	Gastropod Reef	Barnacles	Entire surface covered with Crepidula shell fragments, silt on surface.
20SU-MW0521-019	6	90	60	0.539	Shell Reef with Macroalgae	(10); Barnacles (300) Crepidula; Bryozoans (3);	finfish (1) Small finfish (1)	E, MA	Т		Attached Fauna	Gastropod Reef	Barnacles	Attached red algae and bryozoans. Entire surface covered with Crepidula shell fragments, silt on surface.
						Barnacles (100), Hermit crab (1)				Biota				Macroalgae and bryozoans.
20SU-MW0521-020	1	89	59	0.5275	Rippled Sand	Hermit crab (2); Polychaete worm tube	Small finfish (3)	E, I		Soft Sediment Fauna	Attached Fauna	Small Tube-Building Fauna	Barnacles	Rippled sand with areas of worm tubes and some shell fragments. Possible
						(10); Barnacles (4)				i auria		i auria		egg sack on right.
20SU-MW0521-020	2	71	47	0.3356	Rippled Sand	Hermit crabs (2); Polychaete worm tubes	None	E, MA, I	Т	Soft Sediment Fauna	None	Small Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	Rippled sand with areas of apparent worm tubes, high energy environment causing suspended sand. Red macroalgae present.
20SU-MW0521-020	3	99	66	0.6591	Rippled Sand with Shells	(10) None	Small finfish (4)	E, MA	Т	Inferred Fauna	None	Tracks and Trails	None	Rippled sand in high energy environment causing suspended particles.
20SU-MW0521-021	1	81	54	0.4331	Rippled Sand with Shells	Bryozoans (5); Hermit	None	E, MA	Т	Attached Fauna	Soft Sediment	Attached Bryozoans	Mobile Crustaceans on	Suspended red algae present. Trace Crepidula shell fragments. Mostly sand with scattered Crepidula and shell fragments. Smaller fragments
					.,	crabs (4); Barnacles (20)		•			Fauna	,	Soft Sediments	deposited in troughs. Trace macroalgae present.
20SU-MW0521-021	2	79	53	0.4201	Soft Bottom with Shells and Macroalgae	Skate Egg Case (1); Hydroids (5); Barnacles	None	E, MA	Т	Attached Fauna	None	Attached Hydroids	Barnacles	Mostly sand with shell fragments. One skate egg sack with barnacles. Trace macroalgae present.
					ŭ	(30)								
20SU-MW0521-021	3	77	52	0.3987	Sand with Gravel and Shells	Barnacles (20); Bryozoans (2)	None	E		Attached Fauna	None	Attached Bryozoans	Barnacles	Mostly sand with dispersed gravel and shell fragments. Numerous barnacles on larger shell fragments or gravel.
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		Image Width	Image	Image FOV		Epifauna/Infauna Types		Biological	Macroalgae	Co-occuring	Di il O	Co-occurring Biotic	
Station ID	Replicate		Height (cm)	(m ²)	Habitat Type	and Counts	Fish Types and Count	Information	Cover	Biotic Subclass Biotic Subclass	<u> </u>	Group	Comments
20SU-MW0521-022	1	86	58	0.4982	Rippled Sand with Shells and Gravel	Hydroids (4)	None	E		Attached Fauna Inferred Fauna	Attached Hydroids	Tracks and Trails	Subtle rippled sand bottom with dispersed shell fragments and gravel.
20SU-MW0521-022	2	91	61	0.5539	Sand with Gravel, Shells, and Macroalgae	Bryozoans (8)	None	E, MA	Т	Attached Fauna Inferred Fauna	Attached Bryozoans	Tracks and Trails	Sand with scour around gravel and large shell fragments. Red algae and
20SU-MW0521-022	3	97	64	0.6238	Sand with Gravel, Shells,	Bryozoan (15); Sponge	None	E, MA	Т	Attached Fauna None	Attached Bryozoans	Barnacles	bryozoans growing on larger particles. Gravel mixed with sand transitioning to sand on the right side. Trace
20SU-MW0521-023	1	82	54	0.4444	and Macroalgae Rippled Sand	(1); Barnacles (15) None	None	MA	Т	Inferred Fauna None	Tracks and Trails	None	macroalgae. Rippled sand with some shell fragments and red algae. High energy
									· +				environment causing suspended sediment and low visibility.
20SU-MW0521-023 20SU-MW0521-023	4 5	90 90	60 60	0.5349 0.5441	Rippled Sand Rippled Sand	None Hermit crab (1)	Small finfish (1) None	MA E. MA	÷	Inferred Fauna None Soft Sediment None	Tracks and Trails Mobile Crustaceans on	None None	Rippled sand with dispersed shell fragments. Trace red algae. Subtly rippled sand bottom with shell fragments. Larger ripple on right. Clasts
		00		0.0111	Tappiou Garia	Tromit orab (1)	140110	Ξ, ινυ τ	•	Fauna	Soft Sediments	140110	on left and right.
20SU-MW0521-024	1	66	44	0.2927	Rippled Sand	None	None	None		Inferred Fauna None	Tracks and Trails	None	Variably rippled sand with shell fragments.
20SU-MW0521-024	2	65	43	0.278	Rippled Sand with Shells	None	None	MA	Т	Inferred Fauna None	Tracks and Trails	None	Variably rippled and sorted sand with shell fragments. Suspended red algae.
20SU-MW0521-024	3	100	67	0.6725	Rippled Sand with Shells	Hydroids (1)	None	E, MA	Т	Attached Fauna Inferred Fauna	Attached Hydroids	Tracks and Trails	Variable rippled sand with shell fragments of various sizes in troughs. Trace red algae. Potential worm tubes. One detached, detrital, green eelgrass fragment.
20SU-MW0521-024	4	93	62	0.5755	Hard Bottom Substrate with Shells and Macroalgae	Sponges (4); Bryozoans (4)	Comb Jellyfish (2)	E, MA	Т	Attached Fauna None	Attached Sponges	Attached Bryozoans	Sand and gravel substrate with some red algae.
20SU-MW0521-024	6	84	56	0.4675	Gravel over Sand with Shells and Macroalgae	Sponges (12); Bryozoans	Comb Jellyfish (1)	E, MA	Т	Attached Fauna None	Diverse Colonizers	None	Gravel and large shell fragments over sand. Diverse sponges and bryozoans. Macroalcae present.
20SU-MW0521-024	7	90	60	0.5414	Gravel and Shell over Sand with Macroalgae	Sponges (12); Bryozoans (5); Snail (2)	Small finfish (2)	E, MA	Т	Attached Fauna Soft Sediment Fauna	Diverse Colonizers	Mobile Mollusks on Soft Sediments	Mostly gravel over sand. Diverse sponges and bryozoans. Macroalgae present. One detached, detrital, green eelgrass fragment.
20SU-MW0521-024	8	93	62	0.5803	Sand with Gravel, Shells, and Macroalgae	Sponges (7); Bryozoans (10)	None	E, MA	Т	Attached Fauna None	Diverse Colonizers	None	Mostly gravel over sand with some shell fragments and trace macroalgae. Diverse bryozoans.
20SU-MW0521-024	10	92	61	0.5594	Rippled Sand with Shells and Macroalgae	Diopatra (15); Sponge (1); Bryozoan (3)	Comb Jellyfish (1)	E, MA, I	Т	Soft Sediment Attached Fauna Fauna	Larger Tube-Building Fauna	Diverse Colonizers	Mostly sand with apparent Diopatra bed and diverse bryozoans. Some macroalgae present. Two detached, detrital, brown eelgrass shoots.
20SU-MW0521-024	11	85	56	0.4776	Hard Bottom Substrate with Shells and Macroalgae	Sponges (10); Bryozoans (10)	None	E, MA	Т	Attached Fauna None	Diverse Colonizers	None	Mostly gravels with trace macroalgae. Sea star.
20SU-MW0521-024	12	97	64	0.6209	Gravel and Sand with Shells	Bryozoans (10); Barnacles (100); Snail (2)	Comb Jellyfish (1)	E, MA	Т	Attached Fauna None	Attached Bryozoans	Barnacles	Mostly gravel with shell fragments over sand. Trace macroalgae present.
20SU-MW0521-024	13	91	60	0.548	Sand and Gravel with Shells	Bryozoans (1); Barnacles (15)	Comb Jellyfish (3)	E		Attached Fauna None	Attached Bryozoans	Barnacles	Mostly sand with dispersed gravel and shell fragments. Attached fauna on larger fragments.
20SU-MW0521-025	1	92	61	0.5613	Sand and Gravel Substrate with Shells and Macroalgae	Sponges (4); Bryozoans	None	E, MA	Т	Attached Fauna None	Attached Sponges	None	Primarily gravel over sand with trace macroalgae. Crepidula and bivalve shell fragments.
20SU-MW0521-025	2	99	66	0.6567	Sand and Gravel Substrate with Shells and Macroalgae	Sponges (4); Bryozoans	None	E, MA	Т	Attached Fauna None	Attached Sponges	None	Primarily gravel over sand with spots of macroalgae. Crepidula and bivalve shell fragments.
20SU-MW0521-025	5	88	59	0.5176	Hard Bottom Substrate with Shells and Macroalgae	Sponges (5); Bryozoans; Barnacles	None	E, MA	Т	Attached Fauna None	Attached Sponges	Barnacles	Primarily gravel over sand with spots of macroalgae. Crepidula and bivalve shell fragments.
20SU-MW0521-026	2	88	58	0.5105	Gravel and Sand with Shells and Macroalgae	Barnacles; Bryozoans (2)	None	E, MA	С	Attached Fauna None	Attached Bryozoans	Barnacles	Mostly gravel substrate with some sand. Barnacles and macroalgae on gravel. High energy environment, suspended particulates. Possible
20SU-MW0521-026	4	89	59	0.5247	Sand with Gravel, Shells, and Macroalgae	Barnacles	None	E, MA	С	Attached Fauna None	Attached Bryozoans	Barnacles	bryozoans. Mostly gravel substrate with some sand. Barnacles and macroalgae on gravel. High energy environment, suspended particulates. Two, isolated,
20SU-MW0521-026	5	85	57	0.4842	Hard Bottom Substrate with Shells and Macroalgae	Barnacles	None	E, MA	S	Attached Fauna None	Barnacles	None	detached, detrital, green eelgrass shoots. Mostly gravel substrate with some sand. Barnacles and macroalgae on gravel. High energy environment, suspended particulates. Two, isolated, detached, detrital, eelgrass shoots: one green, one brown.
20SU-MW0521-027	1	87	58	0.5015	Rippled Sand with Macroalgae	Bryozoans	None	E, MA	Т	Attached Fauna Inferred Fauna	Attached Bryozoans	Tracks and Trails	Sand with dispersed gravels mixed in. Trace macroalgae cover.
20SU-MW0521-027	3	84	56	0.4753	Rippled Sand with Macroalgae	Sponge (1); Bryozoans (1)	Comb Jellyfish (1)	E, MA	Т	Attached Fauna None	Attached Sponges	Attached Bryozoans	Rippled sand and dispersed rocks with macroalgae cover. Two, isolated, detached, detrital, green eelgrass shoots.
20SU-MW0521-027	5	89	59	0.5306	Rippled Sand with Macroalgae	Sponge (1)	None	E, MA	Т	Attached Fauna None	Attached Sponges	None	Mostly rippled sand, a few rocks with attached macroalgae and fauna. Shell fragments deposited in troughs. One, detached, detrital, brown eelgrass shoot.

CMECS Biotic Components

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Station ID	Replicate	Image Width (cm)	Image Height (cm)	Image FOV	/ Habitat Type	Epifauna/Infauna Types and Counts	Fish Types and Count	Biological Information	Macroalgae Cover	Co-occuring Biotic Subclass Biotic Subclass	s Biotic Group	Co-occurring Biotic Group	Comments
20SU-MW0521-028	1	81	54	0.435	Hard Bottom Substrate with Shells and Macroalgae	Urchin (1); Barnacles (100); Sponges (6)	None	E, MA	С	Attached Fauna None	Attached Sponges	Barnacles	Mostly granules among larger pieces of cobble with settled shell fragments and an abundance of red algae.
20SU-MW0521-028	2	124	83	1.0261	Hard Bottom Substrate with Shells and Macroalgae	Urchin (5); Sponges (5); Barnacles (100)	Medium finfish (1)	E, MA	S	Attached Fauna None	Attached Sea Urchins	Attached Sponges	Mostly gravel substrate with numerous small settled shell fragment, sand and red algae present.
20SU-MW0521-028	3	86	57	0.4917	Hard Bottom Substrate with Shells and Macroalgae	Sponges (5); Barnacles (100); Hermit crab (1)	Small finfish (1)	E, MA	S	Attached Fauna None	Attached Sponges	Barnacles	Mostly gravel with small settled shell fragments and red algae.
20SU-MW0521-029	1	88	58	0.5105	Sand with Gravel, Shells, and Macroalgae	Hermit crab (1)	None	E, MA	С	Soft Sediment Inferred Fauna Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails	Sand and gravel with some larger rocks. Red and green algae covering 50% of surface. Two, clumped, detached, detrital, brown eelgrass shoots.
20SU-MW0521-029	2	91	61	0.554	Sand with Gravel, Shells, and Macroalgae	Barnacles (20)	None	E, MA	С	Attached Fauna Inferred Fauna	Barnacles	Tracks and Trails	Mostly sand and gravel with larger cobble and shell fragments. Red and green algae covering 50% of surface.
20SU-MW0521-029	5	94	62	0.5829	Sand with Gravel, Shells, and Macroalgae	Sponges (1)	None	E, MA	С	Soft Sediment Inferred Fauna Fauna	Attached Sponges	Tracks and Trails	Sandy substrate with granule and pebbles with dense red and green macroalgae.
20SU-MW0521-031	1	92	61	0.5592	Rippled Sand	None	None	None		Inferred Fauna None	Tracks and Trails	None	Variable rippled sand with some shell fragments.
20SU-MW0521-031	4	76	51	0.3835	Rippled Sand with Gravel	None	None	None		Inferred Fauna None	Tracks and Trails	None	Mostly sand with various sized pebbles.
20SU-MW0521-031	5	89	59	0.5306	Rippled Sand with Gravel	None	None	None		Inferred Fauna None	Tracks and Trails	None	Rippled sand with granule deposits within trough.
20SU-MW0521-033	2	93	62	0.575	Rippled Sand	Hermit crabs (2)	None	E		Soft Sediment Inferred Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails	Large sand ripples with smaller ripples evident. Possible small egg case or
20SU-MW0521-033	4	89	59	0.5296	Rippled Sand	Hermit crab (1)	Comb Jellyfish (3)	E		Fauna Soft Sediment Inferred Fauna Fauna		Tracks and Trails	sea pork. Rippled sand bottom with smaller ripples present.
20SU-MW0521-033	5	85	57	0.4836	Rippled Sand	None	None	None		Inferred Fauna None	Tracks and Trails	None	Multi-directional and sized rippled sand. Tracks and a few shell fragments.
20SU-MW0521-035	6	85	57	0.4801	Rippled Sand	Diopatra (3); Snail (1)	None	Е		Soft Sediment None Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediments	Finer sediment and shell fragments deposited in trough of large rippled sand. Possible casting on right.
20SU-MW0521-035	9	80	53	0.4289	Rippled Sand	Snail (1)	Juvenile Sea Robin (1)	E		Soft Sediment None Fauna	Mobile Mollusks on Soft Sediments	None	Large ripples with finer sediment deposited in trough. Few shell fragments.
20SU-MW0521-035	10	81	54	0.4419	Rippled Sand	Diopatra (1)	None	E		Soft Sediment Inferred Fauna Fauna	Larger Tube-Building Fauna	Tracks and Trails	Large sand ripples with finer sediment deposited in trough. Biogenic depression.
20SU-MW0521-037	1	88	59	0.5145	Rippled Sand	Diopatra (3); Hermit crabs (2); Crab (1); Scale Worm (1)	Comb Jellyfish (1)	E		Soft Sediment None Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	Large sand ripples with trace shell fragments.
20SU-MW0521-037	2	90	60	0.5353	Rippled Sand	Diopatra (2); Snail (2); Hydroid (1)	None	E		Soft Sediment None Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediments	Rippled sand with trace shell fragments. Biogenic depressions.
20SU-MW0521-037	4	83	55	0.4568	Rippled Sand	Diopatra (6); Hermit crab	None	E		Soft Sediment None Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	Fine rippled sand. Worm tube patches. Biogenic depressions.
20SU-MW0521-039	1	88	58	0.5115	Rippled Sand	Anemone (1); Diopatra	Comb Jellyfish (7)	Е		Soft Sediment None	Larger Tube-Building	Burrowing Anemones	Fine sand with large ripples and trace shell fragments. Worm tubes. Biogenic
20SU-MW0521-039	3	83	55	0.4593	Rippled Sand	(1); Hydroid (1) Hermit crabs (6); Anemone (1); Bryozoan	Juvenile Sea Robin (1), Comb Jellyfish (15)	E		Fauna Soft Sediment None Fauna	Fauna Mobile Crustaceans on Soft Sediments	Burrowing Anemones	depressions. Fine rippled sand with diverse fauna. Biogenic depressions.
20SU-MW0521-039	4	77	52	0.3981	Rippled Sand	(1) Diopatra (1); Anemone (1)	Comb Jellyfish (3)	E, I		Soft Sediment None Fauna	Larger Tube-Building Fauna	Burrowing Anemones	Fine rippled sand with some shell particles and granules.
20SU-MW0521-041	1	94	62	0.5848	Rippled Sand	Anemone (19); Snail	None	E, I		Soft Sediment None	Burrowing Anemones	Mobile Mollusks on Soft	Rippled sand with diverse fauna.
20SU-MW0521-041	2	94	63	0.5926	Soft Bottom	(10); Crabs (2) Anemone (11); Snail (8); Hermit crab (4); Jonah	None	Ε, Ι		Fauna Soft Sediment Inferred Fauna Fauna	Burrowing Anemones	Sediments Mobile Crustaceans on Soft Sediments	Sandy bottom with many tracks, and patches of long tubes or fecal casts.
20SU-MW0521-041	5	90	60	0.5436	Soft Bottom	crabs (2) Anemones (15); Jonah crabs (6)	None	E, I		Soft Sediment None Fauna	Burrowing Anemones	Mobile Crustaceans on Soft Sediments	Silty surface sediment. Tubes or fecal cast on surface.

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Station ID	Replicate	Image Width (cm)	Image Height (cm)	Image FOV	/ Habitat Type	Epifauna/Infauna Types and Counts	Fish Types and Count	Biological Information	Macroalgae Cover		Co-occuring Biotic Subclass	s Biotic Group	Co-occurring Biotic Group	Comments
20SU-MW0521-043	1	88	59	0.5152	Rippled Sand	Burrowing Anemone (3); Nassariid Snail (1); Possible Scale Worm (1)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Burrowing Anemones	Tracks and Trails	Rippled medium to fine sand with few shell fragments. Ripples are subtle. Some tracks and trails.
20SU-MW0521-043	4	90	60	0.5367	Sand	Nassariid Snail (9); Burrowing Anemone (7); Possible Scale Worm (2)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Mobile Mollusks on Soft Sediments	Burrowing Anemones	Medium sand with few shell fragments. One recently excavated burrow. Many tracks and few biogenic depressions.
20SU-MW0521-043	5	90	60	0.5416	Rippled Sand	Nassariid Snail (4); Hermit crab (1); Burrowing Anemone (1)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Mobile Mollusks on Soft Sediments	Tracks and Trails	Rippled medium sand with some shell fragments. Wavelength indeterminate due to only one crest of rippled in frame. High turbidity in the water column. Moderate amount of tracks and few biogenic depressions.
20SU-MW0521-045	1	86	57	0.493	Soft Bottom	Sand dollar (14); Snail (4) None	E		Soft Sediment	None	Sand Dollar Bed	Mobile Mollusks on Soft	Soft sandy bottom with biogenic depressions and apparent underlying woody
20SU-MW0521-045	4	83	55	0.4552	Soft Bottom	Sand dollar (18); Snail (5); Hermit crab (1);	None	E		Fauna Soft Sediment Fauna	None	Sand Dollar Bed	Sediments Mobile Mollusks on Soft Sediments	debris (bottom right). Silty sand with high concentration of tubes.
20SU-MW0521-045	5	84	56	0.4713	Soft Bottom	Worm tubes (20) Sand dollar (5); Snail (1)	None	E		Soft Sediment Fauna	None	Sand Dollar Bed	Mobile Mollusks on Soft Sediments	Silty sand with apparent tubes or fecal casts on surface.
20SU-MW0521-047	2	93	62	0.5734	Soft Bottom	Snail (2)	None	Е		Soft Sediment	None	Mobile Mollusks on Soft	None	Fine sand with worm tubes and shell particulates.
20SU-MW0521-047	3	78	52	0.404	Soft Bottom	Snail (5)	None	E, I		Fauna Soft Sediment Fauna	None	Sediments Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediments	Silty surface sediment with numerous worm tubes.
20SU-MW0521-047	5	79	52	0.4131	Soft Bottom	Worm tubes (20)	None	1			Inferred Fauna	Larger Tube-Building Fauna	Tracks and Trails	Silty surface sediment with worm tubes and burrows.
20SU-MW0521-049	1	80	53	0.4285	Soft Bottom	Snail (3)	None	E, I		Soft Sediment	None	Larger Tube-Building	Mobile Mollusks on Soft	Fine silty sediment with numerous worm tubes. Biogenic depressions.
20SU-MW0521-049	2	88	59	0.5142	Soft Bottom	Sand dollar (2); Anemone	e None	E, I		Fauna Soft Sediment Fauna	None	Fauna Sand Dollar bed	Sediments Larger Tube-Building Fauna	Silty sediment with diverse fauna. Biogenic depressions. Unidentified organism top right.
20SU-MW0521-049	5	96	64	0.6094	Soft Bottom	Sand dollar (2); Sponge (1); Snail (1)	None	E, I		Soft Sediment Fauna	None	Sand Dollar Bed	Attached Sponges	Silty surface sediment with worm tubes and finer sediment deposits. One large shell fragment.
20SU-MW0521-051	1	86	57	0.4921	Soft Bottom	Worm tubes (20)	None	1			Inferred Fauna	Larger Tube-Building	Tracks and Trails	Silty surface sediment with worm tubes and tracks. Trace shell fragments.
20SU-MW0521-051	3	85	57	0.4849	Soft Bottom	Hermit crabs (4)	None	E, I		Fauna Soft Sediment Fauna	None	Fauna Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	Silty surface sediment. High density of worm tubes. Trace shell fragments. Long tubes or fecal casts top right.
20SU-MW0521-051	4	88	59	0.5209	Soft Bottom	Hermit crabs (2); Snail (1)	None	E, I		Soft Sediment Fauna	None	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	Silty surface sediment with bivalve and trace shell fragments. Possible hydroid or bryozoan.
20SU-MW0521-053	1	73	49	0.3559	Sand with Dense Worm	Worm tubes (500)	None	!		Soft Sediment	None	Larger Tube-Building	None	Silty surface sediment with dense worm tubes. Trace shell fragments.
20SU-MW0521-053	2	81	54	0.4402	Tubes Sand Bottom with Dense Worm Tubes	Hermit crab (1)	Comb Jellyfish (1)	E, I		Fauna Soft Sediment Fauna	None	Fauna Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	Silty surface sediment with dense worm tubes. Trace shell fragments.
20SU-MW0521-053	4	83	56	0.4625	Sand with Dense Worm Tubes	Hermit crabs (4)	None	E, I		Soft Sediment Fauna	None	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	Silty surface sediment with dense worm tubes. Trace shell fragments. Possible Diopatra and hydroid.
20SU-MW0521-054	1	85	57	0.4846	Sand with Worm Tubes	Worm tubes (100)	None	I		Soft Sediment	Inferred Fauna	Larger Tube-Building	Tracks and Trails	Silty surface sediment with dense worm tubes. Trace shell fragments.
20SU-MW0521-054	3	81	54	0.4426	Sand with Dense Worm	Worm tubes (100)	None	1		Fauna Soft Sediment	None	Fauna Larger Tube-Building	Tracks and Trails	Silty surface sediment with dense worm tubes. Trace shell fragments.
20SU-MW0521-054	4	82	54	0.4447	Tubes Soft Bottom	Snail (1)	None	E, I		Fauna Soft Sediment	None	Fauna Larger Tube-Building	Small Tube-Building	Silty surface sediment with few worm tubes. Trace shell fragments and biogenic depressions.
20SU-MW0521-055	2	80	53	0.4247	Sand with Dense Worm	Hermit crab (1)	None	E, I		Fauna Soft Sediment	None	Fauna Larger Tube-Building	Fauna Mobile Crustaceans on	Silty surface sediment with dense worm tubes. Trace shell fragments.
20SU-MW0521-055	3	73	49	0.3598	Tubes Soft Bottom	Hydroid (1)	None	E, I		Fauna Soft Sediment	Attached Fauna	Fauna Larger Tube-Building	Soft Sediments Attached Hydroids	Silty surface sediment with dense worm tubes. Trace shell fragments.
20SU-MW0521-055	5	74	50	0.37	Soft Bottom with Worm	Hermit crab (1)	None	Ε, Ι		Fauna Soft Sediment	None	Fauna Larger Tube-Building	Mobile Crustaceans on	Ripples are subtle. Silty surface sediment with worm tubes. Trace shell fragments.
20SU-MW0521-057	2	88	59	0.5184	Tubes Soft Bottom with Worm	Snail (3)	None	E, I		Fauna Soft Sediment	None	Fauna Larger Tube-Building	Soft Sediments Mobile Mollusks on Soft	Silty sediment with dense worm tubes. Trace shell fragments on right.
20SU-MW0521-057	3	83	55	0.4538	Tubes Sand with Dense Worm Tubes	Hermit crab (1); Hydroid (1); Worm tubes (500)	Small finfish (1)	E, I		Fauna Soft Sediment Fauna	None	Fauna Larger Tube-Building Fauna	Sediments Mobile Crustaceans on Soft Sediments	Silty sediment with dense worm tubes. Trace shell fragments. Few unidentified organisms.
20SU-MW0521-057	5	88	59	0.5136	Soft Bottom with Worm Tubes	Worm tubes (500)	None	I		Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Tracks and Trails	Silty surface sediment with dense worm tubes. Trace shell fragments.

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											CN	MECS Biotic Components		-
Station ID	Replicate	Image Width	Image	Image FOV	, Habitat Tvpe	Epifauna/Infauna Types	Figh Types and Count	Biological Information	Macroalgae Cover		Co-occuring Biotic Subclass	s Biotic Group	Co-occurring Biotic Group	Comments
20SU-MW0521-059	Replicate 1	(CIII) 85	Height (cm) 56	0.477	Soft Bottom	and Counts Hermit crab (1)	Fish Types and Count Small finfish (1)	E, I	Cover	Soft Sediment		Larger Tube-Building	Mobile Crustaceans on	Silty surface sediment with worm tubes and burrows. Trace shell fragments.
20SU-MW0521-059	2	84	56	0.4655	Soft Bottom	Hermit crab (1); Snail (2)	· ,	=, · E, I		Fauna Soft Sediment		Fauna Larger Tube-Building	Soft Sediments Mobile Mollusks on Soft	Silty surface sediment with dispersed worm tubes. Trace shell fragments.
0001111110504.050		00	50	0.4044	0 " 0 "	0 11(0) 0 11 1 (4)	Jellyfish (2)			Fauna		Fauna	Sediments	
20SU-MW0521-059	4	83	56	0.4644	Soft Bottom	Snail (2); Small crab (1)	Small finfish (3)	E, I		Soft Sediment Fauna	None	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	Silty surface sediment. Particulates in water column. Possible egg case top left. Unidentified organism middle left.
20SU-MW0521-061	1	91	60	0.5479	Soft Bottom	Tubes (5); Nassariid Snail (4); Hermit crab (1)	Comb Jellyfish (1)	E, I		Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Mobile Mollusks on Soft Sediments	Very fine sand graduating to silt with some shell particles. Few tubes and burrows. Many tracks and biogenic depressions.
20SU-MW0521-061	2	84	56	0.4729	Soft Bottom	Bivalve Siphon (3); Amphipod (2); Nassariid Snail (1)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Clam Bed	Tracks and Trails	Very fine sand graduating to silt with few shell particles. Many tracks and biogenic depressions.
20SU-MW0521-061	5	77	52	0.3987	Soft Bottom	Hermit crab (2)	None	E		Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails	Image partially obscured by particulates in water column. Few burrows and tracks, many biogenic depressions.
20SU-MW0521-064	2	77	51	0.3953	Soft Bottom	Tubes (5)	None	I		Soft Sediment Fauna	Inferred Fauna	Larger Deep-Burrowing Fauna	Tracks and Trails	Very fine sand graduating to silt. Many tracks and biogenic depressions. Some burrows and few tubes. Brown filamentous organic matter scattered on surface.
20SU-MW0521-064	3	76	51	0.3859	Soft Bottom	Tubes (20+)	None	I		Soft Sediment Fauna	Inferred Fauna	Larger Deep-Burrowing Fauna	Larger Tube-Building Fauna	Very fine sand graduating to silt. Moderate amount of burrows, tubes and tube clusters. Many tracks and distinct biogenic depressions.
20SU-MW0521-064	4	75	50	0.3756	Soft Bottom	Tubes (5)	None	I			Inferred Fauna		Tracks and Trails	Very fine sand graduating to silt. Few tubes and burrows. Many tracks and biogenic depressions. Clutter of fecal casts in frame.
20SU-MW0521-067	1	72	48	0.3487	Soft Bottom	Tubes (20+); Nassariid Snail (1)	None	E, I			Inferred Fauna	Larger Deep-Burrowing Fauna	Tracks and Trails	Fine to very fine sand with some silt. Brown filamentous organic matter on surface. Many burrows and few tubes. Some tracks and biogenic depressions.
20SU-MW0521-067	2	75	50	0.3734	Soft Bottom	Tubes (10+)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Larger Deep-Burrowing Fauna	Larger Tube-Building Fauna	Very fine sand graduating to silt. Many tubes and burrows. Some tracks and biogenic decressions.
20SU-MW0521-067	3	69	46	0.3219	Soft Bottom	Tubes (20+)	None	I			Inferred Fauna		Larger Deep-Burrowing Fauna	Very fine sand graduating to silt. Moderate amount of tubes and burrows. Brown filamentous organic matter scattered throughout surface.
20SU-MW0521-070	1	74	49	0.3642	Soft Bottom	Tubes (5); Nassariid Snail (2); Hermit crab (1)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Larger Deep-Burrowing Fauna	Tracks and Trails	Very fine sand quickly graduating to mud. High concentration of burrows and few tubes. Many distinct tracks and trails and biogenic depressions. Possible feather and sand clast aggregate.
20SU-MW0521-070	3	74	49	0.361	Soft Bottom	Tubes (20+); Nassariid Snail (2); Worm (1)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Tracks and Trails	Very fine sand graduating to silt. Brown filamentous algae on surface. Large cluster of tubes and moderate amount of burrows. High concentration of distinct tracks and biogenic depressions. Possible fish skeletal remains contained within large burrow.
20SU-MW0521-070	5	71	47	0.3341	Soft Bottom	Tubes (5); Snail (1)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Larger Deep-Burrowing Fauna	Tracks and Trails	Very fine sand graduating to silt with few shell fragments. Many tracks and trails. Few tubes, burrows and sand clast aggregates.
20SU-MW0521-071	7	71	47	0.3363	Soft Bottom	Tubes (30); Nassariid Snail (3); Bivalve Siphon (3); Hermit crab (1)	None	E, I			Inferred Fauna		Small Tube-Building Fauna	Very fine sand graduating to silt with very few small shell fragments. Few tubes and burrows. Some tracks and biogenic depressions. Brown filamentous organic matter on surface.
20SU-MW0521-071	8	71	47	0.3363	Soft Bottom	Tubes (50+); Snail (1); Hermit crab (1)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Tracks and Trails	Very fine sand graduating to silt. Brown filamentous organic matter on surface. High concentration of thin ampelisca tubes. Few burrows and tracks and trails.
20SU-MW0521-071	10	72	48	0.3419	Soft Bottom	Tubes (30+); Nassariid Snail (6); Bivalve Siphon (3)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediments	Very fine sand graduating to silt. Moderate amount of tubes and a few burrows. Some thin ampelisca tubes.
20SU-MW0521-073	1	67	45	0.3016	Soft Bottom	Bivalve Siphon (15); Tubes (10+); Hermit crab (1); Nassariid Snail (1)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Clam Bed	Small Tube-Building Fauna	Very fine sand quickly graduating to silt with very few small shell fragments. Moderate amount of bivalve siphons and diverse tube structures. Some burrows and tracks and trails. Brown filamentous organic matter on surface.
20SU-MW0521-073	4	73	49	0.3588	Soft Bottom	Ampelisca Tubes (100+), Bivalve Siphon (8), Nassariid Snail (2),	None	E, I		Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Clam Bed	Very fine sand graduating to silt with few very small shell fragments. High concentration of ampelisca tubes and few worm tubes. Many tracks and few burrows. Few areas of brown filamentous organic matter on surface.
20SU-MW0521-073	5	70	47	0.3265	Soft Bottom	Hermit crab (1) Tubes (10+); Bivalve Siphon (9); Hermit crab (1)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Clam Bed	Very fine sand graduating to silt with few very small shell fragments. Moderate amount of burrows and few worm tubes in depressions. Many biogenic depressions and tracks.

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											CM	MECS Biotic Components		_
Station ID	Replicate	Image Width (cm)	Image Height (cm)	Image FO\ (m ²)	/ Habitat Type	Epifauna/Infauna Types and Counts	Fish Types and Count	Biological Information	Macroalgae Cover		Co-occuring Biotic Subclass	s Biotic Group	Co-occurring Biotic Group	Comments
20SU-MW0521-074	1	70	46	0.3241	Soft Bottom	Tubes (10+); Bivalve Siphon (4); Nassariid Snail (4)	None None	E, I	Oover			Larger Deep-Burrowing Fauna	Clam Bed	Very fine sand graduating to silt with very few small shell fragments. Moderate amount of burrows. Few concentrations of worm tube clusters in depressions. Many tracks and trails. Small area of brown filamentous organic material on surface.
20SU-MW0521-074	2	72	48	0.3415	Soft Bottom	Tubes (20+); Nassariid Snail (6); Bivalve Siphon (2)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Larger Deep-Burrowing Fauna	Tracks and Trails	Very fine sand graduating to silt with few small shell fragments. Many tracks and biogenic depressions. High concentration of burrows and some tubes and tube clusters within depressions.
20SU-MW0521-074	4	70	47	0.3273	Soft Bottom	Bivalve Siphon (30+); Tubes (10+); Nassariid Snail (10); Worm (1)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Clam Bed	Larger Tube-Building Fauna	Very fine sand graduating to silt with very few small shell fragments. High abundance of worm tubes and few burrows. Many tracks and biogenic depressions. Large biogenic depression left side of frame.
20SU-MW0521-077	1	73	48	0.3518	Soft Bottom	Tubes (10+); Nassariid Snail (2); Hermit crab (1); Unidentifiable Organism (1); Diopatra (1)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Tracks and Trails	Silt overlaying very fine sand graduating back to silt with few small shell fragments. Moderate amount of tracks and biogenic depressions. Some tubes and few burrows.
20SU-MW0521-077	2	70	46	0.3225	Soft Bottom	Tubes (20+); Nassariid Snail (1); Hermit crab (1)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Larger Deep-Burrowing Fauna	Very fine sand graduating to silt with few small shell fragments. High concentration of diverse tubes and some burrows. Few tracks and biogenic depressions.
20SU-MW0521-077	5	73	49	0.3553	Soft Bottom	Tubes (30+); Nassariid Snail (2)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Larger Tube-Building Fauna	Very fine sand graduating to silt with few small shell fragments. Moderate concentration of diverse tubes. Large depression from fish with cluster of ampelisca tubes. Many tracks and some burrows.
20SU-MW0521-078	1	81	54	0.4392	Soft Bottom	Tubes (20+); Nassariid Snail (13)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Mobile Mollusks on Soft Sediments	Very fine sand graduating to silt. Some diverse tube structures. Large clam shell. Few small burrows and many tracks and biogenic depressions.
20SU-MW0521-078	3	74	49	0.3659	Soft Bottom	Tubes (30+); Nassariid Snail (8)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Mobile Mollusks on Soft Sediments	Clusters of diverse tubes within depressions. Some burrows and many tracks.
20SU-MW0521-078	4	71	47	0.3363	Soft Bottom	Tubes (50+); Nassariid Snail (5); Hermit crab (1)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Mobile Mollusks on Soft Sediments	Very fine sand graduating to silt with very few small shell fragments. Fecal casts on surface. Abundance of diverse tubes and few burrows. Many tracks and biogenic depressions, few large depressions potentially from fish.
20SU-MW0521-080	1	73	48	0.3512	Soft Bottom	Tubes (20+); Bivalve Siphon (20+); Isopod (2); Hermit crab (1)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Clam Bed	Very fine sand graduating to silt with few small shell fragments. Moderate amount of tubes and tracks. One tube cluster and one recently excavated burrow. Fecal casts on surface.
20SU-MW0521-080	2	76	51	0.3853	Soft Bottom	Tubes (10+); Bivalve Siphon (7); Hermit crab (1), Worm (1)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Larger Deep-Burrowing Fauna	Larger Tube-Building Fauna	Very fine sand graduating to silt with few shell fragments. Many tubes and burrows, few tracks and trails.
20SU-MW0521-080	4	74	49	0.3655	Soft Bottom	Bivalve Siphon (20+); Tubes (20+); Hermit crabs (3); Worm (2)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Larger Deep-Burrowing Fauna	Clam Bed	Very fine sand transitioning to silt with few small shell fragments. Many tubes and burrows and few tracks.
20SU-MW0521-082	1	68	46	0.3117	Soft Bottom		None	E, I		Soft Sediment Fauna	None	Clam Bed	Small Tube-Building Fauna	Very fine sand graduating to silt with few shell fragments. High concentration of diverse tubes and moderate amount of burrows.
20SU-MW0521-082	2	71	48	0.3406	Soft Bottom	Tubes (20+); Bivalve Siphon (20+); Shrimp (2); Hermit crabs (2); Nassariid Snail (2)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Larger Deep-Burrowing Fauna	Very fine sand graduating to silt with few shell fragments. Many tubes and burrows, few tube clusters. One sand clast aggregate. Some tracks and biogenic depressions.
20SU-MW0521-082	3	71	47	0.3322	Soft Bottom	Bivalve Siphon (40+); Tubes (10+); Hermit crab (1); Shrimp (1)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Clam Bed	Larger Deep-Burrowing Fauna	Very fine sand graduating to silt with few shell fragments. High concentration of bivalve siphons and burrows. Moderate amount of tracks and few depressions.
20SU-MW0521-083	3	75	50	0.3715	Soft Bottom	Tubes (30+); Shrimp (2); Amphipod (2)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	Very fine sand graduating to silt. Brown filamentous organic material on surface and clumps of fecal casts on surface. High concentration of diverse tubes and some burrows. Some distinct tracks and few biogenic depressions.
20SU-MW0521-083	4	72	48	0.3457	Soft Bottom	Tubes (30+); Worm (3); Hermit crab (1); Amphipod (1)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Larger Deep-Burrowing Fauna	Very fine sand graduating to silt with few small shell fragments. High concentration of diverse tube structures and few worms appearing in tubes.
20SU-MW0521-083	5	75	50	0.3733	Soft Bottom	Tubes (30+); Hermit crabs (3)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Larger Deep-Burrowing Fauna	Some tracks and few biogenic depressions. Very fine sand graduating to silt with few small shell fragments. Clumps of fecal casts on surface. Diverse tube structures, aggregated in depressions. Burrows of varying sizes and few tracks.

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											CM	IECS Biotic Components		-
Station ID	Poplicato	Image Width	Image Height (cm)	Image FOV	, Habitat Type	Epifauna/Infauna Types and Counts	Figh Types and Count	Biological Information	Macroalgae Cover	Riotic Subclass	Co-occuring Biotic Subclass	Biotic Group	Co-occurring Biotic Group	Comments
Station ID 20SU-MW0521-084	Replicate 2	(cm) 72	48	0.3461	Soft Bottom	Tubes (40+); Shrimp (6);	Fish Types and Count	E, I	Cover				Larger Deep-Burrowing	Very fine sand graduating to silt with very few shell particles. High
	3		49	0.3556	Soft Bottom	Worms (2)		,		Fauna		Fauna	Fauna	concentration of burrows and diverse tube structures. Moderate amount of tracks and biogenic depressions. Possible fish in large depression. Brown filamentous material on surface.
20SU-MW0521-084	3	73				Tubes (30+); Shrimp (2); Worm (1)		E, I		Fauna		Larger Deep-Burrowing Fauna	Small Tube-Building Fauna	Very fine sand graduating to silt with few small shell particles. High concentration of burrows and diverse tube structures with a few clusters of polychaete and ampelisca tubes.
20SU-MW0521-084	4	73	48	0.3509	Soft Bottom	Tubes (20+); Shrimp (2); Hermit crab (1); Worm (1)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Larger Deep-Burrowing Fauna	Small Tube-Building Fauna	Very fine sand graduating to silt with few shell particles. Many distinct tracks through middle of frame and few biogenic depressions. Moderate amount of diverse tubes and burrows.
20SU-MW0521-086	1	72	48	0.3425	Soft Bottom	Tubes (20+); Shrimp (2);	None	E, I		Soft Sediment	Inferred Fauna	Small Tube-Building	Larger Deep-Burrowing	Moderate amount of diverse tube structures and some burrows. Suspended
						Worm (2); Hermit crab				Fauna		Fauna	Fauna	filamentous organic material. Many tracks and biogenic depressions.
20SU-MW0521-086	4	70	47	0.3288	Soft Bottom	Tubes (20+)	None	E, I		Fauna	Inferred Fauna	Small Tube-Building Fauna	Larger Deep-Burrowing Fauna	Very fine sand graduating to silt with few shell particles. Moderate amount of tubes and some burrows. Some tubes aggregated in depressions. Few pieces of brown/green filamentous organic material. Many tracks and biogenic depressions.
20SU-MW0521-086	5	66	44	0.2931	Soft Bottom	Tubes (30+); Juvenile shrimp (3); Hermit crab (1)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	Very fine sand graduating to silt with few shell particles. High concentration of diverse tube structures with few burrows. Many distinct tracks and biogenic depressions.
20SU-MW0521-088	2	67	45	0.2992	Soft Bottom	Tubes (20+); Hermit crabs (2)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Larger Tube-Building Fauna	Very find sand graduating to silt with few shell particles. Moderate amount of diverse tube structures with some aggregates of polychaete tubes in biogenic depressions. Few burrows and tracks.
20SU-MW0521-088	5	70	47	0.329	Soft Bottom	Tubes (10+); Hermit crabs (2)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Larger Deep-Burrowing Fauna	Larger Tube-Building Fauna	Very fine sand graduating to silt with few shell particles. Moderate amount of burrows and diverse tube structures. Few tracks and biogenic depressions.
20SU-MW0521-088	6	69	46	0.3185	Soft Bottom	Tubes (30+); Hermit crabs (4)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Larger Tube-Building Fauna	Very fine sand graduating to silt. High concentration of diverse tube structures and moderate amount of burrows. One recently excavated burrow. Some brown filamentous organic material on surface. Few tracks and biogenic depressions.
20SU-MW0521-090	1	69	46	0.3189	Soft Bottom	Tubes (30+); Hermit crabs (2)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Larger Deep-Burrowing Fauna	Small Tube-Building Fauna	Very fine sand graduating to silt with few shell particles. Diverse tube structures ranging in sizes and moderate amount of burrows. Many tracks and some biogenic depressions. Brown filamentous organic material on surface.
20SU-MW0521-090	2	65	43	0.2798	Soft Bottom	Tubes (10+)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Larger Deep-Burrowing Fauna	Tracks and Trails	Very fine sand graduating to silt. Diverse tube structures varying in sizes, high amount of burrows. High amount of tracks and few biogenic depressions.
20SU-MW0521-090	3	73	49	0.3574	Soft Bottom	Tubes (20+); Hermit crabs (2); Nassariid Snail (2)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Larger Deep-Burrowing Fauna	Very fine sand graduating to silt with few small shell particles. Moderate amount of tubes, burrows and some clusters of tubes in depressions. Many distinct tracks and few areas of brown filamentous organic material.
20SU-MW0521-098	1	74	49	0.3653	Rippled Sand with Silt	Tubes (40+); Hermit crab (1)	None	I		Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	Very fine rippled sand graduating to silt, ripples are very subtle. Slight disturbance from particulates in water column on bottom left side of frame. High concentration of tubes and few burrows. Tube clusters aggregated in depressions. Moderate amount of tracks.
20SU-MW0521-098	2	72	48	0.3495	Sand with Silt	Tubes (20+); Shrimp (2); Hermit crab (1)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Larger Deep-Burrowing Fauna	Medium sand graduating to silt with few shell particles. Cluster of tubes aggregated in depressions and some burrows. Moderate amount of tracks and some fecal casts.
20SU-MW0521-098	5	64	43	0.2766	Rippled Sand with Silt	Tubes (10+); Hermit crab (1); Worm (1)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Tracks and Trails	Medium sand graduating to silt with few shell fragments. Few tubes and high concentration of tracks and biogenic depressions.
20SU-MW0521-100	3	74	49	0.3616	Soft Bottom	Tubes (40+); Shrimp (2); Amphipods (1); Hermit crab (1)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Larger Tube-Building Fauna	Very fine sand graduating to silt with few shell particles. Abundance of diverse tubes and moderate amount of burrows. Few tube clusters. Some tracks and biogenic depressions.
20SU-MW0521-100	4	74	49	0.3602	Soft Bottom	Tubes (50+); Amphipod (2); Jonah crab (1)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	Very fine sand graduating to silt with few shell particles. High concentration of diverse tube structures with few burrows. Few tube clusters and few clumps of fecal casts. High amount of tracks and biogenic depressions.
20SU-MW0521-100	5	75	50	0.3795	Soft Bottom	Tubes (50+); Amphipod (2); Shrimp (1)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Small Tube-Building Fauna	Very fine sand graduating to silt with few shell particles. High concentration of diverse tube structures with few burrows. Green and brown filamentous organic material. Moderate amount of tracks and biogenic depressions.

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										-	CN	MECS Biotic Components		
Station ID	Replicate	Image Width (cm)	Image Height (cm)	Image FO\ (m²)	/ Habitat Type	Epifauna/Infauna Types and Counts	Fish Types and Count	Biological Information	Macroalgae Cover		Co-occuring Biotic Subclass	s Biotic Group	Co-occurring Biotic Group	Comments
20SU-MW0521-102	2	69	46	0.3152	Soft Bottom	Tubes (40+); Small Amphipod (5)	None	Ε, Ι		Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Tracks and Trails	Very fine sand graduating to silt with few shell particles. High concentration of diverse tube structures and moderate amount of burrows. Few clumps of fecal casts and few areas of brown and orange organic material. Many tracks
20SU-MW0521-102	3	73	49	0.3548	Soft Bottom	Tubes (30+); Small Amphipod (2); Brittle Star (1)	Spotted Hake (1)	E, I		Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Tracks and Trails	and biogenic depressions. Very fine sand graduating to silt. High concentration of diverse tube structures and some burrows. Many tracks and biogenic depressions. Clump of fecal casts and brown and orange organic material on surface.
20SU-MW0521-102	6	72	48	0.3451	Soft Bottom	Tubes (20+); Small Amphipod (2)	Hake (2)	E, I		Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Larger Deep-Burrowing Fauna	Very fine sand graduating to silt with few shell particles. Moderate amount of tubes and some burrows. Many tracks and some biogenic depressions.
20SU-MW0521-103	1	72	48	0.3431	Soft Bottom	Tubes (10+); Amphipod (2)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Tracks and Trails	Thin layer of very fine sand graduating to silt. Some diverse tube structures, few burrows. High amount of tracks and biogenic depressions.
20SU-MW0521-103	4	70	47	0.3308	Soft Bottom	Shrimp (1)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Tracks and Trails	Thin layer of very fine sand graduating to silt. Some tubes and few burrows with a cluster of tubes aggregated in depression. Many tracks and trails.
20SU-MW0521-103	5	68	45	0.3062	Soft Bottom	Tubes (10+); Burrowing Anemone (2)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Tracks and Trails	Thin layer of very fine sand graduating to silt with few shell fragments. Few small tubes and burrows. Many tracks and biogenic depressions.
20SU-MW0521-106	2	73	48	0.3523	Soft Bottom	Shrimp (3)	None	E		Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails	Layer of organic material overlaying coarser sand graduating to silt. Orange/brown filamentous organic material contained within surface layer. Few tracks.
20SU-MW0521-106	3	67	45	0.3002	Soft Bottom	Amphipod (2)	None	E		Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails	Layer of organic material overlaying coarser sand graduating to silt. Orange/brown filamentous organic material contained within surface layer.
20SU-MW0521-106	5	69	46	0.316	Soft Bottom	Tubes (10+); Shrimp (7); Rock crab (1)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	Very fine sand graduating to silt with few pockets of biofilm. Orange/brown organic material on surface. Many distinct tracks and few biogenic depressions.
20SU-MW0521-109	1	66	44	0.2923	Soft Bottom	Brittle Star (5); Cerianthio Anemone (1)	None	I		Soft Sediment Fauna	Inferred Fauna	Soft Sediment Brittle Stars	Burrowing Anemones	Layer of organic material overlaying coarser sand graduating to silt. Orange/brown filamentous organic material contained within surface layer. Few tracks through organic material.
20SU-MW0521-109	3	72	48	0.3467	Soft Bottom	Brittle Star (4); Shrimp (2) None	E		Soft Sediment Fauna	Inferred Fauna	Soft Sediment Brittle Stars	Mobile Crustaceans on Soft Sediments	Coarser sand graduating to silt, few clusters of organic material. Some orange/brown filamentous organic material on surface. Moderate amount of tracks, some burrows and few biogenic depressions.
20SU-MW0521-109	4	75	50	0.3734	Soft Bottom	Tubes (10+); Cerianthid Anemone (4); Squid (1); Shrimp (1)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Burrowing Anemones	Thin layer of silt and organic material overlaying coarser sand graduating to silt. Many pieces of crab exoskeletal remains. Few tubes and burrows. Many tracks and biogenic depressions.
20SU-MW0521-114	1	65	43	0.2782	Soft Bottom	Tubes (10+); Shrimp (1);	None	E, I			Inferred Fauna	•	Tracks and Trails	Very fine sand graduating to silt with few shell fragments. Few tubes, high
20SU-MW0521-114	3	68	45	0.3077	Soft Bottom	Worm (1) Tubes (20+); Shrimp (10); Sea Star (7)	None	E, I		Fauna Soft Sediment Fauna	Inferred Fauna	Fauna Mobile Crustaceans on Soft Sediments	Starfish Bed	concentration of tracks and some biogenic depressions. Moderate amount of tubes and few burrows. One recently excavated burrow. Some tracks and biogenic depressions.
20SU-MW0521-114	5	71	48	0.3393	Soft Bottom	Tubes (10+); Shrimp (3); Brittle Star (3); Sea Star (2)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	Very fine sand graduating to silt with few shell particles. Few fecal mounds on surface. Moderate amount of tracks and large biogenic depression.
20SU-MW0521-116	1	67	45	0.303	Soft Bottom	Tubes (20+); Sea Star (4); Shrimp (3); Brittle Star (1); Rock crab (1)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Starfish Bed	Very fine sand graduating to silt with few shell particles. Moderate amount of tubes and tracks, few burrows.
20SU-MW0521-116	2	66	44	0.2917	Soft Bottom	Tubes (20+); Shrimp (4); Sea Star (2); Cerianthid Anemone (1)	Unidentifiable Fish (1)	E, I		Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	Very fine sand graduating to silt with few shell particles. Depression from sea star and tail of fish in depression. Moderate amount of tracks.
20SU-MW0521-116	3	71	47	0.3331	Soft Bottom	Tubes (10+); Shrimp (5); Sea Star (4)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	Very fine sand graduating to silt with few shell particles. Moderate amount of tubes, few burrows. Few tracks and biogenic depressions.
20SU-MW0521-118	2	75	50	0.3762	Soft Bottom	Shrimp (4)	None	E			Inferred Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails	Very fine sand graduating to silt with few shell particles. Very high abundance of tracks and trails.
20SU-MW0521-118	4	72	48	0.3485	Soft Bottom	Shrimp (3); Tubes (1)	None	E, I		Fauna Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails	Very fine sand graduating to silt with few shell particles. One tube and high abundance of tracks and trails.
20SU-MW0521-118	5	71	47	0.3362	Soft Bottom	Shrimp (1); Worm (1)	None	E		Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails	Very fine sand graduating to silt with few shell particles. High abundance of tracks and trails. Brown filamentous organic material on surface.

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											CN	MECS Biotic Components		_
Station ID	Replicate	Image Width	Image Height (cm)	Image FOV	Habitat Type	Epifauna/Infauna Types and Counts	Fish Types and Count	Biological Information	Macroalgae Cover	Biotic Subclass	Co-occuring Biotic Subclass	s Biotic Group	Co-occurring Biotic Group	Comments
20SU-MW0521-120	1	79	53	0.4136	Soft Bottom	Shrimp (9); Skate Egg Case (1)	None	E		Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails	Very fine sand graduating to silt with few shell particles. High abundance of tracks and some biogenic depressions. Brown filamentous organic material
20SU-MW0521-120	2	80	53	0.4216	Soft Bottom	Shrimp (7)	None	E		Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails	on surface. Very fine sand graduating to silt with few shell particles. High abundance of tracks and some biogenic depressions. Brown filamentous organic material on surface.
20SU-MW0521-120	4	75	50	0.3772	Soft Bottom	Shrimp (4); Worms (3); Sea Star (1)	None	E		Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails	Very fine sand graduating to silt with few shell fragments and particles. High abundance of tracks and some biogenic depressions.
20SU-MW0521-121	3	66	44	0.2938	Sand with Organic Material	None	None	NA		Inferred Fauna	None	Tracks and Trails	None	Layer of organic material overlaying very fine to fine sand. Many tracks and trails. Brown filamentous organic material contained within surface layer.
20SU-MW0521-121	4	68	45	0.3094	Sand with Organic Material	Worm (1)	None	1		Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Tracks and Trails	Thick layer of organic material overlaying very fine to fine sand. Many tracks and trails. Brown filamentous organic material contained within surface layer.
20SU-MW0521-121	5	70	47	0.3309	Sand with Organic Material	Gastropod (1)	None	E		Soft Sediment Fauna	Inferred Fauna	Mobile Mollusks on Soft Sediments	Tracks and Trails	Thick layer of organic material overlaying fine to medium sand. Brown filamentous organic material contained within surface layer.
20SU-MW0521-122	1	73	49	0.3552	Sand	Tubes (20+), Amphipod (1); Worm (1)	None	E, I			Inferred Fauna		Larger Deep-Burrowing Fauna	Very fine sand graduating to silt. Moderate amount of diverse tube structures, some burrows and many tracks and trails.
20SU-MW0521-122	4	72	48	0.3453	Sand	Tubes (30+); Amphipod (1)	None	E, I			Inferred Fauna	Small Tube-Building Fauna	Larger Tube-Building Fauna	Fine sand overlaying very fine sand graduating to silt. High concentration of diverse tube structures, some burrows. Moderate amount of tracks and few biogenic depressions.
20SU-MW0521-122	5	72	48	0.3445	Sand	Tubes (30+)	Fin Fish (1)	1		Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Larger Tube-Building Fauna	High concentration of diverse tube structures and few tube clusters. Few burrows, moderate amount of tracks and biogenic depressions.
20SU-MW0521-123	2	76	51	0.3855	Soft Bottom	Hermit crabs (3); Amphipods	None	E		Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Tracks and Trails	Numerous tube-building amphipods (clearly evident in paired SPI image).
20SU-MW0521-123	3	73	49	0.36	Soft Bottom	Hermit crabs (6); Snail (3); Shrimp (6)	None	Е			Inferred Fauna	Mobile Crustaceans on Soft Sediments	Small Tube-Building Fauna	Diverse epifauna and moderate amount of tubes.
20SU-MW0521-123	5	81	54	0.4358	Soft Bottom	Hermit crabs (5); Shrimp (2); Snail (7)	None	E			Inferred Fauna		Tracks and Trails	Large shell fragments (bivalve, crab).
20SU-MW0521-124	1	89	59	0.5263	Sand	Anemone (2); Snail (3)	None	I			Inferred Fauna	Mobile Mollusks on Soft Sediments	Tracks and Trails	Fecal casts on surface.
20SU-MW0521-124	2	90	60	0.5436	Sand	Scale Worm (1); Crab (1); Snail (3); Anemone	None	E, I			Inferred Fauna	Larger Deep-Burrowing Fauna	Tracks and Trails	Fecal casts on surface.
20SU-MW0521-124	3	85	57	0.4803	Sand	Snail (2); Anemone (2)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Larger Deep-Burrowing Fauna	Small Tube-Building Fauna	Reduced sediment just below sediment surface.
20SU-MW0521-124	4	88	59	0.5201	Sand	Snail (1); Anemone (1)	None	E, I			Inferred Fauna		Tracks and Trails	Reduced sediment below sediment surface, many tracks and trails.
20SU-MW0521-124	5	81	54	0.4343	Sand	Scale Worm (1)	None	E			Inferred Fauna		Tracks and Trails	Many tracks and trails.
20SU-MW0521-124	6	87	58	0.5036	Sand	Crabs (4); Hermit crab (1)	None	Е		Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails	Image partially obscured by suspended material.
20SU-MW0521-124	8	97	65	0.6313	Sand	Crab (1); Snail (2); Anemone (1)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Mobile Mollusks on Soft Sediments	Tracks and Trails	Reduced sediment just below sediment surface.
20SU-MW0521-124	9	63	42	0.2622	Sand	Crabs (2); Bryozoan (1); Snail (1)	None	Е		Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Tracks and Trails	Reduced sediment just below sediment surface, sediment surface exhibit clumps.
20SU-MW0521-124	10	93	62	0.5771	Sand	Crabs (2); Hermit crab (1); Scale Worm (1);	None	E		Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails	Weathered sand ripples.
20SU-MW0521-124	11	80	53	0.4214	Sand	Snail (1) Crab (1); Diopatra (3); Anemone (1); Scale Worm (2)	Comb Jellyfish (1)	E, I		Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Tracks and Trails	Weathered sand ripples.
20SU-MW0521-124	12	69	46	0.3202	Sand	Hermit crab (1); Snail (1)	Small/larval fish (1)	E		Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Tracks and Trails	Reduced sediment just below sediment surface.
20SU-MW0521-124	13	92	61	0.5613	Sand	Crab (1); Snail (1)	None	E			Inferred Fauna	Small Tube-Building Fauna	Tracks and Trails	Suspended material throughout image.
20SU-MW0521-125	1	75	50	0.3776	Soft Bottom	Amphipods	None	Е		Soft Sediment	Inferred Fauna	Small Tube-Building	Tracks and Trails	Numerous diverse surface tube (clearly identifiable in paired SPI image).
20SU-MW0521-125	4	77	51	0.3911	Soft Bottom	Sand dollar (2); Amphipods	None	E		Fauna Soft Sediment Fauna	Inferred Fauna	Fauna Small Tube-Building Fauna	Tracks and Trails	Numerous tube-building amphipods (clearly identifiable in paired SPI image). Several unidentified cylindrical translucent shapes visible.
20SU-MW0521-125	5	74	49	0.3659	Soft Bottom	Jonah crab (1); Shrimp (3); Amphipods	Flat fish (1)	E			Inferred Fauna	Small Tube-Building Fauna	Tracks and Trails	Numerous tube-building amphipods (clearly identifiable in paired SPI image).

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										_	CN	MECS Biotic Components		-
		Image Width	Image	Image FO\		Epifauna/Infauna Types		Biological	Macroalgae	Diotio Cubalcas	Co-occuring Biotic Subclass	s Biotic Group	Co-occurring Biotic	Comments
Station ID 20SU-MW0521-126	Replicate 1	(cm) 71	Height (cm) 47	(m ²) 0.3343	Habitat Type Soft Bottom	and Counts Shrimp (3)	Fish Types and Count None	Information E	Cover				Group Tracks and Trails	Numerous tracks and trails.
20SU-MW0521-126	2	72	48	0.3442	Soft Bottom	Shrimp (4); Cerianthid	None	E, I		Fauna		Soft Sediments Mobile Crustaceans on	Burrowing Anemones	Tube clusters present. Low amount of burrows.
0001111110504 400	_	07	45	0.0004	0.45.4	Anemone (1)	N			Fauna		Soft Sediments	M 1 11 0 1	
20SU-MW0521-126	5	67	45	0.3031	Soft Bottom	Shrimp (4); Cerianthid Anemone (1)	None	E, I		Fauna	interred Fauna	Small Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	Tube clusters present.
20SU-MW0521-127	1	68	45	0.3067	Soft Bottom	Crab (1); Shrimp (3)	None	E			Inferred Fauna	Mobile Crustaceans on	Tracks and Trails	Image lightly obscured by suspended material.
20SU-MW0521-127	3	71	47	0.3354	Soft Bottom	Shrimp (12)	None	E		Fauna Soft Sediment Fauna	Inferred Fauna	Soft Sediments Mobile Crustaceans on Soft Sediments	Tracks and Trails	Image lightly obscured by suspended material.
20SU-MW0521-127	5	69	46	0.3148	Soft Bottom	Shrimp (14)	Medium size fish (1)	E			Inferred Fauna	Mobile Crustaceans on Soft Sediments	Tracks and Trails	Image lightly obscured by suspended material. Only the back half of the fish is visible in the image.
20SU-MW0521-C01	2	91	60	0.5464	Sand with Silt	Hermit crabs (2); Nassariid Snail (1); Worm (1)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediments	Mobile Mollusks on Soft Sediments	Fine layer of silt over laying medium to fine sand with few shell fragments. Small area of brown filamentous organic material. Moderate amount of tracks and few large biogenic depressions. Fecal casts abundant on surface. Hermit crab feeding on brown filamentous organic matter.
20SU-MW0521-C01	4	89	59	0.5303	Sand with Silt	Hermit crabs (3); Burrowing Anemone (2); Nassariid Snail (1)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediments	Burrowing Anemones	Fine layer of silt overlaying medium to coarse sand with few granules and shell fragments. Moderate amount of tracks and biogenic depressions.
20SU-MW0521-C01	5	85	57	0.4852	Sand with Silt	Nassariid Snail (6); Burrowing Anemones (2) Hermit crab (1)	None ;	E, I		Soft Sediment Fauna	Inferred Fauna	Mobile Mollusks on Soft Sediments	Burrowing Anemones	Thin layer of silt overlaying medium sand graduating to fine sand. Moderate amount of tracks and biogenic depressions.
20SU-MW0521-C02	1	91	61	0.5498	Sand with Silt	Nassariid Snail (6);	None	Е		Soft Sediment	Inferred Fauna		Mobile Crustaceans on	Fine layer of silt overlaying medium to coarse sand. Hermit crab feeding on
20SU-MW0521-C02	2	93	62	0.5761	Sand	Hermit crabs (2) Nassariid Snail (7); Hermit crabs (4)	None	E		Fauna Soft Sediment Fauna	Inferred Fauna	Sediments Mobile Mollusks on Soft Sediments	Soft Sediments Mobile Crustaceans on Soft Sediments	shell. Some tracks and trails. Fine layer of silt overlaying medium to coarse sand with some shell fragments. Fecal casts on surface. Moderate amount of tracks and biogenic
20SU-MW0521-C02	4	81	54	0.4329	Sand	Hermit crabs (5); Nassariid Snail (2)	None	E		Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediments	Mobile Mollusks on Soft Sediments	depressions. Thin layer of silt overlaying medium sand with some shell fragments. High amount of tracks and biogenic depressions. Hermit crab feeding on shell.
20SU-MW0521-C03	1	92	61	0.559	Sand with Silt	Tubes (40+); Nassariid Snail (4); Burrowing Anemone (1); Hermit crab (1); Unidentifiable	None	E, I		Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediments	Thin layer of silt overlaying fine sand with some shell fragments. High concentration of tubes and a recently excavated burrow. Few tracks and biogenic depressions.
20SU-MW0521-C03	2	93	62	0.5739	Sand with Silt	Snail (4); Cerianthid Anemone (2); Hermit crab (1); Ribbon Worm	None	E, I		Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediments	Fine layer of silt over laying fine sand with few shell fragments. Some tubes and one recently excavated burrow. Few tracks and biogenic depressions.
20SU-MW0521-C03	4	87	58	0.5082	Sand with Silt	(1) Tubes (30+); Nassariid Snail (6); Hermit crab (1)		E, I		Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediments	Fine silt layer overlaying fine to very fine sand with few small shell fragments. Abundant fecal casts on surface and few tubes.
20SU-MW0521-C04	1	84	56	0.4725	Sand	Tubes (20+); Cerianthid Anemone (4); Hermit crabs (2); Nassariid Snai (2); Worm (1)		E, I		Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Burrowing Anemones	Thin layer of silt overlaying medium to fine sand with few small shell fragments. Reduced sediment on surface. Some tubes and a tube cluster. Few tracks and trails.
20SU-MW0521-C04	4	88	58	0.5106	Sand	Tubes (30+); Nassariid Snail (6); Burrowing Anemones (3); Hermit crabs (2)	None	E, I		Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediments	Silt overlaying medium sand with few small shell fragments. High concentration of tubes and one recently excavated burrow. Few tracks.
20SU-MW0521-C04	5	86	58	0.4965		Tubes (10+); Nassariid Snail (7); Cerianthid Anemone (7); Burrowing Anemone (2); Scale Worm (1); Hermit Crab (1)		E, I		Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Burrowing Anemones	Thin layer of silt overlaying medium sand, few shell particles. Possible relic ripples. Some tubes and tracks.

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										CN	MECS Biotic Components		_
Station ID	Replicate	Image Width (cm)	Image Height (cm)	Image FO\ (m²)	/ Habitat Type	Epifauna/Infauna Types and Counts Fish Typ	Biological ees and Count Information	Macroalgae Cover	Biotic Subclass	Co-occuring Biotic Subclass	s Biotic Group	Co-occurring Biotic Group	Comments
20SU-MW0521-C05	1	84	56	0.4731	Rippled Sand	Tubes (20+); Nassariid None Snail (18); Cerianthid Anemone (1); Hermit crab (1)	Е, І		Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediments	Rippled fine sand with few shell particles. Ripples are fairly subtle. High concentrations of tubes and some tracks. Crab leg in frame.
20SU-MW0521-C05	3	86	57	0.4899	Rippled Sand	Tubes (20+); Nassariid None Snail (10); Cerianthid Anemone (1); Hermit crab (1)	Е, І		Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediments	Thin layer of silt overlaying rippled fine sand with few shell particles. Ripples are very subtle. High concentration of tubes and moderate amount of tracks.
20SU-MW0521-C05	4	94	63	0.5894	Rippled Sand	Tubes (10+); Nassariid None Snail (12); Hermit crabs (5); Cerianthid Anemone (1); Sand dollar (1); Worm (1)	E, I		Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediments	Thin layer of silt overlaying rippled medium sand. Ripples are subtle. Moderate amount of tubes and tracks.
20SU-MW0521-C06	1	71	47	0.3374	Soft Bottom	Brittle stars; Shrimp (3) None	E		Soft Sediment	Inferred Fauna		Small Tube-Building	High concentration of brittle stars and tubes. Moderate amount of tracks and
20SU-MW0521-C06	2	75	50	0.3713	Soft Bottom	Brittle stars; Shrimp (3) None	E		fauna Soft Sediment Fauna	Inferred Fauna	Stars Soft Sediment Brittle Stars	Fauna Small Tube-Building Fauna	burrows. Top center of image partially obscured by suspended material. High concentration of brittle stars and tubes. Moderate amount of tracks and burrows. Unknown translucent masses throughout top half of image (cylindrical, blue).
20SU-MW0521-C06	4	76	51	0.3843	Soft Bottom	Brittle stars; Shrimp (3) None	E		Soft Sediment Fauna	Inferred Fauna	Soft Sediment Brittle Stars	Small Tube-Building Fauna	High concentration of brittle stars and tubes. Moderate amount of tracks and burrows. Unknown translucent masses (cylindrical, blue).
20SU-MW0521-C07	1	73	48	0.3523	Soft Bottom	Brittle stars; Sea star (3); None Shrimp (10)	Е			Inferred Fauna		Small Tube-Building Fauna	High concentration of brittle stars and tubes. Moderate amount of tracks and burrows.
20SU-MW0521-C07	2	75	50	0.3707	Soft Bottom	Brittle stars; Sea star (3); None Shrimp (2)	Е			Inferred Fauna	Soft Sediment Brittle Stars	Small Tube-Building Fauna	High concentration of brittle stars and tubes. Moderate amount of tracks and burrows. Single mud clast near the largest sea star.
20SU-MW0521-C07	4	76	50	0.3811	Soft Bottom	Brittle stars; Sea star (3); None Anemone (1)	E, I			Inferred Fauna	Soft Sediment Brittle Stars	Small Tube-Building Fauna	High concentration of brittle stars and tubes. Moderate amount of tracks and burrows.
20SU-MW0521-C08	2	69	46	0.315	Soft Bottom	Brittle stars; Sea star (1); None Shrimp (13)	Е		Soft Sediment Fauna	Inferred Fauna	Soft Sediment Brittle Stars	Small Tube-Building Fauna	High concentration of brittle stars and tubes. Moderate amount of tracks and burrows.
20SU-MW0521-C08	3	74	49	0.3645	Soft Bottom	Brittle stars; Sea star (1); None Shrimp (3)	E			Inferred Fauna	Soft Sediment Brittle Stars	Small Tube-Building Fauna	High concentration of brittle stars and tubes. Moderate amount of tracks and burrows.
20SU-MW0521-C08	4	73	49	0.36	Soft Bottom	Brittle stars; Shrimp (11); None Bivalve siphons (2)	E, I			Inferred Fauna		Small Tube-Building Fauna	High concentration of brittle stars and tubes. Moderate amount of tracks and burrows.
20SU-MW0521-C09	7	74	50	0.3677	Soft Bottom	Brittle stars; Sea star (1); None Shrimp (13)	E		Soft Sediment Fauna	Inferred Fauna	Soft Sediment Brittle Stars	Small Tube-Building Fauna	High concentration of brittle stars and tubes. Moderate amount of tracks and burrows. Unknown translucent mass near left laser dot.
20SU-MW0521-C09	8	74	49	0.3607	Soft Bottom	Brittle stars; Sea pen (3); None Sea star (1); Shrimp (4)	E, I		Soft Sediment Fauna	Inferred Fauna	Soft Sediment Brittle Stars	Small Tube-Building Fauna	High concentrations of brittle stars and tubes. Moderate amount of tracks and burrows.
20SU-MW0521-C09	10	76	51	0.3881	Soft Bottom	Brittle stars; Sea star (1); None Shrimp (5); Anemone (1)	Е, І		Soft Sediment Fauna	Inferred Fauna	Soft Sediment Brittle Stars	Small Tube-Building Fauna	High concentration of brittle stars and tubes. Moderate amount of tracks and burrows.
20SU-MW0521-C10	1	77	51	0.3907	Soft Bottom	Brittle stars; Shrimp (13) None	Е		Soft Sediment Fauna	Inferred Fauna	Soft Sediment Brittle Stars	Small Tube-Building Fauna	High concentration of brittle stars and tubes. Moderate amount of tracks and burrows.
20SU-MW0521-C10	2	77	51	0.3921	Soft Bottom	Brittle stars; Shrimp (5); None Bivalve siphon (1)	E, I		Soft Sediment Fauna	Inferred Fauna	Soft Sediment Brittle Stars	Small Tube-Building Fauna	High concentration of brittle stars and tubes. Moderate amount of tracks. Low amount of burrows.
20SU-MW0521-C10	4	68	45	0.3072	Soft Bottom	Brittle stars; Shrimp (7); None Sea star (1)	E			Inferred Fauna	Soft Sediment Brittle Stars	Small Tube-Building Fauna	High concentration of brittle stars and tubes. Moderate amount of tracks and burrows.
20SU-MW0521-C11	1	89	59	0.5253	Rippled Sand	Sand dollar (5) Small fish	(1) E		Soft Sediment	Inferred Fauna	Sand Dollar Bed	Small Tube-Building	Possible small fish, bottom center of picture. Tube clusters occur in several
20SU-MW0521-C11	4	90	60	0.538	Rippled Sand	Sand dollar (4); Hermit None	E		Fauna Soft Sediment Fauna	Inferred Fauna	Sand Dollar Bed	Fauna Small Tube-Building Fauna	of the ripple lees. Low amount of burrows. Tube clusters occur in several of the ripple lees. Low amount of burrows. Unidentified invertebrate (1) in center left part of image.
20SU-MW0521-C11	5	95	63	0.6014	Rippled Sand	crabs (2) Sand dollar (1) None	E			Inferred Fauna	Sand Dollar Bed	Fauna Small Tube-Building Fauna	Tube clusters occur in several of the ripple lees. Low amount of burrows.

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Appendix C2: PV Image Data Set Sediment Profile and Plan View Imaging Survey Mayflower Wind Farm, Summer 2020

Plan View Image Analysis Results, Summer 2020 Mayflower Survey

											CM	ECS Biotic Components	s	_
Station ID	Replicate	Image Width (cm)	Image Height (cm)	Image FOV (m ²)	, Habitat Type	Epifauna/Infauna Types and Counts	Fish Types and Count	Biological Information	Macroalgae Cover		Co-occuring Biotic Subclass	Biotic Group	Co-occurring Biotic Group	Comments
20SU-MW0521-C12	8	85	57	0.4822	Rippled Sand	Sand dollar (>35)	None	E		Soft Sediment Fauna	None	Sand Dollar Bed	None	Sand ripples apparent in paired SPI image. Unable to discern wavelength, presence/absence of burrows, tubes, tracks due to suspended material in the water column.
20SU-MW0521-C12	10	82	55	0.4514	Rippled Sand	Sand dollar (15); Hermit crab (1)	None	E		Soft Sediment Fauna	None	Sand Dollar Bed	None	Sand ripples and hermit crab apparent in paired SPI image. Unable to discern wavelength, presence/absence of burrows, tubes, tracks due to suspended material in the water column.
20SU-MW0521-C12	11	83	55	0.4569	Rippled Sand	Sand dollar (14+)	None	E		Soft Sediment Fauna	None	Sand Dollar Bed	None	Sand ripples apparent in paired SPI image. Some brown filamentous organic material present. Unable to discern wavelength, presence/absence of burrows, tubes, tracks due to suspended material in the water column.
20SU-MW0521-C13	4	85	57	0.481	Sand	Sand dollar (55+)	Small orange fish (1)	Е		Soft Sediment Fauna	Inferred Fauna	Sand Dollar Bed	Tracks and Trails	High concentration of sand dollars. Low amount of burrows.
20SU-MW0521-C13	5	80	54	0.4302	Sand	Sand dollar (60+)	Small fish (3)	E			Inferred Fauna	Sand Dollar Bed	Tracks and Trails	High concentration of sand dollars. Low amount of burrows.
20SU-MW0521-C13	7	86	57	0.4954	Sand	Sand dollar (60+)	Small fish (6)	E			Inferred Fauna	Sand Dollar Bed	Tracks and Trails	High concentration of sand dollars.
20SU-MW0521-C14	2	88	59	0.52	Rippled Sand	Sand dollar (4); Amphipod (5+)	None	E		Soft Sediment Fauna	Inferred Fauna	Sand Dollar Bed	Tracks and Trails	Low amount of tubes.
20SU-MW0521-C14	3	83	55	0.4591	Rippled Sand	Sand dollar (2), Amphipod (3)	Small fish (1)	Е		Soft Sediment Fauna	Inferred Fauna	Sand Dollar Bed	Tracks and Trails	Tube clusters occur in the lee of the ripples.
20SU-MW0521-C14	4	93	62	0.571	Rippled Sand	Sand dollar (4)	Small fish (2)	Е		Soft Sediment Fauna	Inferred Fauna	Sand Dollar Bed	Tracks and Trails	Low amount of tubes. Tube clusters occur in the ripple lees.
20SU-MW0521-C15	2	77	51	0.3965	Sand	Sand dollar (54); Hermit crabs (2)	None	E		Soft Sediment Fauna	Inferred Fauna	Sand Dollar Bed	Tracks and Trails	Low amount of tubes.
20SU-MW0521-C15	3	80	53	0.4236	Sand	Sand dollar (86+); Hermit crabs (3); Snail (4)	None	E		Soft Sediment Fauna	Inferred Fauna	Sand Dollar Bed	Tracks and Trails	Brown filamentous organic material in center left of image. Low amount of tubes.
20SU-MW0521-C15	4	81	54	0.4344	Sand	Sand dollar (72+); Hermit crab (1); Snail (1)	None	E		Soft Sediment Fauna	Inferred Fauna	Sand Dollar Bed	Tracks and Trails	Low amount of tubes.
20SU-MW0521-CP2	1	90	60	0.5341	Sand with Gravel	None	None	NA		Inferred Fauna	None	Tracks and Trails	None	Very coarse sand. High energy area with mobile granules and diverse shell fragment deposits.
20SU-MW0521-CP2	2	77	51	0.3976	Sand with Gravel and Shells	None	None	NA		Inferred Fauna	None	Tracks and Trails	None	Very coarse sand. High energy area with mobile granules and diverse shell fragment deposits.
20SU-MW0521-CP2	3	38	25	0.0948	Rippled Sand	None	None	NA		Inferred Fauna	None	Tracks and Trails	None	Rippled very coarse sand, ripples are irregular. High energy area with mobile granules and some shell fragment deposits.

Notes:

CMECS = Coastal and Marine Ecological Classification Standard

C = Common, > 25% cover

E = epifauna

FOV = field of view

I = emergent infauna Ind = indeterminate

MA = macroalgae

N = no

NA = not applicable
S = Some 10-25% cover
SPI = sediment profile imaging
T = Trace, < 10% cover
Y = yes

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ATTACHMENT 3 - CMECS Substrate Classification and Habitat Type

Attachment 3a. CMECS Substrate Classifications and Habitat Type - Spring 2020

	Sample			Substrate			Complex Habitat per NMFS 2020
Station	Туре	Substrate Class	Substrate Subclass	Group	Substrate Subgroup	Habitat Type	(Y/N)
Northern Ex	port Cable Cor	ridor (SPI/PV Stations	001-030)				
001	SPI/PV	Unconsolidated mineral	Coarse unconsolidated	Gravels	Gravel pavement	Hard bottom substrate with macroalgae	Υ
002	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Sand	Very coarse/coarse sand	Rippled sands	N
002	Grab	Unconsolidated mineral	Fine unconsolidated	Sand	Very coarse/coarse sand	Rippled sands	N
003	SPI/PV	Unconsolidated mineral	Coarse unconsolidated	Gravels	Gravel pavement	Hard bottom substrate with macroalgae and epifauna	Υ
005	SPI/PV	Unconsolidated mineral	Coarse unconsolidated	Gravels	Gravel pavement	Hard bottom substrate with macroalgae and epifauna	Υ
006	Grab	Unconsolidated mineral	Fine unconsolidated	Sand	Very coarse/coarse sand	Sand	N
007	SPI/PV	Unconsolidated mineral	Coarse unconsolidated	Gravel mixes	Sandy gravel	Hard bottom substrate with macroalgae	Υ
008	Grab	Shell	Shell Reef	Crepidula reef	NA	Shell reef	Υ
009	SPI/PV	Unconsolidated mineral	Coarse unconsolidated	Gravelly	Gravelly sand	Sand and gravel	Y*
010	Grab	Unconsolidated mineral	Fine unconsolidated	Sand	Medium sand	Sand with epifauna	N
011	SPI/PV	Shell	Shell Reef	Crepidula reef	NA	Shell reef	Y*
012	Grab	Unconsolidated mineral	Coarse unconsolidated	Gravelly	Gravelly sand	Sand and gravel	Υ
013	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Sand	Medium sand	Sand	N
014	Grab	Unconsolidated mineral	Fine unconsolidated	Sand	Very coarse/coarse sand	Sand with epifauna	N
015	SPI/PV	Unconsolidated mineral	Coarse unconsolidated	Gravel mixes	Sandy gravel	Hard bottom substrate with macroalgae	Υ
016	Grab	Unconsolidated mineral	Fine unconsolidated	Sand	Very coarse/coarse sand	Sand with epifauna	N
017	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Sand	Medium sand	Rippled sands	N
018	Grab	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Sand with macroalgae	N
019	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Rippled sands	N

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	Sample			Substrate			Complex Habitat per NMFS 2020
Station	Type	Substrate Class	Substrate Subclass	Group	Substrate Subgroup	Habitat Type	(Y/N)
020	Grab	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Sand	N
021	SPI/PV	Unconsolidated mineral	Coarse unconsolidated	Gravelly	Gravelly sand	Sand and gravel	Υ*
022	SPI/PV	Unconsolidated mineral	Coarse unconsolidated	Gravelly	Gravelly sand	Sand and gravel	Υ*
022	Grab	Unconsolidated mineral	Coarse unconsolidated	Gravelly	Gravelly sand	Sand and gravel	Υ
023	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Sand	Very coarse/coarse sand	Rippled sands	N
024	Grab	Unconsolidated mineral	Coarse unconsolidated	Gravelly	Gravelly sand	Sand and gravel with macroalgae and epifauna	Υ
CP1	SPI/PV	Unconsolidated mineral	Coarse unconsolidated	Gravelly	Gravelly sand	Sand	Υ*
CP2	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Sand	Very coarse/coarse sand	Sand	N
025	SPI/PV	Unconsolidated mineral	Coarse unconsolidated	Gravels	Gravel pavement	Gravel substrate	Υ*
026	Grab	Unconsolidated mineral	Coarse unconsolidated	Gravels	Pebble/granule	Gravel substrate	Υ
027	SPI/PV	Unconsolidated mineral	Coarse unconsolidated	Gravelly	Gravelly sand	Sand and gravel	Υ*
028	Grab	Unconsolidated mineral	Coarse unconsolidated	Gravel mixes	Sandy gravel	Hard bottom substrate with epifauna	Υ
029	SPI/PV	Unconsolidated mineral	Coarse unconsolidated	Gravelly	Gravelly sand	Sand and gravel with macroalgae	Υ*
030	Grab	Unconsolidated mineral	Coarse unconsolidated	Gravelly	Gravelly sand	Sand	Υ
Southern Ex	port Cable Cor	ridor (SPI/PV Stations	031-060)				
031	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Sand	Very coarse/coarse sand	Rippled sands	N
032	Grab	Unconsolidated mineral	Coarse unconsolidated	Gravelly	Gravelly sand	Sand	Υ
033	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Rippled sands	N
034	Grab	Unconsolidated mineral	Fine unconsolidated	Sand	Medium sand	Sand	N
035	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Sand	Very coarse/coarse sand	Rippled sands	N
036	Grab	Unconsolidated mineral	Fine unconsolidated	Sand	Medium sand	Sand	N
037	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Sand	Medium sand	Rippled sands	N

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Station	Sample Type	Substrate Class	Substrate Subclass	Substrate Group	Substrate Subgroup	Habitat Type	Complex Habitat per NMFS 2020 (Y/N)
038	Grab	Unconsolidated mineral	Fine unconsolidated	Sand	Medium sand	Sand	N
039	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Rippled sands	N
040	Grab	Unconsolidated mineral	Fine unconsolidated	Sand	Very coarse/coarse sand	Sand with epifauna	N
041	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Rippled sands	N
042	Grab	Unconsolidated mineral	Fine unconsolidated	Sand	Very coarse/coarse sand	Sand	N
043	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Sand	Medium sand	Rippled sands	N
044	Grab	Unconsolidated mineral	Fine unconsolidated	Sand	Very coarse/coarse sand	Sand with epifauna	N
045	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Rippled sands	N
046	Grab	Unconsolidated mineral	Fine unconsolidated	Sand	Very coarse/coarse sand	Sand with epifauna	N
047	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Soft bottom	N
048	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy sand	NA	Soft bottom	N
049	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Rippled sands	N
050	Grab	Unconsolidated mineral	Fine unconsolidated	Sand	Very coarse/coarse sand	Sand with epifauna	N
051	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Sand	Fine sand	Rippled sands	N
052	Grab	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Sand with epifauna	N
053	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Rippled sands	N
054	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Rippled sands	N
054	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy sand	NA	Soft bottom	N
055	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Sand	Fine sand	Rippled sands	N
056	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy sand	NA	Soft bottom	N
057	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Rippled sands	N
058	Grab	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Sand with epifauna	N

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Station	Sample Type	Substrate Class	Substrate Subclass	Substrate Group	Substrate Subgroup	Habitat Type	Complex Habitat per NMFS 2020 (Y/N)
059	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Rippled sands	N
060	Grab	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Sand with epifauna	N
Lease Area	(SPI/PV Station						
061	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Rippled sands	N
062	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy sand	NA	Soft bottom	N
063	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy sand	NA	Soft bottom	N
064	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Sandy mud	NA	Soft bottom	N
065	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy sand	NA	Soft bottom	N
066	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Sandy mud	NA	Soft bottom	N
067	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft bottom	N
068	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy sand	NA	Soft bottom	N
069	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy sand	NA	Soft bottom	N
070	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft bottom	N
071	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft bottom	N
072	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy sand	NA	Soft bottom	N
073	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft bottom	N
074	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft bottom	N
074	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy sand	NA	Soft bottom	N
075	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy sand	NA	Soft bottom	N
076	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft bottom	N
077	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft bottom	N
078	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy sand	NA	Soft bottom	N

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Attachment 3-5

Station	Sample Type	Substrate Class	Substrate Subclass	Substrate Group	Substrate Subgroup	Habitat Type	Complex Habitat per NMFS 2020 (Y/N)
079	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy sand	NA	Soft bottom	N
080	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft bottom	N
081	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy sand	NA	Soft bottom	N
082	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft bottom	N
083	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Sandy mud	NA	Soft bottom	N
084	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Sandy mud	NA	Soft bottom	N
084	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy sand	NA	Soft bottom	N
085	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy sand	NA	Soft bottom	N
086	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Sandy mud	NA	Soft bottom	N
087	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy sand	NA	Soft bottom	N
088	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Sandy mud	NA	Soft bottom	N
089	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy sand	NA	Soft bottom	N
090	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft bottom	N
091	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft bottom	N
092	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy sand	NA	Soft bottom	N
093	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft bottom	N
094	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy sand	NA	Soft bottom	N
095	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy sand	NA	Soft bottom	N
096	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Sandy mud	NA	Soft bottom	N
097	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy sand	NA	Soft bottom	N
098	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Sandy mud	NA	Rippled sands	N
099	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy sand	NA	Soft bottom	N

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Station	Sample Type	Substrate Class	Substrate Subclass	Substrate Group	Substrate Subgroup	Habitat Type	Complex Habitat per NMFS 2020 (Y/N)
100	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Sandy mud	NA	Soft bottom	N
101	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft bottom	N
102	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft bottom	N
102	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy sand	NA	Soft bottom	N
103	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft bottom	N
104	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy sand	NA	Soft bottom	N
105	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy sand	NA	Soft bottom	N
106	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft bottom	N
107	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy sand	NA	Soft bottom	N
108	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft bottom	N
109	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft bottom	N
110	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy sand	NA	Soft bottom	N
111	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft bottom	N
112	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy sand	NA	Soft bottom	N
113	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy sand	NA	Soft bottom	N
114	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft bottom	N
115	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy sand	NA	Soft bottom	N
116	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft bottom	N
117	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft bottom	N
118	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy sand	NA	Soft bottom	N
119	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy sand	NA	Soft bottom	N
120	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft bottom	N

	Sample			Substrate			Complex Habitat per NMFS 2020		
Station	Туре	Substrate Class	Substrate Subclass	Group	Substrate Subgroup	Habitat Type	(Y/N)		
Northern Control Area (SPI/PV Stations C01-C05)									
C01	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Sand	Medium sand	Rippled sands	N		
C02	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Sand	Very coarse/coarse sand	Rippled sands	N		
C02	Grab	Unconsolidated mineral	Fine unconsolidated	Sand	Very coarse/coarse sand	Rippled sands	N		
C03	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Rippled sands	N		
C04	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Sand	Medium sand	Rippled sands	N		
C05	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Sand	Medium sand	Rippled sands	N		
Western Co	ntrol Area (SPI	/PV Stations C06-C10)							
C06	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft bottom	N		
C07	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft bottom	N		
C08	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft bottom	N		
C09	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft bottom	N		
C09	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy sand	NA	Soft bottom	N		
C10	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Mud	NA	Soft bottom	N		
Eastern Cor	ntrol Area (SPI/	PV Stations C11-C15)							
C11	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Rippled sands	N		
C12	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Rippled sands	N		
C13	SPI/PV	Unconsolidated mineral	Coarse unconsolidated	Gravelly	Gravelly sand	Sand	Υ		
C13	Grab	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Sand	N		
C14	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Rippled sands	N		
C15	SPI/PV	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/very fine sand	Sand	N		
Notes:									

Notes:

CMECS classifications follow modifications of NMFS (NMFS, 2020).

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Attachment 3-8

Y* indicates that designation of Complex Habitat differs from the designation provided in the SPI/PV report. Samples were reclassified for consistency with grab sample classification.

Attachment 3b. CMECS Substrate Classifications and Habitat Type - Summer 2020

	Sample		Substrate	Substrate	Substrate		Complex Habitat per NMFS 2020
Station	Туре	Substrate Class	Subclass	Group	Subgroup	Habitat Type	(Y/N)
Northern Export Cable Rout	te (SPI/PV Sta	itions 001-030)					
001	SPI/PV	Unconsolidated mineral	Coarse Unconsolidated	Gravels	Gravel Pavement	Hard Bottom Substrate with Shells and Macroalgae	Υ
002 - Transect Location 1	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Medium Sand	Rippled Sand with Shells	N
002 - Transect Location 2	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Medium Sand	Rippled Sand	N
002 - Transect Location 3	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Medium Sand	Sandy Bottom with Gravel and Macroalgae	N
002 - Transect Location 4	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Medium Sand	Rippled Sand with Shells	N
002 - mid (Location 6)	SPI/PV	Unconsolidated mineral	Coarse Unconsolidated	Sand	Very Coarse/Coarse Sand	Sand with Gravel and Shells and Macroalgae	Υ
002 - Transect Location 10	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Medium Sand	Rippled Sand	N
002 - Transect Location 11	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Medium Sand	Rippled Sand with Macroalgae	N
002 - Transect Location 12	SPI/PV	Unconsolidated mineral	Coarse Unconsolidated	Gravelly	Gravelly Sand	Sand with Gravel and Shells	Υ
002 - Transect Location 13	SPI/PV	Unconsolidated mineral	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Sand with Gravel, Shells and Macroalgae	Υ
003	Grab	Unconsolidated mineral	Coarse unconsolidated	Gravel Mixes	Sandy Gravel	Hard bottom substrate with shells, shell fragments, macroalgae and epifauna	Υ
003	SPI/PV	Unconsolidated mineral	Coarse Unconsolidated	Gravels	Gravel Pavement	Hard Bottom Substrate with Shells, Macroalgae and Epifauna	Υ
004	SPI/PV	Unconsolidated mineral	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Hard Bottom Substrate with Shells and Macroalgae	Υ
005 - Transect Location 1	SPI/PV	Unconsolidated mineral	Coarse Unconsolidated	Gravels	Gravel Pavement	Hard Bottom Substrate with Sand and Shells	Υ
005 - Transect Location 2	SPI/PV	Unconsolidated mineral	Coarse Unconsolidated	Gravels	Gravel Pavement	Hard Bottom Substrate with Sand, Shells and Macroalgae	Υ
005 - Transect Location 3	SPI/PV	Unconsolidated mineral	Coarse Unconsolidated	Gravels	Gravel Pavement	Hard Bottom Substrate with Sand and Shells	Υ
005 - Transect Location 4	SPI/PV	Unconsolidated mineral	Coarse Unconsolidated	Gravels	Gravel Pavement	Hard Bottom Substrate with Sand and Shells	Υ
005 – mid (Location 5)	SPI/PV	Unconsolidated mineral	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Hard Bottom Substrate with Sand, Shells and Macroalgae	Υ
005 - Transect Location 10	SPI/PV	Unconsolidated mineral	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Hard Bottom Substrate with Sand and Shells	Υ

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Station	Sample Type	Substrate Class	Substrate Subclass	Substrate Group	Substrate Subgroup	Habitat Type	Complex Habitat per NMFS 2020 (Y/N)
005 - Transect Location 11	SPI/PV	Unconsolidated mineral	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Hard Bottom Substrate with Sand, Macroalgae and Epifauna	Y
005 - Transect Location 12	SPI/PV	Unconsolidated mineral	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Hard Bottom Substrate with Sand and Shells	Υ
005 - Transect Location 13	SPI/PV	Unconsolidated mineral	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Hard Bottom Substrate with Sand and Shells	Υ
006	Grab	Unconsolidated mineral	Fine unconsolidated	Sand	Very Coarse/Coarse Sand	Sand with gravel, shells and shell fragments and epifauna	N
007	Grab	Unconsolidated mineral	Coarse unconsolidated	Gravel Mixes	Sandy Gravel	Hard bottom substrate with shells, macroalgae and epifauna	Υ
007	SPI/PV	Unconsolidated mineral	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Hard Bottom Substrate with Shells and Epifauna	Υ
008	Grab	Unconsolidated mineral	Coarse unconsolidated	Gravelly	Gravelly Sand	Shell reef with macroalgae and epifauna	Y
009	SPI/PV	Unconsolidated mineral	Shell Reef Substrate	Crepidula Reef	NA	Shell Reef with Sand	Υ
010	Grab	Unconsolidated mineral	Fine unconsolidated	Sand	Medium Sand	Sand with shells and shell fragments	N
011	SPI/PV	Unconsolidated mineral	Shell Reef Substrate	Crepidula Reef	NA	Shell Reef	Y
012	Grab	Unconsolidated mineral	Fine unconsolidated	Sand	Very Coarse/Coarse Sand	Rippled sand with shells, shell fragments and macroalgae	N
013	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Medium Sand	Sand with Shells	N
014	Grab	Unconsolidated mineral	Fine unconsolidated	Sand	Very Coarse/Coarse Sand	Rippled sand with shell fragments, macroalgae and epifauna	N
015 - Transect Location 1	SPI/PV	Shell	Shell Reef Substrate	Crepidula Reef	NA	Shell Reef with Sand and Gravel	Y
015 - Transect Location 2	SPI/PV	Shell	Shell Reef Substrate	Crepidula Reef	NA	Shell Reef with Macroalgae	Υ
015 - Transect Location 3	SPI/PV	Unconsolidated mineral	Coarse Unconsolidated	Gravelly	Gravelly Sand	Sand with Shells and Gravel	Υ
015 - Transect Location 4	SPI/PV	Unconsolidated mineral	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Sand and Gravel with Shells and Macroalgae	Υ
015 – mid (Location 7)	SPI/PV	Unconsolidated mineral	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Sand and Gravel with Shells and Macroalgae	Υ
015 – Transect Location 10	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Medium Sand	Rippled Sand	N
015 - Transect Location 11	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Rippled Sand	N

Station	Sample Type	Substrate Class	Substrate Subclass	Substrate Group	Substrate Subgroup	Habitat Type	Complex Habitat per NMFS 2020 (Y/N)
015 - Transect Location 12	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Rippled Sand	N
015 - Transect Location 15	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Rippled Sand	N
016	Grab	Unconsolidated mineral	Fine unconsolidated	Sand	Very Coarse/Coarse Sand	Rippled sand with shell fragments, macroalgae and epifauna	N
017	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sandy Bottom with Macroalgae	N
018	Grab	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/Very Fine Sand	Rippled sand with shells, shell fragments and epifauna	N
019	Grab	Unconsolidated mineral	Coarse unconsolidated	Gravel Mixes	Muddy Sandy Gravel	Shell reef with macroalgae and epifauna	Υ
019	SPI/PV	Shell	Shell Reef Substrate	Crepidula Reef	NA	Shell Reef with Macroalgae	Υ
020	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Rippled Sand	N
021	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Rippled Sand with Shells	N
022	SPI/PV	Unconsolidated mineral	Coarse Unconsolidated	Gravelly	Sandy Gravel	Sand and Gravel with Shells and Macroalgae	Υ
023	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Medium Sand	Rippled Sand	N
024 - Transect Location 1	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Very Coarse/Coarse Sand	Rippled Sand	N
024 - Transect Location 2	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Rippled Sand with Shells	N
024 - Transect Location 3	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Rippled Sand with Shells	N
024 - Transect Location 4	SPI/PV	Unconsolidated mineral	Coarse Unconsolidated	Gravels	Gravel Pavement	Hard Bottom Substrate with Shells and Macroalgae	Υ
024 – mid (Location 7)	SPI/PV	Unconsolidated mineral	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Sand and Gravel with Shells and Macroalgae	Υ
024 - Transect Location 10	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Rippled Sand with Shells and Macroalgae	N
024 - Transect Location 11	SPI/PV	Unconsolidated mineral	Coarse Unconsolidated	Gravels	Gravel Pavement	Hard Bottom Substrate with Shells and Macroalgae	Υ
024 - Transect Location 12	SPI/PV	Unconsolidated mineral	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Gravel and Sand with Shells	Υ
024 - Transect Location 13	SPI/PV	Unconsolidated mineral	Coarse Unconsolidated	Gravelly	Gravelly Sand	Sand and Gravel with Shells	Υ
CP2	SPI/PV	Unconsolidated mineral	Coarse Unconsolidated	Gravelly	Gravelly Sand	Sand with Gravel and Shell	Υ

Station	Sample Type	Substrate Class	Substrate Subclass	Substrate Group	Substrate Subgroup	Habitat Type	Complex Habitat per NMFS 2020 (Y/N)
025	SPI/PV	Unconsolidated mineral	Coarse Unconsolidated	Gravelly	Sandy Gravel	Sand and Gravel Substrate with Shells and Macroalgae	Υ
026	SPI/PV	Unconsolidated mineral	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Gravel and Sand with Shells and Macroalgae	Υ
027	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Fine Sand	Rippled Sand with Macroalgae	N
028	SPI/PV	Unconsolidated mineral	Coarse Unconsolidated	Gravels	Gravel Pavement	Hard Bottom Substrate with Shells and Macroalgae	Υ
029	SPI/PV	Unconsolidated mineral	Coarse Unconsolidated	Gravel Mixes	Sandy Gravel	Sand and Gravel with Shells and Macroalgae	Υ
030	Grab	Unconsolidated mineral	Fine unconsolidated	Sand	Very Coarse/Coarse Sand	Rippled sand with shell fragments	N
Southern Export Cable Rou	ite (SPI/PV Sta	ations 031-060)					
031	SPI/PV	Unconsolidated mineral	Coarse Unconsolidated	Gravelly	Gravelly Sand	Rippled Sand with Gravel	Υ
032	Grab	Unconsolidated mineral	Fine unconsolidated	Sand	Very Coarse/Coarse Sand	Rippled sand with shells and shell fragments	N
033	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Fine Sand	Rippled Sand	N
034	Grab	Unconsolidated mineral	Fine unconsolidated	Sand	Medium Sand	Rippled sand with shell fragments, macroalgae and epifauna	N
035	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Medium Sand	Rippled Sand	N
036	Grab	Unconsolidated mineral	Fine unconsolidated	Sand	Medium Sand	Rippled sand with shell fragments and epifauna	N
037	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Fine Sand	Rippled Sand	N
124	Grab	Unconsolidated mineral	Coarse unconsolidated	Gravelly	Gravelly Muddy Sand	Silt with epifauna	Υ
124 - Transect Location 1	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand	N
124 - Transect Location 2	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand	N
124 - Transect Location 3	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sandy Mud	NA	Sand	N
124 - Transect Location 4	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sandy Mud	NA	Sand	N
124 - mid (Location 5)	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sandy Mud	NA	Sand	N
124 - Transect Location 10	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand	N

Station	Sample Type	Substrate Class	Substrate Subclass	Substrate Group	Substrate Subgroup	Habitat Type	Complex Habitat per NMFS 2020 (Y/N)
124 - Transect Location 11	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand	N
124 - Transect Location 12	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Mud	NA	Sand	N
124 - Transect Location 13	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Sand	N
038	Grab	Unconsolidated mineral	Fine unconsolidated	Sand	Medium Sand	Rippled sand with shell fragments and epifauna	N
039	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Fine Sand	Rippled Sand	N
040	Grab	Unconsolidated mineral	Fine unconsolidated	Sand	Very Coarse/Coarse Sand	Rippled sand with shell fragments and epifauna	N
041	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Fine/Very Fine Sand	Soft Bottom	N
043	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Medium Sand	Rippled Sand	N
044	Grab	Unconsolidated mineral	Fine unconsolidated	Sand	Very Coarse/Coarse Sand	Rippled sand with shell fragments and epifauna	N
045	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Fine Sand	Soft Bottom	N
046	Grab	Unconsolidated mineral	Fine unconsolidated	Sand	Fine Sand	Rippled sand with shells, shell fragments and epifauna	N
047	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Fine Sand	Soft Bottom	N
049	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Fine Sand	Soft Bottom	N
050	Grab	Unconsolidated mineral	Fine unconsolidated	Sand	Medium Sand	Rippled sand with shells, shell fragments and epifauna	N
051	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Fine Sand	Soft Bottom	N
053	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Fine Sand	Sand with dense worm tubes	N
054	Grab	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/Very Fine Sand	Rippled sand with shell fragments	N
054	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Fine Sand	Sand with worm tubes	N
055	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Fine Sand	Soft Bottom with worm tubes	N
057	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Fine Sand	Soft Bottom with worm tubes	N
058	Grab	Unconsolidated mineral	Fine unconsolidated	Sand	Fine Sand	Silt with epifauna	N

Station	Sample Type	Substrate Class	Substrate Subclass	Substrate Group	Substrate Subgroup	Habitat Type	Complex Habitat per NMFS 2020 (Y/N)
059	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Fine Sand	Soft Bottom	N
Lease Area (SPI/PV Stat	ions 061-120)						
061	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Bottom	N
062	Grab	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/Very Fine Sand	Silt with epifauna	N
064	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Bottom	N
065	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy Sand	NA	Silt with epifauna	N
067	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Bottom	N
068	Grab	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/Very Fine Sand	Silt with epifauna	N
070	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Bottom	N
071	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Bottom	N
072	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy Sand	NA	Silt with epifauna	N
073	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Bottom	N
074	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy Sand	NA	Silt with epifauna	N
074	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Bottom	N
075	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy Sand	NA	Silt with epifauna	N
077	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Bottom	N
078	Grab	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/Very Fine Sand	Silt with epifauna	N
078	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Bottom	N
080	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Bottom	N
081	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy Sand	NA	Silt with epifauna	N
082	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Bottom	N
083	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Bottom	N

Station	Sample Type	Substrate Class	Substrate Subclass	Substrate Group	Substrate Subgroup	Habitat Type	Complex Habitat per NMFS 2020 (Y/N)
084	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy Sand	NA	Silt with epifauna	N
084	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Bottom	N
086	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Bottom	N
087	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy Sand	NA	Silt with epifauna	N
088	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Bottom	N
090	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Bottom	N
097	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy Sand	NA	Silt with epifauna	N
098	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Muddy Sand	NA	Rippled Sand with Silt	N
099	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy Sand	NA	Silt with epifauna	N
100	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Bottom	N
102	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy Sand	NA	Silt with epifauna	N
102	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Bottom	N
103	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Bottom	N
105	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy Sand	NA	Silt with epifauna	N
106	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Bottom	N
107	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy Sand	NA	Silt with epifauna	N
109	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Bottom	N
113	Grab	Unconsolidated mineral	Coarse unconsolidated	Gravelly	Gravelly Muddy Sand	Silt with epifauna	Υ
114	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Bottom	N
115	Grab	Unconsolidated mineral	Coarse unconsolidated	Gravelly	Gravelly Muddy Sand	Silt with epifauna	Y
116	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Bottom	N
118	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Bottom	N

Station	Sample Type	Substrate Class	Substrate Subclass	Substrate Group	Substrate Subgroup	Habitat Type	Complex Habitat per NMFS 2020 (Y/N)
119	Grab	Unconsolidated mineral	Fine unconsolidated	Muddy Sand	NA	Silt	N
120	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Bottom	N
121	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Fine Sand	Sand with Organic Material	N
122	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sandy Mud	NA	Sand	N
123	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sandy Mud	NA	Soft Bottom	N
125	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Fine Sand	Soft Bottom	N
126	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Mud	NA	Soft Bottom	N
127	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Mud	NA	Soft Bottom	N
Northern Control Area (S	SPI/PV Stations C						
C01	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Medium Sand	Sand with Silt	N
C02	Grab	Unconsolidated mineral	Fine unconsolidated	Sand	Very Coarse/Coarse Sand	Silt with shell fragments and epifauna	N
C02	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Medium Sand	Sand	N
C03	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Medium Sand	Sand with Silt	N
C04	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Fine Sand	Sand	N
C05	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Fine Sand	Rippled Sand	N
Western Control Area (S	PI/PV Stations C	06-C10)					
C06	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Mud	NA	Soft Bottom	N
C07	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Mud	NA	Soft Bottom	N
C08	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Mud	NA	Soft Bottom	N
C09	Grab	Unconsolidated mineral	Coarse unconsolidated	Gravelly	Gravelly Muddy Sand	Silt with epifauna	Y
C09	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Mud	NA	Soft Bottom	N
C10	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Mud	NA	Soft Bottom	N

Station Eastern Control Area (\$	Sample Type	Substrate Class	Substrate Subclass	Substrate Group	Substrate Subgroup	Habitat Type	Complex Habitat per NMFS 2020 (Y/N)
C11	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Fine/Very Fine sand	Rippled Sand	N
C12	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Fine/Very Fine sand	Rippled Sand	N
C13	Grab	Unconsolidated mineral	Fine unconsolidated	Sand	Fine/Very Fine Sand	Silt with shell fragments and epifauna	N
C13	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Fine sand	Sand	N
C14	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Fine/Very Fine sand	Rippled Sand	N
C15	SPI/PV	Unconsolidated mineral	Fine Unconsolidated	Sand	Fine/Very Fine sand	Sand	N

Note:

CMECS classifications follow modifications of NMFS (NMFS, 2020).

ATTACHMENT 4 - Grain Size and Total Organic Carbon Analytical Data

Attachment 4a. Results of Grain Size Analysis on Grab Samples - Spring 2020

		USCS Grain Size (percent) ^(a)				Wentworth Grain	Size (percent) (a)	
Station	TOC (percent)	Total Gravel	Total Sand	Total Fines	Pebble	Granule	Sand	Silt + Clay
002	Not detected (ND	ND	97.20	2.80	0.7	1.4	97.6	0.3
002-DUP	ND	ND	98.00	2.00	0.6	1.1	97.7	0.6
006	ND	4.40	94.10	1.50	0.9	0.2	98.5	0.4
010	ND	ND	97.40	2.60	0.2	0.9	97.8	1.1
012	0.319	0.90	96.70	2.40	2.6	4.8	91	1.6
014	0.105	ND	96.10	3.90	0.1 U	0.8	96.5	2.7
014-DUP	0.108	ND	95.20	4.80	0.4	1.4	94.7	3.5
016	ND	ND	98.20	1.80	0.1 U	1	98	1
018	0.094	ND	96.40	3.60	0.1 U	0.1 U	96.3	3.7
020	0.064	2.40	95.80	1.80	0.1	0.4	97.3	2.2
022	ND	0.30	98.40	1.30	9.6	0.7	88.9	0.8
024	0.261	17.10	76.30	6.60	18.7	3.2	74.5	3.6
026	ND	76.70	22.50	0.80	88.5	3.6	7.8	0.1
028	1.030	48.30	47.50	4.20	33.6	12	52.7	1.7
030	ND	12.10	84.60	3.30	21.2	7	70.1	1.7
032	ND	0.70	96.00	3.30	1.6	5.6	92	0.8
034	ND	ND	95.70	4.30	0.1 U	0.1 U	99.2	0.8
036	0.079	ND	97.40	2.60	0.1 U	0.1 U	98.4	1.6
038	0.062	ND	97.10	2.90	0.1 U	0.1 U	98.3	1.7
040	0.057	10.20	86.60	3.20	0.1 U	1	98.1	0.9
042	0.069	ND	96.40	3.60	0.5	0.5	98.1	0.9
044	0.102	ND	95.90	4.10	0.1 U	0.2	98.9	0.9
046	0.059	ND	96.90	3.10	0.1 U	0.4	97.5	2.1
048	0.136	ND	84.30	15.70	0.1 U	1.4	86.4	12.2
050	0.071	ND	96.70	3.30	0.1 U	0.7	97.9	1.4
052	0.232	ND	86.80	13.20	0.1 U	0.1 U	92.3	7.7
054	0.361	ND	80.80	19.20	0.1 U	0.5	88.5	11
054-DUP	0.510	ND	81.40	18.60	0.1 U	0.6	86.4	13
056	0.380	ND	82.90	17.10	0.1 U	0.2	88.2	11.6

		USCS	Grain Size (per	cent) ^(a)	Wentworth Grain Size (percent) (a)				
Station	TOC (percent)	Total Gravel	Total Sand	Total Fines	Pebble	Granule	Sand	Silt + Clay	
058	0.428	ND	79.20	20.80	0.1	0.4	91.1	8.4	
060	0.261	ND	87.90	12.10	0.1	0.1	91.9	7.9	
062	0.315	0.50	83.40	16.10	0.1 U	0.1	88.9	11	
063	0.538	ND	77.80	22.20	0.1 U	0.1	84.8	15.1	
065	0.454	ND	82.30	17.70	0.1 U	0.2	88.2	11.6	
068	0.485	ND	86.70	13.30	0.2	0.1	87	12.7	
069	1.260	ND	78.30	21.70	0.1 U	0.7	80.6	18.7	
072	0.404	ND	82.40	17.60	0.1 U	0.4	84.4	15.2	
074	0.551	ND	77.70	22.30	0.1 U	0.3	80	19.7	
075	0.563	ND	77.70	22.30	0.1 U	0.5	82.1	17.4	
078	0.390	ND	85.40	14.60	0.1 U	0.1	89	10.9	
079	0.374	ND	85.10	14.90	0.1 U	0.1	85.6	14.3	
081	0.497	ND	83.00	17.00	0.1 U	0.3	86	13.7	
084	0.518	ND	71.50	28.50	0.1 U	0.2	80.7	19.1	
085	0.480	ND	71.60	28.40	0.1 U	0.5	78.1	21.4	
087	0.576	ND	70.20	29.80	0.1	1.2	75.7	23	
089	0.534	ND	80.90	19.10	0.1 U	0.1 U	79.8	20.2	
092	0.556	ND	67.10	32.90	0.1 U	0.5	74.2	25.3	
094	0.560	ND	75.30	24.70	0.1 U	0.1 U	81.4	18.6	
094-DUP	0.497	ND	71.10	28.90	0.1 U	0.2	76.6	23.2	
095	0.620	ND	73.60	26.40	0.1 U	0.2	78.7	21.1	
097	0.543	ND	71.20	28.80	0.1 U	0.3	77.2	22.5	
099	0.528	ND	75.60	24.40	0.1 U	0.4	83.9	15.7	
102	0.619	ND	71.00	29.00	0.1 U	0.7	75.4	23.9	
104	0.927	ND	57.80	42.20	0.1 U	1.8	67.6	30.6	
105	1.040	ND	56.50	43.50	0.1	1.2	59.5	39.2	
105-DUP	0.974	ND	56.30	43.70	0.1 U	0.4	63.2	36.4	
107	0.799	ND	54.90	45.10	0.1 U	1.3	66.7	32	
110	0.769	ND	67.70	32.30	0.1 U	0.8	67	32.2	
112	1.080	ND	45.90	54.10	0.1 U	1.4	61.3	37.3	
113	1.260	ND	53.80	46.20	0.1 U	1.5	60.8	37.7	

		USCS Grain Size (percent) ^(a) Wentworth Grain Size (percent) ^(a)						
Station	TOC (percent)	Total Gravel	Total Sand	Total Fines	Pebble	Granule	Sand	Silt + Clay
113-DUP	1.340	ND	56.80	43.20	0.1 U	0.9	58.3	40.8
115	0.941	ND	57.20	42.80	0.1 U	0.1	58	41.9
118	1.010	ND	48.40	51.60	0.1 U	1.5	55.8	42.7
119	0.800	ND	49.70	50.30	0.1 U	1.2	54.5	44.3
C02	ND	ND	97.40	2.60	0.1 U	0.8	98.1	1.1
C02-DUP	ND	ND	98.70	1.30	0.1 U	0.9	97.7	1.4
C09	1.250	ND	46.40	53.60	0.1 U	0.8	53.1	46.1
C13	0.177	ND	96.10	3.90	3.8	1.7	91.3	3.2

Note:

(a) USCS grainsize analysis performed specifically to collect #200 sieve size as percent fines to support Massachusetts Section 106 permit filing. Wentworth grainsize analysis performed to support the Folk characterization and CMECS classification of substrates.

Attachment 4b. Results of Grain Size Analysis on Grab Samples - Summer 2020

	TOC	USCS	Grain Size (per	rcent) ^(a)	Wentworth Grain Size (percent) (a)			
Station	(percent)	Total Gravel	Total Sand	Total Fines	Pebble	Granule	Sand	Silt + Clay
003	0.15	70.1	29.1	0.8	35.6	7	55.3	2.1
006	Not detected							
	(ND)	0.5	97.8	1.7	0.6	1.5	95.9	2
006-DUP	0.078	55.6	43.3	1.1	0.8	1.2	96.7	1.3
007	0.429	3	83.4	13.6	56.7	4.6	37.8	0.9
800	0.055	25	72	3	8.9	4.2	84.1	2.8
008 reanalysis		21	75.6	3.4	Not analyzed (NA)	NA	NA	NA
008 reanalysis-DUP		0.1	98.3	1.6	NA	NA	NA	NA
010	ND	0.2	97.3	2.5	ND	0.8	97.8	1.4
012	0.083	0.4	95.4	4.2	ND	0.6	97.5	1.9
014	0.1	55.6	43.3	1.1	1.1	1.9	94.6	2.4
014-DUP	0.634	NA	NA	NA	0.3	1.1	95.2	3.4
016	ND	0.5	98	1.5	0.1	1.6	96.4	1.9
018	0.116	0.1	94.9	5	ND	0.7	95.5	3.8
019	2.38	NA	NA	NA	40.8	10.9	37.3	11
030	0.053	0.2	98.9	0.9	0.1	0.8	97.5	1.6
032	ND	0.4	98.1	1.5	0.8	3.4	94.5	1.3
034	0.061	ND	98.7	1.3	ND	0.2	96.8	3
036	ND	ND	97.9	2.1	ND	0.1	97	2.9
038	0.077	NA	NA	NA	ND	0.1	97.3	2.6
040	0.078	NA	NA	NA	0.1	0.3	98.3	1.3
040-DUP	0.051	NA	NA	NA	ND	0.3	97.6	2.1
044	0.076	NA	NA	NA	ND	ND	97.5	2.5
046	0.346	NA	NA	NA	ND	0.1	92.3	7.6
050	0.087	NA	NA	NA	ND	0.1	97.9	2
054	0.718	NA	NA	NA	0.1	0.3	90	9.6
058	0.279	NA	NA	NA	ND	0.1	91.9	8
062	0.327	NA	NA	NA	0.5	0.9	90.8	7.8
065	0.474	NA	NA	NA	0.4	1	86.4	12.2

	TOC	USCS Grain Size (percent)(a)			Wentworth Grain Size (percent) (a)			
Station	(percent)	Total Gravel	Total Sand	Total Fines	Pebble	Granule	Sand	Silt + Clay
068	0.423	NA	NA	NA	ND	0.3	90.8	8.9
072	0.662	NA	NA	NA	0.3	0.8	84.1	14.8
074	0.693	NA	NA	NA	0.1	1	82.4	16.5
075	0.544	NA	NA	NA	0.1	0.7	84.5	14.7
078	0.556	NA	NA	NA	ND	0.1	90.3	9.6
081	0.676	NA	NA	NA	ND	0.4	89.6	10
084	0.587	NA	NA	NA	0.5	2.3	57.5	39.7
087	0.557	NA	NA	NA	0.1	1.6	82.3	16
097	0.668	NA	NA	NA	0.6	2.1	81.5	15.8
099	0.56	NA	NA	NA	ND	0.4	85.8	13.8
099-DUP	0.521	NA	NA	NA	ND	0.2	88.4	11.4
102	0.822	NA	NA	NA	0.2	1.1	79.7	19
105	1.13	NA	NA	NA	1.3	2.7	62.7	33.3
107	0.807	NA	NA	NA	0.2	1.8	75	23
113	1.15	NA	NA	NA	1.9	3.9	56.2	38
113-DUP	1.08	NA	NA	NA	1.1	6.3	60.9	31.7
115	1.12	NA	NA	NA	0.5	4.8	66.3	28.4
119	0.994	NA	NA	NA	0.2	2.4	55.4	42
124	0.51	NA	NA	NA	0.9	4.2	61.5	33.4
C02	0.077	NA	NA	NA	ND	0.5	97.5	2
C09	1.09	NA	NA	NA	2	5.6	59	33.4
C13	0.192	NA	NA	NA	0.4	0.3	96.5	2.8

Note:

(a) USCS grainsize analysis performed specifically to collect #200 sieve size as percent fines to support Massachusetts Section 106 permit filing. Wentworth grainsize analysis performed to support the Folk characterization and CMECS classification of substrates.

ATTACHMENT 5 - CMECS Biotic Classification – Epifauna

Attachment 5a. CMECS Biotic Classifications Spring 2020 - Epifauna

		CMECS Biotic Classifications					
Otation ID	Sample Type ⁽¹⁾	Dietie Oubelese	Co-occurring Biotic	Pietie Coore	On accoming Biotic Occurs		
Station ID Northern Export	Cable Corridor (S	Biotic Subclass	Subclass	Biotic Group	Co-occurring Biotic Group		
Northern Export	Cable Corridor (5						
001	SPI/PV (2)	Soft Sediment Fauna	Inferred Fauna	Soft Sediment Bryozoans	Attached Hydroids		
002	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediment	None		
002	Benthic Grab Cam	Soft Sediment Fauna	None	Diverse Soft Sediment Epifauna	None		
003	SPI/PV	Attached Fauna	Inferred Fauna	Attached Sponges	Sea Urchin Bed		
004	Benthic Grab Cam	Attached Fauna	Soft Sediment Fauna	Diverse Colonizers	Mobile Crustaceans on Soft Sediment		
005	SPI/PV	Attached Fauna	Inferred Fauna	Attached Sponges	Sea Urchin Bed		
006	Benthic Grab Cam	None	None	None	None		
007	SPI/PV	Attached Fauna	Inferred Fauna	Attached Bryozoans	Attached Sponges		
008	Benthic Grab Cam	Mollusk Reef Biota	Attached Fauna	Gastropod Reef	Diverse Colonizers		
009	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Diverse Soft Sediment Epifauna	Barnacles		
010	Benthic Grab Cam	Attached Fauna	None	Barnacles	None		
011	SPI/PV	Mollusk Reef Biota	none	Gastropod Reef (Crepidula)	Mobile Crustaceans on Mixed Substrate		
012	Benthic Grab Cam	Soft Sediment Fauna	Benthic Macroalgae	Larger Tube-Building Fauna	Leafy Algal Bed		
013	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Diverse Soft Sediment Epifauna	Mobile Mollusks on Soft Sediment		
014	Benthic Grab Cam	Soft Sediment Fauna	Benthic Macroalgae	Mobile Crustaceans on Soft Sediment	Leafy Algal Bed		

		CMECS Biotic Classifications						
Station ID	Sample Type ⁽¹⁾	Biotic Subclass	Co-occurring Biotic Subclass	Biotic Group	Co-occurring Biotic Group			
015	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Diverse Soft Sediment Epifauna	Soft Sediment Bryozoans			
016	Benthic Grab Cam	Soft Sediment Fauna	Benthic Macroalgae	Mobile Mollusks on Soft Sediment	Leafy Algal Bed			
017	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Mobile Mollusks on Soft Sediment	Tracks and Trails			
018	Benthic Grab Cam	None	None	None	None			
019	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediment	Tracks and Trails			
020	Benthic Grab Cam	None	None	None	None			
021	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Diverse Soft Sediment Epifauna	Soft Sediment Bryozoans			
022	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediment			
022	Benthic Grab Cam	Attached Fauna	Benthic Macroalgae	Sessile Gastropods	Leafy Algal Bed			
023	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	None			
024	Benthic Grab Cam	Attached Fauna	Attached Fauna	Diverse Colonizers	Mobile Crustaceans on Mixed Substrates			
CP1	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Diverse Soft Sediment Epifauna	Tracks and Trails			
CP2	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	None			
025	SPI/PV	Attached Fauna	Inferred Fauna	Attached Bryozoans	Attached Hydroids			
026	Benthic Grab Cam	Attached Fauna	Benthic Macroalgae	Sessile Gastropods	Leafy Algal Bed			
027	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Mobile Mollusks on Soft Sediment	Mobile Crustaceans on Soft Sediment			

				CMECS Biotic Classifications	
Station ID	Sample Type ⁽¹⁾	Biotic Subclass	Co-occurring Biotic Subclass	Biotic Group	Co-occurring Biotic Group
028	Benthic Grab Cam	Attached Fauna	Attached Fauna	Sessile Gastropods	Attached Sponges
029	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	None
030	Benthic Grab Cam	Benthic Grab Cam	Attached Fauna	Mobile Mollusks on Mixed Substrate	Leafy Algal Bed
Southern Expor	t Cable Corridor (S	tations 031-060)			
031	SPI/PV	Soft Sediment Fauna	Inferred Fauna	None	None
032	Benthic Grab Cam	None	None	None	None
033	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	None
034	Benthic Grab Cam	None	None	None	None
035	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Larger Tube-Building Fauna
036	Benthic Grab Cam	None	None	None	None
037	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Burrowing Anemones	Tracks and Trails
038	Benthic Grab Cam	None	None	None	None
039	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Tracks and Trails
040	Benthic Grab Cam	Soft Sediment Fauna	None	Mobile Mollusks on Soft Sediment	None
041	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Burrowing Anemones	Tracks and Trails
042	Benthic Grab Cam	None	None	None	None

		CMECS Biotic Classifications			
Station ID	Sample Type ⁽¹⁾	Biotic Subclass	Co-occurring Biotic Subclass	Biotic Group	Co-occurring Biotic Group
043	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Mobile Mollusks on Soft Sediment	Burrowing Anemones
044	Benthic Grab Cam	None	None	None	None
045	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediment	Larger Tube-Building Fauna
046	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediment
047	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Tracks and Trails
048	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
049	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
050	Benthic Grab Cam	Soft Sediment Fauna	None	Sand Dollar Bed	None
051	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Tracks and Trails
052	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediment
053	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediment
054	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediment	Larger Tube-Building Fauna
054	Benthic Grab Cam	None	None	None	None
055	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	None
056	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	None	None
057	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	None

		CMECS Biotic Classifications				
Station ID	Sample Type ⁽¹⁾	Biotic Subclass	Co-occurring Biotic Subclass	Biotic Group	Co-occurring Biotic Group	
058	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediment	
059	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	None	
060	Benthic Grab Cam	Soft Sediment Fauna	None	Larger Tube-Building Fauna	None	
Lease Area (Sta	tions 061-120)					
061	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediment	
062	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediment	
063	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediment	
064	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Larger Tube-Building Fauna	
065	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediment	
066	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Large Tube-Building Fauna	Tracks and Trails	
067	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Tracks and Trails	
068	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediment	
069	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediment	
070	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Larger Tube-Building Fauna	
071	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Mobile Mollusks on Soft Sediment	
072	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Clam Bed	

		CMECS Biotic Classifications				
Station ID	Sample Type ⁽¹⁾	Biotic Subclass	Co-occurring Biotic Subclass	Biotic Group	Co-occurring Biotic Group	
073	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Larger Tube-Building Fauna	
074	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Larger Tube-Building Fauna	
074	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediment	
075	Benthic Grab Cam	Soft Sediment Fauna	None	Larger Tube-Building Fauna	None	
076	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Larger Tube-Building Fauna	
077	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Larger Tube-Building Fauna	
078	Benthic Grab Cam	Soft Sediment Fauna	None	Larger Tube-Building Fauna	None	
079	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediment	
080	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Larger Tube-Building Fauna	
081	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediment	
082	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Tracks and Trails	
083	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Larger Tube-Building Fauna	
084	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Larger Tube-Building Fauna	
084	Benthic Grab Cam	Soft Sediment Fauna	None	Larger Tube-Building Fauna	None	
085	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediment	
086	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Larger Tube-Building Fauna	

				CMECS Biotic Classifications	
Station ID	Sample Type ⁽¹⁾	Biotic Subclass	Co-occurring Biotic Subclass	Biotic Group	Co-occurring Biotic Group
087	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediment
088	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Larger Tube-Building Fauna
089	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediment
090	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Larger Tube-Building Fauna
091	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Larger Tube-Building Fauna
092	Benthic Grab Cam	Soft Sediment Fauna	None	Larger Tube-Building Fauna	None
093	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Larger Tube-Building Fauna
094	Benthic Grab Cam	Soft Sediment Fauna	None	Larger Tube-Building Fauna	None
095	Benthic Grab Cam	Soft Sediment Fauna	None	Larger Tube-Building Fauna	None
096	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Larger Tube-Building Fauna
097	Benthic Grab Cam	Soft Sediment Fauna	None	Larger Tube-Building Fauna	None
098	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Mobile Crustaceans on Soft Sediment
099	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediment
100	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Larger Tube-Building Fauna
101	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Tracks and Trails
102	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Mobile Mollusks on Soft Sediment

				CMECS Biotic Classifications	
Station ID	Sample Type ⁽¹⁾	Biotic Subclass	Co-occurring Biotic Subclass	Biotic Group	Co-occurring Biotic Group
102	Benthic Grab Cam	Soft Sediment Fauna	None	Larger Tube-Building Fauna	None
103	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Larger Tube-Building Fauna
104	Benthic Grab Cam	Soft Sediment Fauna	None	Larger Tube-Building Fauna	None
105	Benthic Grab Cam	Soft Sediment Fauna	None	Larger Tube-Building Fauna	None
106	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Mobile Mollusks on Soft Sediment
107	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Burrowing Anemones
108	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Burrowing Anemones	Tracks and Trails
109	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Larger Tube-Building Fauna
110	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Burrowing Anemones
111	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Larger Tube-Building Fauna
112	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediment
113	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Soft Sediment Bryozoans	Larger Tube-Building Fauna
114	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Burrowing Anemones
115	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Soft Sediment Bryozoans	Larger Tube-Building Fauna
116	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Larger Tube-Building Fauna
117	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Larger Tube-Building Fauna

		CMECS Biotic Classifications						
Station ID	Sample Type ⁽¹⁾	Biotic Subclass	Co-occurring Biotic Subclass	Biotic Group	Co-occurring Biotic Group			
118	Benthic Grab Cam	None	None	None	None			
119	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Soft Sediment Bryozoans	Larger Tube-Building Fauna			
120	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Larger Tube-Building Fauna			
Northern Contro	ol Area (Stations Co)1-C05)						
C01	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Burrowing Anemones			
C02	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Mobile Mollusks on Soft Sediment			
C02	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediment			
C03	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Mobile Mollusks on Soft Sediment			
C04	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Burrowing Anemones			
C05	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Burrowing Anemones			
Western Contro	I Area (Stations C0	6-C10)						
C06	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Soft Sediment Brittle Stars	Small Tube-Building Fauna			
C07	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Soft Sediment Brittle Stars	Burrowing Anemones			
C08	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Soft Sediment Brittle Stars	Burrowing Anemones			
C09	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Soft Sediment Brittle Stars	Burrowing Anemones			
C09	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Soft Sediment Bryozoans			
C10	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Soft Sediment Brittle Stars	Burrowing Anemones			

			CMECS Biotic Classifications				
Station ID	Sample Type ⁽¹⁾	Biotic Subclass	Co-occurring Biotic Subclass	Biotic Group	Co-occurring Biotic Group		
Eastern Control	Area (Stations C1	1-C15)					
C11	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Tracks and Trails	Small Tube-Building Fauna		
C12	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Sand Dollar Bed	Small Tube-Building Fauna		
C13	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Sand Dollar Bed	Tracks and Trails		
C13	Benthic Grab	Soft Sediment Fauna	Soft Sediment Fauna	Sand Dollar Bed	Mobile Crustaceans on Soft Sediment		
C14	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Sand Dollar Bed	Tracks and Trails		
C15	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Sand Dollar Bed	Tracks and Trails		

Notes:

⁽¹⁾ CMECS Biotic Classifications from SPI/PV images and benthic grab sample and video data.(2) SPI/PV images collected and analyzed in triplicate. Only data from one image shown. The full data set is provided in Attachment 3.

Attachment 5b. CMECS Biotic Classifications Summer 2020 - Epifauna

		CMECS Biotic Classifications						
	Sample		Co-occurring Biotic					
Station ID	Type (1)	Biotic Subclass	Subclass	Biotic Group	Co-occurring Biotic Group			
-	Cable Corridor (S	•						
001	SPI/PV (2)	Attached Fauna	Attached Fauna	Attached Sponges	Attached Bryozoans			
002	SPI/PV	Attached Fauna	Attached Fauna	Barnacles	None			
002	SPI/PV	Attached Fauna	None	Barnacles	None			
002	SPI/PV	Attached Fauna	None	Diverse Colonizers	None			
002	SPI/PV	Attached Fauna	None	Diverse Colonizers	None			
002	SPI/PV	Attached Fauna	None	Mobile Crustaceans on Mixed Substrate	None			
002	SPI/PV	Inferred Fauna	None	Tracks and Trails	Attached Bryozoans			
002	SPI/PV	Inferred Fauna	Attached Fauna	Tracks and Trails	None			
002	SPI/PV	Attached Fauna	None	Attached Tunicates	Barnacles			
002	SPI/PV	Attached Fauna	Attached Fauna	Attached Sponges	Larger Tube-Building Fauna			
003	SPI/PV	Attached Fauna	Attached Fauna	Mussel Reef	Attached Sea Urchins			
003	Benthic Grab Cam	Attached Fauna	Soft Sediment Fauna	Diverse Colonizers	Sea Urchin Bed			
004	SPI/PV	Attached Fauna	None	Diverse Colonizers	None			
005	SPI/PV	Attached Fauna	Attached Fauna	Diverse Colonizers	Mobile Crustaceans on Hard or Mixed Substrates			
005	SPI/PV	Attached Fauna	Attached Fauna	Diverse Colonizers	Chitons			
005	SPI/PV	Attached Fauna	Attached Fauna	Diverse Colonizers	Chitons			
005	SPI/PV	Attached Fauna	Attached Fauna	Diverse Colonizers	Chitons			
005	SPI/PV	Attached Fauna	Attached Fauna	Diverse Colonizers	Mobile Mollusks on Hard or Mixed Substrates			
005	SPI/PV	Attached Fauna	Attached Fauna	Diverse Colonizers	Chitons			
005	SPI/PV	Attached Fauna	Attached Fauna	Diverse Colonizers	Mobile Mollusks on Hard or Mixed Substrates			
005	SPI/PV	Attached Fauna	Attached Fauna	Diverse Colonizers	Mobile Mollusks on Hard or Mixed Substrates			
005	SPI/PV	Attached Fauna	Attached Fauna	Diverse Colonizers	Mobile Mollusks on Hard or Mixed Substrates			

				CIVIECS BIOLIC CIASSIFICATIONS	
Station ID	Sample Type ⁽¹⁾	Biotic Subclass	Co-occurring Biotic Subclass	Biotic Group	Co-occurring Biotic Group
006	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediment	Mobile Mollusks on Soft Sediment
007	SPI/PV	Attached Fauna	Attached Fauna	Diverse Colonizers	Barnacles
007	Benthic Grab Cam	Attached Fauna	Benthic Macroalgae	Diverse Colonizers	Leathery/Leafy Algal Bed
008	Benthic Grab Cam	Mollusk Reef Biota	Attached Fauna	Gastropod Reef	Diverse Colonizers
009	SPI/PV	Mollusk Reef Biota	Attached Fauna	Gastropod Reef	Barnacles
010	Benthic Grab Cam	None	None	None	None
011	SPI/PV	Mollusk Reef Biota	Attached Fauna	Gastropod Reef	Barnacles
012	Benthic Grab Cam	Benthic Macroalgae	None	Leafy Algal Bed	None
013	SPI/PV	Soft Sediment Fauna	Attached Fauna	Mobile Crustaceans on Soft Sediment	Attached Bryozoans
014	Benthic Grab Cam	Benthic Macroalgae	None	Leafy Algal Bed	None
015	SPI/PV	Mollusk Reef Biota	Attached Fauna	Gastropod Reef	Attached Sponges
015	SPI/PV	Mollusk Reef Biota	Attached Fauna	Gastropod Reef	Barnacles
015	SPI/PV	Soft Sediment Fauna	Attached Fauna	Mobile Mollusks on Soft Sediment	Attached Bryozoans
015	SPI/PV	Attached Fauna	Attached Fauna	Attached Bryozoans	Mobile Mollusks on Mixed Substrate
015	SPI/PV	Attached Fauna	Attached Fauna	Diverse Colonizers	Attached Bryozoans
015	SPI/PV	Inferred Fauna	None	Tracks and Trails	None
015	SPI/PV	Soft Sediment Fauna	None	Mobile Crustaceans on Soft Sediment	None
015	SPI/PV	Soft Sediment Fauna	None	Mobile Crustaceans on Soft Sediment	None

		CMECS Blotte Classifications				
Station ID	Sample Type ⁽¹⁾	Biotic Subclass	Co-occurring Biotic Subclass	Biotic Group	Co-occurring Biotic Group	
015	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediment	Tracks and Trails	
016	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Mobile Mollusks on Soft Sediment	Larger Tube-Building Fauna	
017	SPI/PV	Attached Fauna	Soft Sediment Fauna	Attached Bryozoans	Mobile Mollusks on Soft Sediment	
018	Benthic Grab Cam	Soft Sediment Fauna		Mobile Crustaceans on Soft Sediment	Mobile Mollusks on Soft Sediment	
019	SPI/PV	Mollusk Reef Biota	Attached Fauna	Gastropod Reef	Barnacles	
019	Benthic Grab Cam	Mollusk Reef Biota	Attached Fauna	Gastropod Reef	Diverse Colonizers	
020	SPI/PV	Soft Sediment Fauna	Soft Sediment Fauna	Small Tube-Building Fauna	Mobile Crustaceans on Soft Sediment	
021	SPI/PV	Attached Fauna	Soft Sediment Fauna	Attached Bryozoans	Mobile Crustaceans on Soft Sediment	
022	SPI/PV	Attached Fauna	Inferred Fauna	Attached Bryozoans	Tracks and Trails	
023	SPI/PV	Inferred Fauna	None	Tracks and Trails	None	
024	SPI/PV	Inferred Fauna	None	Tracks and Trails	None	
024	SPI/PV	Inferred Fauna	None	Tracks and Trails	None	
024	SPI/PV	Attached Fauna	Inferred Fauna	Attached Hydroids	Tracks and Trails	
024	SPI/PV	Attached Fauna	Attached Fauna	Attached Sponges	Attached Bryozoans	
024	SPI/PV	Attached Fauna	Soft Sediment Fauna	Diverse Colonizers	Mobile Mollusks on Soft Sediments	
024	SPI/PV	Soft Sediment Fauna	Attached Fauna	Larger Tube-Building Fauna	Diverse Colonizers	
024	SPI/PV	Attached Fauna	None	Diverse Colonizers	None	
024	SPI/PV	Attached Fauna	Attached Fauna	Attached Bryozoans	Barnacles	
024	SPI/PV	Attached Fauna	Attached Fauna	Attached Bryozoans	Barnacles	
025	SPI/PV	Attached Fauna	Attached Fauna	Attached Sponges	Barnacles	
026	SPI/PV	Attached Fauna	Attached Fauna	Attached Bryozoans	Barnacles	
027	SPI/PV	Attached Fauna	Inferred Fauna	Attached Bryozoans	Tracks and Trails	
028	SPI/PV	Attached Fauna	Attached Fauna	Attached Sponges	Barnacles	

Station ID	Sample Type ⁽¹⁾	Biotic Subclass	Co-occurring Biotic Subclass	Biotic Group	Co-occurring Biotic Group
029	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediment	Tracks and Trails
030	Benthic Grab Cam	None	None	None	None
CP2	SPI/PV	Inferred Fauna	None	Tracks and Trails	None
Southern Export	t Cable Corridor (S	ations 031-060)			
031	SPI/PV	Inferred Fauna	None	Tracks and Trails	None
032	Benthic Grab Cam	None	None	None	None
033	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediment	Tracks and Trails
034	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Mobile Mollusks on Soft Sediment	Larger Tube-Building Fauna
035	SPI/PV	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediment
036	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Mobile Mollusks on Soft Sediment	Small Tube-Building Fauna
037	SPI/PV	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediment
038	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Small Tube-Building Fauna	Mobile Crustaceans on Soft Sediment
039	SPI/PV	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Burrowing Anemones
040	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Small Tube-Building Fauna	Mobile Mollusks on Soft Sediment
041	SPI/PV	Soft Sediment Fauna	Soft Sediment Fauna	Burrowing Anemones	Mobile Crustaceans on Soft Sediment
043	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Mobile Mollusks on Soft Sediment	Tracks and Trails
044	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Mobile Mollusks on Soft Sediment	Burrowing Anemones

				CWIECS BIOTIC Classifications	
Station ID	Sample Type ⁽¹⁾	Biotic Subclass	Co-occurring Biotic Subclass	Biotic Group	Co-occurring Biotic Group
045	SPI/PV	Soft Sediment Fauna	Soft Sediment Fauna	Sand Dollar Bed	Mobile Mollusks on Soft Sediment
046	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Small Tube-Building Fauna	Mobile Mollusks on Soft Sediment
047	SPI/PV	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediment
049	SPI/PV	Soft Sediment Fauna	Soft Sediment Fauna	Sand Dollar Bed	Larger Tube-Building Fauna
050	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Small Tube-Building Fauna	Sand Dollar Bed
051	SPI/PV	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediment
053	SPI/PV	Soft Sediment Fauna	Soft Sediment Fauna	Small Tube-Building Fauna	Mobile Crustaceans on Soft Sediment
054	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Tracks and Trails
054	Benthic Grab Cam	None	None	None	None
055	SPI/PV	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediment
057	SPI/PV	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediment
058	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediment
059	SPI/PV	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediment
124	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediment
124	SPI/PV	Inferred Fauna	Soft Sediment Fauna	Tracks and Trails	Mobile Mollusks on Soft Sediment
124	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Larger Deep-Burrowing Fauna	Tracks and Trails

				CIVIECS BIOLIC CIASSIFICATIONS	
Station ID	Sample Type ⁽¹⁾	Biotic Subclass	Co-occurring Biotic Subclass	Biotic Group	Co-occurring Biotic Group
124	SPI/PV	Soft Sediment Fauna	Soft Sediment Fauna	Larger Deep-Burrowing Fauna	Small Tube-Building Fauna
124	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Tracks and Trails
124	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Tracks and Trails
124	SPI/PV	Inferred Fauna	Soft Sediment Fauna	Tracks and Trails	Mobile Crustaceans on Soft Sediment
124	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Tracks and Trails
124	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Tracks and Trails
124	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Tracks and Trails
Lease Area (Sta	tions 061-120)				
061	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediment	Tracks and Trails
062	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediment
064	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Tracks and Trails
065	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediment
067	SPI/PV	Soft Sediment Fauna	Soft Sediment Fauna	Larger Deep-Burrowing Fauna	Larger Tube-Building Fauna
068	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediment
070	SPI/PV	Soft Sediment Fauna	Soft Sediment Fauna	Larger Deep-Burrowing Fauna	Tracks and Trails
071	SPI/PV	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Small Tube-Building Fauna
072	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Clam Bed

				CMECS Blotic Classifications	
Station ID	Sample Type ⁽¹⁾	Biotic Subclass	Co-occurring Biotic Subclass	Biotic Group	Co-occurring Biotic Group
073	SPI/PV	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Clam Bed
074	SPI/PV	Soft Sediment Fauna	Soft Sediment Fauna	Larger Deep-Burrowing Fauna	Clam Bed
074	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediment
075	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Larger Deep-Burrowing Fauna	Mobile Mollusks on Soft Sediment
077	SPI/PV	Soft Sediment Fauna	Soft Sediment Fauna	Small Tube-Building Fauna	Larger Deep-Burrowing Fauna
078	SPI/PV	Soft Sediment Fauna	Soft Sediment Fauna	Small Tube-Building Fauna	Mobile Mollusks on Soft Sediment
078	Benthic Grab	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediment
080	SPI/PV	Soft Sediment Fauna	Soft Sediment Fauna	Small Tube-Building Fauna	Clam Bed
081	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediment
082	SPI/PV	Soft Sediment Fauna	Soft Sediment Fauna	Clam Bed	Larger Deep-Burrowing Fauna
083	SPI/PV	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Larger Deep-Burrowing Fauna
084	SPI/PV	Soft Sediment Fauna	Soft Sediment Fauna	Larger Deep-Burrowing Fauna	Small Tube-Building Fauna
084	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediment
086	SPI/PV	Soft Sediment Fauna	Soft Sediment Fauna	Small Tube-Building Fauna	Larger Deep-Burrowing Fauna
087	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediment
088	SPI/PV	Soft Sediment Fauna	Soft Sediment Fauna	Small Tube-Building Fauna	Larger Tube-Building Fauna
·				· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·

		CMECS BIOTIC Classifications			
Station ID	Sample Type ⁽¹⁾	Biotic Subclass	Co-occurring Biotic Subclass	Biotic Group	Co-occurring Biotic Group
090	SPI/PV	Soft Sediment Fauna	Soft Sediment Fauna	Larger Deep-Burrowing Fauna	Small Tube-Building Fauna
097	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediment
098	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Larger Tube-Building Fauna	Tracks and Trails
099	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediment
100	SPI/PV	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Small Tube-Building Fauna
102	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Tracks and Trails
102	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediment
103	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Tracks and Trails
105	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediment
106	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediment	Tracks and Trails
107	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediment
109	SPI/PV	Soft Sediment Fauna	Soft Sediment Fauna	Soft Sediment Brittle Stars	Burrowing Anemones
113	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Starfish Bed
114	SPI/PV	Soft Sediment Fauna	Soft Sediment Fauna	Small Tube-Building Fauna	Mobile Crustaceans on Soft Sediment
115	Benthic Grab	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Starfish Bed
116	SPI/PV	Soft Sediment Fauna	Soft Sediment Fauna	Small Tube-Building Fauna	Mobile Crustaceans on Soft Sediment

				CIVIECS BIOLIC Classifications	
Station ID	Sample Type ⁽¹⁾	Biotic Subclass	Co-occurring Biotic Subclass	Biotic Group	Co-occurring Biotic Group
118	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediment	Tracks and Trails
119	Benthic Grab Cam	None	None	None	None
120	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Mobile Crustaceans on Soft Sediment	Tracks and Trails
121	SPI/PV	Inferred Fauna	None	Tracks and Trails	None
122	SPI/PV	Soft Sediment Fauna	Soft Sediment Fauna	Small Tube-Building Fauna	Larger Tube-Building Fauna
123	SPI/PV	Soft Sediment Fauna	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediment	Small Tube-Building Fauna
125	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Small Tube-Building Fauna	Tracks and Trails
126	SPI/PV	Inferred Fauna	Soft Sediment Fauna	Tracks and Trails	Mobile Crustaceans on Soft Sediment
127	SPI/PV	Inferred Fauna	Soft Sediment Fauna	Tracks and Trails	Mobile Crustaceans on Soft Sediment
Northern Contro	ol Area (Stations Co)1-C05)			
C01	SPI/PV	Soft Sediment Fauna	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediment	Mobile Mollusks on Soft Sediment
C02	SPI/PV	Soft Sediment Fauna	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediment	Mobile Crustaceans on Mixed Substrate
C02	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Small Tube-Building Fauna	Mobile Crustaceans on Soft Sediment
C03	SPI/PV	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediment
C04	SPI/PV	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Burrowing Anemones
C05	SPI/PV	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Mollusks on Soft Sediment
Western Contro	I Area (Stations C0	6-C10)			
C06	SPI/PV	Soft Sediment Fauna	Soft Sediment Fauna	Soft Sediment Brittle Stars	Small Tube-Building Fauna

Station ID	Sample Type ⁽¹⁾	Biotic Subclass	Co-occurring Biotic Subclass	Biotic Group	Co-occurring Biotic Group
C07	SPI/PV	Soft Sediment Fauna	Soft Sediment Fauna	Soft Sediment Brittle Stars	Small Tube-Building Fauna
C08	SPI/PV	Soft Sediment Fauna	Soft Sediment Fauna	Soft Sediment Brittle Stars	Small Tube-Building Fauna
C09	SPI/PV	Soft Sediment Fauna	Soft Sediment Fauna	Soft Sediment Brittle Stars	Small Tube-Building Fauna
C09	Benthic Grab Cam	Soft Sediment Fauna	Soft Sediment Fauna	Larger Tube-Building Fauna	Starfish Bed
C10	SPI/PV	Soft Sediment Fauna	Soft Sediment Fauna	Soft Sediment Brittle Stars	Small Tube-Building Fauna
astern Control	Area (Stations C1	1-C15)			
C11	SPI/PV	Soft Sediment Fauna	Soft Sediment Fauna	Sand Dollar Bed	Small Tube-Building Fauna
C12	SPI/PV	Soft Sediment Fauna	None	Sand Dollar Bed	None
C13	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Sand Dollar Bed	Tracks and Trails
C13	Benthic Grab Cam	Soft Sediment Fauna	None	Sand Dollar Bed	None
C14	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Sand Dollar Bed	Tracks and Trails
C15	SPI/PV	Soft Sediment Fauna	Inferred Fauna	Sand Dollar Bed	Tracks and Trails

Notes:

⁽¹⁾ CMECS Biotic Classifications from SPI/PV images and benthic grab sample and video data.

(2) SPI/PV images collected and analyzed in triplicate. Only data from one image shown. The full data set is provided in Attachment 1.

(3) None = No Epifauna observed in Grab Camera Video

ATTACHMENT 6 – CMECS Biotic Classification – Infauna

Attachment 6a. CMECS Biotic Classifications for Spring 2020 - Infauna

Station ID	Biotic Subclass	Biotic Group	Co-occurring Biotic Group	Biotic Community	Co-occurring Biotic Community
		te (Benthic Grab Sta			
002	Soft Sediment Fauna	Diverse Soft Sediment Epifauna	rab Stations 002-030) None	Sand Dollar/ Mobile Mollusk Bed	None
004	Attached Fauna, Soft Sediment Fauna	Diverse Colonizers	Small Surface- Burrowing Fauna	Mollusk/ Sponge/ Tunicate colonizers (large megafauna)	<i>Syllidae</i> bed
006	Soft Sediment Fauna	Small Surface- Burrowing Fauna	None	Phylodocidae Bed	None
008	Mollusk Reef Biota, Attached Fauna	Gastropod Reef	Barnacles	Crepidula Reef	Balanidae Communities
010	Attached Fauna, Soft Sediment Fauna	Diverse Colonizers	Mobile Mollusks on Soft Sediments	Anemone/ mussel/ bryozoa	Caecum Bed
012	Attached Fauna, Soft Sediment Fauna	Small Surface- Burrowing Fauna	Attached Tunicates	Spionidae Bed	Attached <i>Molgula</i>
014	Soft Sediment Fauna	Small Tube- Building Fauna	Clam Bed	Ampharetidae Bed	Ameritella Bed
016	Attached Fauna, Soft Sediment Fauna	Small Surface- Burrowing Fauna	Attached Tunicates	Terebellidae/ Opheliidae Bed	Attached <i>Molgula</i>
018	Soft Sediment Fauna	Small Surface- Burrowing Fauna	Clam bed	Capitellidae Bed	Ameritella Bed
020	Soft Sediment Fauna	Small Surface- Burrowing Fauna	Mobile Mollusks on Soft Sediments	Magelonidae Bed	Phoxocephalidae Bed
022	Soft Sediment Fauna	Small Surface- Burrowing Fauna	None	Syllidae Bed	Oligochaete Bed
024	Attached Fauna	Diverse Colonizers	Barnacles	Mollusk/ Sponge/ Tunicate colonizers (large megafuana)	Balanidae Communities
026	Attached Fauna, Soft Sediment Fauna	Barnacles	Mobile Crustaceans on Mixed Substrates	Balanidae Communities	Caprellid Communities
028	Soft Sediment Fauna	Mobile Mollusks on Soft Sediment	Small Surface- Burrowing Fauna	Astyris Bed	Terebellidae Bed
030	Attached Fauna	Attached Tunicate	None	Molgula Bed	None
Southern		•	rab Stations 032-060)		
032	Attached Fauna	Attached Tunicate	None	Attached Molgula	None
034	Soft Sediment Fauna	Small Surface- Burrowing Fauna	Diverse Soft Sediment Epifauna	Spionidae Bed	Sand Dollar/Sea Pansy/Mobile Mollusk Bed (Large Megafauna)
036	Soft Sediment Fauna	Large Deep- Burrowing Fauna	Mobile Crustaceans on Soft Sediments	Nephtyidae Bed	Haustoriid Bed
038	Soft Sediment Fauna	Small Surface- Burrowing Fauna	None	Oligochaeta Bed	None

Station ID	Biotic Subclass	Biotic Group	Co-occurring Biotic Group	Biotic Community	Co-occurring Biotic Community
040	Soft Sediment Fauna	Small Surface- Burrowing Fauna	None	Polygordius Bed	Paraonidae Bed
042	Soft Sediment Fauna	Small Surface- Burrowing Fauna	None	Paraonidae Bed	None
044	Soft Sediment Fauna	Small Surface- Burrowing Fauna	None	Polygordius Bed	None
046	Soft Sediment Fauna	Small Surface- Burrowing Fauna	None	Polygordius Bed	None
048	Soft Sediment Fauna	Small Surface- Burrowing Fauna	Clam Bed	Polygordius Bed	<i>Nucula</i> Bed
050	Soft Sediment Fauna	Small Surface- Burrowing Fauna	None	Polygordius Bed	None
052	Soft Sediment Fauna	Clam Bed	Small Surface- Burrowing Fauna	<i>Nucula</i> Bed	Oligochaete Bed
054	Soft Sediment Fauna	Clam Bed	Larger Tube-Building Fauna	<i>Nucula</i> Bed	Ampelisca Bed
056	Soft Sediment Fauna	Clam Bed	Larger Tube-Building Fauna	<i>Nucula</i> Bed	Ampelisca Bed
058	Soft Sediment Fauna	Clam Bed	Larger Tube-Building Fauna	<i>Nucula</i> Bed	<i>Ampelisca</i> Bed
060	Soft Sediment Fauna	Clam Bed	Small Surface- Burrowing Fauna	<i>Nucula</i> Bed	Oligochaete Bed
Mayflowe		a (Benthic Grab Stat			
062	Soft Sediment Fauna	Clam Bed	Small Surface- Burrowing Fauna	<i>Nucula</i> Bed	Cirratulidae Bed
063	Soft Sediment Fauna	Clam Bed	Larger Tube-Building Fauna	<i>Nucula</i> Bed	Ampelisca Bed
065	Soft Sediment Fauna	Clam Bed	Larger Tube-Building Fauna	<i>Nucula</i> Bed	Ampelisca Bed
068	Soft Sediment Fauna	Clam Bed	Larger Tube-Building Fauna	<i>Nucula</i> Bed	Ampelisca Bed
069	Soft Sediment Fauna	Clam Bed	Small Surface- Burrowing Fauna	<i>Nucula</i> Bed	Levinsenia Bed
072	Soft Sediment Fauna	Clam Bed	Small Surface- Burrowing Fauna	<i>Nucula</i> Bed	<i>Levinsenia</i> Bed
074	Soft Sediment Fauna	Clam Bed	Larger Tube-Building Fauna	<i>Nucula</i> Bed	<i>Ampelisca</i> Bed
075	Soft Sediment Fauna	Clam Bed	Larger Tube-Building Fauna	<i>Nucula</i> Bed	<i>Ampelisca</i> Bed
078	Soft Sediment Fauna	Larger Tube- Building Fauna	None	<i>Ampelisca</i> Bed	Corophium Bed
079	Soft Sediment Fauna	Larger Tube- Building Fauna	Clam Bed	<i>Ampelisca</i> Bed	<i>Nucula</i> Bed
081	Soft Sediment Fauna	Larger Tube- Building Fauna	Clam Bed	<i>Ampelisca</i> Bed	<i>Nucula</i> Bed
084	Soft Sediment Fauna	Larger Tube- Building Fauna	Clam Bed	<i>Ampelisca</i> Bed	<i>Nucula</i> Bed
085	Soft Sediment Fauna	Larger Tube- Building Fauna	Clam Bed	<i>Ampelisca</i> Bed	<i>Nucula</i> Bed
087	Soft Sediment Fauna	Larger Tube- Building Fauna	Clam Bed	<i>Ampelisca</i> Bed	<i>Nucula</i> Bed
089	Soft Sediment Fauna	Larger Tube- Building Fauna	Clam Bed	<i>Ampelisca</i> Bed	<i>Nucula</i> Bed
092	Soft Sediment Fauna	Small Surface- Burrowing Fauna	Larger Tube-Building Fauna	Paraonidae Bed	Ampelisca Bed
094	Soft Sediment Fauna	Larger Tube- Building Fauna	Clam Bed	Ampelisca Bed	<i>Nucula</i> Bed
095	Soft Sediment Fauna	Larger Tube- Building Fauna	Clam Bed	Ampelisca Bed	<i>Nucula</i> Bed

Station	Biotic		Co-occurring Biotic		Co-occurring Biotic
ID	Subclass	Biotic Group	Group	Biotic Community	Community
097	Soft Sediment Fauna	Larger Tube- Building Fauna	Clam Bed	<i>Ampelisca</i> Bed	<i>Nucula</i> Bed
099	Soft Sediment Fauna	Larger Tube- Building Fauna	None	Ampelisca Bed	Corophium Bed
102	Soft Sediment Fauna	Larger Tube- Building Fauna	Clam Bed	Ampelisca Bed	Nucula Bed
104	Soft Sediment Fauna	Larger Tube- Building Fauna	Small Surface- Burrowing Fauna	Ampelisca Bed	Levinsenia Bed
105	Soft Sediment Fauna	Larger Tube- Building Fauna	Small Surface- Burrowing Fauna	Ampelisca Bed	Levinsenia Bed
107	Soft Sediment Fauna	Larger Tube- Building Fauna	Small Surface- Burrowing Fauna	Ampelisca Bed	Levinsenia Bed
110	Soft Sediment Fauna	Larger Tube- Building Fauna	Small Surface- Burrowing Fauna	Ampelisca Bed	Levinsenia Bed
112	Soft Sediment Fauna	Larger Tube- Building Fauna	Small Surface- Burrowing Fauna	Ampelisca Bed	Levinsenia Bed
113	Soft Sediment Fauna	Larger Tube- Building Fauna	Small Surface- Burrowing Fauna	Ampelisca Bed	Levinsenia Bed
115	Soft Sediment Fauna	Larger Tube- Building Fauna	Small Surface- Burrowing Fauna	Ampelisca Bed	Levinsenia Bed
118	Soft Sediment Fauna	Small Surface- Burrowing Fauna	Small Surface- Burrowing Fauna	Paraonidae/ Cossuridae Bed	Levinsenia Bed
119	Soft Sediment Fauna	Small Surface- Burrowing Fauna	Larger Tube-Building Fauna	Cossuridae Bed	Ampelisca Bed
Mayflowe		rab Control Stations			
C02	Soft Sediment Fauna	Small Surface- Burrowing Fauna	Larger Deep- Burrowing Fauna	Paraonidae/ Polygordiidae Bed	Goniada Bed
C09	Soft Sediment Fauna	Small Surface- Burrowing Fauna	Small Tube-Building Fauna	Cossuridae/ Cirratulidae Bed	Sabella Bed
C13	Soft Sediment Fauna	Sand Dollar Bed	Small Surface- Burrowing Fauna	Echinarachnius Bed	Polygordius Bed

Attachment 6b. CMECS Biotic Classifications for Summer 2020 - Infauna

Station ID	Biotic Subclass	Biotic Group	Co-occurring Biotic Group	Biotic Community	Co-occurring Biotic Community
		te (Benthic Grab Stations 00			
Northern	· · · · · · · · · · · · · · · · · · ·	ole Route (Benthic Grab Statio	ns 002-030)		
003	Attached Fauna, Soft Sediment Fauna	Mobile Crustaceans on Hard or Mixed Substrates	Larger Tube-Building Fauna	Panopeus Communities	Ericthonius Bed
006	Soft Sediment Fauna, Attached Fauna	Mobile Mollusks on Soft Sediments	Attached Tunicates	Caecum Bed	Attached Molgula
007	Soft Sediment Fauna	Mobile Mollusks on Soft Sediments	Mobile Crustaceans on Hard or Mixed Substrates	Caecum Bed/ Astyris Bed	Caprellid Community
008	Soft Sediment Fauna	Small Surface-Burrowing Fauna	Mobile Mollusks on Hard or Mixed Substrates	Oligochaete Bed	Caecum Bed
010	Soft Sediment Fauna	Mobile Mollusks on Soft Sediments	Mobile Crustaceans on Soft Sediments	Caecum Bed	Tanaid Bed
012	Soft Sediment Fauna, Attached Fauna	Mobile Mollusks on Soft Sediments	Attached Tunicates	Caecum Bed	Attached Molgula
014	Soft Sediment Fauna	Mobile Mollusks on Soft Sediments	Small Tube-Building Fauna	Astyris Bed	Thin <i>Ampelisca</i> Bed
016	Soft Sediment Fauna	Mobile Mollusks on Soft Sediments	Clam Bed	Caecum Bed	<i>Spisula</i> Bed
018	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	None	Phoxocephalid Bed	None
019	Mollusk Reef Biota	Gastropod Reef	Mobile Mollusks on Hard or Mixed Substrates	Crepidula Reef	<i>Bittiolum</i> Bed
030	Soft Sediment Fauna, Attached Fauna	Small Surface Burrowing Fauna	Attached Tunicates	Syllidae Bed	Attached Molgula
Southern	Offshore Export Ca	ble Route (Benthic Grab Statio	ons 032-060 and 124)		
032	Soft Sediment Fauna	Clam Bed	Clam Bed	Periploma Bed	Spisula Bed
034	Soft Sediment Fauna	Mobile Crustaceans on Soft Sediments	Clam Bed	Tanaid/ Phoxocephalid Bed	<i>Spisula</i> Bed
036	Soft Sediment Fauna	Clam Bed	Larger Deep- Burrowing Fauna	Spisula Bed	Nephtys Bed
038	Soft Sediment Fauna	Clam Bed	Larger Deep- Burrowing Fauna	Spisula Bed	Nephtys Bed
040	Soft Sediment Fauna	Clam Bed	Mobile Crustaceans on Soft Sediments	<i>Nucula</i> Bed	Tanaid Bed
044	Soft Sediment Fauna	Small Surface-Burrowing Fauna	None	Polygordius Bed	None
046	Soft Sediment Fauna	Clam Bed	None	<i>Nucula</i> Bed	None
050	Soft Sediment Fauna	Larger Deep-Burrowing Fauna	Small Surface- Burrowing Fauna	Nephtys Bed	Lumbrinerid Bed
054	Soft Sediment Fauna	Clam Bed	Larger Tube-Building Fauna	<i>Nucula</i> Bed	Ampelisca Bed
058	Soft Sediment Fauna	Clam Bed	Larger Tube-Building Fauna	<i>Nucula</i> Bed	Ampelisca Bed
124	Soft Sediment Fauna	Clam Bed	None	<i>Nucula</i> Bed	None

Station	D. 4. 6. 1.	District.	Co-occurring Biotic	Biotic	Co-occurring Biotic
Mouflow	Biotic Subclass	Biotic Group	Group	Community	Community
Mayriow		a (Benthic Grab Stations 062	-119)		
062	Soft Sediment Fauna	Clam Bed	None	<i>Nucula</i> Bed	None
065	Soft Sediment Fauna	Clam Bed	Larger Tube-Building Fauna	<i>Nucula</i> Bed	Ampelisca Bed
068	Soft Sediment Fauna	Clam Bed	Larger Tube-Building Fauna	<i>Nucula</i> Bed	Ampelisca Bed
072	Soft Sediment Fauna	Larger Tube-Building Fauna	Clam Bed	Ampelisca Bed	<i>Nucula</i> Bed
074	Soft Sediment Fauna	Clam Bed	Larger Tube-Building Fauna	<i>Nucula</i> Bed	Ampelisca Bed
076	Soft Sediment Fauna	Clam Bed	Larger Tube-Building Fauna	<i>Nucula</i> Bed	Ampelisca Bed
078	Soft Sediment Fauna	Larger Tube-Building Fauna	Mobile Crustaceans on Soft Sediments	Ampelisca/ Leptocheirus Bed	Cumacean Bed
081	Soft Sediment Fauna	Larger Tube-Building Fauna	Clam Bed	Ampelisca/ Leptocheirus Bed	<i>Nucula</i> Bed
084	Soft Sediment Fauna	Larger Tube-Building Fauna	Clam Bed	Ampelisca Bed	<i>Nucula</i> Bed
087	Soft Sediment Fauna	Larger Tube-Building Fauna	Clam Bed	Ampelisca Bed	<i>Nucula</i> Bed
097	Soft Sediment Fauna	Larger Tube-Building Fauna	Clam Bed	Ampelisca Bed	<i>Nucula</i> Bed
099	Soft Sediment Fauna	Larger Tube-Building Fauna	Clam Bed	Ampelisca Bed	<i>Nucula</i> Bed
102	Soft Sediment Fauna	Larger Tube-Building Fauna	Clam Bed	Ampelisca Bed	<i>Nucula</i> Bed
105	Soft Sediment Fauna	Larger Tube-Building Fauna	Small Surface- Burrowing Fauna	Ampelisca Bed	Paraonidae Bed
107	Soft Sediment Fauna	Larger Tube-Building Fauna	Small Surface- Burrowing Fauna	Ampelisca Bed	Paraonidae Bed
113	Soft Sediment Fauna	Larger Tube-Building Fauna	Small Surface- Burrowing Fauna	Ampelisca Bed	Paraonidae Bed
115	Soft Sediment Fauna	Larger Tube-Building Fauna	Small Surface- Burrowing Fauna	Ampelisca Bed	Paraonidae Bed
119	Soft Sediment Fauna	Small Surface-Burrowing Fauna	None	Cossuridae Bed	None
Mayflow	er Wind Benthic G	rab Control Stations	•		
C02	Soft Sediment Fauna	Larger Tube-Building Fauna	Small Surface- Burrowing Fauna	Nephtys Bed	Paraonidae Bed
C09	Soft Sediment Fauna	Small Surface Burrowing Fauna	Small Tube-Building Fauna	Cossuridae Bed	Oweniidae Bed
C13	Soft Sediment Fauna	Clam Bed	Small Surface Burrowing Fauna	<i>Nucula</i> Bed	Oligochaete Bed

ATTACHMENT 7 - Benthic Laboratory Report and Community Structure Analysis - Spring and Summer, 2020



Attachment 7. Benthic Laboratory Report and Community Structure Analysis – Spring and Summer, 2020

Prepared by:

9 Jonathan Bourne Drive Pocasset, MA 02559

November 2020

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Acronyms and Abbreviations

Abbreviation or Acronym	Definition
CMECS	Coastal and Marine Ecological Classification Standard
COP	Construction and Operations Plan
ECC	export cable corridor
Fugro	Fugro Marine USA, Inc.
IF	interface feeder
m ²	square meter
μm	micron
Lease Area	Lease area OCS-A 0521
Mayflower Wind	Mayflower Wind Energy LLC
MDS	multidimensional scaling
N/A	not applicable
ocs	Outer Continental Shelf
OS	omnivore/scavenger
P	predator
PV	plan view
RTVS	Real-Time Visualization System
SDF	surface deposit feeder
SFF	suspension/filter feeder
SPI	sediment profile imaging
spp.	species

subsurface deposit feeder

SSDF

1.0 Introduction

Benthic sampling was conducted in Spring and Summer, 2020, from the Offshore Project Area to support the Mayflower Wind Energy LLC (Mayflower Wind) offshore wind renewable energy generation project (the Project) located in federal waters off the southern coast of Massachusetts in the Outer Continental Shelf (OCS) Lease Area OCS-A 0521 (Lease Area). The Offshore Project Area sampled in 2020 includes the Lease Area, Northern export cable corridor (ECC), and Southern ECC (Figure 1-1).

This report describes the survey and lab methods for benthic infauna grab samples and co-located video data collected within the Lease Area, along the ECC and at three control areas in May 2020. This attachment provides details of data presented in the Construction and Operations Plan (COP) Appendix M, Benthic and Shellfish Resources Characterization Report.

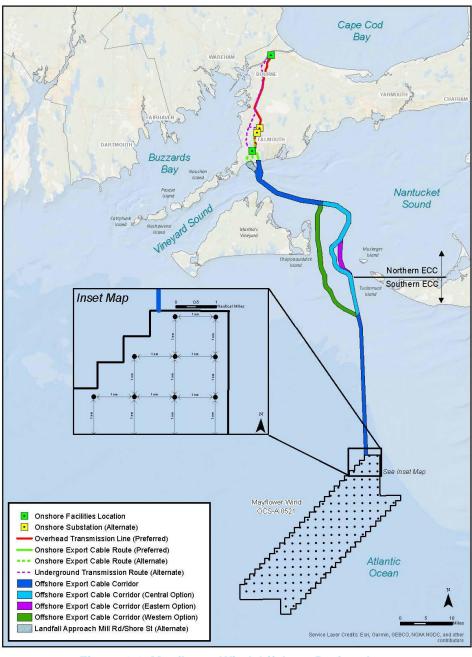


Figure 1-1. Mayflower Wind Offshore Project Area

2.0 Benthic Infauna Surveys

The Spring benthic survey took place May 12 – May 25, 2020 aboard the Fugro Marine, USA, Inc. (Fugro) vessel *M/V GO Liberty*. The Summer survey took place from August 22 through September 1, 2020 aboard the *M/V Berto L. Miller*. During both surveys, Fugro staff collected sediment samples with a dual bucket 0.04 square meter (m²) van Veen grab sampler. The surveys are conducted consistent with the *Benthic Infaunal and Seafloor Habitat Study Quality Assurance Project Plan* (AECOM, 2020a). Further detail related to the Spring 2020 field survey, including sampling methodology, is presented in the *Mayflower Wind Benthic Infaunal and Seafloor Habitat Field Study Plan - Spring 2020* (AECOM, 2020b), and further detail related to the Summer 2020 field survey, including sampling methodology, is presented in the *Mayflower Wind Benthic Infaunal and Seafloor Habitat Field Study Plan - Summer 2020* (AECOM, 2020c).

Samples were collected for the benthic infauna surveys from the Lease Area (Figure 2-1), the Southern ECC (Figure 2-2), the Northern ECC (Figure 2-3), and from three control areas (North control [Figure 2-2], West control, and East control [Figure 2-1]).

A total of 63 benthic grab samples were collected during the Spring survey for benthic infauna analysis including 30 within the Lease Area, 15 in the Southern ECC, 15 in the Northern ECC, and one from each of the three control areas. During the Summer survey, Fugro collected 43 benthic grab samples; 19 in the Lease Area, 11 in the Southern ECC, 11 in the Northern ECC, and one in each of the three control areas. The samples were sieved onboard the vessels through a 500-micron (µm) mesh sieve. Organisms and residual sediment retained on the sieve were preserved in 1-liter or 1-gallon jars fixed with an approximately 10 percent buffered formalin solution.

In addition to benthic grab sample collection, a Real-Time Visualization System (RTVS) was mounted on the grab sampler frame and video footage of the seafloor habitat was recorded at each grab sampling station. This "grab cam" video of the seafloor was viewed and interpreted for the types and counts (as appropriate) of epifauna and megafauna observed. These data were also classified under Coastal and Marine Ecological Classification Standard (CMECS) biotic categories (COP Appendix M).

The field-preserved infauna samples were transferred to the AECOM Pocasset, Massachusetts benthic laboratory for sample processing. Upon arrival at the laboratory, samples were transferred from formalin to 80 percent ethanol and stained with rose bengal to aid in the sample sorting process. The organisms were removed from the sediment and placed in vials by major group and polychaete family. Taxonomists identified and enumerated the organisms to lowest practical taxonomic level. Note that organisms from the phylum Nematoda (considered meiofauna) and pelagic organisms were not sorted from the residual sediment, and organisms considered epifauna (Hydrozoa, Bryozoa, and attached barnacles) were not enumerated but were added to the data as present when found. Pelagic and epifaunal species were not included in any of the community statistical analyses performed.

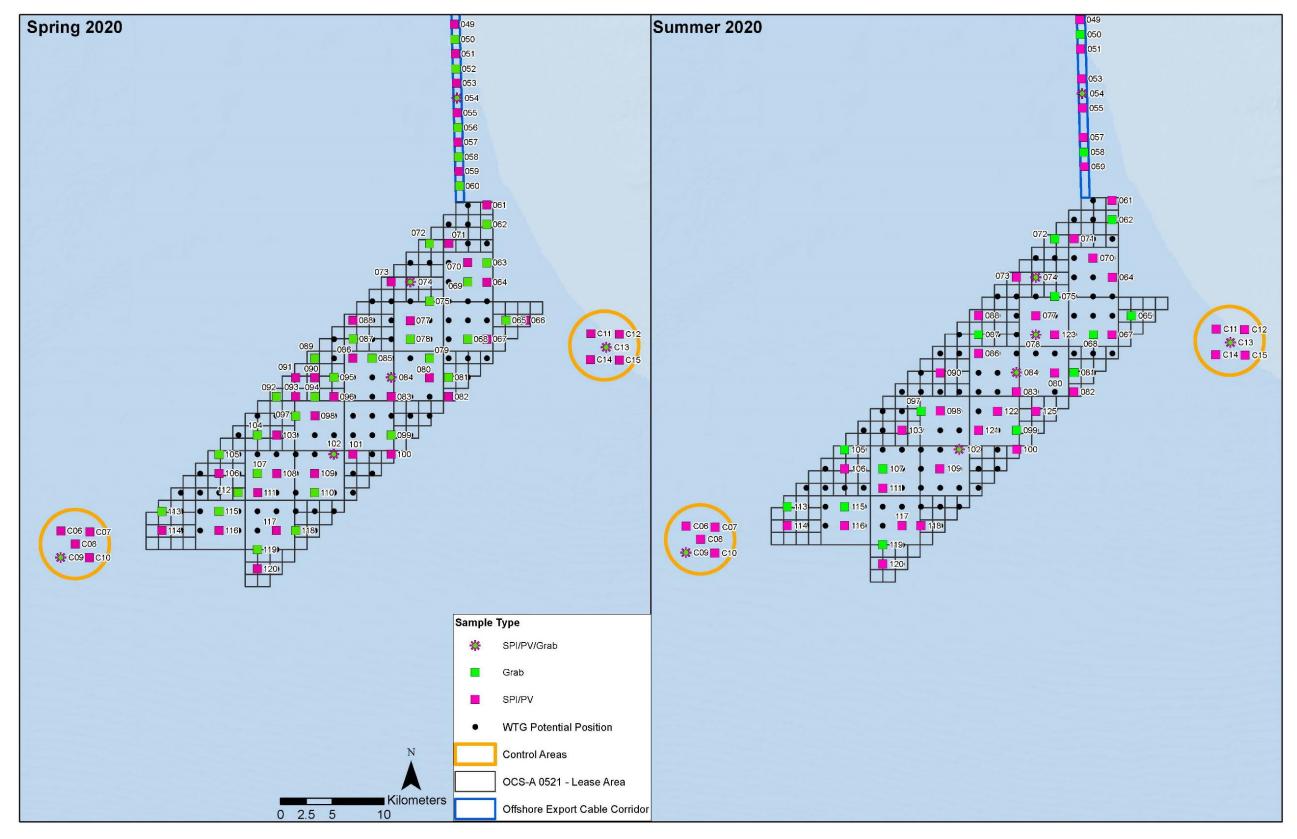


Figure 2-1. Stations Sampled in Spring and Summer 2020 from the Lease Area

Prepared for: Mayflower Wind Energy LLC

AECOM
2-2

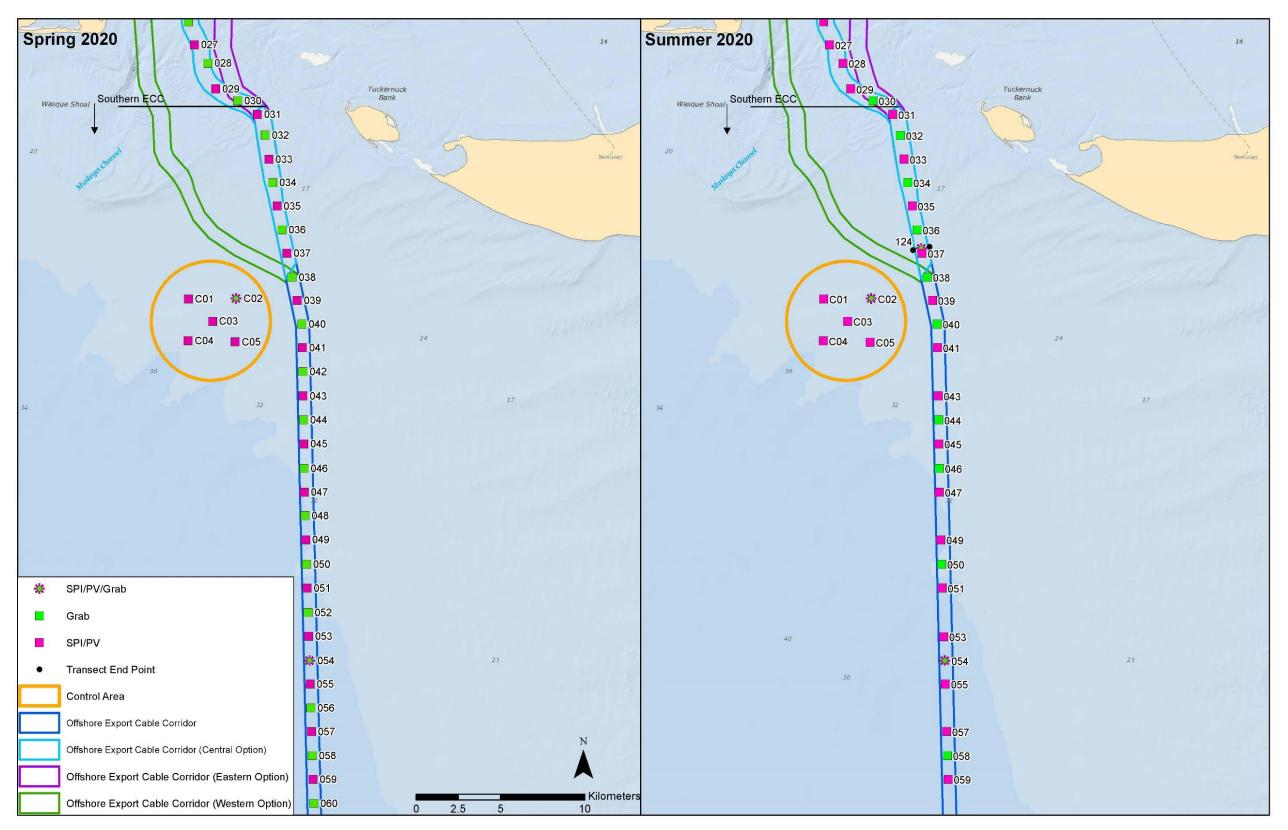


Figure 2-2. Stations Sampled in Spring and Summer 2020 from the Southern Export Cable Corridor

Prepared for: Mayflower Wind Energy LLC

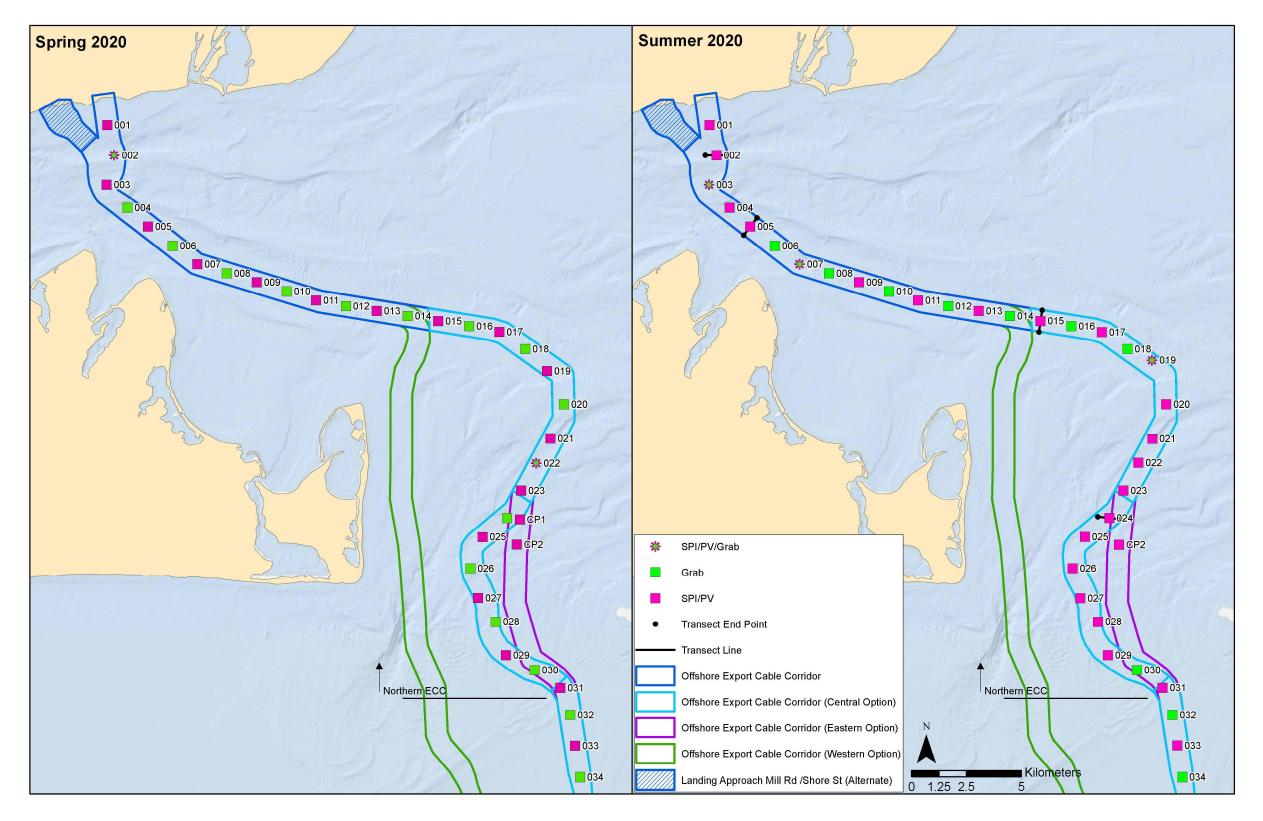


Figure 2-3. Stations Sampled in Spring and Summer 2020 from the Northern Export Cable Corridor

Prepared for: Mayflower Wind Energy LLC AECOM 2-4

3.0 Results

3.1 Epifauna/Megafauna

Benthic epifauna/megafauna are generally best characterized using imagery of the seafloor such as sediment profile image (SPI) and plan view (PV) imagery. SPI/PV data were collected during the Spring and Summer 2020 surveys. These data are provided at Attachments 1 and 2, respectively, of COP Appendix M. While stationary imagery such as SPI/PV provides images of the seafloor only at the location of the image, video transects can provide information on a broad area. During the Spring and Summer 2020 surveys, stationary imagery was obtained through the RTVS that was attached to the benthic grab framing, allowing for seafloor imagery at the benthic grab stations.

Epifauna/megafauna observed included macroalgae, sponges, bryozoans, hydroids, barnacles, tunicates, anemones, polychaetes, gastropods, nemerteans, urchins, starfish, sand dollars, crabs (brachyuran, hermit and spider), amphipods, squid, skates, and some finfish (Exhibits 1 and 2). Attached epifauna (i.e., macroalgae, hydroids, bryozoans, sponges) were found in areas with suitable substrate (gravels, cobbles, shells, manmade objects, etc.) along the Northern ECC, predominantly in Station 002 through 032. According to the CMECS substrate¹ classifications (Attachment 4 in COP Appendix M), seven grab stations from the Spring survey and eight from the Summer survey were classified as gravelly or gravel mixes.

The Southern ECC and the Lease Area substrate is finer grained, with stations predominantly classified as sand or muddy sand. Epifauna/megafauna found at these stations were predominantly organisms living on the surface (i.e., crabs, sand dollars, gastropods) or burrowing into the sediment (i.e., anemones, amphipods, polychaetes) (Exhibit 1 and 2).

3.2 Infauna/Macrofauna

The benthic infauna data were evaluated in the context of the general substrate in the area. Benthic species abundance was correlated with benthic habitat type to discern patterns of species distribution and abundance. Multivariate analysis tools such as the Bray-Curtis similarity calculation were used in data interpretation and determination of habitat trends. Metrics, including abundance, dominant species, evenness, diversity, and density of organisms, were also calculated. Details related to this data interpretation are presented below.

In the Spring, the biological assessment developed from the SPI and PV images (reported separately; Attachment 1 to COP Appendix M) was supplemented with co-located sample collection for characterization of the benthic infaunal community at 33 stations; one station in each of the three control areas and 30 stations across the Lease Area and ECC. Because the Lease Area and the ECC stations do not have similar substrates (as determined through grain-size analysis), further statistical analysis was performed by area, with similar substrate stations grouped together as follows: Stations 002 through 030 considered the Northern ECC, Stations 032 through 060 the Southern ECC, and Stations 061 through 120 comprise the Lease Area. All control stations were analyzed separately. This area breakdown is anticipated to remain constant throughout the program because it is based on substrate.

During the Spring survey, a total of 31,091 individuals from 132 species or species complexes (e.g., *Ampelisca* species [spp.]) were identified from the Lease Area; 133 species and a total of 5,002 individuals were identified along the Northern ECC; 20,520 individuals from 90 species along the Southern ECC, 26 species and 513 individuals at control Station C02, 889 individuals from 32 species at Station C09 and 17 species from 149 individuals at Station C13 (Table 3-1). The average number of species per station (species richness) was 34 in the Lease Area, 28 along the Northern ECC, 20 along the Southern ECC and 25 with all control sites combined. Average density within the Lease Area was 25,125 individuals/m², 7,750

¹ CMECS substrate classification was done for both SPI/PV images and quantitative grain size measurements on benthic grab samples. Details are provided in COP Appendix M.

individuals/m² along the Northern ECC, 33,725 individuals/m² along the Southern ECC, and 12,425 individuals/m² for all control stations combined (Table 3-2). Mean Shannon-Weiner (Log₂) diversity values were similar for all three areas (2.4 along Northern ECC, 1.1 along Southern ECC, 2.0 within the Lease Area and 2.1 at the control stations). Shannon-Weiner (Log₂) results indicate that the Northern ECC is the most diverse with species evenly distributed, and the Southern ECC is the least diverse/evenly distributed, with similar findings for Pielou's J evenness. Fisher's alpha biodiversity index was highest within the Northern ECC area, and lowest in the Southern ECC area (Table 3-2). The full set of benthic laboratory data from the Spring 2020 survey is provided in Exhibit 3.

During the Summer survey, one infauna sample was collected at each of the three control areas, at 18 stations in the Lease Area, and at 11 stations along each of the Northern ECC and Southern ECC. Note that the number of stations decreased overall from 63 in spring to 43 in summer, so direct comparisons between the two events for total densities and species richness were not calculated. A total of 20,072 individuals from 86 species or species complexes (e.g., Ampelisca spp.) were identified from the Lease Area; 85 species and a total of 2,840 individuals were identified along the Northern ECC; 10,048 individuals from 77 species along the Southern ECC, 11 species and 63 individuals at control Station C02, 1,119 individuals from 24 species at Station C09 and 20 species from 257 individuals at Station C13 (Table 3-1). The average number of species per station (species richness) was 28 in the Lease Area, 21 along the Northern ECC, 16 along the Southern ECC and 18 with all control sites combined. Average density within the Lease Area was 27,450 individuals/m², 6,300 individuals/m² along the Northern ECC, 22,725 individuals/m² along the Southern ECC, and 11,250 individuals/m² for all control stations combined (Table 3-2). Mean Shannon-Weiner (Log 2) diversity values were similar for all three areas (2.1 along Northern ECC, 1.4 along Southern ECC, 1.8 within the Lease Area and 1.6 at the control stations) (Table 3-2). As in the spring, Shannon-Weiner (Log 2) results indicate that the Northern ECC is the most diverse with species evenly distributed, and the Southern ECC is the least diverse/evenly distributed, with similar findings for Pielou's J evenness. Fisher's alpha biodiversity index was highest within the Northern ECC area, and lowest in the Southern ECC area (Table 3-2). The full set of benthic laboratory data from the Summer 2020 survey is provided in Exhibit 4.

Benthic infauna taxa identified were typical for the New England region. In general, the area was dominated by subsurface deposit feeders (Figure 3-1).

- In the spring, the Lease Area was dominated by the bivalve *Nucula proxima*, the polychaetes *Levisenia gracilis* and Maldanidae spp. juv. (all subsurface deposit feeders), and the amphipods *Ampelisca* spp. and *Leptocheirus pinguis* (interface feeders). In the summer all dominants were the same except that *Eudorella pusilla* (interface feeder) replaced the juvenile Maldanids (Table 3-3).
- In spring the organisms from the stations in the Southern ECC were similar to those in the Lease Area and were dominated by *N. proxima, L. gracilis*, Oligochaeta spp., and the polychaete *Polygordius jouinae* (subsurface deposit feeders), and *Ampelisca* spp. (interface feeders). In summer, dominant species *N. proxima, P. jouinae* and *Ampelisca* spp. were joined by the bivalves *Spissula solidisima* and *Periploma leanum* (suspension filter feeders) as dominants.
- The samples from stations along the Northern ECC were dominated in spring by the polychaetes Exogone sp. (omnivore/scavenger) and Polycirrus sp. (subsurface deposit feeders), the gastropod Astyris lunata (predator), the amphipod Ericthonius spp. (interface feeders) and barnacles Balanidae spp. (suspension/filter feeders). In the summer on the Northern ECC, Exogone sp and A. lunata were again dominant but other dominant species included the gastropods Crepidula fornicata (suspension filter feeders), Caecum johnsonii (predators) and Bittiolum alternatum (omnivore/scavengers).

Bray-Curtis multivariate calculation was used to compare the overall similarity (species and abundance) with a 4th root transformation.

Figure 3-2 shows strong similarities between the Lease Area stations, and some groupings of ECC stations. During the Spring survey, station 006 shows as an outlier, not similar to any other station; while in the Summer station 018 falls in this category. Summer stations 014, 019 and C09 also show less than 40 percent similarity to other groupings. The ECC stations generally grouped together as Northern ECC and Southern ECC station groupings and the Lease Area groups together.

Figure 3-3, the non-metric multidimensional scaling of 4th root transformed abundance data (principal component analysis) for both Spring and Summer infauna data are generally the same when comparing entire areas. Both figures show the Northern ECC with >20 percent but < 40 percent similarity to the Southern ECC and Lease Areas; but that the Southern ECC is similar (>40 percent but <60 percent) to the Lease Area stations. The control stations show as less than 20 percent similar to all areas in Summer samples and between 20 and 40 percent similar in Spring samples. This analysis takes into account the number of replicates and therefore is not directly comparable when grouping stations by area. Several stations (replicates) combine together for the other areas while each control site is only one station (replicate).

In Spring samples, biomass totals ranged from 446 grams at Station 008 (large number of *Crepidula* spp. in shells) to 0.15 grams at Station 032, with an average across all stations of 13 grams. Combining biomass for all stations by class/group shows that gastropods contribute the most biomass to the total area (all ECC and Lease Area stations as well as controls) with 466 grams, then bivalves with 116 grams, followed by echinoderms with 112 grams (Table 3-4). In the Summer data set, biomass totals ranged from 895 grams at Station 019 (large number of *Crepidula* spp. in shells) to 0.24 grams at Station 012, with an average across all stations of 26 grams. When combining biomass by class/group the gastropods by far contribute the most biomass to the total area with 892 grams, followed by bivalves with 106 grams, then polychaetes with 32 grams.

Table 3-1. Major Group Counts, Percentages of Area, Species Richness and Total Abundance by **Areas for Spring and Summer, 2020**

			Total		Species	
			Individuals	Percent of	Richness by	Total Abundance
Area		Major Group	in Area	Area Total	Area	by Area
	Spring	Annelida	2,370	47.4%		
		Mollusca	1,117	22.3%	133	5,002
		Crustacea	1,301	26.0%		5,552
Northern ECC		Miscellaneous	214	4.3%		
	Summer	Annelida	365	12.9%		
		Mollusca	1798	63.3%	85	2840
		Crustacea	596	21.0%		_0.0
		Miscellaneous	81	2.9%		
	Spring	Annelida	8,308	40.5%		
		Mollusca	11,575	56.4%	90	20,520
		Crustacea	496	2.4%		_0,0_0
Southern ECC		Miscellaneous	141	0.7%		
	Summer	Annelida	824	8.2%		
		Mollusca	7821	77.8%	77	10048
		Crustacea	1339	13.3%	• •	10010
		Miscellaneous	64	0.6%		
	Spring	Annelida	6,460	20.8%		
		Mollusca	12,251	39.4%	132	31,091
		Crustacea	11,968	38.5%	.02	01,001
Lease Area		Miscellaneous	412	1.3%		
	Summer	Annelida	2170	10.8%		
		Mollusca	10132	50.5%	86	20072
		Crustacea	7708	38.4%	00	2007.2
		Miscellaneous	62	0.3%		
	Spring	Annelida	434	84.6%		
		Mollusca	35	6.8%	26	513
		Crustacea	33	6.4%	20	0.10
Control		Miscellaneous	11	2.1%		
Station C02	Summer	Annelida	48	76.2%		
		Mollusca	7	11.1%	11	63
		Crustacea	7	11.1%	• •	00
		Miscellaneous	1	1.6%		
	Spring	Annelida	800	90.0%		
		Mollusca	6	0.7%	32	889
		Crustacea	16	1.8%		
Control		Miscellaneous	67	7.5%		
Station C09	Summer	Annelida	1054	94.2%		
		Mollusca	2	0.2%	24	1119
		Crustacea	26	2.3%		
	•	Miscellaneous	37	3.3%		
	Spring	Annelida	117	78.5%		
		Mollusca	20	13.4%	17	149
		Crustacea	4	2.7%		
Control		Miscellaneous	8	5.4%		
Station C13	Summer	Annelida	103	40.1%		
		Mollusca	137	53.3%	20	257
		Crustacea	13	5.1%		
		Miscellaneous	4	1.6%		

Table 3-2. Summary of Benthic Biology Community Parameters for All Stations by Area, Spring and Summer 2020

				No. of	Density			
			#	individuals	(Individuals	Shannon's		Fisher's
Area			Species	(0.04m²)	per m²)	H' (Log ₂)	Pielou's J	Alpha
	Spring	Average	28	310	7,750	2.4	0.8	9.3
		_Minimum	5	8	200	1.3	0.5	4.2
Northern ECC		Maximum	63	1,035	25,875	3.3	1.0	14.8
Northern LCC	Summer	Average	21	252	6,300	2.1	0.7	6.6
		Minimum	8	27	675	1.2	0.6	2.4
		Maximum	45	1,191	29,775	3.1	0.9	11.7
	Spring	Average	20	1,349	33,725	1.1	0.4	4.4
		Minimum	9	47	1,175	0.4	0.1	2.4
Southern ECC		Maximum	30	3,083	77,075	2.5	0.9	10.7
Southern ECC	Summer	Average	16	909	22,725	1.4	0.5	4.0
		Minimum	8	38	950	0.1	0.1	1.5
		Maximum	29	5,608	140,200	2.2	0.9	6.7
	Spring	Average	34	1,005	25,125	2.0	0.6	7.4
		Minimum	17	125	3,125	0.3	0.1	3.9
Lease Area		Maximum	46	4,089	102,225	2.5	0.8	9.7
Lease Area	Summer	Average	28	1,098	27,450	1.8	0.5	5.7
		Minimum	21	355	8,875	0.3	0.1	2.9
		Maximum	37	3,994	99,850	2.3	0.7	7.6
	Spring	Average	25	497	12,425	2.1	0.7	5.8
		Minimum	17	148	3,700	1.8	0.6	5.0
Control Citos		Maximum	32	866	21,650	2.4	0.7	6.5
Control Sites	Summer	Average	18	450	11,250	1.6	0.6	4.7
		Minimum	11	57	1,425	1.3	0.4	4.1
		Maximum	24	1109	27,725	1.8	0.8	5.7

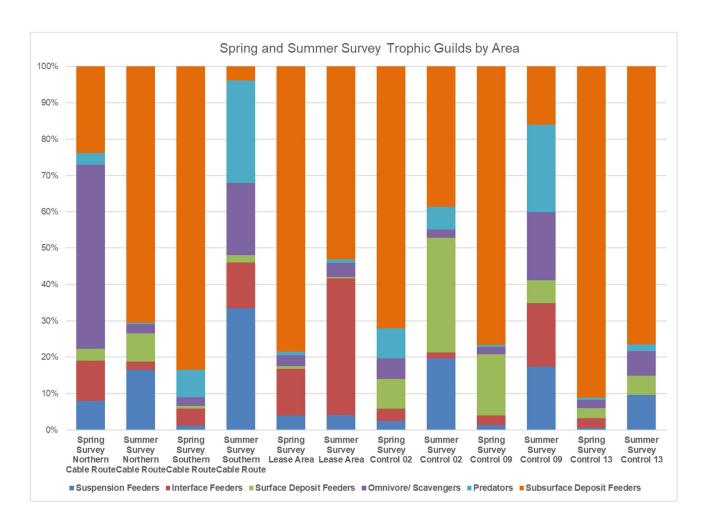


Figure 3-1. Number of Individuals Belonging to Each Trophic Guild by Area Surveyed during the Spring and Summer, 2020 Benthic Surveys

Table 3-3. Top Five Dominant Species by Area and Associated Trophic Guild as Observed in **Spring and Summer, 2020**

	Spring 2020		Summer 2020				
A	Davile	T	Total	Percent of	T	Total	Percent of
Area	Rank 1	Nucula proxima	10,603	Total 34.1	N. proxima	Total 9,143	Total 45.6
	2	(SSDF) Ampelisca spp. (IF)	9,313	30	(SSDF) Ampelisca spp. (IF)	5,035	25.1
	3	Levinsenia gracilis (SSDF)	1,749	5.6	L. gracilis (SSDF)	824	4.1
Lanca Avan	4	Leptocheirus pinguis (IF)	758	2.4	Eudorella pusilla (IF)	711	3.5
Lease Area	5	Maldanidae spp. juv. (SSDF)	649	2.1	L. pinguis (IF)	527	2.6
		Remaining Individuals	8,019	25.9	Remaining Individuals	3,832	19.1
		Total Area Abundance	31,091		Total Area Abundance	20,072	
		Species Richness	132		Species Richness	86	
	1	Exogone spp. (OS)	415	8.3	Crepidula fornicata (SFF)	687	24.2
	2	Astyris lunata (P)	345	6.9	Caecum johnsoni (P)	260	9.2
	3	Polycirrus spp. (SSDF)	223	4.5	Bittiolum alternatum (OS)	256	9
Northern	4	Ericthonius spp. (IF)	220	4.4	A. lunata (P)	238	8.4
ECC	5	Balanidae spp. (SFF)	211	4.2	Exogone spp. (OS)	145	5.1
		Remaining Individuals	3,588	71.7	Remaining Individuals	1,254	44.2
		Total Area Abundance	5,002		Total Area Abundance	2,840	
		Species Richness	133		Species Richness	85	
	1	Nucula proxima (SSDF)	11,427	55.7	<i>N. proxima</i> (SSDF)	7,397	73.6
	2	Polygordius jouinae (SSDF)	5,734	27.9	<i>Ampelisca</i> spp. (IF)	1,082	10.8
	3	Oligochaeta spp. (SSDF)	1,126	5.5	<i>P. jouinae</i> (SSDF)	309	3.1
Southern ECC	4	Levinsenia gracilis (SSDF)	305	1.5	Spissula solidissima (SFF)	193	1.9
EUU	5	Ampelisca spp. (IF)	257	1.3	Periploma leanum (SFF)	145	1.4
		Remaining Individuals	1,671	8.1	Remaining Individuals	922	9.2
		Total Area Abundance	20,520		Total Area Abundance	10,048	
Notes:		Species Richness	90		Species Richness	77	

Notes:

IF – Interface Feeder

OS - Omnivore/Scavenger P - Predator

SSDF – Subsurface Deposit Feeder SDF – Surface Deposit Feeder SFF - Suspension/Filter Feeder

Prepared for: Mayflower Wind Energy LLC

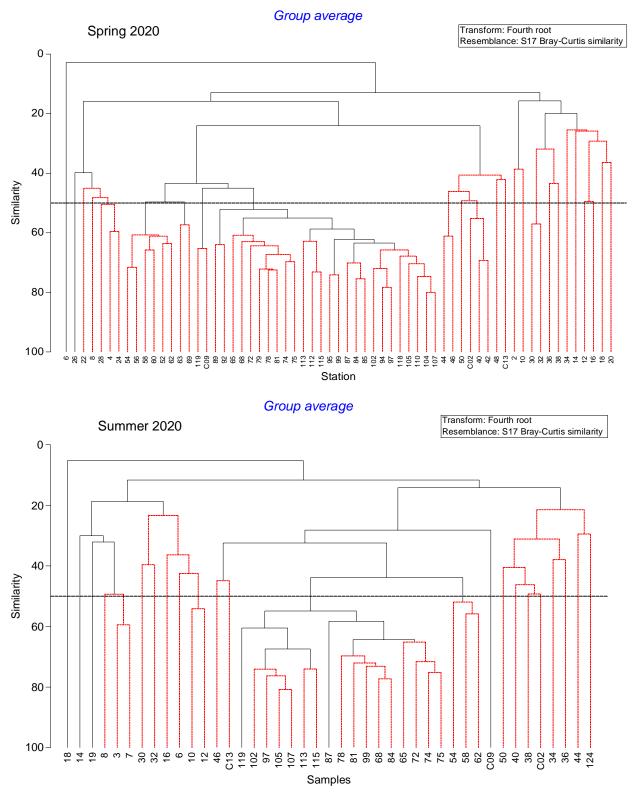
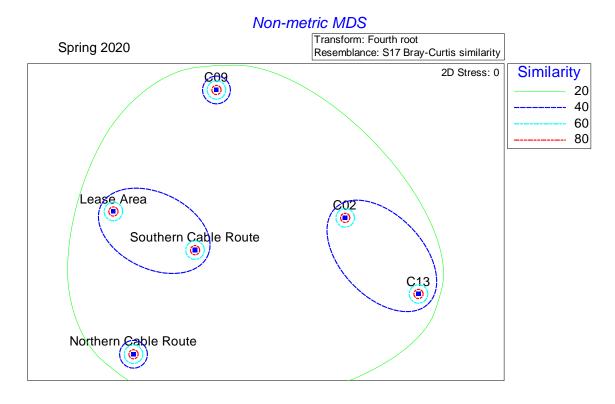
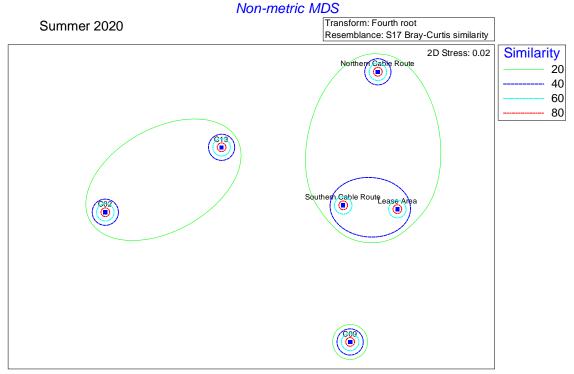


Figure 3-2. Bray-Curtis Cluster Analysis of the Mayflower Wind Spring and Summer 2020 Benthic Survey Infauna Station Data





Note: MDS - multidimensional scaling

Figure 3-3. Principal Component Analysis of Infauna Data from the Spring and Summer, 2020 Mayflower Wind Benthic Surveys

Table 3-4. Total Biomass by Infauna Group/Class Observed in Spring and Summer, 2020

	Total Biomass	s (grams)		Total Biomass (grams	
Group/Class	Spring	Summer	Group/Class	Spring	Summer
Brachiopoda	N/A	0.001	Echinodermata	111.82	20.48
Chordata	11	6.25	Polyplacophora	1.4	2.10
Cnidaria	1.2	0.70	Nemertea	3.9	1.65
Crustacea	60	24.40	Oligochaeta	0.16	0.02
Hemichordata	0.19	N/A	Phoronida	0.003	N/A
Bivalvia	116	106.10	Platyhelminthes	0.03	N/A
Aplacophora	0.05	0.001	Polychaeta	59	32.11
Gastropoda	466	891.65	Priapulida	0.19	N/A
Nudibranchia	0.03	N/A	Sipuncula	0.03	0.01

Note:

N/A - not appplicable

4.0 CMECS Biotic Classification

By the very nature of the analysis, all of the benthic infauna samples were classified under the category benthic/attached biota as the biotic setting. Benthic grabs cannot penetrate hard surfaces (gravels, cobbles, etc.), therefore benthic samples will not typically identify much of the attached biota. Under the biotic class category, all but one of the benthic grab infauna samples were classified as faunal bed, with only Station 008 in Spring and 019 in Summer classified as reef biota. The biotic subclass along the ECC varied, but in all of the Lease Area, the Southern ECC stations (except 032 in spring) and the control stations the classification was soft sediment fauna (Attachment 6 of COP Appendix M). The biotic group and biotic communities varied and are discussed by area below.

The biotic and co-occurring biotic groups found in the Lease Area in both spring and summer were classified as clam bed, larger tube-building fauna, and small surface-burrowing fauna. The clam beds were classified as *Nucula* beds, the larger tube-building fauna were *Ampelisca* spp., *Corophium* spp., *and Leptocheirus* spp. (amphipods) beds; and the surface-burrowing fauna were Paraonidae and Cossuridae polychaetes as the biotic community.

The biotic groups identified in the Southern ECC were attached tunicate (*Molgula*), larger deep-burrowing fauna, clam bed, mobile crustaceans on soft sediments, diverse soft sediment epifauna, larger tube-building fauna and small surface-burrowing fauna. Clam beds in this area were all *Nucula* spp. in the Spring but included *Periploma* spp. and *Spissula* spp. in the Summer. The larger tube building fauna in this area were *Ampelisca* spp. amphipods, the larger deep-burrowing fauna were Nephtyidae polychaetes, and the small surface-burrowing fauna included oligochaetes and Polygordiidae, Spionidae, and Lumbrineridae polychaetes. The mobile crustaceans on soft sediments were haustoriid and phoxocephalid amphipods and tanaids.

In the Northern ECC, the biotic subclasses identified are attached fauna, soft sediment fauna, and one station as mollusk reef biota in each season. CMECS defines attached fauna as those found in areas with rock, gravel or other hard or mixed substrates. In the spring, the five stations with attached fauna as the dominant biotic group were found to gravelly sand or sand, and none of the stations in the summer were characterized as having attached fauna as the dominant group. The infauna at Station 008 in the spring and Station 019 in the summer was dominated by *Crepidula* spp. (gastropod), and from video analysis at both stations it was clear that it was a "gastropod reef" with no visible sediment. The other biotic groups classified in the Northern ECC included diverse soft sediment epifauna, barnacles, mobile mollusks on soft sediment, mobile mollusks on hard or mixed substrates, attached tunicate, small tube-building fauna, diverse colonizers, small surface-burrowing fauna, mobile crustaceans on hard or mixed substrates, clam bed and mobile crustaceans on soft sediments. The Northern ECC area displayed the most diverse biotic classifications of all surveyed areas due to the diversity of substrates found along the ECC in this area.

The biotic groups of the control Stations C02, and C09 were similar to those of the Lease Area and Southern ECC. The dominant biotic group of Station C13 in the spring was sand dollar bed, which was unique to only this station.

5.0 Conclusions

Results of the benthic infauna analysis provide an assessment of the benthic infaunal community structure of the Lease Area and ECC. The primary conclusions of the infauna analysis are:

- 1. Soft sediment fauna was the dominant CMECS subclass observed in the Southern ECC and Lease Area, characterized by clam beds, larger tube-building and surface-burrowing fauna.
- 2. CMECS characterization of fauna along the Northern ECC was diverse and included soft sediment fauna as well as attached fauna (i.e., hydroids, bryozoans, sponges, tunicates).
- The biological characteristics of the controls area were within the range observed among the Lease Area and ECC and may be used to support future monitoring efforts.

Exhibit 1. Epifauna and Megafauna Observed in Spring 2020

Station

ID GrabCam Surface Sediment Type Observed

GrabCam Fauna Observed

10	Grabbani banabe beannent Type observed	Graboani radna observed
Northern	Export Cable Corridor (Benthic Grab Stations 002-0	030)
002	Sand (low relief ripples/ pock marks) with few shell fragments	1 sea robin (Triglidae spp.), 3 hermit crabs (Paguridae spp.)
004	Sand, gravel, shells and shell hash	sponge (<i>Cliona celata</i>), <i>Crepidula fornicata</i> , 4 crabs, 1 spider crab (Majidae spp.), Serpulidae, macroalgae (few), colonial tunicate, channeled whelk (<i>Busycotypus canaliculatus</i>)
006	Sand (low relief), some gravel, few shell frags	None
800	Crepidula and their shells cover bottom	Crepidula fornicata, Bryozoa, macroalgae (trace), 1 spider crab (Majidae spp.)
010	Sand (low relief), few shell fragments (razor clam)	barnacle (Balanidae spp.)
012	Sand, few shell fragments	Diopatra spp. tube, macroalgae (trace)
014	Sand, few shell fragments	1 spider crab (Majidae spp.), macroalgae (trace)
016	Sand, gravel (trace), shell fragments	channeled whelk (Busycotypus canaliculatus), squid, macroalgae (trace)
018	Sand (low relief)	macroalgae drifting along bottom
020	Sand (low relief), few shell fragments	none
022	Sand, gravel (trace), shell hash (abundant),	macroalgae (common), Crepidula spp., urchin
024	Sand, gravel, shell hash	macroalgae (common), colonial tunicate, sponge, 1 urchin, 1 spider crab (Majidae spp.), 1 hermit crab (Paguridae spp.), Bryozoa
026	Sand, gravel, shell hash	macroalgae (common), Crepidula spp.
028	Sand, gravel, shell hash	macroalgae, Crepidula spp., sponge
030	Sand (low relief)	moon snail (Euspira heros), macroalgae (trace)
Southern	Export Cable Corridor (Benthic Grab Stations 032-	060)
032	Sand (low relief)	none
034	Sand (low relief)	none
036	Sand	none
038	Sand	none
040	Sand (low relief), few shells	snails
042	Sand (low relief)	none
044	Sand, few shell fragments	none
046	Sand	Diopatra spp. tubes, spiral shelled gastropod
048	Sand	polychaete tubes, 1 crab, 3 sand dollars
050	Sand (low relief)	3 fish, > 10 sand dollars
052	Sand (low relief)	amphipod tubes, 1 crab

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ID	GrabCam Surface Sediment Type Observed	GrabCam Fauna Observed
054	Sand, trace shells	None
056	Silt at surface	amphipod tubes, 1 crab
058	Silt at surface	polychaete and amphipod tubes, 1 fish
060		polychaete tubes
Mayflowe	er Wind Lease Area (Benthic Grab Stations 062-120)	
062	Silt at surface	polychaete tubes, 3 fish (1 searobin [Triglidae spp.]), one nemertean swimming, 2 crabs
063	Silt at surface	polychaete and amphipod tubes, 2 fish (1 searobin [Triglidae spp.]), 1 crab
065	Silt at surface	polychaete and amphipod tubes, >10 Crabs, 8 fish, 1 hermit crab (Paguridae spp.), 2 snails
068	Silt at surface	polychaete tubes and amphipod, >10 fish, 1 crab
069	Silt	polychaete and amphipod tubes, 1 skate, 2 hermit crabs (Paguridae spp.), 1 anemone, mud snails
072	Silt	polychaete and amphipod tubes, 1 hermit crab (Paguridae spp.), 2 crabs, 2 fish, mud snails
074	Silt	polychaete and amphipod tubes, >10 fish (1 white hake), mud snails
075	Silt	polychaete and amphipod tubes, 1 white hake
078	Silt	polychaete and amphipod tubes, 5 fish
079	Silt	polychaete and amphipod tubes, 3 fish, 1 bivalve, mud snails, 3 hermit crabs (Paguridae spp.)
081	Silt	polychaete and amphipod tubes, 1 fish, mud snails
084	Silt	polychaete tubes, 1 fish
085	Silt	polychaete and amphipod tubes, 3 fish, 3 crab
087	Silt	polychaete and amphipod tubes, 1 crab
089	Silt	polychaete and amphipod tubes, 3 fish, 1 hermit crab (Paguridae spp.)
092	Silt	polychaete and amphipod tubes, 3 fish, 1 skate, several small fish in water column
094	Silt	polychaete and amphipod tubes, 3 fish (2 white hake), several small fish in water column
095	Silt	polychaete tubes, 1 fish
097	Silt	polychaete tubes
099	Silt	polychaete tubes, 4 white hake, 1 crab
102	Silt	polychaete and amphipod tubes, 3 fish, 1 skate
104	Silt	polychaete tubes, 2 fish
105	Silt	polychaete tubes
107	Silt	polychaete tubes, 1 crab, 2 anemones
110	Silt	polychaete and amphipod tubes, 7 anemones, 1 hake

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ID	GrabCam Surface Sediment Type Observed	GrabCam Fauna Observed
112	Silt	polychaete tubes, 1 crab, 1 white hake,
113	Silt	> 100 Asteroidea, polychaete tubes, 2 fish, 1 skate
115	Silt	> 100 Asteroidea, polychaete tubes, 1 crab
118	Silt	1 dead crab
119	Silt	> 10 Asteroidea, polychaete tubes
	Control	Stations (Benthic Grab Stations C02, C09, C13)
C02	Silt at surface, few shells	polychaete and amphipod tubes, channeled whelk (Busycotypus canaliculatus)
C09	Silt	5 Asteroidea, polychaete tubes, 3 fish
C13	Sand	>1000 sand dollars, >10 crabs, 1 fish, 3 skates, 1 hermit crab (Paguridae spp.), many small fish in water column

Notes Based on assessment of grab cam video analysis.

Exhibit 2. Epifauna and Megafauna Observed in Summer 2020

Station

ID GrabCam Surface Sediment Type Observed

GrabCam Fauna Observed

Northern	Export Cable Corridor (Benthic Grab Stations 002-0	30)
003	Gravel and shells, some sand, trace cobble, few shell fragments	Sea urchins - common, common macroalgae, common colonial tunicates, few small fish, 1 spider crab (Majoidea spp.)
006	Sand (low relief), over gravel and shells, few shell frags in troughs, trace cobble	1 spider crab (Majoidea spp.) few small fish, 1 channeled whelk (Busycotypus canaliculatus)
007	Gravel, some sand, trace cobble, shells	Common macroalgae, few sponge (<i>Cliona celata</i>), common colonial tunicate, few hermit crabs (Paguridae spp.), few small fish, serpulids
800	Crepidula shells cover bottom, over sand and gravel, few cobbles	Abundant <i>Crepidula fornicata</i> , bryozoa (trace), macroalgae (trace), few small fish, rare sea urchins, few colonial tunicates, 1 knobbed whelk (<i>Busycon carica</i>), 1 fish, 1 channeled whelk (<i>Busycotypus canaliculatus</i>), 1 spider crab (Majoidea spp.)
010	Sand (very low relief), common shells, common shell fragments, trace cobbles	None
012	Sand (low relief), common shells and shell fragments, trace gravel	Few macroalgae, trace small fish, whelk egg case
014	Silt over sand (low relief), common shell fragments trace gravel	Few macroalgae, common small fish, 1 spider crab (Majoidea spp.)
016	Gravel patch transitioned to silt over low relief sand with shell fragments	Few macroalgae, few small fish, 1 knobbed whelk (<i>Busycon carica</i>), 1 Sea Robin (Triglidae spp.), 3 channeled whelks (<i>Busycotypus canaliculatus</i>), <i>Diopatra</i> spp. tubes
018	Silty sand (low relief), common shells and shell fragments	Trace small fish, Few hermit crabs (Paguridae spp.) 2 knobbed whelks (Busycon carica)
019	Crepidula shells cover bottom	Abundant Crepidula fornicata, bryozoa, few macroalgae, trace small fish
030	Sand (low relief), few shell fragments	Trace small fish, rare hermit crabs (Paguridae spp.), trace macroalgae, 1 small crab
Southern	Export Cable Corridor (Benthic Grab Stations 032-0	060 and 124)
032	Sand (low relief), trace shells and shell fragments	A couple of possible detrital, unattached eelgrass strands
034	Silt over sand (low relief), trace shell fragments	Few hermit crabs (Paguridae spp.), few <i>Diopatra</i> spp. tubes, trace bryozoa or macroalgae
036	Silt on sand (low relief), few shell fragments	1 searobin (Triglidae spp.) few mud snails, Polychaete tubes
038	Silt on Sand (low relief), trace shell fragments	Few anemones, few mud snails, common polychaete tubes, few small fish, 2 crabs, few hermit crabs (Paguridae spp.)
040	Silt on sand (low relief), trace shell fragments	Few small fish, few hermit crabs (Paguridae spp.) few anemones, few mud snails, polychaete tubes, 1 skate
044	Sand (low relief), trace shell fragments	1 mud snail, 1 anemone
046	Silt on sand (low relief), trace shell fragments	Polychaete tubes, few mud snails, rare anemones
050	Silt on sand (low relief), trace shells and shell fragments	Common sand dollars (<i>Echinarachnius parma</i>), polychaete tubes, few mud snails

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ID	GrabCam Surface Sediment Type Observed	GrabCam Fauna Observed
054	Silt on sand (low relief), trace shell fragments	None
058	Silt	Polychaete and amphipod tubes, few mud snails, few hermit crabs (Paguridae spp.)
124	Silt trace shell hash	Polychaete and amphipod tubes, 1 unidentified bivalve, rare mud snails, rare hermit crabs (Paguridae spp.), 1 small crab
Mayflowe	r Wind Lease Area (Benthic Grab Stations 062-120)	
062	Silt	Polychaete and amphipod tubes, few mud snails, few hermit crabs (Paguridae spp.),
065	Silt	Plychaete and amphipod tubes, few mud snails, shrimp or amphipods in water above seafloor
068	Silt	Polychaete and amphipod tubes, few mud snails
072	Silt	Polychaete and amphipod tubes, few mud snails, few hermit crabs (Paguridae spp.), 1 crab, 1 flatfish, shrimp or amphipods in water above seafloor
074	Silt	Polychaete and amphipod tubes, few mud snails, few hermit crabs (Paguridae spp.), shrimp or amphipods in water above seafloor
075	Silt	Polychaete and amphipod tubes, common mud snails, few hermit crabs (Paguridae spp.), shrimp or amphipods in water above seafloor
078	Silt	Polychaete and amphipod tubes, few mud snails, few hermit crabs (Paguridae spp.) 1 searobin (Triglidae spp.), shrimp or amphipods in water above seafloor
081	Silt	Polychaete and amphipod tubes, rare mud snails, rare hermit crabs (Paguridae spp.), rare shrimp or amphipods in water above seafloor
084	Silt	Polychaete and amphipod tubes, rare mud snails, rare hermit crabs (Paguridae spp.) 1 skate, 2 searobins (Triglidae spp.), rare shrimp or amphipods in water above seafloor
087	Silt	Polychaete and amphipod tubes, few mud snails, few hermit crabs (Paguridae spp.), 1 large crab, shrimp or amphipods in water above seafloor
097	Silt	Polychaete and amphipod tubes, 3 large crabs, few mud snails, few hermit crabs (Paguridae spp.)
099	Silt	Polychaete and amphipod tubes, few mud snails, few hermit crabs (Paguridae spp.) 1 large crab, 1 fish, 1 flat fish
102	Silt	Polychaete and amphipod tubes, rare mud snails/hermit crabs, 2 fish, shrimp or amphipods in water above seafloor
105	Silt	Polychaete and amphipod tubes, few mud snails, few hermit crab (Paguridae spp.), common small and medium sized fish, 4 large crabs, 1 squid, 1 skate, shrimp or amphipods in water above seafloor
107	Silt	Few polychaete and amphipod tubes, 4 large crabs, 1 fish, shrimp or amphipods in water above seafloor
113	Silt	Polychaete and amphipod tubes, common Asteroidea, common fish, 3 crabs
115	Silt	Polychaete and amphipod tubes, common Asteroidea, 3 fish, 3 large crabs, 1 squid
119	Silt	None

Station

ID GrabCam Surface Sediment Type Observed

GrabCam Fauna Observed

Control S	Stations (Benthic Grab Stations C02, C09, C13)	
C02	Sand trace shell hash	Polychaete and amphipod tubes, few hermit crabs (Paguridae spp.)
C09	Silt	Polychaete and amphipod tubes, common Asteroidea, 1 large crab, 1 sea pen (Pennatulacea spp.)
C13	Silt on sand trace shell fragments	abundant sand dollars (<i>Echinarachnius parma</i>), few small fish
Notes	Based on assessment of grab cam video analysis.	

Exhibit 3. Spring 2020 Benthic Laboratory Data

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
North control	C02	Arthropoda	Ampeliscidae	Ampelisca spp.	3	Interface Feeder	0.008	
North control	C02	Arthropoda	Bodotriidae	Cyclaspis varians	4	Surface Deposit Feeder	0.007	
North control	C02	Arthropoda	Diastylidae	Diastylis sculpta	1	Interface Feeder	< 0.001	
North control	C02	Arthropoda	Leptocheliidae	Chondrochelia savignyi	9	Interface Feeder	0.001	
North control	C02	Arthropoda	Mysidae	Mysidae spp.	12	Predator	0.001	juvenile
North control	C02	Arthropoda	Phoxocephalidae	Harpinia propinqua	3	Interface Feeder	0.001	
North control	C02	Arthropoda	Unciolidae	<i>Unciola</i> spp.	1	Interface Feeder	< 0.001	
North control	C02	Chordata	Molgulidae	Molgula manhattensis	10	Suspension Feeder	0.049	
North control	C02	Mollusca	Bivalvia	Ameritella agilis	3	Subsurface Deposit Feeder	0.001	
North control	C02	Mollusca	Bivalvia	Astarte castanea	2	Suspension Feeder	0.081	
North control	C02	Mollusca	Bivalvia	Nucula proxima	23	Subsurface Deposit Feeder	0.013	
North control	C02	Mollusca	Bivalvia	Pitar morrhuanus	1	Suspension Feeder	< 0.001	
North control	C02	Mollusca	Bivalvia	Yoldia sapotilla	1	Subsurface Deposit Feeder	0.001	
North control	C02	Mollusca	Gastropoda	Tritia trivittata	4	Omnivore/Scavenger	2.027	
North control	C02	Mollusca	Nudibranchia	Nudibranchia spp.	1	Predator	0.001	
North control	C02	Nemertea	Tubulanidae	Tubulanus pellucidus	1	Predator	< 0.001	
North control	C02	Oligochaeta	Oligochaeta	Oligochaeta spp.	2	Subsurface Deposit Feeder	< 0.001	
North control	C02	Polychaeta	Ampharetidae	Ampharetidae spp.	19	Surface Deposit Feeder	0.001	juvenile
North control	C02	Polychaeta	Cirratulidae	Cirratulus spp.	2	Surface Deposit Feeder	0.001	
North control	C02	Polychaeta	Cirratulidae	Tharyx spp.	6	Surface Deposit Feeder	0.003	
North control	C02	Polychaeta	Flabelligaridae	Pherusa affinis	1	Surface Deposit Feeder	0.002	
North control	C02	Polychaeta	Glyceridae	Glycera spp.	6	Omnivore/Scavenger	0.007	juvenile
North control	C02	Polychaeta	Goniadidae	Goniada maculata	29	Predator	0.017	
North control	C02	Polychaeta	Lumbrineridae	Lumbrineris acicularum	5	Omnivore/Scavenger	0.254	
North control	C02	Polychaeta	Nephtyidae	Nephtys bucera	2	Omnivore/Scavenger	0.3	
North control	C02	Polychaeta	Paraonidae	Aricidea (Acmira) catherinae	10	Surface Deposit Feeder	0.006	
North control	C02	Polychaeta	Paraonidae	Levinsenia gracilis	175	Subsurface Deposit Feeder	0.044	
North control	C02	Polychaeta	Polygordiidae	Polygordius jouinae	165	Subsurface Deposit Feeder	0.067	

North control C02 Polychaeta Syllidae Exogone spp. 12 Omnivore/Scavenger 0.003 North control C02 Polychaeta - Polychaete Fragments 0.176 West control C09 Arthropoda Ampeliscidae Ampelisca spp. 10 Interface Feeder 0.023 West control C09 Arthropoda Ampeliscidae Byblis serrata 2 Interface Feeder 0.001 West control C09 Arthropoda Corophildae Leptocheirus pinguis 1 Interface Feeder 0.096 West control C09 Arthropoda Phoxocephalidae Harpinia propinqua 2 Interface Feeder 0.004 West control C09 Arthropoda Phoxocephalidae Phronima sedentaria 1 Omnivore/Scavenger 0.031 West control C09 Arthropoda Phronimidae Phronima sedentaria 1 Omnivore/Scavenger 0.031 West control C09 Chridata Molgulidae Molgula manhattensis 10 Suspension Feeder 0.618 West control C09 Chridaria Edwardsiidae Edwardsia elegans 1 Suspension Feeder 0.001 West control C09 Chidaria Tubulariidae Tubulariidae spp. 2 Predator 0.016 West control C09 Echinodermata Amphiluridae Amphilpriolis squamata 45 Predator 2.163 West control C09 Echinodermata Peolidae Pasulus spp. 1 Suspension Feeder 0.001 West control C09 Echinodermata Peolidae Pasulus spp. 1 Suspension Feeder 0.001 West control C09 Mollusca Bivalvia Arctica islandica 3 Suspension Feeder 0.001 West control C09 Mollusca Bivalvia Nucula proxima 1 Subsurface Deposit Feeder 0.001 West control C09 Mollusca Bivalvia Nucula proxima 1 Subsurface Deposit Feeder 0.005 West control C09 Nemertea Lineidae Cerebratulus lacteus 1 Predator 0.022 West control C09 Nemertea Lineidae Micrura spp. 14 Subsurface Deposit Feeder 0.006 West control C09 Polychaeta Alpharetidae Ampharetia arctica 1 Surface Deposit Feeder 0.001 West control C09 Polychaeta Arabellidae Driloneris lange 1 Predator 0.002 West control C09 Polychaeta Arabellidae Driloneris lange 1 Predator 0.005 West control C09 Polychaeta Arabellidae Driloneris lange 1 Predator 0.006 West control C09 Polychaeta Arabellidae Driloneris lange 1 Surface Deposit Feeder 0.001 West control C09 Polychaeta Fiabelligaridae Prava plumosa 22 Surface Deposit Feeder 0.001	Comments
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West control C09 Polychaeta Nephtyidae Nephtys incisa 15 Omnivore/Scavenger 0.044	
West control C09 Polychaeta Opheliidae Ophelina acuminata 3 Subsurface Deposit Feeder 0.002	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
West control	C09	Polychaeta	Oweniidae	Owenia fusiformis	24	Suspension Feeder	0.035	
West control	C09	Polychaeta	Paraonidae	Aricidea (Acmira) catherinae	81	Surface Deposit Feeder	0.012	
West control	C09	Polychaeta	Paraonidae	Levinsenia gracilis	47	Subsurface Deposit Feeder	0.009	
West control	C09	Polychaeta	Sabellidae	Euchone rubrocincta	133	Suspension Feeder	0.063	
West control	C09	Polychaeta	Syllidae	Exogone spp.	5	Omnivore/Scavenger	0.004	
West control	C09	Polychaeta	Terebellidae	Polycirrus spp.	7	Subsurface Deposit Feeder	0.009	
West control	C09	Polychaeta	Trichobranchidae	Terebellides stroemii	59	Subsurface Deposit Feeder	0.085	
West control	C09	Polychaeta	-	Polychaete Fragments	-	-	0.054	
West control	C09	Sipuncula	-	Sipuncula spp.	1	Surface Deposit Feeder	0.002	
East control	C13	Arthropoda	Diastylidae	Diastylis sculpta	2	Interface Feeder	0.015	
East control	C13	Arthropoda	Phoxocephalidae	Rhepoxynius epistomus	1	Interface Feeder	0.001	
East control	C13	Arthropoda	Unciolidae	Unciola spp.	1	Interface Feeder	<0.001	
East control	C13	Cnidaria	Campanulariidae	Campanulariidae spp.	-	Suspension Feeder	-	
East control	C13	Echinodermata	Echinoidea	Echinarachnius parma	7	Surface Deposit Feeder	90.358	
East control	C13	Mollusca	Bivalvia	Ameritella agilis	14	Subsurface Deposit Feeder	0.007	
East control	C13	Mollusca	Bivalvia	Mytilidae spp.	1	Suspension Feeder	<0.001	juvenile
East control	C13	Mollusca	Bivalvia	Nucula proxima	4	Subsurface Deposit Feeder	0.002	
East control	C13	Mollusca	Bivalvia	Pitar morrhuanus	1	Suspension Feeder	<0.001	
East control	C13	Nemertea	Tubulanidae	Tubulanus pellucidus	1	Predator	0.007	
East control	C13	Oligochaeta	Oligochaeta	Oligochaeta sp.	34	Subsurface Deposit Feeder	0.004	
East control	C13	Polychaeta	Ampharetidae	Amage auricula	3	Surface Deposit Feeder	<0.001	
East control	C13	Polychaeta	Capitellidae	Capitella capitata	2	Subsurface Deposit Feeder	0.001	
East control	C13	Polychaeta	Cirratulidae	Tharyx spp.	5	Surface Deposit Feeder	0.004	
East control	C13	Polychaeta	Glyceridae	Glycera capitata	2	Omnivore/Scavenger	0.009	
East control	C13	Polychaeta	Nephtyidae	Nephytidae spp.	1	Omnivore/Scavenger	<0.001	juvenile
East control	C13	Polychaeta	Orbiniidae	Leitoscoloplos fragilis	4	Subsurface Deposit Feeder	0.061	
East control	C13	Polychaeta	Paraonidae	Aricidea (Acmira) catherinae	10	Surface Deposit Feeder	0.003	
East control	C13	Polychaeta	Polygordiidae	Polygordius jouinae	56	Subsurface Deposit Feeder	0.006	
East control	C13	Polychaeta	-	Polychaete Fragments	-	-	0.311	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
Lease Area	062	Arthropoda	Ampeliscidae	Ampelisca spp.	27	Interface Feeder	0.226	
Lease Area	062	Arthropoda	Corophiidae	Leptocheirus pinguis	3	Interface Feeder	0.023	
Lease Area	062	Arthropoda	Corophiidae	Unciola spp.	1	Interface Feeder	0.002	
Lease Area	062	Arthropoda	Diastylidae	Diastylis spp.	1	Interface Feeder	<0.001	
Lease Area	062	Arthropoda	Phoxocephalidae	Harpinia propinqua	3	Interface Feeder	0.006	
Lease Area	062	Arthropoda	-	Amphipoda spp.	4	Interface Feeder	<0.001	
Lease Area	062	Cnidaria	Edwardsiidae	Edwardsiella lineata	1	Suspension Feeder	0.025	
Lease Area	062	Mollusca	Bivalvia	Arctica islandica	2	Suspension Feeder	0.024	
Lease Area	062	Mollusca	Bivalvia	Nucula proxima	3630	Subsurface Deposit Feeder	6.672	
Lease Area	062	Mollusca	Bivalvia	Periploma papyratium	1	Suspension Feeder	<0.001	
Lease Area	062	Mollusca	Bivalvia	Spisula solidissima	3	Suspension Feeder	0.952	
Lease Area	062	Mollusca	Bivalvia	Yoldia sapotilla	8	Subsurface Deposit Feeder	0.003	
Lease Area	062	Nemertea	Lineidae	Cerebratulus lacteus	3	Predator	0.27	
Lease Area	062	Nemertea	Lineidae	Micrura spp.	2	Predator	0.078	
Lease Area	062	Oligochaeta	Oligochaeta	Oligochaeta spp.	14	Subsurface Deposit Feeder	0.003	
Lease Area	062	Polychaeta	Ampharetidae	Ampharetidae spp.	3	Surface Deposit Feeder	<0.001	juvenile
Lease Area	062	Polychaeta	Cirratulidae	Tharyx spp.	65	Surface Deposit Feeder	0.052	
Lease Area	062	Polychaeta	Glyceridae	Glycera capitata	4	Omnivore/Scavenger	0.043	
Lease Area	062	Polychaeta	Lumbrineridae	Ninoe nigripes	24	Omnivore/Scavenger	0.317	
Lease Area	062	Polychaeta	Lumbrineridae	Scoletoma tenuis	25	Omnivore/Scavenger	0.077	
Lease Area	062	Polychaeta	Nephtyidae	Nephtys incisa	5	Omnivore/Scavenger	0.019	
Lease Area	062	Polychaeta	Paraonidae	Levinsenia gracilis	6	Subsurface Deposit Feeder	0.003	
Lease Area	062	Polychaeta	Pholoidae	Pholoe minuta	1	Predator	0.002	
Lease Area	062	Polychaeta	Phyllodocidae	Hypereteone heteropoda	1	Predator	0.001	
Lease Area	062	Polychaeta	Phyllodocidae	Phyllodoce mucosa	1	Predator	0.007	
Lease Area	062	Polychaeta	Polynoidae	Harmothoe extenuata	1	Predator	0.001	
Lease Area	062	Polychaeta	Scalibregmatidae	Scalibregma inflatum	1	Subsurface Deposit Feeder	0.009	
Lease Area	062	Polychaeta	Syllidae	Syllis spp.	1	Omnivore/Scavenger	0.001	
Lease Area	062	Polychaeta	-	Polychaete Fragments	-	-	0.145	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
Lease Area	062	Priapulida	Priapulidae	Priapulus caudatus	3	Surface Deposit Feeder	0.12	
Lease Area	063	Arthropoda	Ammotheidae	Achelia spinosa	1	Predator	0.001	
Lease Area	063	Arthropoda	Ampeliscidae	Ampelisca spp.	183	Interface Feeder	0.28	
Lease Area	063	Arthropoda	Caprellidae	Aeginina longicornis	93	Predator	0.273	
Lease Area	063	Arthropoda	Corophiidae	Leptocheirus pinguis	2	Interface Feeder	0.004	
Lease Area	063	Arthropoda	Diastylidae	Diastylis spp.	1	Interface Feeder	0.001	
Lease Area	063	Arthropoda	Idoteidea	Edotia triloba	1	Omnivore/Scavenger	0.001	
Lease Area	063	Arthropoda	Ischyroceridae	Ericthonius spp.	6	Interface Feeder	0.002	
Lease Area	063	Arthropoda	Ischyroceridae	Ischyrocerus anguipes	17	Interface Feeder	0.01	
Lease Area	063	Arthropoda	Leuconidae	Eudorella pusilla	5	Interface Feeder	0.006	
Lease Area	063	Arthropoda	Photidae	Photis spp.	14	Interface Feeder	0.003	
Lease Area	063	Arthropoda	Phoxocephalidae	Harpinia propinqua	2	Interface Feeder	0.004	
Lease Area	063	Arthropoda	Unciolidae	Unciola spp.	27	Interface Feeder	0.043	
Lease Area	063	Arthropoda	-	Cumacea spp.	1	Omnivore/Scavenger	0.001	
Lease Area	063	Cnidaria	Halcampidae	Halcampa duodecimcirrata	2	Predator	0.061	
Lease Area	063	Mollusca	Bivalvia	Ameritella agilis	7	Subsurface Deposit Feeder	0.006	
Lease Area	063	Mollusca	Bivalvia	Lyonsia arenosa	1	Suspension Feeder	0.004	
Lease Area	063	Mollusca	Bivalvia	Mesodesma arctatum	6	Suspension Feeder	0.005	
Lease Area	063	Mollusca	Bivalvia	Nucula proxima	823	Subsurface Deposit Feeder	0.441	
Lease Area	063	Mollusca	Bivalvia	Periploma papyratium	6	Suspension Feeder	0.01	
Lease Area	063	Mollusca	Bivalvia	Pitar morrhuanus	2	Suspension Feeder	0.001	
Lease Area	063	Mollusca	Bivalvia	Yoldia sapotilla	37	Subsurface Deposit Feeder	0.05	
Lease Area	063	Mollusca	Gastropoda	Astyris lunata	1	Predator	0.037	
Lease Area	063	Mollusca	Gastropoda	Tritia trivittata	1	Omnivore/Scavenger	0.547	
Lease Area	063	Nemertea	Lineidae	Micrura spp.	2	Predator	0.033	
Lease Area	063	Oligochaeta	Oligochaeta	Oligochaeta spp.	9	Subsurface Deposit Feeder	0.002	
Lease Area	063	Polychaeta	Ampharetidae	Ampharetidae spp.	5	Surface Deposit Feeder	<0.001	juvenile
Lease Area	063	Polychaeta	Ampharetidae	Melinna cristata	10	Surface Deposit Feeder	0.075	
Lease Area	063	Polychaeta	Capitellidae	Mediomastus ambiseta	1	Subsurface Deposit Feeder	< 0.001	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
Lease Area	063	Polychaeta	Cirratulidae	Chaetozone sp.	4	Surface Deposit Feeder	0.001	
Lease Area	063	Polychaeta	Cirratulidae	Tharyx spp.	31	Surface Deposit Feeder	0.012	
Lease Area	063	Polychaeta	Glyceridae	Glycera capitata	2	Omnivore/Scavenger	0.001	
Lease Area	063	Polychaeta	Goniadidae	Goniada spp.	1	Predator	0.001	
Lease Area	063	Polychaeta	Lumbrineridae	Lumbrineridae spp.	9	Omnivore/Scavenger	0.001	juvenile
Lease Area	063	Polychaeta	Lumbrineridae	Ninoe nigripes	7	Omnivore/Scavenger	0.029	
Lease Area	063	Polychaeta	Lumbrineridae	Scoletoma tenuis	13	Omnivore/Scavenger	0.016	
Lease Area	063	Polychaeta	Maldanidae	Clymenella torquata	89	Subsurface Deposit Feeder	1.419	
Lease Area	063	Polychaeta	Nephtyidae	Nephtys incisa	18	Omnivore/Scavenger	0.599	
Lease Area	063	Polychaeta	Paraonidae	Aricidea (Acmira) catherinae	48	Surface Deposit Feeder	0.012	
Lease Area	063	Polychaeta	Paraonidae	Levinsenia gracilis	19	Subsurface Deposit Feeder	0.005	
Lease Area	063	Polychaeta	Polygordiidae	Polygordius jouinae	1	Subsurface Deposit Feeder	<0.001	
Lease Area	063	Polychaeta	Polynoidae	Harmothoe extenuata	3	Predator	0.004	
Lease Area	063	Polychaeta	Sabellidae	Euchone rubrocincta	4	Suspension Feeder	0.001	
Lease Area	063	Polychaeta	Spionidae	Polydora spp.	1	Interface Feeder	0.001	
Lease Area	063	Polychaeta	Syllidae	Exogone spp.	2	Omnivore/Scavenger	<0.001	
Lease Area	063	Polychaeta	-	Polychaeta fragments	-	-	0.066	
Lease Area	063	Priapulida	Priapulidae	Priapulus caudatus	2	Surface Deposit Feeder	0.054	
Lease Area	065	Arthropoda	Ampeliscidae	Ampelisca spp.	669	Interface Feeder	1.51	
Lease Area	065	Arthropoda	Caprellidae	Aeginina longicornis	2	Predator	0.003	
Lease Area	065	Arthropoda	Caprellidae	Paracaprella tenuis	15	Predator	0.008	
Lease Area	065	Arthropoda	Corophiidae	Leptocheirus pinguis	49	Interface Feeder	0.279	
Lease Area	065	Arthropoda	Idoteidea	Edotia triloba	5	Omnivore/Scavenger	0.006	
Lease Area	065	Arthropoda	Ischyroceridae	Ericthonius spp.	21	Interface Feeder	0.017	
Lease Area	065	Arthropoda	Leuconidae	Eudorella pusilla	12	Interface Feeder	0.016	
Lease Area	065	Arthropoda	Lysianassidae	Lysianopsis alba	20	Omnivore/Scavenger	0.02	
Lease Area	065	Arthropoda	Photidae	Photis spp.	3	Interface Feeder	<0.001	
Lease Area	065	Arthropoda	Phoxocephalidae	Rhepoxynius epistomus	3	Interface Feeder	0.002	
Lease Area	065	Arthropoda	Pontogeneiidae	Pontogeneia inermis	1	Interface Feeder	0.003	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
Lease Area	065	Arthropoda	Unciolidae	<i>Unciola</i> spp.	6	Interface Feeder	0.004	
Lease Area	065	Bryozoa	-	Ctenostomatida spp.	-	Suspension Feeder	-	
Lease Area	065	Chordata	Molgulidae	Molgula manhattensis	5	Suspension Feeder	0.01	
Lease Area	065	Cnidaria	Edwardsiidae	Edwardsia elegans	1	Suspension Feeder	0.031	
Lease Area	065	Mollusca	Bivalvia	Ameritella agilis	3	Subsurface Deposit Feeder	0.001	
Lease Area	065	Mollusca	Bivalvia	Mesodesma arctatum	7	Suspension Feeder	0.005	
Lease Area	065	Mollusca	Bivalvia	Mytilidae spp.	1	Suspension Feeder	<0.001	juvenile
Lease Area	065	Mollusca	Bivalvia	Nucula proxima	2512	Subsurface Deposit Feeder	1.342	
Lease Area	065	Mollusca	Bivalvia	Periploma papyratium	5	Suspension Feeder	0.001	
Lease Area	065	Mollusca	Bivalvia	Pitar morrhuanus	3	Suspension Feeder	0.011	
Lease Area	065	Mollusca	Bivalvia	Spisula solidissima	5	Suspension Feeder	0.207	
Lease Area	065	Mollusca	Bivalvia	Thyasira gouldii	1	Suspension Feeder	0.005	
Lease Area	065	Mollusca	Bivalvia	Yoldia sapotilla	15	Subsurface Deposit Feeder	0.015	
Lease Area	065	Nemertea	Amphiporidae	Amphiporus angulatus	5	Predator	0.044	
Lease Area	065	Nemertea	Lineidae	Cerebratulus lacteus	3	Predator	0.39	
Lease Area	065	Oligochaeta	Oligochaeta	Oligochaeta spp.	5	Subsurface Deposit Feeder	0.001	
Lease Area	065	Polychaeta	Ampharetidae	Ampharete arctica	7	Surface Deposit Feeder	0.024	
Lease Area	065	Polychaeta	Arabellidae	Drilonereis longa	1	Predator	0.011	
Lease Area	065	Polychaeta	Capitellidae	Mediomastus ambiseta	2	Subsurface Deposit Feeder	0.002	
Lease Area	065	Polychaeta	Cirratulidae	Aphelochaeta spp.	36	Surface Deposit Feeder	0.036	
Lease Area	065	Polychaeta	Cirratulidae	Chaetozone spp.	12	Surface Deposit Feeder	0.011	
Lease Area	065	Polychaeta	Cirratulidae	Cirratulidae spp.	10	Surface Deposit Feeder	0.001	
Lease Area	065	Polychaeta	Cirratulidae	Tharyx spp.	391	Surface Deposit Feeder	0.323	
Lease Area	065	Polychaeta	Flabelligaridae	Pherusa affinis	3	Surface Deposit Feeder	0.008	
Lease Area	065	Polychaeta	Glyceridae	Glycera spp.	1	Omnivore/Scavenger	0.001	juvenile
Lease Area	065	Polychaeta	Lumbrineridae	Lumbrineridae spp.	30	Omnivore/Scavenger	0.01	juvenile
Lease Area	065	Polychaeta	Lumbrineridae	Ninoe nigripes	19	Omnivore/Scavenger	0.086	
Lease Area	065	Polychaeta	Lumbrineridae	Scoletoma fragilis	23	Omnivore/Scavenger	0.063	
Lease Area	065	Polychaeta	Maldanidae	Clymenella torquata	38	Subsurface Deposit Feeder	2.604	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
Lease Area	065	Polychaeta	Maldanidae	Maldanidae spp.	106	Subsurface Deposit Feeder	1.088	juvenile
Lease Area	065	Polychaeta	Nephtyidae	Nephtys incisa	9	Omnivore/Scavenger	0.09	
Lease Area	065	Polychaeta	Oweniidae	Owenia fusiformis	2	Suspension Feeder	0.026	
Lease Area	065	Polychaeta	Paraonidae	Aricidea (Acmira) catherinae	38	Surface Deposit Feeder	0.018	
Lease Area	065	Polychaeta	Paraonidae	Levinsenia gracilis	21	Subsurface Deposit Feeder	0.006	
Lease Area	065	Polychaeta	Phyllodocidae	Phyllodoce groenlandica	1	Predator	0.001	
Lease Area	065	Polychaeta	Polygordiidae	Polygordius jouinae	77	Subsurface Deposit Feeder	0.016	
Lease Area	065	Polychaeta	Polynoidae	Harmothoe extenuata	2	Predator	0.001	
Lease Area	065	Polychaeta	Sabellidae	Euchone rubrocincta	25	Suspension Feeder	0.011	
Lease Area	065	Polychaeta	Spionidae	Spio spp.	2	Interface Feeder	0.022	
Lease Area	065	Polychaeta	Syllidae	Exogone spp.	3	Omnivore/Scavenger	<0.001	
Lease Area	065	Polychaeta	-	Polychaete Fragments	-	-	0.154	
Lease Area	068	Arthropoda	Ampeliscidae	Ampelisca spp.	212	Interface Feeder	0.888	
Lease Area	068	Arthropoda	Caprellidae	Aeginina longicornis	1	Predator	0.019	
Lease Area	068	Arthropoda	Caprellidae	Caprella equilibra	10	Predator	0.004	
Lease Area	068	Arthropoda	Corophiidae	Leptocheirus pinguis	69	Interface Feeder	0.957	
Lease Area	068	Arthropoda	Diastylidae	Diastylis quadrispinosa	2	Interface Feeder	0.002	
Lease Area	068	Arthropoda	Diastylidae	Diastylis sculpta	1	Interface Feeder	0.001	
Lease Area	068	Arthropoda	Gammaridae	Gammarus spp.	2	Interface Feeder	0.015	
Lease Area	068	Arthropoda	Ischyroceridae	Ericthonius spp.	11	Interface Feeder	0.015	
Lease Area	068	Arthropoda	Leuconidae	Eudorella pusilla	20	Interface Feeder	0.025	
Lease Area	068	Arthropoda	Lysianassidae	Lysianopsis alba	18	Omnivore/Scavenger	0.028	
Lease Area	068	Arthropoda	Phoxocephalidae	Harpinia propinqua	10	Interface Feeder	0.016	
Lease Area	068	Arthropoda	Unciolidae	Unciola spp.	7	Interface Feeder	0.019	
Lease Area	068	Arthropoda	-	Cumacea spp.	2	Omnivore/Scavenger	0.001	
Lease Area	068	Chordata	Molgulidae	Molgula manhattensis	19	Suspension Feeder	0.052	
Lease Area	068	Cnidaria	Campanulariidae	Campanulariidae spp.	-	Suspension Feeder	-	
Lease Area	068	Mollusca	Bivalvia	Arctica islandica	1	Suspension Feeder	0.005	
Lease Area	068	Mollusca	Bivalvia	Mesodesma arctatum	18	Suspension Feeder	0.056	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
Lease Area	068	Mollusca	Bivalvia	Nucula proxima	384	Subsurface Deposit Feeder	0.163	
Lease Area	068	Mollusca	Bivalvia	Periploma papyratium	21	Suspension Feeder	0.065	
Lease Area	068	Mollusca	Bivalvia	Pitar morrhuanus	3	Suspension Feeder	0.001	
Lease Area	068	Mollusca	Bivalvia	Thyasira gouldii	5	Suspension Feeder	0.017	
Lease Area	068	Mollusca	Bivalvia	Yoldia sapotilla	5	Subsurface Deposit Feeder	0.007	
Lease Area	068	Mollusca	Gastropoda	Acteocina canaliculata	1	Predator	<0.001	
Lease Area	068	Mollusca	Gastropoda	Tritia trivittata	1	Omnivore/Scavenger	0.423	
Lease Area	068	Nemertea	Lineidae	Micrura spp.	1	Predator	0.009	
Lease Area	068	Oligochaeta	Oligochaeta	Oligochaeta spp.	9	Subsurface Deposit Feeder	<0.001	
Lease Area	068	Polychaeta	Ampharetidae	Ampharete arctica	2	Surface Deposit Feeder	0.005	
Lease Area	068	Polychaeta	Arabellidae	Drilonereis longa	1	Predator	0.008	
Lease Area	068	Polychaeta	Cirratulidae	Tharyx spp.	5	Surface Deposit Feeder	0.001	
Lease Area	068	Polychaeta	Flabelligaridae	Brada spp.	3	Surface Deposit Feeder	0.005	
Lease Area	068	Polychaeta	Flabelligaridae	Pherusa plumosa	1	Surface Deposit Feeder	<0.001	
Lease Area	068	Polychaeta	Glyceridae	Glycera spp.	1	Omnivore/Scavenger	<0.001	juvenile
Lease Area	068	Polychaeta	Lumbrineridae	Lumbrineridae spp.	11	Omnivore/Scavenger	0.009	juvenile
Lease Area	068	Polychaeta	Lumbrineridae	Lumbrineris acicularum	11	Omnivore/Scavenger	0.096	
Lease Area	068	Polychaeta	Lumbrineridae	Ninoe nigripes	10	Omnivore/Scavenger	0.1062	
Lease Area	068	Polychaeta	Maldanidae	Clymenella torquata	17	Subsurface Deposit Feeder	0.215	
Lease Area	068	Polychaeta	Maldanidae	Maldanidae spp.	55	Subsurface Deposit Feeder	1.175	juvenile
Lease Area	068	Polychaeta	Nephtyidae	Nephtys incisa	4	Omnivore/Scavenger	0.102	
Lease Area	068	Polychaeta	Nephtyidae	Nephytidae spp.	6	Omnivore/Scavenger	0.004	juvenile
Lease Area	068	Polychaeta	Paraonidae	Aricidea (Acmira) catherinae	5	Surface Deposit Feeder	0.001	
Lease Area	068	Polychaeta	Paraonidae	Levinsenia gracilis	5	Subsurface Deposit Feeder	0.019	
Lease Area	068	Polychaeta	Phyllodocidae	Phyllodoce mucosa	1	Predator	0.003	
Lease Area	068	Polychaeta	Polynoidae	Harmothoe extenuata	1	Predator	<0.001	
Lease Area	068	Polychaeta	Sabellidae	Euchone rubrocincta	9	Suspension Feeder	0.004	
Lease Area	068	Polychaeta	Spionidae	Spio spp.	1	Interface Feeder	0.001	
Lease Area	068	Polychaeta	Syllidae	Exogone spp.	8	Omnivore/Scavenger	0.001	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
Lease Area	068	Polychaeta	-	Polychaete Fragments	-	-	0.151	
Lease Area	069	Arthropoda	Ampeliscidae	Ampelisca spp.	7	Interface Feeder	0.012	
Lease Area	069	Arthropoda	Caprellidae	Aeginina longicornis	4	Predator	0.011	
Lease Area	069	Arthropoda	Diastylidae	Diastylis spp.	1	Interface Feeder	<0.001	
Lease Area	069	Arthropoda	Ischyroceridae	Ericthonius spp.	1	Interface Feeder	<0.001	
Lease Area	069	Arthropoda	Ischyroceridae	Ischyrocerus anguipes	2	Interface Feeder	<0.001	
Lease Area	069	Arthropoda	Leuconidae	Eudorella pusilla	1	Interface Feeder	0.005	
Lease Area	069	Arthropoda	Photidae	Photis spp.	3	Interface Feeder	<0.001	
Lease Area	069	Arthropoda	Phoxocephalidae	Phoxocephalidae spp.	1	Interface Feeder	<0.001	
Lease Area	069	Arthropoda	Unciolidae	<i>Unciola</i> spp.	3	Interface Feeder	<0.001	
Lease Area	069	Cnidaria	Edwardsiidae	Edwardsiella lineata	1	Suspension Feeder	0.074	
Lease Area	069	Mollusca	Bivalvia	Ameritella agilis	4	Subsurface Deposit Feeder	0.001	
Lease Area	069	Mollusca	Bivalvia	Lucinoma filosa	3	Suspension Feeder	0.041	
Lease Area	069	Mollusca	Bivalvia	Nucula proxima	3062	Subsurface Deposit Feeder	0.14	
Lease Area	069	Mollusca	Bivalvia	Periploma papyratium	2	Suspension Feeder	<0.001	
Lease Area	069	Mollusca	Bivalvia	Pitar morrhuanus	2	Suspension Feeder	<0.001	
Lease Area	069	Mollusca	Bivalvia	Thyasira gouldii	1	Suspension Feeder	0.008	
Lease Area	069	Mollusca	Bivalvia	Yoldia sapotilla	9	Subsurface Deposit Feeder	0.002	
Lease Area	069	Mollusca	Gastropoda	Tritia trivittata	1	Omnivore/Scavenger	0.007	
Lease Area	069	Oligochaeta	Oligochaeta	Oligochaeta spp.	18	Subsurface Deposit Feeder	0.002	
Lease Area	069	Polychaeta	Ampharetidae	Ampharetidae spp.	4	Surface Deposit Feeder	<0.001	juvenile
Lease Area	069	Polychaeta	Cirratulidae	Aphelochaeta sp.	4	Surface Deposit Feeder	0.002	
Lease Area	069	Polychaeta	Lumbrineridae	Lumbrineridae spp.	12	Omnivore/Scavenger	0.008	juvenile
Lease Area	069	Polychaeta	Lumbrineridae	Ninoe nigripes	4	Omnivore/Scavenger	0.025	
Lease Area	069	Polychaeta	Maldanidae	Clymenella torquata	4	Subsurface Deposit Feeder	0.103	
Lease Area	069	Polychaeta	Maldanidae	Maldanidae spp.	12	Subsurface Deposit Feeder	-	juvenile
Lease Area	069	Polychaeta	Nephtyidae	Nephtys incisa	12	Omnivore/Scavenger	0.052	
Lease Area	069	Polychaeta	Oweniidae	Owenia fusiformis	5	Suspension Feeder	0.05	
Lease Area	069	Polychaeta	Paraonidae	Aricidea (Acmira) catherinae	29	Surface Deposit Feeder	0.006	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
Lease Area	069	Polychaeta	Paraonidae	Levinsenia gracilis	119	Subsurface Deposit Feeder	0.038	
Lease Area	069	Polychaeta	Phyllodocidae	Hypereteone heteropoda	1	Predator	0.003	
Lease Area	069	Polychaeta	Syllidae	Exogone spp.	4	Omnivore/Scavenger	<0.001	
Lease Area	069	Polychaeta	-	Polychaete Fragments	-	-	0.068	
Lease Area	072	Arthropoda	Ampeliscidae	Ampelisca spp.	33	Interface Feeder	0.068	
Lease Area	072	Arthropoda	Cancridae	Cancer irroratus	1	Predator	0.405	
Lease Area	072	Arthropoda	Corophiidae	Leptocheirus pinguis	1	Interface Feeder	0.035	
Lease Area	072	Arthropoda	Ischyroceridae	Ericthonius spp.	1	Interface Feeder	<0.001	
Lease Area	072	Arthropoda	Lysianassidae	Lysianopsis alba	4	Omnivore/Scavenger	0.001	
Lease Area	072	Arthropoda	Photidae	Photis spp.	2	Interface Feeder	<0.001	
Lease Area	072	Arthropoda	Unciolidae	Unciola spp.	4	Interface Feeder	<0.001	
Lease Area	072	Bryozoa	-	Bryozoa spp.	-	Suspension Feeder	-	
Lease Area	072	Chordata	Molgulidae	Molgula manhattensis	7	Suspension Feeder	0.002	
Lease Area	072	Mollusca	Bivalvia	Ameritella agilis	1	Subsurface Deposit Feeder	<0.001	
Lease Area	072	Mollusca	Bivalvia	Ensis leei	1	Suspension Feeder	<0.001	
Lease Area	072	Mollusca	Bivalvia	Mesodesma arctatum	16	Suspension Feeder	0.01	
Lease Area	072	Mollusca	Bivalvia	Nucula proxima	128	Subsurface Deposit Feeder	0.076	
Lease Area	072	Mollusca	Bivalvia	Periploma papyratium	6	Suspension Feeder	0.02	
Lease Area	072	Mollusca	Bivalvia	Pitar morrhuanus	3	Suspension Feeder	0.039	
Lease Area	072	Mollusca	Bivalvia	Thyasira gouldii	1	Suspension Feeder	0.013	
Lease Area	072	Mollusca	Bivalvia	Yoldia sapotilla	1	Subsurface Deposit Feeder	<0.001	
Lease Area	072	Mollusca	Gastropoda	Tritia trivittata	3	Omnivore/Scavenger	0.685	
Lease Area	072	Nemertea	Lineidae	Cerebratulus lacteus	1	Predator	0.211	
Lease Area	072	Oligochaeta	Oligochaeta	Oligochaeta spp.	3	Subsurface Deposit Feeder	<0.001	
Lease Area	072	Polychaeta	Ampharetidae	Ampharete arctica	3	Surface Deposit Feeder	0.035	
Lease Area	072	Polychaeta	Cirratulidae	Tharyx spp.	9	Surface Deposit Feeder	0.002	
Lease Area	072	Polychaeta	Glyceridae	Glycera spp.	1	Omnivore/Scavenger	0.002	juvenile
Lease Area	072	Polychaeta	Lumbrineridae	Lumbrineridae spp.	12	Omnivore/Scavenger	-	juvenile
Lease Area	072	Polychaeta	Lumbrineridae	Ninoe nigripes	12	Omnivore/Scavenger	0.049	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
Lease Area	072	Polychaeta	Maldanidae	Clymenella torquata	15	Subsurface Deposit Feeder	0.486	
Lease Area	072	Polychaeta	Maldanidae	Maldanidae spp.	23	Subsurface Deposit Feeder	0.702	juvenile
Lease Area	072	Polychaeta	Nephtyidae	Nephtys incisa	20	Omnivore/Scavenger	0.076	
Lease Area	072	Polychaeta	Oweniidae	Owenia fusiformis	13	Suspension Feeder	0.174	
Lease Area	072	Polychaeta	Paraonidae	Aricidea (Acmira) catherinae	6	Surface Deposit Feeder	<0.001	
Lease Area	072	Polychaeta	Paraonidae	Levinsenia gracilis	57	Subsurface Deposit Feeder	0.009	
Lease Area	072	Polychaeta	Polygordiidae	Polygordius jouinae	10	Subsurface Deposit Feeder	<0.001	
Lease Area	072	Polychaeta	Sabellidae	Euchone rubrocincta	20	Suspension Feeder	0.005	
Lease Area	072	Polychaeta	Syllidae	Exogone spp.	7	Omnivore/Scavenger	<0.001	
Lease Area	072	Polychaeta	Syllidae	Haplosyllis spongiphila	1	Omnivore/Scavenger	<0.001	
Lease Area	072	Polychaeta	Trichobranchidae	Terebellides stroemii	2	Subsurface Deposit Feeder	0.023	
Lease Area	072	Polychaeta	-	Polychaete Fragments	-	-	0.014	
Lease Area	074	Arthropoda	Ampeliscidae	Ampelisca spp.	265	Interface Feeder	0.405	
Lease Area	074	Arthropoda	Corophiidae	Corophium spp.	3	Interface Feeder	0.002	
Lease Area	074	Arthropoda	Corophiidae	Leptocheirus pinguis	8	Interface Feeder	0.033	
Lease Area	074	Arthropoda	Diastylidae	Diastylis sculpta	1	Interface Feeder	<0.001	
Lease Area	074	Arthropoda	Idoteidea	Edotia triloba	1	Omnivore/Scavenger	<0.001	
Lease Area	074	Arthropoda	Leuconidae	Eudorella pusilla	23	Interface Feeder	0.017	
Lease Area	074	Arthropoda	Lysianassidae	Lysianopsis alba	2	Omnivore/Scavenger	<0.001	
Lease Area	074	Arthropoda	Photidae	Photis spp.	12	Interface Feeder	<0.001	
Lease Area	074	Arthropoda	Phoxocephalidae	Rhepoxynius epistomus	4	Interface Feeder	0.004	
Lease Area	074	Arthropoda	Unciolidae	<i>Unciola</i> spp.	1	Interface Feeder	0.002	
Lease Area	074	Arthropoda	-	Balanomorpha spp.	7	Suspension Feeder	0.002	
Lease Area	074	Bryozoa	-	Bryozoa spp.	-	Suspension Feeder	-	
Lease Area	074	Chordata	Molgulidae	Molgula manhattensis	40	Suspension Feeder	0.052	
Lease Area	074	Mollusca	Bivalvia	Mesodesma arctatum	58	Suspension Feeder	0.056	
Lease Area	074	Mollusca	Bivalvia	Nucula proxima	449	Subsurface Deposit Feeder	0.181	
Lease Area	074	Mollusca	Bivalvia	Periploma papyratium	6	Suspension Feeder	0.056	
Lease Area	074	Mollusca	Bivalvia	Pitar morrhuanus	4	Suspension Feeder	<0.001	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
Lease Area	074	Mollusca	Bivalvia	Thyasira gouldii	2	Suspension Feeder	0.051	
Lease Area	074	Mollusca	Bivalvia	Yoldia sapotilla	4	Subsurface Deposit Feeder	0.005	
Lease Area	074	Mollusca	Gastropoda	Tritia trivittata	1	Omnivore/Scavenger	0.005	
Lease Area	074	Nemertea	Lineidae	Cerebratulus lacteus	1	Predator	0.499	
Lease Area	074	Nemertea	Lineidae	Micrura spp.	2	Predator	0.363	
Lease Area	074	Platyhelminthes	-	Platyhelminthes spp.	1	Omnivore/Scavenger	0.025	
Lease Area	074	Polychaeta	Ampharetidae	Ampharete arctica	1	Surface Deposit Feeder	0.022	
Lease Area	074	Polychaeta	Goniadidae	Goniada spp.	1	Predator	<0.001	
Lease Area	074	Polychaeta	Lumbrineridae	Lumbrineridae spp.	5	Omnivore/Scavenger	0.086	juvenile
Lease Area	074	Polychaeta	Lumbrineridae	Ninoe nigripes	4	Omnivore/Scavenger	0.053	
Lease Area	074	Polychaeta	Lumbrineridae	Scoletoma fragilis	1	Omnivore/Scavenger	0.599	
Lease Area	074	Polychaeta	Maldanidae	Clymenella torquata	10	Subsurface Deposit Feeder	0.32	
Lease Area	074	Polychaeta	Maldanidae	Maldanidae spp.	15	Subsurface Deposit Feeder	0.692	juvenile
Lease Area	074	Polychaeta	Nephtyidae	Nephtys incisa	11	Omnivore/Scavenger	0.002	
Lease Area	074	Polychaeta	Oweniidae	Owenia fusiformis	21	Suspension Feeder	0.192	
Lease Area	074	Polychaeta	Paraonidae	Levinsenia gracilis	32	Subsurface Deposit Feeder	0.006	
Lease Area	074	Polychaeta	Sabellidae	Euchone rubrocincta	2	Suspension Feeder	<0.001	
Lease Area	074	Polychaeta	Trichobranchidae	Terebellides stroemii	6	Subsurface Deposit Feeder	0.082	
Lease Area	074	Polychaeta	-	Polychaete Fragments	-	-	0.033	
Lease Area	074	Sipuncula	-	Sipuncula spp.	1	Surface Deposit Feeder	<0.001	
Lease Area	075	Arthropoda	Ampeliscidae	Ampelisca spp.	308	Interface Feeder	0.656	
Lease Area	075	Arthropoda	Ampeliscidae	Byblis serrata	1	Interface Feeder	0.01	
Lease Area	075	Arthropoda	Anthuridae	Ptilanthura tenuis	1	Omnivore/Scavenger	0.002	
Lease Area	075	Arthropoda	Aoridae	Aoridae spp.	2	Omnivore/Scavenger	0.002	
Lease Area	075	Arthropoda	Caprellidae	Aeginina longicornis	2	Predator	0.021	
Lease Area	075	Arthropoda	Caprellidae	Paracaprella tenuis	2	Predator	0.002	
Lease Area	075	Arthropoda	Corophiidae	Corophium spp.	5	Interface Feeder	<0.001	
Lease Area	075	Arthropoda	Corophiidae	Leptocheirus pinguis	3	Interface Feeder	0.005	
Lease Area	075	Arthropoda	Ischyroceridae	Ericthonius spp.	5	Interface Feeder	0.007	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
Lease Area	075	Arthropoda	Leuconidae	Eudorella pusilla	27	Interface Feeder	0.018	
Lease Area	075	Arthropoda	Lysianassidae	Lysianopsis alba	1	Omnivore/Scavenger	<0.001	
Lease Area	075	Arthropoda	Photidae	Photis spp.	12	Interface Feeder	0.002	
Lease Area	075	Arthropoda	Phoxocephalidae	Harpinia propinqua	15	Interface Feeder	0.009	
Lease Area	075	Arthropoda	Phoxocephalidae	Rhepoxynius epistomus	7	Interface Feeder	0.006	
Lease Area	075	Arthropoda	-	Balanomorpha spp.	2	Suspension Feeder	<0.001	
Lease Area	075	Chordata	Molgulidae	Molgula manhattensis	15	Suspension Feeder	3.387	
Lease Area	075	Cnidaria	Edwardsiidae	Edwardsiella lineata	1	Suspension Feeder	0.023	
Lease Area	075	Mollusca	Bivalvia	Ameritella agilis	1	Subsurface Deposit Feeder	<0.001	
Lease Area	075	Mollusca	Bivalvia	Arctica islandica	1	Suspension Feeder	1.204	
Lease Area	075	Mollusca	Bivalvia	Mesodesma arctatum	34	Suspension Feeder	0.038	
Lease Area	075	Mollusca	Bivalvia	Nucula proxima	1029	Subsurface Deposit Feeder	0.413	
Lease Area	075	Mollusca	Bivalvia	Periploma papyratium	3	Suspension Feeder	0.008	
Lease Area	075	Mollusca	Bivalvia	Pitar morrhuanus	6	Suspension Feeder	<0.001	
Lease Area	075	Mollusca	Bivalvia	Thyasira gouldii	9	Suspension Feeder	0.037	
Lease Area	075	Mollusca	Bivalvia	Yoldia sapotilla	7	Subsurface Deposit Feeder	0.002	
Lease Area	075	Mollusca	Gastropoda	Tritia trivittata	3	Omnivore/Scavenger	0.601	
Lease Area	075	Nemertea	Lineidae	Micrura spp.	1	Predator	0.395	
Lease Area	075	Oligochaeta	Oligochaeta	Oligochaeta spp.	6	Subsurface Deposit Feeder	<0.001	
Lease Area	075	Polychaeta	Ampharetidae	Ampharete arctica	5	Surface Deposit Feeder	0.154	
Lease Area	075	Polychaeta	Cirratulidae	Tharyx spp.	1	Surface Deposit Feeder	<0.001	
Lease Area	075	Polychaeta	Dorvellidae	Parougia caeca	1	Surface Deposit Feeder	<0.001	
Lease Area	075	Polychaeta	Glyceridae	Glycera capitata	1	Omnivore/Scavenger	0.022	
Lease Area	075	Polychaeta	Glyceridae	Glycera spp.	4	Omnivore/Scavenger	-	juvenile
Lease Area	075	Polychaeta	Lumbrineridae	Lumbrineridae spp.	4	Omnivore/Scavenger	0.005	juvenile
Lease Area	075	Polychaeta	Lumbrineridae	Ninoe nigripes	15	Omnivore/Scavenger	0.177	
Lease Area	075	Polychaeta	Maldanidae	Clymenella torquata	27	Subsurface Deposit Feeder	1.279	
Lease Area	075	Polychaeta	Maldanidae	Maldanidae spp.	78	Subsurface Deposit Feeder	0.327	juvenile
Lease Area	075	Polychaeta	Nephtyidae	Nephtys incisa	33	Omnivore/Scavenger	0.032	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
Lease Area	075	Polychaeta	Oweniidae	Owenia fusiformis	14	Suspension Feeder	0.173	
Lease Area	075	Polychaeta	Paraonidae	Levinsenia gracilis	81	Subsurface Deposit Feeder	0.026	
Lease Area	075	Polychaeta	Polygordiidae	Polygordius jouinae	3	Subsurface Deposit Feeder	<0.001	
Lease Area	075	Polychaeta	Sabellidae	Euchone rubrocincta	1	Suspension Feeder	0.005	
Lease Area	075	Polychaeta	Scalibregmatidae	Scalibregma inflatum	1	Subsurface Deposit Feeder	0.014	
Lease Area	075	Polychaeta	Syllidae	Exogone spp.	4	Omnivore/Scavenger	<0.001	
Lease Area	075	Polychaeta	Syllidae	Syllis spp.	1	Omnivore/Scavenger	<0.001	
Lease Area	075	Polychaeta	Trichobranchidae	Terebellides stroemii	4	Subsurface Deposit Feeder	0.131	
Lease Area	075	Polychaeta	-	Polychaete Fragments	-	-	0.103	
Lease Area	075	Sipuncula	-	Sipuncula spp.	1	Surface Deposit Feeder	<0.001	
Lease Area	078	Arthropoda	Ampeliscidae	Ampelisca spp.	786	Interface Feeder	1.349	
Lease Area	078	Arthropoda	Corophiidae	Corophium spp.	12	Interface Feeder	0.003	
Lease Area	078	Arthropoda	Corophiidae	Leptocheirus pinguis	229	Interface Feeder	0.678	
Lease Area	078	Arthropoda	Diastylidae	Diastylis spp.	4	Interface Feeder	0.003	
Lease Area	078	Arthropoda	Dulichiidae	Dyopedos monacanthus	2	Suspension Feeder	<0.001	
Lease Area	078	Arthropoda	Ischyroceridae	Ericthonius spp.	3	Interface Feeder	<0.001	
Lease Area	078	Arthropoda	Leuconidae	Eudorella pusilla	36	Interface Feeder	0.025	
Lease Area	078	Arthropoda	Lysianassidae	Lysianassidae spp.	1	Interface Feeder	<0.001	juvenile
Lease Area	078	Arthropoda	Lysianassidae	Lysianopsis alba	2	Omnivore/Scavenger	<0.001	
Lease Area	078	Arthropoda	Photidae	Photis spp.	38	Interface Feeder	0.002	
Lease Area	078	Arthropoda	Phoxocephalidae	Harpinia propinqua	30	Interface Feeder	0.014	
Lease Area	078	Arthropoda	Phoxocephalidae	Rhepoxynius epistomus	3	Interface Feeder	0.002	
Lease Area	078	Arthropoda	Unciolidae	Unciola spp.	2	Interface Feeder	0.005	
Lease Area	078	Arthropoda	-	Amphipoda spp.	1	Interface Feeder	<0.001	
Lease Area	078	Bryozoa	-	Bryozoa spp.	-	Suspension Feeder	-	
Lease Area	078	Chordata	Molgulidae	Molgula manhattensis	11	Suspension Feeder	0.025	
Lease Area	078	Mollusca	Bivalvia	Ameritella agilis	3	Subsurface Deposit Feeder	< 0.001	
Lease Area	078	Mollusca	Bivalvia	Arctica islandica	1	Suspension Feeder	0.047	
Lease Area	078	Mollusca	Bivalvia	Astarte undata	2	Suspension Feeder	0.099	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
Lease Area	078	Mollusca	Bivalvia	Mesodesma arctatum	19	Suspension Feeder	0.007	
Lease Area	078	Mollusca	Bivalvia	Mytillidae spp.	3	Suspension Feeder	<0.001	juvenile
Lease Area	078	Mollusca	Bivalvia	Nucula proxima	60	Subsurface Deposit Feeder	0.034	
Lease Area	078	Mollusca	Bivalvia	Periploma papyratium	18	Suspension Feeder	0.054	
Lease Area	078	Mollusca	Bivalvia	Pitar morrhuanus	2	Suspension Feeder	<0.001	
Lease Area	078	Mollusca	Bivalvia	Thyasira gouldii	3	Suspension Feeder	<0.001	
Lease Area	078	Mollusca	Bivalvia	Yoldia sapotilla	1	Subsurface Deposit Feeder	<0.001	
Lease Area	078	Mollusca	Gastropoda	Tritia trivittata	1	Omnivore/Scavenger	0.007	
Lease Area	078	Nemertea	Lineidae	Micrura spp.	1	Predator	0.077	
Lease Area	078	Nemertea	Tubulanidae	Tubulanus pellucidus	2	Predator	0.019	
Lease Area	078	Oligochaeta	Oligochaeta	Oligochaeta spp.	1	Subsurface Deposit Feeder	<0.001	
Lease Area	078	Polychaeta	Ampharetidae	Ampharete arctica	1	Surface Deposit Feeder	0.03	
Lease Area	078	Polychaeta	Arabellidae	Drilonereis longa	2	Predator	0.006	
Lease Area	078	Polychaeta	Cirratulidae	Chaetozone sp.	1	Surface Deposit Feeder	0.002	
Lease Area	078	Polychaeta	Cirratulidae	Tharyx sp.	2	Surface Deposit Feeder	<0.001	
Lease Area	078	Polychaeta	Flabelligaridae	Pherusa affinis	1	Surface Deposit Feeder	<0.001	
Lease Area	078	Polychaeta	Glyceridae	Glycera capitata	2	Omnivore/Scavenger	0.015	
Lease Area	078	Polychaeta	Glyceridae	Glycera spp.	1	Omnivore/Scavenger	-	juvenile
Lease Area	078	Polychaeta	Lumbrineridae	Ninoe nigripes	13	Omnivore/Scavenger	0.144	
Lease Area	078	Polychaeta	Lumbrineridae	Scoletoma fragilis	7	Omnivore/Scavenger	0.112	
Lease Area	078	Polychaeta	Maldanidae	Clymenella torquata	9	Subsurface Deposit Feeder	1.282	
Lease Area	078	Polychaeta	Nephtyidae	Nephtys incisa	3	Omnivore/Scavenger	0.471	
Lease Area	078	Polychaeta	Nephtyidae	Nephtys picta	8	Omnivore/Scavenger	0.021	
Lease Area	078	Polychaeta	Oweniidae	Owenia fusiformis	2	Suspension Feeder	<0.001	
Lease Area	078	Polychaeta	Paraonidae	Aricidea (Acmira) catherinae	2	Surface Deposit Feeder	<0.001	
Lease Area	078	Polychaeta	Paraonidae	Levinsenia gracilis	20	Subsurface Deposit Feeder	0.004	
Lease Area	078	Polychaeta	Phyllodocidae	Phyllodocidae spp.	1	Predator	<0.001	juvenile
Lease Area	078	Polychaeta	Polygordiidae	Polygordius jouinae	12	Subsurface Deposit Feeder	<0.001	
Lease Area	078	Polychaeta	Polynoidae	Harmothoe extenuata	1	Predator	0.001	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
Lease Area	078	Polychaeta	Sabellidae	Euchone rubrocincta	1	Suspension Feeder	<0.001	
Lease Area	078	Polychaeta	Spionidae	Spionidae spp.	1	Interface Feeder	<0.001	juvenile
Lease Area	078	Polychaeta	Syllidae	Exogone spp.	1	Omnivore/Scavenger	<0.001	
Lease Area	078	Polychaeta	Trichobranchidae	Terebellides stroemii	3	Subsurface Deposit Feeder	0.09	
Lease Area	078	Polychaeta	-	Polychaete Fragments	-	-	0.033	
Lease Area	078	Sipuncula	-	Sipuncula spp.	3	Surface Deposit Feeder	<0.001	
Lease Area	079	Arthropoda	Ampeliscidae	Ampelisca spp.	339	Interface Feeder	0.751	
Lease Area	079	Arthropoda	Anthuridae	Ptilanthura tenuis	1	Omnivore/Scavenger	<0.001	
Lease Area	079	Arthropoda	CaNECCidae	Cancer irroratus	1	Predator	0.408	
Lease Area	079	Arthropoda	Caprellidae	Paracaprella tenuis	1	Predator	<0.001	
Lease Area	079	Arthropoda	Corophiidae	Corophium spp.	21	Interface Feeder	0.024	
Lease Area	079	Arthropoda	Corophiidae	Leptocheirus pinguis	23	Interface Feeder	0.202	
Lease Area	079	Arthropoda	Diastylidae	Diastylis sculpta	2	Interface Feeder	<0.001	
Lease Area	079	Arthropoda	Ischyroceridae	Ericthonius spp.	14	Interface Feeder	0.008	
Lease Area	079	Arthropoda	Leuconidae	Eudorella pusilla	20	Interface Feeder	0.019	
Lease Area	079	Arthropoda	Lysianassidae	Lysianopsis alba	2	Omnivore/Scavenger	<0.001	
Lease Area	079	Arthropoda	Oedicerotidae	Ameroculodea edwardsi	1	Interface Feeder	<0.001	
Lease Area	079	Arthropoda	Photidae	Photis spp.	5	Interface Feeder	<0.001	
Lease Area	079	Arthropoda	Phoxocephalidae	Harpinia propinqua	22	Interface Feeder	0.014	
Lease Area	079	Arthropoda	Unciolidae	<i>Unciola</i> spp.	4	Interface Feeder	<0.001	
Lease Area	079	Bryozoa	-	Ctenostomatida spp.	-	Suspension Feeder	-	
Lease Area	079	Chordata	Molgulidae	Molgula manhattensis	4	Suspension Feeder	0.038	
Lease Area	079	Hemichordata	Harrimaniidae	Stereobalanus canadensis	1	Surface Deposit Feeder	<0.001	
Lease Area	079	Mollusca	Bivalvia	Ameritella agilis	1	Subsurface Deposit Feeder	<0.001	
Lease Area	079	Mollusca	Bivalvia	Mesodesma arctatum	21	Suspension Feeder	0.006	
Lease Area	079	Mollusca	Bivalvia	Nucula proxima	72	Subsurface Deposit Feeder	0.056	
Lease Area	079	Mollusca	Bivalvia	Periploma papyratium	8	Suspension Feeder	0.017	
Lease Area	079	Mollusca	Bivalvia	Pitar morrhuanus	12	Suspension Feeder	0.003	
Lease Area	079	Mollusca	Gastropoda	Euspira triseriata	1	Predator	0.005	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
Lease Area	079	Mollusca	Gastropoda	Tritia trivittata	2	Omnivore/Scavenger	0.453	
Lease Area	079	Nemertea	Amphiporidae	Amphiporus angulatus	1	Predator	<0.001	
Lease Area	079	Nemertea	Lineidae	Micrura spp.	1	Predator	0.022	
Lease Area	079	Nemertea	Tubulanidae	Tubulanus pellucidus	1	Predator	<0.001	
Lease Area	079	Polychaeta	Ampharetidae	Ampharete arctica	2	Surface Deposit Feeder	0.012	
Lease Area	079	Polychaeta	Arabellidae	Drilonereis longa	1	Predator	0.003	
Lease Area	079	Polychaeta	Cirratulidae	Tharyx spp.	1	Surface Deposit Feeder	<0.001	
Lease Area	079	Polychaeta	Flabelligaridae	Pherusa affinis	2	Surface Deposit Feeder	0.002	
Lease Area	079	Polychaeta	Lumbrineridae	Ninoe nigripes	9	Omnivore/Scavenger	0.065	
Lease Area	079	Polychaeta	Lumbrineridae	Scoletoma fragilis	4	Omnivore/Scavenger	0.007	
Lease Area	079	Polychaeta	Maldanidae	Clymenella torquata	7	Subsurface Deposit Feeder	0.076	
Lease Area	079	Polychaeta	Maldanidae	Maldanidae spp.	6	Subsurface Deposit Feeder	0.231	juvenile
Lease Area	079	Polychaeta	Nephtyidae	Nephtys incisa	21	Omnivore/Scavenger	0.039	
Lease Area	079	Polychaeta	Oweniidae	Owenia fusiformis	7	Suspension Feeder	0.02	
Lease Area	079	Polychaeta	Paraonidae	Aricidea (Acmira) catherinae	2	Surface Deposit Feeder	<0.001	
Lease Area	079	Polychaeta	Paraonidae	Levinsenia gracilis	9	Subsurface Deposit Feeder	0.002	
Lease Area	079	Polychaeta	Sabellidae	Euchone rubrocincta	5	Suspension Feeder	0.002	
Lease Area	079	Polychaeta	Scalibregmatidae	Scalibregma inflatum	2	Subsurface Deposit Feeder	0.044	
Lease Area	079	Polychaeta	Syllidae	Exogone spp.	1	Omnivore/Scavenger	<0.001	
Lease Area	079	Polychaeta	Trichobranchidae	Terebellides stroemii	2	Subsurface Deposit Feeder	0.055	
Lease Area	079	Polychaeta	-	Polychaete Fragments	-	-	0.194	
Lease Area	079	Sipuncula	-	Sipuncula spp.	1	Surface Deposit Feeder	<0.001	
Lease Area	081	Arthropoda	Ampeliscidae	Ampelisca spp.	853	Interface Feeder	2.082	
Lease Area	081	Arthropoda	Caprellidae	Aeginina longicornis	1	Predator	0.006	
Lease Area	081	Arthropoda	Caprellidae	Caprella equilibra	6	Predator	0.003	
Lease Area	081	Arthropoda	Corophiidae	Corophium spp.	32	Interface Feeder	0.043	
Lease Area	081	Arthropoda	Corophiidae	Leptocheirus pinguis	109	Interface Feeder	0.95	
Lease Area	081	Arthropoda	Diastylidae	Diastylis sculpta	2	Interface Feeder	0.008	
Lease Area	081	Arthropoda	Gammaridae	Gammarus spp.	1	Interface Feeder	0.027	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
Lease Area	081	Arthropoda	Ischyroceridae	Ericthonius spp.	6	Interface Feeder	0.003	
Lease Area	081	Arthropoda	Leuconidae	Eudorella pusilla	27	Interface Feeder	0.024	
Lease Area	081	Arthropoda	Lysianassidae	Lysianopsis alba	12	Omnivore/Scavenger	0.004	
Lease Area	081	Arthropoda	Photidae	Photis spp.	18	Interface Feeder	0.004	
Lease Area	081	Arthropoda	Phoxocephalidae	Harpinia propinqua	34	Interface Feeder	0.02	
Lease Area	081	Arthropoda	Pontogeneiidae	Pontogeneia inermis	1	Interface Feeder	<0.001	
Lease Area	081	Arthropoda	Unciolidae	Unciola spp.	5	Interface Feeder	0.003	
Lease Area	081	Arthropoda	-	Amphipoda spp.	1	Interface Feeder	<0.001	
Lease Area	081	Bryozoa	-	Ctenostomatida spp.	-	Suspension Feeder	-	
Lease Area	081	Chordata	Molgulidae	Molgula manhattensis	41	Suspension Feeder	3.337	
Lease Area	081	Mollusca	Bivalvia	Lyonsia hyalina	3	Suspension Feeder	0.26	
Lease Area	081	Mollusca	Bivalvia	Mesodesma arctatum	38	Suspension Feeder	0.022	
Lease Area	081	Mollusca	Bivalvia	Nucula proxima	120	Subsurface Deposit Feeder	0.071	
Lease Area	081	Mollusca	Bivalvia	Periploma papyratium	9	Suspension Feeder	0.027	
Lease Area	081	Mollusca	Bivalvia	Pitar morrhuanus	20	Suspension Feeder	0.006	
Lease Area	081	Mollusca	Bivalvia	Thyasira gouldii	3	Suspension Feeder	0.004	
Lease Area	081	Mollusca	Bivalvia	Yoldia sapotilla	3	Subsurface Deposit Feeder	0.023	
Lease Area	081	Nemertea	Amphiporidae	Amphiporus angulatus	1	Predator	0.01	
Lease Area	081	Nemertea	Lineidae	Micrura spp.	15	Predator	0.058	
Lease Area	081	Polychaeta	Ampharetidae	Ampharete arctica	4	Surface Deposit Feeder	0.057	
Lease Area	081	Polychaeta	Capitellidae	Mediomastus ambiseta	1	Subsurface Deposit Feeder	<0.001	
Lease Area	081	Polychaeta	Cirratulidae	Tharyx spp.	3	Surface Deposit Feeder	<0.001	
Lease Area	081	Polychaeta	Flabelligaridae	Brada spp.	1	Surface Deposit Feeder	0.003	
Lease Area	081	Polychaeta	Flabelligaridae	Pherusa affinis	8	Surface Deposit Feeder	0.003	
Lease Area	081	Polychaeta	Glyceridae	Glycera capitata	2	Omnivore/Scavenger	0.025	
Lease Area	081	Polychaeta	Lumbrineridae	Ninoe nigripes	10	Omnivore/Scavenger	0.055	
Lease Area	081	Polychaeta	Lumbrineridae	Scoletoma fragilis	3	Omnivore/Scavenger	0.004	
Lease Area	081	Polychaeta	Maldanidae	Clymenella torquata	10	Subsurface Deposit Feeder	0.206	
Lease Area	081	Polychaeta	Maldanidae	Maldanidae spp.	100	Subsurface Deposit Feeder	0.491	juvenile

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
Lease Area	081	Polychaeta	Nephtyidae	Nephtys incisa	15	Omnivore/Scavenger	0.202	
Lease Area	081	Polychaeta	Oweniidae	Owenia fusiformis	19	Suspension Feeder	0.209	
Lease Area	081	Polychaeta	Paraonidae	Aricidea (Acmira) catherinae	17	Surface Deposit Feeder	0.006	
Lease Area	081	Polychaeta	Paraonidae	Levinsenia gracilis	6	Subsurface Deposit Feeder	<0.001	
Lease Area	081	Polychaeta	Polygordiidae	Polygordius jouinae	1	Subsurface Deposit Feeder	<0.001	
Lease Area	081	Polychaeta	Polynoidae	Harmothoe extenuata	3	Predator	<0.001	
Lease Area	081	Polychaeta	Sabellidae	Euchone rubrocincta	3	Suspension Feeder	0.007	
Lease Area	081	Polychaeta	Sigalionidae	Sthenelais boa	1	Predator	0.003	
Lease Area	081	Polychaeta	Spionidae	Spiophanes bombyx	1	Interface Feeder	<0.001	
Lease Area	081	Polychaeta	Syllidae	Exogone spp.	1	Omnivore/Scavenger	<0.001	
Lease Area	081	Polychaeta	Trichobranchidae	Terebellides stroemii	3	Subsurface Deposit Feeder	0.054	
Lease Area	081	Polychaeta	-	Polychaete Fragments	-	-	0.134	
Lease Area	084	Arthropoda	Ampeliscidae	Ampelisca spp.	249	Interface Feeder	0.44	
Lease Area	084	Arthropoda	Anthuridae	Ptilanthura tenuis	1	Omnivore/Scavenger	<0.001	
Lease Area	084	Arthropoda	Corophiidae	Corophium spp.	5	Interface Feeder	<0.001	
Lease Area	084	Arthropoda	Corophiidae	Leptocheirus pinguis	44	Interface Feeder	0.282	
Lease Area	084	Arthropoda	Diastylidae	Diastylis quadrispinosa	10	Interface Feeder	0.027	
Lease Area	084	Arthropoda	Ischyroceridae	Ericthonius spp.	9	Interface Feeder	0.008	
Lease Area	084	Arthropoda	Lampropidae	Alamprops quadriplicatus	1	Interface Feeder	<0.001	
Lease Area	084	Arthropoda	Leuconidae	Eudorella pusilla	11	Interface Feeder	0.009	
Lease Area	084	Arthropoda	Lysianassidae	Lysianopsis alba	4	Omnivore/Scavenger	<0.001	
Lease Area	084	Arthropoda	Photidae	Photis spp.	4	Interface Feeder	<0.001	
Lease Area	084	Arthropoda	Phoxocephalidae	Harpinia propinqua	13	Interface Feeder	0.002	
Lease Area	084	Arthropoda	Pontogeneiidae	Pontogeneia inermis	1	Interface Feeder	<0.001	
Lease Area	084	Arthropoda	Tryphosidae	Hippomedon serratus	1	Interface Feeder	<0.001	
Lease Area	084	Chordata	Molgulidae	Molgula manhattensis	10	Suspension Feeder	0.033	
Lease Area	084	Echinodermata	-	Ophiuroidea spp	1	Predator	<0.001	
Lease Area	084	Hemichordata	Harrimaniidae	Stereobalanus canadensis	1	Surface Deposit Feeder	0.015	
Lease Area	084	Mollusca	Bivalvia	Ameritella agilis	1	Subsurface Deposit Feeder	<0.001	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
Lease Area	084	Mollusca	Bivalvia	Arctica islandica	1	Suspension Feeder	<0.001	
Lease Area	084	Mollusca	Bivalvia	Mesodesma arctatum	17	Suspension Feeder	0.003	
Lease Area	084	Mollusca	Bivalvia	Nucula proxima	106	Subsurface Deposit Feeder	0.045	
Lease Area	084	Mollusca	Bivalvia	Periploma papyratium	7	Suspension Feeder	0.017	
Lease Area	084	Mollusca	Bivalvia	Pitar morrhuanus	27	Suspension Feeder	0.015	
Lease Area	084	Mollusca	Bivalvia	Thyasira gouldii	1	Suspension Feeder	<0.001	
Lease Area	084	Mollusca	Bivalvia	Yoldia sapotilla	6	Subsurface Deposit Feeder	0.183	
Lease Area	084	Mollusca	Gastropoda	Tritia trivittata	4	Omnivore/Scavenger	0.173	
Lease Area	084	Oligochaeta	Oligochaeta	Oligochaeta spp.	29	Subsurface Deposit Feeder	0.002	
Lease Area	084	Polychaeta	Ampharetidae	Ampharetidae spp.	2	Surface Deposit Feeder	-	juvenile
Lease Area	084	Polychaeta	Arabellidae	Drilonereis longa	2	Predator	0.01	
Lease Area	084	Polychaeta	Cirratulidae	Tharyx spp.	4	Surface Deposit Feeder	0.003	
Lease Area	084	Polychaeta	Cossuridae	Cossura longocirrata	2	Subsurface Deposit Feeder	<0001	
Lease Area	084	Polychaeta	Lumbrineridae	Ninoe nigripes	9	Omnivore/Scavenger	0.123	
Lease Area	084	Polychaeta	Maldanidae	Clymenella torquata	2	Subsurface Deposit Feeder	0.304	
Lease Area	084	Polychaeta	Maldanidae	Maldanidae spp.	2	Subsurface Deposit Feeder	-	juvenile
Lease Area	084	Polychaeta	Nephtyidae	Nephtys incisa	23	Omnivore/Scavenger	0.04	
Lease Area	084	Polychaeta	Oweniidae	Owenia fusiformis	3	Suspension Feeder	0.03	
Lease Area	084	Polychaeta	Paraonidae	Levinsenia gracilis	21	Subsurface Deposit Feeder	0.001	
Lease Area	084	Polychaeta	Syllidae	Odontosyllis fulgurans	1	Omnivore/Scavenger	<0.001	
Lease Area	084	Polychaeta	Trichobranchidae	Terebellides stroemii	1	Subsurface Deposit Feeder	0.045	
Lease Area	084	Polychaeta	-	Polychaete Fragments	-	-	0.005	
Lease Area	85	Arthropoda	Ampeliscidae	Ampelisca spp.	179	Interface Feeder	0.31	
Lease Area	85	Arthropoda	Corophiidae	Corophium spp.	2	Interface Feeder	<0.001	
Lease Area	85	Arthropoda	Corophiidae	Leptocheirus pinguis	3	Interface Feeder	0.011	
Lease Area	85	Arthropoda	Ischyroceridae	Ericthonius spp.	6	Interface Feeder	0.015	
Lease Area	85	Arthropoda	Leuconidae	Eudorella pusilla	2	Interface Feeder	0.001	
Lease Area	85	Arthropoda	Phoxocephalidae	Harpinia propinqua	13	Interface Feeder	0.009	
Lease Area	85	Chordata	Molgulidae	Molgula manhattensis	2	Suspension Feeder	< 0.001	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
Lease Area	85	Cnidaria	Edwardsiidae	Edwardsiella lineata	1	Suspension Feeder	<0.001	
Lease Area	85	Hemichordata	Harrimaniidae	Stereobalanus canadensis	3	Surface Deposit Feeder	0.178	
Lease Area	85	Mollusca	Bivalvia	Ameritella agilis	1	Subsurface Deposit Feeder	<0.001	
Lease Area	85	Mollusca	Bivalvia	Arctica islandica	5	Suspension Feeder	0.002	
Lease Area	85	Mollusca	Bivalvia	Mesodesma arctatum	33	Suspension Feeder	0.006	
Lease Area	85	Mollusca	Bivalvia	Nucula proxima	123	Subsurface Deposit Feeder	0.064	
Lease Area	85	Mollusca	Bivalvia	Periploma papyratium	15	Suspension Feeder	0.002	
Lease Area	85	Mollusca	Bivalvia	Pitar morrhuanus	41	Suspension Feeder	0.022	
Lease Area	85	Mollusca	Bivalvia	Thyasira gouldii	3	Suspension Feeder	0.013	
Lease Area	85	Mollusca	Bivalvia	Yoldia sapotilla	5	Subsurface Deposit Feeder	0.002	
Lease Area	85	Mollusca	Gastropoda	Frigidoalvania carinata	4	Predator	0.004	
Lease Area	85	Mollusca	Gastropoda	Tritia trivittata	2	Omnivore/Scavenger	0.139	
Lease Area	85	Oligochaeta	Oligochaeta	Oligochaeta spp.	36	Subsurface Deposit Feeder	0.002	
Lease Area	85	Polychaeta	Capitellidae	Mediomastus ambiseta	2	Subsurface Deposit Feeder	<0.001	
Lease Area	85	Polychaeta	Cirratulidae	Tharyx spp.	3	Surface Deposit Feeder	0.001	
Lease Area	85	Polychaeta	Flabelligaridae	Brada spp.	1	Surface Deposit Feeder	0.011	
Lease Area	85	Polychaeta	Lumbrineridae	Ninoe nigripes	5	Omnivore/Scavenger	0.053	
Lease Area	85	Polychaeta	Maldanidae	Maldanidae spp.	10	Subsurface Deposit Feeder	0.01	juvenile
Lease Area	85	Polychaeta	Nephtyidae	Nephtys incisa	22	Omnivore/Scavenger	0.071	
Lease Area	85	Polychaeta	Oweniidae	Owenia fusiformis	1	Suspension Feeder	<0.001	
Lease Area	85	Polychaeta	Paraonidae	Aricidea (Acmira) catherinae	1	Surface Deposit Feeder	<0.001	
Lease Area	85	Polychaeta	Paraonidae	Levinsenia gracilis	31	Subsurface Deposit Feeder	0.009	
Lease Area	85	Polychaeta	Trichobranchidae	Terebellides stroemii	1	Subsurface Deposit Feeder	0.02	
Lease Area	85	Polychaeta	-	Polychaete Fragments	-	-	0.242	
Lease Area	087	Arthropoda	Ampeliscidae	Ampelisca spp.	211	Interface Feeder	0.401	
Lease Area	087	Arthropoda	Caprellidae	Aeginina longicornis	1	Predator	0.014	
Lease Area	087	Arthropoda	Crangonidae	Crangon septemspinosa	1	Predator	0.112	
Lease Area	087	Arthropoda	Idoteidea	Edotia triloba	1	Omnivore/Scavenger	0.008	
Lease Area	087	Arthropoda	Ischyroceridae	Ericthonius spp.	14	Interface Feeder	0.004	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
Lease Area	087	Arthropoda	Leuconidae	Eudorella pusilla	2	Interface Feeder	0.002	
Lease Area	087	Arthropoda	Paguridae	Pagurus longicarpus	1	Omnivore/Scavenger	0.005	
Lease Area	087	Arthropoda	Photidae	Photis spp.	1	Interface Feeder	< 0.001	
Lease Area	087	Arthropoda	Phoxocephalidae	Harpinia propinqua	14	Interface Feeder	0.003	
Lease Area	087	Hemichordata	Harrimaniidae	Stereobalanus canadensis	5	Surface Deposit Feeder	< 0.001	
Lease Area	087	Mollusca	Bivalvia	Arctica islandica	3	Suspension Feeder	0.024	
Lease Area	087	Mollusca	Bivalvia	Mesodesma arctatum	12	Suspension Feeder	0.002	
Lease Area	087	Mollusca	Bivalvia	Nucula proxima	60	Subsurface Deposit Feeder	0.032	
Lease Area	087	Mollusca	Bivalvia	Periploma papyratium	3	Suspension Feeder	0.002	
Lease Area	087	Mollusca	Bivalvia	Pitar morrhuanus	18	Suspension Feeder	0.003	
Lease Area	087	Mollusca	Bivalvia	Yoldia sapotilla	5	Subsurface Deposit Feeder	0.073	
Lease Area	087	Mollusca	Gastropoda	Frigidoalvania carinata	10	Predator	0.011	
Lease Area	087	Oligochaeta	Oligochaeta	Oligochaeta spp.	20	Subsurface Deposit Feeder	< 0.001	
Lease Area	087	Polychaeta	Arabellidae	Drilonereis longa	2	Predator	0.004	
Lease Area	087	Polychaeta	Cirratulidae	Tharyx spp.	8	Surface Deposit Feeder	0.003	
Lease Area	087	Polychaeta	Dorvellidae	Parougia caeca	1	Surface Deposit Feeder	<0.001	
Lease Area	087	Polychaeta	Lumbrineridae	Ninoe nigripes	12	Omnivore/Scavenger	0.14	
Lease Area	087	Polychaeta	Nephtyidae	Nephtys incisa	16	Omnivore/Scavenger	0.603	
Lease Area	087	Polychaeta	Oweniidae	Owenia fusiformis	3	Suspension Feeder	0.011	
Lease Area	087	Polychaeta	Paraonidae	Aricidea (Acmira) catherinae	4	Surface Deposit Feeder	<0.001	
Lease Area	087	Polychaeta	Paraonidae	Levinsenia gracilis	53	Subsurface Deposit Feeder	0.014	
Lease Area	087	Polychaeta	Scalibregmatidae	Scalibregma inflatum	1	Subsurface Deposit Feeder	0.017	
Lease Area	087	Polychaeta	Trichobranchidae	Terebellides stroemii	2	Subsurface Deposit Feeder	0.054	
Lease Area	087	Polychaeta	-	Polychaete Fragments	-	-	0.17	
Lease Area	089	Arthropoda	Ampeliscidae	Ampelisca spp.	83	Interface Feeder	0.201	
Lease Area	089	Arthropoda	Corophiidae	Corophium spp.	1	Interface Feeder	<0.001	
Lease Area	089	Arthropoda	Corophiidae	Leptocheirus pinguis	3	Interface Feeder	0.004	
Lease Area	089	Arthropoda	Leuconidae	Eudorella pusilla	3	Interface Feeder	<0.001	
Lease Area	089	Arthropoda	Photidae	Photis spp.	2	Interface Feeder	< 0.001	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
Lease Area	089	Arthropoda	Phoxocephalidae	Harpinia propinqua	1	Interface Feeder	<0.001	
Lease Area	089	Arthropoda	Unciolidae	Unciola spp.	6	Interface Feeder	<0.001	
Lease Area	089	Chordata	Molgulidae	Molgula manhattensis	2	Suspension Feeder	<0.001	
Lease Area	089	Mollusca	Bivalvia	Arctica islandica	4	Suspension Feeder	0.002	
Lease Area	089	Mollusca	Bivalvia	Nucula proxima	60	Subsurface Deposit Feeder	0.043	
Lease Area	089	Mollusca	Bivalvia	Periploma papyratium	1	Suspension Feeder	<0.001	
Lease Area	089	Mollusca	Bivalvia	Pitar morrhuanus	11	Suspension Feeder	0.002	
Lease Area	089	Mollusca	Bivalvia	Solamen glandula	1	Suspension Feeder	<0.001	
Lease Area	089	Mollusca	Bivalvia	Thyasira gouldii	1	Suspension Feeder	0.003	
Lease Area	089	Mollusca	Gastropoda	Tritia trivittata	2	Omnivore/Scavenger	0.219	
Lease Area	089	Nemertea	Amphiporidae	Amphiporus angulatus	1	Predator	0.003	
Lease Area	089	Oligochaeta	Oligochaeta	Oligochaeta spp.	1	Subsurface Deposit Feeder	<0.001	
Lease Area	089	Polychaeta	Ampharetidae	Ampharete arctica	2	Surface Deposit Feeder	0.001	
Lease Area	089	Polychaeta	Flabelligaridae	Brada spp.	2	Surface Deposit Feeder	0.041	
Lease Area	089	Polychaeta	Glyceridae	Glycera capitata	1	Omnivore/Scavenger	0.001	
Lease Area	089	Polychaeta	Lumbrineridae	Ninoe nigripes	3	Omnivore/Scavenger	0.014	
Lease Area	089	Polychaeta	Lumbrineridae	Scoletoma fragilis	7	Omnivore/Scavenger	0.017	
Lease Area	089	Polychaeta	Maldanidae	Clymenella torquata	11	Subsurface Deposit Feeder	0.642	
Lease Area	089	Polychaeta	Maldanidae	Maldanidae spp.	47	Subsurface Deposit Feeder	0.544	juvenile
Lease Area	089	Polychaeta	Nephtyidae	Nephtys incisa	2	Omnivore/Scavenger	<0.001	
Lease Area	089	Polychaeta	Nephtyidae	Nephtys picta	1	Omnivore/Scavenger	<0.001	
Lease Area	089	Polychaeta	Oweniidae	Owenia fusiformis	1	Suspension Feeder	<0.001	
Lease Area	089	Polychaeta	Paraonidae	Levinsenia gracilis	15	Subsurface Deposit Feeder	0.002	
Lease Area	089	Polychaeta	Scalibregmatidae	Scalibregma inflatum	2	Subsurface Deposit Feeder	0.018	
Lease Area	089	Polychaeta	Trichobranchidae	Terebellides stroemii	3	Subsurface Deposit Feeder	0.061	
Lease Area	089	Polychaeta	-	Polychaete Fragments	-	-	0.02	
Lease Area	092	Arthropoda	Ampeliscidae	Ampelisca spp.	23	Interface Feeder	0.053	
Lease Area	092	Arthropoda	Corophiidae	Corophium spp.	2	Interface Feeder	0.006	
Lease Area	092	Arthropoda	Leuconidae	Eudorella pusilla	4	Interface Feeder	0.005	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
Lease Area	092	Chordata	Molgulidae	Molgula manhattensis	2	Suspension Feeder	0.022	
Lease Area	092	Mollusca	Bivalvia	Arctica islandica	5	Suspension Feeder	0.002	
Lease Area	092	Mollusca	Bivalvia	Nucula proxima	21	Subsurface Deposit Feeder	0.028	
Lease Area	092	Mollusca	Bivalvia	Periploma papyratium	5	Suspension Feeder	0.596	
Lease Area	092	Mollusca	Bivalvia	Pitar morrhuanus	1	Suspension Feeder	<0.001	
Lease Area	092	Nemertea	Amphiporidae	Amphiporus angulatus	1	Predator	0.005	
Lease Area	092	Polychaeta	Arabellidae	Drilonereis longa	1	Predator	0.005	
Lease Area	092	Polychaeta	Cirratulidae	Tharyx spp.	1	Surface Deposit Feeder	<0.001	
Lease Area	092	Polychaeta	Lumbrineridae	Ninoe nigripes	9	Omnivore/Scavenger	0.081	
Lease Area	092	Polychaeta	Lumbrineridae	Scoletoma fragilis	6	Omnivore/Scavenger	0.019	
Lease Area	092	Polychaeta	Maldanidae	Clymenella torquata	3	Subsurface Deposit Feeder	0.248	
Lease Area	092	Polychaeta	Maldanidae	Maldanidae spp.	8	Subsurface Deposit Feeder	0.25	juvenile
Lease Area	092	Polychaeta	Nephtyidae	Nephtys incisa	1	Omnivore/Scavenger	0.003	
Lease Area	092	Polychaeta	Paraonidae	Levinsenia gracilis	39	Subsurface Deposit Feeder	0.008	
Lease Area	092	Polychaeta	Trichobranchidae	Terebellides stroemii	1	Subsurface Deposit Feeder	0.016	
Lease Area	092	Polychaeta	-	Polychaete Fragments	-	-	0.184	
Lease Area	094	Arthropoda	Ampeliscidae	Ampelisca spp.	233	Interface Feeder	0.613	
Lease Area	094	Arthropoda	Anthuridae	Ptilanthura tenuis	1	Omnivore/Scavenger	<0.001	
Lease Area	094	Arthropoda	Cancridae	Cancer irroratus	1	Predator	0.402	
Lease Area	094	Arthropoda	Caprellidae	Aeginina longicornis	1	Predator	0.024	
Lease Area	094	Arthropoda	Corophiidae	Corophium spp.	1	Interface Feeder	<0.001	
Lease Area	094	Arthropoda	Corophiidae	Leptocheirus pinguis	1	Interface Feeder	<0.001	
Lease Area	094	Arthropoda	Diastylidae	Diastylis quadrispinosa	1	Interface Feeder	<0.001	
Lease Area	094	Arthropoda	Diastylidae	Diastylis sculpta	4	Interface Feeder	0.013	
Lease Area	094	Arthropoda	Ischyroceridae	Ericthonius spp.	8	Interface Feeder	0.008	
Lease Area	094	Arthropoda	Leuconidae	Eudorella pusilla	5	Interface Feeder	0.006	
Lease Area	094	Arthropoda	Photidae	Photis spp.	1	Interface Feeder	<0.001	
Lease Area	094	Arthropoda	Phoxocephalidae	Harpinia propinqua	3	Interface Feeder	<0.001	
Lease Area	094	Arthropoda	Pontogeneiidae	Pontogeneia inermis	2	Interface Feeder	<0.001	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
Lease Area	094	Arthropoda	Unciolidae	<i>Unciola</i> spp.	4	Interface Feeder	0.002	
Lease Area	094	Chordata	Molgulidae	Molgula manhattensis	2	Suspension Feeder	0.041	
Lease Area	094	Mollusca	Bivalvia	Arctica islandica	2	Suspension Feeder	0.083	
Lease Area	094	Mollusca	Bivalvia	Mesodesma arctatum	16	Suspension Feeder	0.002	
Lease Area	094	Mollusca	Bivalvia	Nucula proxima	115	Subsurface Deposit Feeder	0.065	
Lease Area	094	Mollusca	Bivalvia	Periploma papyratium	12	Suspension Feeder	0.003	
Lease Area	094	Mollusca	Bivalvia	Pitar morrhuanus	29	Suspension Feeder	0.017	
Lease Area	094	Mollusca	Bivalvia	Solamen glandula	1	Suspension Feeder	<0.001	
Lease Area	094	Mollusca	Bivalvia	Spisula solidissima	6	Suspension Feeder	0.007	
Lease Area	094	Mollusca	Bivalvia	Yoldia sapotilla	3	Subsurface Deposit Feeder	0.02	
Lease Area	094	Mollusca	Gastropoda	Acteocina canaliculata	2	Predator	<0.001	
Lease Area	094	Mollusca	Gastropoda	Frigidoalvania carinata	3	Predator	0.001	
Lease Area	094	Oligochaeta	Oligochaeta	Oligochaeta spp.	3	Subsurface Deposit Feeder	<0.001	
Lease Area	094	Polychaeta	Ampharetidae	Ampharetidae spp.	3	Surface Deposit Feeder	<0.001	juvenile
Lease Area	094	Polychaeta	Cossuridae	Cossura longocirrata	1	Subsurface Deposit Feeder	<0.001	
Lease Area	094	Polychaeta	Lumbrineridae	Ninoe nigripes	10	Omnivore/Scavenger	0.143	
Lease Area	094	Polychaeta	Lumbrineridae	Scoletoma fragilis	5	Omnivore/Scavenger	0.286	
Lease Area	094	Polychaeta	Maldanidae	Clymenella torquata	2	Subsurface Deposit Feeder	0.17	
Lease Area	094	Polychaeta	Maldanidae	Maldanidae spp.	15	Subsurface Deposit Feeder	0.242	juvenile
Lease Area	094	Polychaeta	Nephtyidae	Nephtys incisa	7	Omnivore/Scavenger	0.007	
Lease Area	094	Polychaeta	Paraonidae	Levinsenia gracilis	32	Subsurface Deposit Feeder	0.006	
Lease Area	094	Polychaeta	Trichobranchidae	Terebellides stroemii	7	Subsurface Deposit Feeder	0.135	
Lease Area	094	Polychaeta	-	Polychaete Fragments	-	-	0.093	
Lease Area	095	Arthropoda	Ampeliscidae	Ampelisca spp.	454	Interface Feeder	1.019	
Lease Area	095	Arthropoda	Ampeliscidae	Byblis serrata	1	Interface Feeder	<0.001	
Lease Area	095	Arthropoda	Corophiidae	Corophium spp.	2	Interface Feeder	<0.001	
Lease Area	095	Arthropoda	Corophiidae	Leptocheirus pinguis	47	Interface Feeder	0.355	
Lease Area	095	Arthropoda	Diastylidae	Diastylis quadrispinosa	8	Interface Feeder	0.031	
Lease Area	095	Arthropoda	Diastylidae	Diastylis sculpta	4	Interface Feeder	0.013	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
Lease Area	095	Arthropoda	Leuconidae	Eudorella pusilla	18	Interface Feeder	0.018	
Lease Area	095	Arthropoda	Lysianassidae	Lysianopsis alba	4	Omnivore/Scavenger	<0.001	
Lease Area	095	Arthropoda	Photidae	Photis spp.	7	Interface Feeder	0.001	
Lease Area	095	Arthropoda	Phoxocephalidae	Harpinia propinqua	24	Interface Feeder	0.004	
Lease Area	095	Arthropoda	Tryphosidae	Hippomedon serratus	1	Interface Feeder	0.008	
Lease Area	095	Arthropoda	Unciolidae	Unciola spp.	14	Interface Feeder	0.003	
Lease Area	095	Chordata	Molgulidae	Molgula manhattensis	6	Suspension Feeder	0.077	
Lease Area	095	Mollusca	Bivalvia	Arctica islandica	18	Suspension Feeder	0.01	
Lease Area	095	Mollusca	Bivalvia	Nucula proxima	67	Subsurface Deposit Feeder	0.035	
Lease Area	095	Mollusca	Bivalvia	Periploma papyratium	13	Suspension Feeder	0.008	
Lease Area	095	Mollusca	Bivalvia	Pitar morrhuanus	18	Suspension Feeder	0.007	
Lease Area	095	Mollusca	Bivalvia	Solamen glandula	1	Suspension Feeder	<0.001	
Lease Area	095	Mollusca	Bivalvia	Thyasira gouldii	3	Suspension Feeder	0.018	
Lease Area	095	Mollusca	Bivalvia	Yoldia sapotilla	2	Subsurface Deposit Feeder	<0.001	
Lease Area	095	Mollusca	Gastropoda	Astyris lunata	1	Predator	0.001	
Lease Area	095	Mollusca	Gastropoda	Frigidoalvania carinata	2	Predator	0.001	
Lease Area	095	Mollusca	Gastropoda	Tritia trivittata	4	Omnivore/Scavenger	0.339	
Lease Area	095	Nemertea	Amphiporidae	Amphiporus angulatus	2	Predator	0.018	
Lease Area	095	Nemertea	Lineidae	Micrura spp.	1	Predator	0.314	
Lease Area	095	Nemertea	Tubulanidae	Tubulanus pellucidus	4	Predator	<0.001	
Lease Area	095	Oligochaeta	Oligochaeta	Oligochaeta spp.	4	Subsurface Deposit Feeder	<0.001	
Lease Area	095	Polychaeta	Arabellidae	Drilonereis longa	1	Predator	0.001	
Lease Area	095	Polychaeta	Flabelligaridae	Pherusa plumosa	1	Surface Deposit Feeder	<0.001	
Lease Area	095	Polychaeta	Lumbrineridae	Ninoe nigripes	15	Omnivore/Scavenger	0.215	
Lease Area	095	Polychaeta	Lumbrineridae	Scoletoma fragilis	3	Omnivore/Scavenger	0.008	
Lease Area	095	Polychaeta	Maldanidae	Clymenella torquata	1	Subsurface Deposit Feeder	0.037	
Lease Area	095	Polychaeta	Maldanidae	Maldanidae spp.	25	Subsurface Deposit Feeder	0.565	juvenile
Lease Area	095	Polychaeta	Nephtyidae	Nephtys incisa	13	Omnivore/Scavenger	0.147	
Lease Area	095	Polychaeta	Paraonidae	Aricidea (Acmira) catherinae	1	Surface Deposit Feeder	<0.001	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
Lease Area	095	Polychaeta	Paraonidae	Levinsenia gracilis	64	Subsurface Deposit Feeder	0.013	
Lease Area	095	Polychaeta	Scalibregmatidae	Scalibregma inflatum	1	Subsurface Deposit Feeder	0.038	
Lease Area	095	Polychaeta	Trichobranchidae	Terebellides stroemii	7	Subsurface Deposit Feeder	0.092	
Lease Area	095	Polychaeta	-	Polychaete Fragments	-	-	0.102	
Lease Area	097	Arthropoda	Ampeliscidae	Ampelisca spp.	175	Interface Feeder	0.473	
Lease Area	097	Arthropoda	Anthuridae	Ptilanthura tenuis	1	Omnivore/Scavenger	<0.001	
Lease Area	097	Arthropoda	Corophiidae	Leptocheirus pinguis	4	Interface Feeder	0.052	
Lease Area	097	Arthropoda	Diastylidae	Diastylis quadrispinosa	3	Interface Feeder	0.011	
Lease Area	097	Arthropoda	Diastylidae	Diastylis sculpta	1	Interface Feeder	0.001	
Lease Area	097	Arthropoda	Ischyroceridae	Ericthonius spp.	1	Interface Feeder	0.001	
Lease Area	097	Arthropoda	Leuconidae	Eudorella pusilla	5	Interface Feeder	0.004	
Lease Area	097	Arthropoda	Paguridae	Paguridae spp.	1	Omnivore/Scavenger	0.002	
Lease Area	097	Arthropoda	Photidae	Photis spp.	1	Interface Feeder	<0.001	
Lease Area	097	Arthropoda	Phoxocephalidae	Harpinia propinqua	7	Interface Feeder	0.003	
Lease Area	097	Arthropoda	Pontogeneiidae	Pontogeneia inermis	1	Interface Feeder	<0.001	
Lease Area	097	Arthropoda	Unciolidae	Unciola spp.	9	Interface Feeder	0.007	
Lease Area	097	Arthropoda	-	Amphipoda spp.	5	Interface Feeder	<0.001	
Lease Area	097	Chordata	Molgulidae	Molgula manhattensis	9	Suspension Feeder	0.064	
Lease Area	097	Mollusca	Bivalvia	Arctica islandica	18	Suspension Feeder	0.137	
Lease Area	097	Mollusca	Bivalvia	Mesodesma arctatum	4	Suspension Feeder	0.002	
Lease Area	097	Mollusca	Bivalvia	Nucula proxima	062	Subsurface Deposit Feeder	0.011	
Lease Area	097	Mollusca	Bivalvia	Periploma papyratium	15	Suspension Feeder	0.007	
Lease Area	097	Mollusca	Bivalvia	Pitar morrhuanus	21	Suspension Feeder	0.013	
Lease Area	097	Mollusca	Bivalvia	Solamen glandula	2	Suspension Feeder	<0.001	
Lease Area	097	Mollusca	Bivalvia	Yoldia sapotilla	7	Subsurface Deposit Feeder	0.027	
Lease Area	097	Mollusca	Gastropoda	Frigidoalvania carinata	8	Predator	0.005	
Lease Area	097	Nemertea	Lineidae	Micrura spp.	1	Predator	0.018	
Lease Area	097	Nemertea	Tubulanidae	Tubulanus pellucidus	4	Predator	<0.001	
Lease Area	097	Polychaeta	Capitellidae	Mediomastus ambiseta	1	Subsurface Deposit Feeder	<0.001	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
Lease Area	097	Polychaeta	Lumbrineridae	Ninoe nigripes	9	Omnivore/Scavenger	0.195	
Lease Area	097	Polychaeta	Lumbrineridae	Scoletoma fragilis	2	Omnivore/Scavenger	0.01	
Lease Area	097	Polychaeta	Maldanidae	Maldanidae spp.	49	Subsurface Deposit Feeder	0.175	juvenile
Lease Area	097	Polychaeta	Nephtyidae	Nephtys incisa	5	Omnivore/Scavenger	0.004	
Lease Area	097	Polychaeta	Paraonidae	Levinsenia gracilis	37	Subsurface Deposit Feeder	0.005	
Lease Area	097	Polychaeta	Scalibregmatidae	Scalibregma inflatum	1	Subsurface Deposit Feeder	0.005	
Lease Area	097	Polychaeta	Trichobranchidae	Terebellides stroemii	7	Subsurface Deposit Feeder	0.128	
Lease Area	097	Polychaeta	-	Polychaete Fragments	-	-	0.102	
Lease Area	099	Arthropoda	Ampeliscidae	Ampelisca spp.	549	Interface Feeder	1.51	
Lease Area	099	Arthropoda	Ampeliscidae	Byblis serrata	1	Interface Feeder	0.006	
Lease Area	099	Arthropoda	Caprellidae	Paracaprella tenuis	1	Predator	<0.001	
Lease Area	099	Arthropoda	Corophiidae	Corophium spp.	171	Interface Feeder	0.045	
Lease Area	099	Arthropoda	Corophiidae	Leptocheirus pinguis	116	Interface Feeder	1.134	
Lease Area	099	Arthropoda	Diastylidae	Diastylis quadrispinosa	5	Interface Feeder	0.014	
Lease Area	099	Arthropoda	Diastylidae	Diastylis sculpta	7	Interface Feeder	0.015	
Lease Area	099	Arthropoda	Ischyroceridae	Ericthonius spp.	49	Interface Feeder	0.021	
Lease Area	099	Arthropoda	Leuconidae	Eudorella pusilla	25	Interface Feeder	0.029	
Lease Area	099	Arthropoda	Lysianassidae	Lysianopsis alba	7	Omnivore/Scavenger	0.007	
Lease Area	099	Arthropoda	Photidae	Photis spp.	2	Interface Feeder	<0.001	
Lease Area	099	Arthropoda	Phoxocephalidae	Harpinia propinqua	24	Interface Feeder	0.013	
Lease Area	099	Arthropoda	Tryphosidae	Hippomedon serratus	6	Interface Feeder	0.007	
Lease Area	099	Arthropoda	Unciolidae	Unciola spp.	37	Interface Feeder	0.03	
Lease Area	099	Arthropoda	-	Amphipoda spp.	21	Interface Feeder	-	
Lease Area	099	Chordata	Molgulidae	Molgula manhattensis	6	Suspension Feeder	0.286	
Lease Area	099	Echinodermata	Amphiuridae	Amphipholis squamata	1	Predator	0.004	
Lease Area	099	Mollusca	Bivalvia	Lucinoma filosa	1	Suspension Feeder	0.012	
Lease Area	099	Mollusca	Bivalvia	Mesodesma arctatum	12	Suspension Feeder	0.002	
Lease Area	099	Mollusca	Bivalvia	Nucula proxima	47	Subsurface Deposit Feeder	0.029	
Lease Area	099	Mollusca	Bivalvia	Periploma papyratium	10	Suspension Feeder	0.009	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
Lease Area	099	Mollusca	Bivalvia	Pitar morrhuanus	27	Suspension Feeder	0.015	
Lease Area	099	Mollusca	Bivalvia	Yoldia sapotilla	6	Subsurface Deposit Feeder	0.002	
Lease Area	099	Mollusca	Gastropoda	Colus pygmaeus	1	Omnivore/Scavenger	0.07	
Lease Area	099	Mollusca	Gastropoda	Tritia trivittata	6	Omnivore/Scavenger	0.267	
Lease Area	099	Nemertea	Amphiporidae	Amphiporus angulatus	1	Predator	<0.001	
Lease Area	099	Oligochaeta	Oligochaeta	Oligochaeta spp.	5	Subsurface Deposit Feeder	<0.001	
Lease Area	099	Polychaeta	Ampharetidae	Ampharetidae spp.	5	Surface Deposit Feeder	<0.001	juvenile
Lease Area	099	Polychaeta	Cirratulidae	Tharyx spp.	1	Surface Deposit Feeder	<0.001	
Lease Area	099	Polychaeta	Flabelligaridae	Pherusa plumosa	2	Surface Deposit Feeder	<0.001	
Lease Area	099	Polychaeta	Lumbrineridae	Lumbrineridae spp.	1	Omnivore/Scavenger	-	juvenile
Lease Area	099	Polychaeta	Lumbrineridae	Ninoe nigripes	13	Omnivore/Scavenger	0.154	
Lease Area	099	Polychaeta	Lumbrineridae	Scoletoma fragilis	2	Omnivore/Scavenger	0.004	
Lease Area	099	Polychaeta	Maldanidae	Maldanidae spp.	29	Subsurface Deposit Feeder	0.194	juvenile
Lease Area	099	Polychaeta	Nephtyidae	Nephtys incisa	13	Omnivore/Scavenger	0.022	
Lease Area	099	Polychaeta	Nephtyidae	Nephtys picta	4	Omnivore/Scavenger	0.002	
Lease Area	099	Polychaeta	Paraonidae	Aricidea (Acmira) catherinae	2	Surface Deposit Feeder	0.001	
Lease Area	099	Polychaeta	Paraonidae	Levinsenia gracilis	49	Subsurface Deposit Feeder	0.015	
Lease Area	099	Polychaeta	Sigalionidae	Sthenelais boa	1	Predator	0.002	
Lease Area	099	Polychaeta	Trichobranchidae	Terebellides stroemii	2	Subsurface Deposit Feeder	0.043	
Lease Area	099	Polychaeta	-	Polychaete Fragments	-	-	0.0234	
Lease Area	102	Arthropoda	Ampeliscidae	Ampelisca spp.	153	Interface Feeder	0.552	
Lease Area	102	Arthropoda	Anthuridae	Ptilanthura tenuis	1	Omnivore/Scavenger	<0.001	
Lease Area	102	Arthropoda	Corophiidae	Corophium spp.	1	Interface Feeder	<0.001	
Lease Area	102	Arthropoda	Corophiidae	Leptocheirus pinguis	2	Interface Feeder	0.006	
Lease Area	102	Arthropoda	Diastylidae	Diastylis quadrispinosa	1	Interface Feeder	0.015	
Lease Area	102	Arthropoda	Diastylidae	Diastylis sculpta	6	Interface Feeder	0.004	
Lease Area	102	Arthropoda	Ischyroceridae	Ericthonius spp.	7	Interface Feeder	0.001	
Lease Area	102	Arthropoda	Leuconidae	Eudorella pusilla	11	Interface Feeder	0.011	
Lease Area	102	Arthropoda	Phoxocephalidae	Harpinia propinqua	6	Interface Feeder	0.002	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
Lease Area	102	Arthropoda	Pontogeneiidae	Pontogeneia inermis	12	Interface Feeder	0.003	
Lease Area	102	Arthropoda	Unciolidae	<i>Unciola</i> spp.	5	Interface Feeder	0.004	
Lease Area	102	Chordata	Molgulidae	Molgula manhattensis	2	Suspension Feeder	0.03	
Lease Area	102	Mollusca	Bivalvia	Arctica islandica	8	Suspension Feeder	0.03	
Lease Area	102	Mollusca	Bivalvia	Lucinoma filosa	2	Suspension Feeder	0.002	
Lease Area	102	Mollusca	Bivalvia	Nucula proxima	78	Subsurface Deposit Feeder	0.056	
Lease Area	102	Mollusca	Bivalvia	Parvicardium pinnulatum	1	Suspension Feeder	0.058	
Lease Area	102	Mollusca	Bivalvia	Periploma papyratium	11	Suspension Feeder	0.83	
Lease Area	102	Mollusca	Bivalvia	Pitar morrhuanus	21	Suspension Feeder	0.022	
Lease Area	102	Mollusca	Bivalvia	Yoldia sapotilla	1	Subsurface Deposit Feeder	0.004	
Lease Area	102	Mollusca	Gastropoda	Frigidoalvania carinata	21	Predator	0.018	
Lease Area	102	Mollusca	Gastropoda	Haminella solitaria	1	Predator	0.003	
Lease Area	102	Polychaeta	Ampharetidae	Ampharetidae spp.	1	Surface Deposit Feeder	<0.001	juvenile
Lease Area	102	Polychaeta	Cirratulidae	Tharyx spp.	1	Surface Deposit Feeder	<0.001	
Lease Area	102	Polychaeta	Lumbrineridae	Lumbrineridae spp.	1	Omnivore/Scavenger	-	juvenile
Lease Area	102	Polychaeta	Lumbrineridae	Ninoe nigripes	4	Omnivore/Scavenger	0.017	
Lease Area	102	Polychaeta	Maldanidae	Clymenella torquata	1	Subsurface Deposit Feeder	0.024	
Lease Area	102	Polychaeta	Maldanidae	Maldanidae spp.	9	Subsurface Deposit Feeder	-	juvenile
Lease Area	102	Polychaeta	Nephtyidae	Nephtys incisa	17	Omnivore/Scavenger	0.022	
Lease Area	102	Polychaeta	Oweniidae	Owenia fusiformis	1	Suspension Feeder	0.002	
Lease Area	102	Polychaeta	Paraonidae	Aricidea (Acmira) catherinae	1	Surface Deposit Feeder	<0.001	
Lease Area	102	Polychaeta	Paraonidae	Levinsenia gracilis	41	Subsurface Deposit Feeder	0.008	
Lease Area	102	Polychaeta	-	Polychaete Fragments	-	-	0.068	
Lease Area	104	Arthropoda	Ampeliscidae	Ampelisca spp.	402	Interface Feeder	1.224	
Lease Area	104	Arthropoda	Diastylidae	Diastylis quadrispinosa	2	Interface Feeder	0.012	
Lease Area	104	Arthropoda	Diastylidae	Diastylis sculpta	1	Interface Feeder	0.005	
Lease Area	104	Arthropoda	Ischyroceridae	Ericthonius spp.	4	Interface Feeder	0.002	
Lease Area	104	Arthropoda	Leuconidae	Eudorella pusilla	2	Interface Feeder	0.002	
Lease Area	104	Arthropoda	Phoxocephalidae	Harpinia propinqua	12	Interface Feeder	0.005	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
Lease Area	104	Arthropoda	Unciolidae	Unciola spp.	1	Interface Feeder	0.008	
Lease Area	104	Chordata	Molgulidae	Molgula manhattensis	6	Suspension Feeder	0.172	
Lease Area	104	Mollusca	Bivalvia	Arctica islandica	15	Suspension Feeder	0.03	
Lease Area	104	Mollusca	Bivalvia	Mesodesma arctatum	6	Suspension Feeder	<0.001	
Lease Area	104	Mollusca	Bivalvia	Nucula proxima	75	Subsurface Deposit Feeder	0.046	
Lease Area	104	Mollusca	Bivalvia	Periploma papyratium	6	Suspension Feeder	0.003	
Lease Area	104	Mollusca	Bivalvia	Pitar morrhuanus	20	Suspension Feeder	0.028	
Lease Area	104	Mollusca	Bivalvia	Thyasira gouldii	3	Suspension Feeder	0.009	
Lease Area	104	Mollusca	Bivalvia	Yoldia sapotilla	5	Subsurface Deposit Feeder	0.04	
Lease Area	104	Mollusca	Caudofoveata	Chaetoderma nitidulum	2	Subsurface Deposit Feeder	0.037	
Lease Area	104	Mollusca	Gastropoda	Frigidoalvania carinata	6	Predator	0.004	
Lease Area	104	Nemertea	Tubulanidae	Tubulanus pellucidus	3	Predator	<0.001	
Lease Area	104	Oligochaeta	Oligochaeta	Oligochaeta spp.	14	Subsurface Deposit Feeder	<0.001	
Lease Area	104	Phoronida	Phoronidae	Phoronis psammophilia	1	Suspension Feeder	<0.001	
Lease Area	104	Polychaeta	Ampharetidae	Ampharetidae spp.	3	Surface Deposit Feeder	<0.001	juvenile
Lease Area	104	Polychaeta	Cossuridae	Cossura longocirrata	2	Subsurface Deposit Feeder	<0.001	
Lease Area	104	Polychaeta	Dorvellidae	Parougia caeca	2	Surface Deposit Feeder	<0.001	
Lease Area	104	Polychaeta	Flabelligaridae	Pherusa plumosa	1	Surface Deposit Feeder	<0.001	
Lease Area	104	Polychaeta	Glyceridae	Glycera spp.	1	Omnivore/Scavenger	<0.001	juvenile
Lease Area	104	Polychaeta	Lumbrineridae	Ninoe nigripes	3	Omnivore/Scavenger	0.03	
Lease Area	104	Polychaeta	Lumbrineridae	Scoletoma fragilis	6	Omnivore/Scavenger	0.013	
Lease Area	104	Polychaeta	Maldanidae	Clymenella torquata	16	Subsurface Deposit Feeder	0.05	
Lease Area	104	Polychaeta	Maldanidae	Maldanidae spp.	6	Subsurface Deposit Feeder	-	juvenile
Lease Area	104	Polychaeta	Nephtyidae	Nephtys incisa	15	Omnivore/Scavenger	0.018	
Lease Area	104	Polychaeta	Opheliidae	Ophelina acuminata	3	Subsurface Deposit Feeder	0.002	
Lease Area	104	Polychaeta	Paraonidae	Levinsenia gracilis	89	Subsurface Deposit Feeder	0.025	
Lease Area	104	Polychaeta	Trichobranchidae	Terebellides stroemii	11	Subsurface Deposit Feeder	0.191	
Lease Area	104	Polychaeta	-	Polychaete Fragments	-	-	0.025	
Lease Area	105	Arthropoda	Ampeliscidae	Ampelisca spp.	597	Interface Feeder	1.346	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
Lease Area	105	Arthropoda	Caprellidae	Aeginina longicornis	1	Predator	0.006	
Lease Area	105	Arthropoda	Cirolanidae	Politolana polita	1	Omnivore/Scavenger	0.201	
Lease Area	105	Arthropoda	Corophiidae	Leptocheirus pinguis	5	Interface Feeder	0.013	
Lease Area	105	Arthropoda	Diastylidae	Diastylis sculpta	3	Interface Feeder	0.004	
Lease Area	105	Arthropoda	Dulichiidae	Dulichia spp.	1	Suspension Feeder	0.003	
Lease Area	105	Arthropoda	Ischyroceridae	Ericthonius spp.	33	Interface Feeder	0.03	
Lease Area	105	Arthropoda	Melitidae	Melita nitida	1	Interface Feeder	<0.001	
Lease Area	105	Arthropoda	Phoxocephalidae	Harpinia propinqua	20	Interface Feeder	0.032	
Lease Area	105	Arthropoda	Pseudocumatidae	Petalosarsia declivis	9	Omnivore/Scavenger	0.008	
Lease Area	105	Arthropoda	Unciolidae	Unciola spp.	13	Interface Feeder	0.038	
Lease Area	105	Chordata	Molgulidae	Molgula manhattensis	7	Suspension Feeder	0.052	
Lease Area	105	Mollusca	Bivalvia	Arctica islandica	16	Suspension Feeder	0.106	
Lease Area	105	Mollusca	Bivalvia	Nucula proxima	45	Subsurface Deposit Feeder	0.034	
Lease Area	105	Mollusca	Bivalvia	Periploma papyratium	5	Suspension Feeder	0.007	
Lease Area	105	Mollusca	Bivalvia	Pitar morrhuanus	19	Suspension Feeder	0.008	
Lease Area	105	Mollusca	Bivalvia	Thyasira gouldii	2	Suspension Feeder	0.004	
Lease Area	105	Mollusca	Bivalvia	Yoldia sapotilla	8	Subsurface Deposit Feeder	0.009	
Lease Area	105	Mollusca	Caudofoveata	Chaetoderma nitidulum	1	Subsurface Deposit Feeder	0.009	
Lease Area	105	Mollusca	Gastropoda	Frigidoalvania carinata	7	Predator	0.005	
Lease Area	105	Oligochaeta	Oligochaeta	Oligochaeta spp.	16	Subsurface Deposit Feeder	<0.001	
Lease Area	105	Polychaeta	Cirratulidae	Tharyx spp.	1	Surface Deposit Feeder	< 0.001	
Lease Area	105	Polychaeta	Cossuridae	Cossura longocirrata	3	Subsurface Deposit Feeder	<0.001	
Lease Area	105	Polychaeta	Flabelligaridae	Pherusa spp.	1	Surface Deposit Feeder	< 0.001	juvenile
Lease Area	105	Polychaeta	Lumbrineridae	Ninoe nigripes	8	Omnivore/Scavenger	0.047	
Lease Area	105	Polychaeta	Lumbrineridae	Scoletoma fragilis	9	Omnivore/Scavenger	0.012	
Lease Area	105	Polychaeta	Maldanidae	Clymenella torquata	2	Subsurface Deposit Feeder	0.495	
Lease Area	105	Polychaeta	Maldanidae	Maldanidae spp.	9	Subsurface Deposit Feeder	-	juvenile
Lease Area	105	Polychaeta	Nephtyidae	Nephtys incisa	2	Omnivore/Scavenger	1.827	
Lease Area	105	Polychaeta	Nephtyidae	Nephytidae spp.	26	Omnivore/Scavenger	-	juvenile

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
Lease Area	105	Polychaeta	Opheliidae	Opheliidae spp.	2	Subsurface Deposit Feeder	<0.001	juvenile
Lease Area	105	Polychaeta	Paraonidae	Aricidea (Acmira) catherinae	9	Surface Deposit Feeder	0.002	
Lease Area	105	Polychaeta	Paraonidae	Levinsenia gracilis	101	Subsurface Deposit Feeder	0.034	
Lease Area	105	Polychaeta	Polynoidae	Harmothoe extenuata	2	Predator	0.016	
Lease Area	105	Polychaeta	Trichobranchidae	Terebellides stroemii	9	Subsurface Deposit Feeder	0.078	
Lease Area	105	Polychaeta	-	Polychaete Fragments	-	-	0.144	
Lease Area	107	Arthropoda	Ampeliscidae	Ampelisca spp.	222	Interface Feeder	0.913	
Lease Area	107	Arthropoda	Corophiidae	Leptocheirus pinguis	4	Interface Feeder	0.017	
Lease Area	107	Arthropoda	Diastylidae	Diastylis quadrispinosa	4	Interface Feeder	0.012	
Lease Area	107	Arthropoda	Ischyroceridae	Ericthonius spp.	3	Interface Feeder	0.006	
Lease Area	107	Arthropoda	Leuconidae	Eudorella pusilla	2	Interface Feeder	0.002	
Lease Area	107	Arthropoda	Phoxocephalidae	Harpinia propinqua	8	Interface Feeder	0.003	
Lease Area	107	Arthropoda	Tryphosidae	Hippomedon serratus	1	Interface Feeder	0.005	
Lease Area	107	Arthropoda	Unciolidae	Unciola spp.	3	Interface Feeder	0.008	
Lease Area	107	Arthropoda	-	Amphipoda spp.	3	Interface Feeder	<0.001	
Lease Area	107	Chordata	Molgulidae	Molgula manhattensis	2	Suspension Feeder	0.017	
Lease Area	107	Cnidaria	Cerianthidae	Ceriantheopsis americana	1	Suspension Feeder	0.001	
Lease Area	107	Mollusca	Bivalvia	Arctica islandica	20	Suspension Feeder	0.047	
Lease Area	107	Mollusca	Bivalvia	Mesodesma arctatum	4	Suspension Feeder	0.001	
Lease Area	107	Mollusca	Bivalvia	Nucula proxima	45	Subsurface Deposit Feeder	0.036	
Lease Area	107	Mollusca	Bivalvia	Periploma papyratium	9	Suspension Feeder	0.006	
Lease Area	107	Mollusca	Bivalvia	Pitar morrhuanus	35	Suspension Feeder	0.03	
Lease Area	107	Mollusca	Bivalvia	Thyasira gouldii	1	Suspension Feeder	0.002	
Lease Area	107	Mollusca	Bivalvia	Yoldia sapotilla	6	Subsurface Deposit Feeder	0.016	
Lease Area	107	Mollusca	Caudofoveata	Chaetoderma nitidulum	1	Subsurface Deposit Feeder	0.001	
Lease Area	107	Mollusca	Gastropoda	Frigidoalvania carinata	15	Predator	0.011	
Lease Area	107	Nemertea	Tubulanidae	Tubulanus pellucidus	1	Predator	0.001	
Lease Area	107	Oligochaeta	Oligochaeta	Oligochaeta spp.	17	Subsurface Deposit Feeder	0.001	
Lease Area	107	Phoronida	Phoronidae	Phoronis psammophilia	1	Suspension Feeder	0.003	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
Lease Area	107	Polychaeta	Ampharetidae	Ampharete arctica	1	Surface Deposit Feeder	0.006	
Lease Area	107	Polychaeta	Cossuridae	Cossura longocirrata	16	Subsurface Deposit Feeder	0.002	
Lease Area	107	Polychaeta	Flabelligaridae	Pherusa plumosa	2	Surface Deposit Feeder	0.001	
Lease Area	107	Polychaeta	Lumbrineridae	Ninoe nigripes	8	Omnivore/Scavenger	0.093	
Lease Area	107	Polychaeta	Lumbrineridae	Scoletoma fragilis	8	Omnivore/Scavenger	0.041	
Lease Area	107	Polychaeta	Maldanidae	Maldanidae spp.	3	Subsurface Deposit Feeder	0.001	juvenile
Lease Area	107	Polychaeta	Nephtyidae	Nephtys incisa	17	Omnivore/Scavenger	0.887	
Lease Area	107	Polychaeta	Opheliidae	Opheliidae spp.	4	Subsurface Deposit Feeder	0.001	juvenile
Lease Area	107	Polychaeta	Oweniidae	Owenia fusiformis	2	Suspension Feeder	0.012	
Lease Area	107	Polychaeta	Paraonidae	Aricidea (Acmira) catherinae	5	Surface Deposit Feeder	0.002	
Lease Area	107	Polychaeta	Paraonidae	Levinsenia gracilis	105	Subsurface Deposit Feeder	0.046	
Lease Area	107	Polychaeta	Polynoidae	Harmothoe extenuata	1	Predator	0.002	
Lease Area	107	Polychaeta	Trichobranchidae	Terebellides stroemii	19	Subsurface Deposit Feeder	0.105	
Lease Area	107	Polychaeta	-	Polychaete Fragments	-	-	0.11	
Lease Area	110	Arthropoda	Ampeliscidae	Ampelisca spp.	228	Interface Feeder	1.016	
Lease Area	110	Arthropoda	Anthuridae	Ptilanthura tenuis	1	Omnivore/Scavenger	0.001	
Lease Area	110	Arthropoda	Cirolanidae	Politolana polita	1	Omnivore/Scavenger	0.084	
Lease Area	110	Arthropoda	Corophiidae	Leptocheirus pinguis	1	Interface Feeder	0.003	
Lease Area	110	Arthropoda	Diastylidae	Diastylis quadrispinosa	1	Interface Feeder	0.003	
Lease Area	110	Arthropoda	Ischyroceridae	Ericthonius spp.	8	Interface Feeder	0.011	
Lease Area	110	Arthropoda	Leuconidae	Eudorella pusilla	3	Interface Feeder	0.004	
Lease Area	110	Arthropoda	Phoxocephalidae	Harpinia propinqua	14	Interface Feeder	0.015	
Lease Area	110	Arthropoda	Pontogeneiidae	Pontogeneia inermis	2	Interface Feeder	0.003	
Lease Area	110	Arthropoda	-	Amphipoda spp.	1	Interface Feeder	0.002	
Lease Area	110	Chordata	Molgulidae	Molgula manhattensis	4	Suspension Feeder	0.243	
Lease Area	110	Mollusca	Bivalvia	Arctica islandica	8	Suspension Feeder	0.5	
Lease Area	110	Mollusca	Bivalvia	Mesodesma arctatum	6	Suspension Feeder	0.005	
Lease Area	110	Mollusca	Bivalvia	Nucula proxima	75	Subsurface Deposit Feeder	0.044	
Lease Area	110	Mollusca	Bivalvia	Parvicardium pinnulatum	2	Suspension Feeder	0.132	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
Lease Area	110	Mollusca	Bivalvia	Periploma papyratium	8	Suspension Feeder	0.034	
Lease Area	110	Mollusca	Bivalvia	Pitar morrhuanus	26	Suspension Feeder	0.045	
Lease Area	110	Mollusca	Bivalvia	Thyasira gouldii	3	Suspension Feeder	0.01	
Lease Area	110	Mollusca	Caudofoveata	Chaetoderma nitidulum	1	Subsurface Deposit Feeder	0.001	
Lease Area	110	Mollusca	Gastropoda	Frigidoalvania carinata	6	Predator	0.004	
Lease Area	110	Oligochaeta	Oligochaeta	Oligochaeta spp.	12	Subsurface Deposit Feeder	0.001	
Lease Area	110	Polychaeta	Ampharetidae	Ampharetidae spp.	9	Surface Deposit Feeder	0.002	juvenile
Lease Area	110	Polychaeta	Arabellidae	Drilonereis longa	1	Predator	0.011	
Lease Area	110	Polychaeta	Cirratulidae	Tharyx spp.	2	Surface Deposit Feeder	0.001	
Lease Area	110	Polychaeta	cossuridae	Cossura longocirrata	11	Subsurface Deposit Feeder	0.003	
Lease Area	110	Polychaeta	Flabelligaridae	Pherusa affinis	1	Surface Deposit Feeder	0.001	
Lease Area	110	Polychaeta	Lumbrineridae	Ninoe nigripes	17	Omnivore/Scavenger	0.178	
Lease Area	110	Polychaeta	Lumbrineridae	Scoletoma fragilis	9	Omnivore/Scavenger	0.035	
Lease Area	110	Polychaeta	Maldanidae	Clymenella torquata	8	Subsurface Deposit Feeder	0.192	
Lease Area	110	Polychaeta	Maldanidae	Maldanidae spp.	35	Subsurface Deposit Feeder	0.056	juvenile
Lease Area	110	Polychaeta	Nephtyidae	Nephtys incisa	27	Omnivore/Scavenger	1.365	
Lease Area	110	Polychaeta	Opheliidae	Ophelina acuminata	3	Subsurface Deposit Feeder	0.001	
Lease Area	110	Polychaeta	Orbiniidae	Leitoscoloplos fragilis	2	Subsurface Deposit Feeder	0.004	
Lease Area	110	Polychaeta	Oweniidae	Owenia fusiformis	2	Suspension Feeder	0.002	
Lease Area	110	Polychaeta	Paraonidae	Aricidea (Acmira) catherinae	8	Surface Deposit Feeder	0.003	
Lease Area	110	Polychaeta	Paraonidae	Levinsenia gracilis	122	Subsurface Deposit Feeder	0.048	
Lease Area	110	Polychaeta	Trichobranchidae	Terebellides stroemii	11	Subsurface Deposit Feeder	0.019	
Lease Area	110	Polychaeta	-	Polychaete Fragments	-	-	0.059	
Lease Area	112	Arthropoda	Ampeliscidae	Ampelisca spp.	472	Interface Feeder	2.074	
Lease Area	112	Arthropoda	Ampeliscidae	Byblis serrata	4	Interface Feeder	0.005	
Lease Area	112	Arthropoda	Corophiidae	Leptocheirus pinguis	1	Interface Feeder	0.005	
Lease Area	112	Arthropoda	Ischyroceridae	Ericthonius spp.	19	Interface Feeder	0.03	
Lease Area	112	Arthropoda	Leuconidae	Eudorella pusilla	6	Interface Feeder	0.008	
Lease Area	112	Arthropoda	Phoxocephalidae	Harpinia propinqua	7	Interface Feeder	0.008	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
Lease Area	112	Arthropoda	Tryphosidae	Hippomedon serratus	1	Interface Feeder	0.009	
Lease Area	112	Arthropoda	Unciolidae	Unciola spp.	10	Interface Feeder	0.029	
Lease Area	112	Chordata	Molgulidae	Molgula manhattensis	9	Suspension Feeder	0.236	
Lease Area	112	Mollusca	Bivalvia	Arctica islandica	2	Suspension Feeder	0.001	
Lease Area	112	Mollusca	Bivalvia	Mesodesma arctatum	2	Suspension Feeder	0.002	
Lease Area	112	Mollusca	Bivalvia	Nucula proxima	27	Subsurface Deposit Feeder	0.026	
Lease Area	112	Mollusca	Bivalvia	Periploma papyratium	11	Suspension Feeder	0.051	
Lease Area	112	Mollusca	Bivalvia	Pitar morrhuanus	47	Suspension Feeder	0.064	
Lease Area	112	Mollusca	Bivalvia	Thyasira gouldii	3	Suspension Feeder	0.203	
Lease Area	112	Mollusca	Bivalvia	Yoldia sapotilla	4	Subsurface Deposit Feeder	0.001	
Lease Area	112	Mollusca	Gastropoda	Frigidoalvania carinata	3	Predator	0.003	
Lease Area	112	Nemertea	Amphiporidae	Amphiporus angulatus	3	Predator	0.002	
Lease Area	112	Nemertea	Carinomidae	Carinomella lactea	3	Predator	0.003	
Lease Area	112	Nemertea	Lineidae	Micrura spp.	1	Predator	0.039	
Lease Area	112	Oligochaeta	Oligochaeta	Oligochaeta spp.	20	Subsurface Deposit Feeder	0.002	
Lease Area	112	Polychaeta	Ampharetidae	Amage auricula	1	Surface Deposit Feeder	0.001	
Lease Area	112	Polychaeta	Ampharetidae	Ampharetidae spp.	2	Surface Deposit Feeder	< 0.001	juvenile
Lease Area	112	Polychaeta	Arabellidae	Drilonereis longa	3	Predator	0.013	
Lease Area	112	Polychaeta	Cirratulidae	Tharyx spp.	4	Surface Deposit Feeder	0.002	
Lease Area	112	Polychaeta	Cossuridae	Cossura longocirrata	9	Subsurface Deposit Feeder	0.002	
Lease Area	112	Polychaeta	Flabelligaridae	Pherusa affinis	1	Surface Deposit Feeder	0.402	
Lease Area	112	Polychaeta	Glyceridae	Glycera capitata	1	Omnivore/Scavenger	0.001	
Lease Area	112	Polychaeta	Lumbrineridae	Ninoe nigripes	13	Omnivore/Scavenger	0.185	
Lease Area	112	Polychaeta	Lumbrineridae	Scoletoma tenuis	16	Omnivore/Scavenger	0.03	
Lease Area	112	Polychaeta	Maldanidae	Clymenella torquata	26	Subsurface Deposit Feeder	0.037	
Lease Area	112	Polychaeta	Nephtyidae	Nephtys incisa	18	Omnivore/Scavenger	0.022	
Lease Area	112	Polychaeta	Nephtyidae	Nephtys picta	2	Omnivore/Scavenger	0.003	
Lease Area	112	Polychaeta	Nereidae	Alitta succinea	1	Predator	0.005	
Lease Area	112	Polychaeta	Opheliidae	Ophelina acuminata	9	Subsurface Deposit Feeder	0.029	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
Lease Area	112	Polychaeta	Paraonidae	Aricidea (Acmira) catherinae	4	Surface Deposit Feeder	0.002	
Lease Area	112	Polychaeta	Paraonidae	Levinsenia gracilis	151	Subsurface Deposit Feeder	0.075	
Lease Area	112	Polychaeta	polynoidae	Harmothoe extenuata	5	Predator	0.012	
Lease Area	112	Polychaeta	Trichobranchidae	Terebellides stroemii	35	Subsurface Deposit Feeder	0.086	
Lease Area	112	Polychaeta	-	Polychaete Fragments	-	-	0.389	
Lease Area	112	Sipuncula	-	Sipuncula spp.	1	Surface Deposit Feeder	0.001	juvenile
Lease Area	113	Arthropoda	Ampeliscidae	Ampelisca spp.	768	Interface Feeder	2.397	
Lease Area	113	Arthropoda	Anthuridae	Ptilanthura tenuis	2	Omnivore/Scavenger	0.002	
Lease Area	113	Arthropoda	Corophiidae	Leptocheirus pinguis	25	Interface Feeder	0.338	
Lease Area	113	Arthropoda	Diastylidae	Diastylis quadrispinosa	3	Interface Feeder	0.022	
Lease Area	113	Arthropoda	Diastylidae	Diastylis sculpta	1	Interface Feeder	0.001	
Lease Area	113	Arthropoda	Ischyroceridae	Ericthonius spp.	7	Interface Feeder	0.01	
Lease Area	113	Arthropoda	Leuconidae	Eudorella pusilla	2	Interface Feeder	0.004	
Lease Area	113	Arthropoda	Phoxocephalidae	Harpinia propinqua	8	Interface Feeder	0.01	
Lease Area	113	Arthropoda	Unciolidae	Unciola spp.	8	Interface Feeder	0.01	
Lease Area	113	Arthropoda	Lysianassidae	Lysianassidae spp.	1	Interface Feeder	<0.001	
Lease Area	113	Arthropoda	Phoxocephalidae	Rhepoxynius epistomus	1	Interface Feeder	0.003	
Lease Area	113	Chordata	Molgulidae	Molgula manhattensis	22	Suspension Feeder	0.23	
Lease Area	113	Cnidaria	-	Hydrozoa spp.	-	Suspension Feeder	-	
Lease Area	113	Echinodermata	Amphiuiridae	Amphipholis squamata	2	Predator	0.152	
Lease Area	113	Mollusca	Bivalvia	Mesodesma arctatum	38	Suspension Feeder	0.019	
Lease Area	113	Mollusca	Bivalvia	Nucula proxima	2	Subsurface Deposit Feeder	<0.001	
Lease Area	113	Mollusca	Bivalvia	Periploma papyratium	9	Suspension Feeder	0.011	
Lease Area	113	Mollusca	Bivalvia	Pitar morrhuanus	15	Suspension Feeder	0.005	
Lease Area	113	Nemertea	Lineidae	Cerebratulus lacteus	1	Predator	0.003	
Lease Area	113	Oligochaeta	Oligochaeta	Oligochaeta spp.	13	Subsurface Deposit Feeder	0.001	
Lease Area	113	Polychaeta	Ampharetidae	Ampharetidae spp.	3	Surface Deposit Feeder	0.001	juvenile
Lease Area	113	Polychaeta	Arabellidae	Drilonereis longa	2	Predator	0.013	
Lease Area	113	Polychaeta	Capitellidae	Mediomastus ambiseta	1	Subsurface Deposit Feeder	<0.001	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
Lease Area	113	Polychaeta	Cossuridae	Cossura longocirrata	19	Subsurface Deposit Feeder	0.002	
Lease Area	113	Polychaeta	Flabelligaridae	Brada spp.	4	Surface Deposit Feeder	0.004	
Lease Area	113	Polychaeta	Flabelligaridae	Pherusa affinis	16	Surface Deposit Feeder	0.029	
Lease Area	113	Polychaeta	Glyceridae	Glycera capitata	2	Omnivore/Scavenger	0.104	
Lease Area	113	Polychaeta	Glyceridae	Glycera spp.	3	Omnivore/Scavenger	-	juvenile
Lease Area	113	Polychaeta	Lumbrineridae	Ninoe nigripes	5	Omnivore/Scavenger	0.006	
Lease Area	113	Polychaeta	Maldanidae	Clymenella torquata	5	Subsurface Deposit Feeder	0.014	
Lease Area	113	Polychaeta	Maldanidae	Maldanidae spp.	3	Subsurface Deposit Feeder	-	juvenile
Lease Area	113	Polychaeta	Nephtyidae	Nephtys incisa	13	Omnivore/Scavenger	0.016	
Lease Area	113	Polychaeta	Nephtyidae	Nephtys picta	4	Omnivore/Scavenger	0.003	
Lease Area	113	Polychaeta	Opheliidae	Opheliidae spp.	2	Subsurface Deposit Feeder	-	juvenile
Lease Area	113	Polychaeta	Opheliidae	Ophelina acuminata	10	Subsurface Deposit Feeder	0.004	
Lease Area	113	Polychaeta	Oweniidae	Owenia fusiformis	13	Suspension Feeder	0.024	
Lease Area	113	Polychaeta	Paraonidae	Levinsenia gracilis	74	Subsurface Deposit Feeder	0.015	
Lease Area	113	Polychaeta	Polynoidae	Harmothoe extenuata	2	Predator	0.022	
Lease Area	113	Polychaeta	Sabellidae	Sabellidae spp.	1	Suspension Feeder	<0.001	juvenile
Lease Area	113	Polychaeta	Spionidae	Spiophanes spp.	2	Interface Feeder	0.003	
Lease Area	113	Polychaeta	Syllidae	Exogone spp.	2	Omnivore/Scavenger	<0.001	
Lease Area	113	Polychaeta	Syllidae	Haplosyllis spongiphila	2	Omnivore/Scavenger	0.004	
Lease Area	113	Polychaeta	Terebellidae	Polycirrus spp.	2	Subsurface Deposit Feeder	0.142	
Lease Area	113	Polychaeta	Trichobranchidae	Terebellides stroemii	69	Subsurface Deposit Feeder	0.258	
Lease Area	113	Polychaeta	-	Polychaete Fragments	-	-	0.23	
Lease Area	113	Sipuncula	Golfingiidae	Nephasoma eremita	2	Surface Deposit Feeder	0.022	
Lease Area	115	Arthropoda	Ampeliscidae	Ampelisca spp.	352	Interface Feeder	1.137	
Lease Area	115	Arthropoda	Ampeliscidae	Byblis serrata	4	Interface Feeder	0.006	
Lease Area	115	Arthropoda	Caprellidae	Caprella equilibra	1	Predator	0.005	
Lease Area	115	Arthropoda	Corophiidae	Leptocheirus pinguis	4	Interface Feeder	0.008	
Lease Area	115	Arthropoda	Diastylidae	Diastylis quadrispinosa	1	Interface Feeder	0.007	
Lease Area	115	Arthropoda	Diastylidae	Diastylis sculpta	1	Interface Feeder	0.002	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
Lease Area	115	Arthropoda	Ischyroceridae	Ericthonius spp.	33	Interface Feeder	0.021	
Lease Area	115	Arthropoda	Leuconidae	Eudorella pusilla	6	Interface Feeder	0.005	
Lease Area	115	Arthropoda	Nannastacidae	Almyracuma proximoculi	1	Omnivore/Scavenger	0.001	
Lease Area	115	Arthropoda	Phoxocephalidae	Harpinia propinqua	4	Interface Feeder	0.003	
Lease Area	115	Arthropoda	Unciolidae	Unciola spp.	4	Interface Feeder	0.008	
Lease Area	115	Chordata	Molgulidae	Molgula manhattensis	14	Suspension Feeder	0.058	
Lease Area	115	Echinodermata	Strongylocentrotidae	Strongylocentrotus droebachiensis	1	Omnivore/Scavenger	<0.001	
Lease Area	115	Echinodermata	-	Ophiuroidea spp.	1	Predator	< 0.001	
Lease Area	115	Mollusca	Bivalvia	Nucula proxima	5	Subsurface Deposit Feeder	0.003	
Lease Area	115	Mollusca	Bivalvia	Periploma papyratium	14	Suspension Feeder	0.016	
Lease Area	115	Mollusca	Bivalvia	Pitar morrhuanus	22	Suspension Feeder	0.011	
Lease Area	115	Mollusca	Bivalvia	Thyasira gouldii	4	Suspension Feeder	0.008	
Lease Area	115	Nemertea	Carinomidae	Carinomella lactea	1	Predator	0.002	
Lease Area	115	Nemertea	Lineidae	Micrura spp.	1	Predator	0.031	
Lease Area	115	Polychaeta	Ampharetidae	Ampharete arctica	1	Surface Deposit Feeder	0.005	
Lease Area	115	Polychaeta	Ampharetidae	Ampharetidae spp.	5	Surface Deposit Feeder	-	juvenile
Lease Area	115	Polychaeta	Arabellidae	Drilonereis longa	2	Predator	0.001	
Lease Area	115	Polychaeta	Cirratulidae	Cirratulidae spp.	3	Surface Deposit Feeder	0.003	juvenile
Lease Area	115	Polychaeta	Cossuridae	Cossura longocirrata	19	Subsurface Deposit Feeder	<0.001	
Lease Area	115	Polychaeta	Glyceridae	Glycera capitata	1	Omnivore/Scavenger	0.001	
Lease Area	115	Polychaeta	Lumbrineridae	Ninoe nigripes	3	Omnivore/Scavenger	0.006	
Lease Area	115	Polychaeta	Lumbrineridae	Scoletoma fragilis	3	Omnivore/Scavenger	0.003	
Lease Area	115	Polychaeta	Lumbrineridae	Scoletoma tenuis	16	Omnivore/Scavenger	0.01	
Lease Area	115	Polychaeta	Maldanidae	Clymenella torquata	5	Subsurface Deposit Feeder	0.004	
Lease Area	115	Polychaeta	Maldanidae	Maldanidae spp.	4	Subsurface Deposit Feeder	-	juvenile
Lease Area	115	Polychaeta	Nephtyidae	Nephtys incisa	11	Omnivore/Scavenger	0.497	
Lease Area	115	Polychaeta	Opheliidae	Ophelina acuminata	9	Subsurface Deposit Feeder	0.002	
Lease Area	115	Polychaeta	Paraonidae	Aricidea (Acmira) catherinae	3	Surface Deposit Feeder	0.001	
Lease Area	115	Polychaeta	Paraonidae	Levinsenia gracilis	126	Subsurface Deposit Feeder	0.041	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
Lease Area	115	Polychaeta	Spionidae	Spionidae spp.	1	Interface Feeder	< 0.001	juvenile
Lease Area	115	Polychaeta	Trichobranchidae	Terebellides stroemii	15	Subsurface Deposit Feeder	0.04	
Lease Area	115	Polychaeta	-	Polychaete Fragments	-	-	0.105	
Lease Area	115	Sipuncula	Golfingiidae	Nephasoma eremita	1	Surface Deposit Feeder	0.001	
Lease Area	118	Arthropoda	Ampeliscidae	Ampelisca spp.	175	Interface Feeder	0.841	
Lease Area	118	Arthropoda	Anthuridae	Ptilanthura tenuis	1	Omnivore/Scavenger	0.001	
Lease Area	118	Arthropoda	Corophiidae	Leptocheirus pinguis	2	Interface Feeder	0.014	
Lease Area	118	Arthropoda	Diastylidae	Diastylis quadrispinosa	1	Interface Feeder	0.004	
Lease Area	118	Arthropoda	Diastylidae	Diastylis sculpta	1	Interface Feeder	0.002	
Lease Area	118	Arthropoda	Ischyroceridae	Ericthonius spp.	4	Interface Feeder	0.004	
Lease Area	118	Arthropoda	Leuconidae	Eudorella pusilla	4	Interface Feeder	0.005	
Lease Area	118	Arthropoda	Phoxocephalidae	Harpinia propinqua	7	Interface Feeder	0.009	
Lease Area	118	Arthropoda	Unciolidae	Unciola spp.	1	Interface Feeder	0.001	
Lease Area	118	Cnidaria	Cerianthidae	Pachycerianthus borealis	1	Suspension Feeder	0.001	
Lease Area	118	Mollusca	Bivalvia	Nucula proxima	21	Subsurface Deposit Feeder	0.02	
Lease Area	118	Mollusca	Bivalvia	Periploma papyratium	7	Suspension Feeder	0.04	
Lease Area	118	Mollusca	Bivalvia	Pitar morrhuanus	24	Suspension Feeder	0.032	
Lease Area	118	Mollusca	Bivalvia	Thyasira gouldii	3	Suspension Feeder	0.001	
Lease Area	118	Mollusca	Bivalvia	Yoldia sapotilla	9	Subsurface Deposit Feeder	0.019	
Lease Area	118	Mollusca	Gastropoda	Haminella solitaria	1	Predator	0.01	
Lease Area	118	Nemertea	Amphiporidae	Amphiporus angulatus	2	Predator	0.001	
Lease Area	118	Nemertea	Lineidae	Micrura spp.	1	Predator	<0.001	
Lease Area	118	Oligochaeta	Oligochaeta	Oligochaeta spp.	29	Subsurface Deposit Feeder	<0.001	
Lease Area	118	Polychaeta	Ampharetidae	Ampharetidae spp.	7	Surface Deposit Feeder	0.001	juvenile
Lease Area	118	Polychaeta	Cossuridae	Cossura longocirrata	89	Subsurface Deposit Feeder	0.016	
Lease Area	118	Polychaeta	Flabelligaridae	Brada spp.	1	Surface Deposit Feeder	0.001	
Lease Area	118	Polychaeta	Flabelligaridae	Pherusa plumosa	2	Surface Deposit Feeder	0.001	
Lease Area	118	Polychaeta	Lumbrineridae	Lumbrineridae spp.	1	Omnivore/Scavenger	-	juvenile
Lease Area	118	Polychaeta	Lumbrineridae	Ninoe nigripes	12	Omnivore/Scavenger	0.107	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
Lease Area	118	Polychaeta	Lumbrineridae	Scoletoma fragilis	13	Omnivore/Scavenger	0.034	
Lease Area	118	Polychaeta	Maldanidae	Clymenella torquata	6	Subsurface Deposit Feeder	0.045	
Lease Area	118	Polychaeta	Nephtyidae	Nephtys incisa	13	Omnivore/Scavenger	0.021	
Lease Area	118	Polychaeta	Opheliidae	Ophelina acuminata	5	Subsurface Deposit Feeder	0.007	
Lease Area	118	Polychaeta	Oweniidae	Owenia fusiformis	7	Suspension Feeder	0.064	
Lease Area	118	Polychaeta	Paraonidae	Levinsenia gracilis	160	Subsurface Deposit Feeder	0.066	
Lease Area	118	Polychaeta	Sabellidae	Sabellidae spp.	3	Suspension Feeder	<0.001	juvenile
Lease Area	118	Polychaeta	Trichobranchidae	Terebellides stroemii	20	Subsurface Deposit Feeder	0.04	
Lease Area	118	Polychaeta	-	Polychaete Fragments	-	-	0.055	
Lease Area	119	Arthropoda	Ampeliscidae	Ampelisca spp.	106	Interface Feeder	0.493	
Lease Area	119	Arthropoda	Ischyroceridae	Ericthonius spp.	1	Interface Feeder	0.003	
Lease Area	119	Arthropoda	Leuconidae	Eudorella pusilla	1	Interface Feeder	0.001	
Lease Area	119	Arthropoda	Phoxocephalidae	Harpinia propinqua	2	Interface Feeder	0.002	
Lease Area	119	Chordata	Molgulidae	Molgula manhattensis	27	Suspension Feeder	0.567	
Lease Area	119	Echinodermata	Asteroidea	Astropecten americanus	1	Predator	3.822	
Lease Area	119	Echinodermata	Synaptidae	Leptosynapta tenuis	1	Subsurface Deposit Feeder	0.002	
Lease Area	119	Echinodermata	-	Ophiuroidea spp.	15	Predator	0.221	
Lease Area	119	Mollusca	Bivalvia	Mesodesma arctatum	1	Suspension Feeder	0.005	
Lease Area	119	Mollusca	Bivalvia	Periploma papyratium	1	Suspension Feeder	0.002	
Lease Area	119	Mollusca	Bivalvia	Pitar morrhuanus	20	Suspension Feeder	0.007	
Lease Area	119	Mollusca	Bivalvia	Thyasira gouldii	3	Suspension Feeder	0.068	
Lease Area	119	Mollusca	Bivalvia	Yoldia sapotilla	1	Subsurface Deposit Feeder	0.003	
Lease Area	119	Nemertea	Carinomidae	Carinomella lactea	1	Predator	<0.001	
Lease Area	119	Nemertea	Lineidae	Cerebratulus lacteus	1	Predator	0.002	
Lease Area	119	Nemertea	Lineidae	<i>Micrura</i> spp.	1	Predator	0.002	
Lease Area	119	Oligochaeta	Oligochaeta	Oligochaeta spp.	44	Subsurface Deposit Feeder	0.001	
Lease Area	119	Polychaeta	Ampharetidae	Ampharetidae spp.	7	Surface Deposit Feeder	0.005	juvenile
Lease Area	119	Polychaeta	Arabellidae	Drilonereis longa	3	Predator	0.003	
Lease Area	119	Polychaeta	Capitellidae	Mediomastus ambiseta	1	Subsurface Deposit Feeder	<0.001	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
Lease Area	119	Polychaeta	Cirratulidae	Tharyx spp.	32	Surface Deposit Feeder	0.01	
Lease Area	119	Polychaeta	Cossuridae	Cossura longocirrata	313	Subsurface Deposit Feeder	0.041	
Lease Area	119	Polychaeta	Flabelligaridae	Pherusa plumosa	4	Surface Deposit Feeder	< 0.001	
Lease Area	119	Polychaeta	Lumbrineridae	Lumbrineridae spp.	16	Omnivore/Scavenger	0.001	juvenile
Lease Area	119	Polychaeta	Lumbrineridae	Ninoe nigripes	27	Omnivore/Scavenger	0.011	
Lease Area	119	Polychaeta	Lumbrineridae	Scoletoma fragilis	14	Omnivore/Scavenger	0.005	
Lease Area	119	Polychaeta	Maldanidae	Clymenella torquata	1	Subsurface Deposit Feeder	0.023	
Lease Area	119	Polychaeta	Nephtyidae	Nephtys incisa	35	Omnivore/Scavenger	0.183	
Lease Area	119	Polychaeta	Opheliidae	Ophelina acuminata	3	Subsurface Deposit Feeder	0.001	
Lease Area	119	Polychaeta	Oweniidae	Owenia fusiformis	6	Suspension Feeder	0.01	
Lease Area	119	Polychaeta	Paraonidae	Aricidea (Acmira) catherinae	9	Surface Deposit Feeder	0.002	
Lease Area	119	Polychaeta	Paraonidae	Levinsenia gracilis	64	Subsurface Deposit Feeder	0.005	
Lease Area	119	Polychaeta	Sabellidae	Euchone rubrocincta	36	Suspension Feeder	0.016	
Lease Area	119	Polychaeta	Syllidae	Exogone spp.	4	Omnivore/Scavenger	<0.001	
Lease Area	119	Polychaeta	Terebellidae	Polycirrus spp.	8	Subsurface Deposit Feeder	0.007	
Lease Area	119	Polychaeta	Trichobranchidae	Terebellides stroemii	062	Subsurface Deposit Feeder	0.053	
Lease Area	119	Polychaeta	-	Polychaete Fragments	-	-	0.039	
NECC	002	Echinodermata	Echinoidea	Echinarachnius parma	1	Surface Deposit Feeder	0.004	
NECC	002	Mollusca	Bivalvia	Astarte montagui	1	Suspension Feeder	0.002	
NECC	002	Mollusca	Bivalvia	Spisula solidissima	1	Suspension Feeder	2.074	
NECC	002	Mollusca	Gastropoda	Caecum johnsoni	1	Predator	< 0.001	
NECC	002	Mollusca	Gastropoda	Turbonilla spp.	1	Omnivore/Scavenger	< 0.001	
NECC	002	Polychaeta	Glyceridae	Glycera spp.	3	Omnivore/Scavenger	0.004	juvenile
NECC	002	Polychaeta	Polygordiidae	Polygordius jouinae	1	Subsurface Deposit Feeder	< 0.001	
NECC	002	Polychaeta	Terebellidae	Polycirrus spp.	2	Subsurface Deposit Feeder	0.011	
NECC	002	Polychaeta	-	Polychaete Fragments	-	-	0.002	
NECC	004	Arthropoda	Ampeliscidae	Ampelisca spp.	11	Interface Feeder	0.002	
NECC	004	Arthropoda	Caprellidae	Aeginina longicornis	4	Predator	0.001	
NECC	004	Arthropoda	Caprellidae	Paracaprella tenuis	3	Predator	0.002	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
NECC	004	Arthropoda	Corophiidae	Corophium spp.	14	Interface Feeder	0.017	
NECC	004	Arthropoda	Epialtidae	Libinia emarginata	1	Predator	13.463	
NECC	004	Arthropoda	Ischyroceridae	Ericthonius spp.	33	Interface Feeder	0.026	
NECC	004	Arthropoda	Lysianassidae	Lysianopsis alba	25	Omnivore/Scavenger	0.04	
NECC	004	Arthropoda	Paguridae	Pagurus arcuatus	2	Omnivore/Scavenger	0.576	
NECC	004	Arthropoda	Panopeidae	Panopeus herbstii	22	Predator	1.491	
NECC	004	Arthropoda	Phoxocephalidae	Eobrolgus spinosus	3	Interface Feeder	0.005	
NECC	004	Arthropoda	Unciolidae	Unciola spp.	9	Interface Feeder	0.011	
NECC	004	Chordata	Molgulidae	Molgula manhattensis	2	Suspension Feeder	0.078	
NECC	004	Chordata	-	Ascidiacea spp.	-	Suspension Feeder	-	
NECC	004	Cnidaria	Edwardsiidae	Edwardsia elegans	1	Suspension Feeder	0.001	
NECC	004	Echinodermata	Amphiuridae	Amphipholis squamata	1	Predator	< 0.001	
NECC	004	Mollusca	Bivalvia	Anadara transversa	3	Suspension Feeder	0.684	
NECC	004	Mollusca	Bivalvia	Anomia simplex	1	Suspension Feeder	2.545	
NECC	004	Mollusca	Bivalvia	Modiolus modiolus	2	Suspension Feeder	47.111	
NECC	004	Mollusca	Bivalvia	Nucula proxima	1	Subsurface Deposit Feeder	0.004	
NECC	004	Mollusca	Gastropoda	Astyris lunata	52	Predator	0.401	
NECC	004	Mollusca	Gastropoda	Caecum johnsoni	3	Predator	0.002	
NECC	004	Mollusca	Gastropoda	Caecum pulchellum	25	Predator	0.015	
NECC	004	Mollusca	Gastropoda	Cotonopsis lafresnayi	18	Predator	0.941	
NECC	004	Mollusca	Gastropoda	Tritia obsoleta	1	Omnivore/Scavenger	0.237	
NECC	004	Polychaeta	Ampharetidae	Ampharetidae spp.	4	Surface Deposit Feeder	0.002	juvenile
NECC	004	Polychaeta	Arabellidae	Arabella iricolor	14	Predator	0.248	
NECC	004	Polychaeta	Cirratulidae	Cirratulus grandis	1	Surface Deposit Feeder	0.001	
NECC	004	Polychaeta	Cirratulidae	Tharyx spp.	1	Surface Deposit Feeder	<0.001	
NECC	004	Polychaeta	Phyllodocidae	Eumida sanguinea	10	Predator	0.005	
NECC	004	Polychaeta	Polynoidae	Harmothoe extenuata	39	Predator	0.025	
NECC	004	Polychaeta	Polynoidae	Lepidonotus squamatus	11	Predator	0.294	
NECC	004	Polychaeta	Sabellaridae	Sabellaria vulgaris	25	Suspension Feeder	0.164	

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NECC	004	Polychaeta	Sabellidae	Potamilla neglecta	2	Suspension Feeder	0.01	
NECC	004	Polychaeta	Sabellidae	Pseudopotamilla reniformis	3	Suspension Feeder	0.016	
NECC	004	Polychaeta	Spionidae	Polydora spp.	7	Interface Feeder	0.009	
NECC	004	Polychaeta	Spionidae	Spio spp.	1	Interface Feeder	0.002	
NECC	004	Polychaeta	Syllidae	Eusyllis lamelligera	34	Omnivore/Scavenger	0.01	
NECC	004	Polychaeta	Syllidae	Exogone spp.	72	Omnivore/Scavenger	0.011	
NECC	004	Polychaeta	Syllidae	Odontosyllis fulgurans	10	Omnivore/Scavenger	0.002	
NECC	004	Polychaeta	Syllidae	Proceraea cornuta	23	Omnivore/Scavenger	0.006	
NECC	004	Polychaeta	Syllidae	Syllis spp.	11	Omnivore/Scavenger	0.011	
NECC	004	Polychaeta	Terebellidae	Polycirrus spp.	6	Subsurface Deposit Feeder	0.004	
NECC	004	Polychaeta	-	Polychaete Fragments	-	-	0.142	
NECC	006	Mollusca	Bivalvia	Mytilidae spp.	2	Suspension Feeder	<0.001	juvenile
NECC	006	Mollusca	Bivalvia	Periploma leanum	2	Suspension Feeder	<0.001	
NECC	006	Mollusca	Gastropoda	Caecum johnsoni	1	Predator	<0.001	
NECC	006	Polychaeta	Glyceridae	Glycera capitata	1	Omnivore/Scavenger	0.008	
NECC	006	Polychaeta	Phyllodocidae	Eumida sanguinea	3	Predator	0.001	
NECC	006	Polychaeta	Sabellidae	Pseudopotamilla reniformis	1	Suspension Feeder	0.005	
NECC	006	Polychaeta	-	Polychaete Fragments	-	-	0.001	
NECC	006	Porifera	Clionaidae	Cliona spp.	-	Suspension Feeder	0.229	
NECC	800	Arthropoda	Balanidae	Balanidae spp.	155	Suspension Feeder	0.286	
NECC	800	Arthropoda	Cirolanidae	Politolana polita	1	Omnivore/Scavenger	<0.001	
NECC	800	Arthropoda	Corophiidae	Corophium spp.	14	Interface Feeder	0.006	
NECC	800	Arthropoda	Ischyroceridae	Ericthonius spp.	23	Interface Feeder	0.006	
NECC	800	Arthropoda	Lysianassidae	Lysianopsis alba	1	Omnivore/Scavenger	<0.001	
NECC	800	Arthropoda	Panopeidae	Panopeus herbstii	13	Predator	1.296	
NECC	800	Arthropoda	Phoxocephalidae	Rhepoxynius epistomus	2	Interface Feeder	0.001	
NECC	008	Arthropoda	Unciolidae	<i>Unciola</i> spp.	14	Interface Feeder	0.01	
NECC	008	Arthropoda	-	Amphipoda spp.	1	Interface Feeder	<0.001	
NECC	800	Bryozoa	-	Cheilostomatida spp.	-	Suspension Feeder	-	

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NECC	800	Bryozoa	-	Ctenostomatida spp.	-	Suspension Feeder	-	
NECC	800	Cnidaria	Campanulariidae	Campanulariidae spp.	-	Suspension Feeder	-	
NECC	800	Echinodermata	Amphiuridae	Amphipholis squamata	2	Predator	0.002	
NECC	800	Mollusca	Bivalvia	Ameritella agilis	2	Subsurface Deposit Feeder	< 0.001	
NECC	800	Mollusca	Bivalvia	Anadara transversa	3	Suspension Feeder	1.883	
NECC	800	Mollusca	Bivalvia	Crassinella lunulata	1	Suspension Feeder	0.102	
NECC	800	Mollusca	Bivalvia	Mytilus edulis	2	Suspension Feeder	< 0.001	juvenile
NECC	800	Mollusca	Bivalvia	Nucula proxima	16	Subsurface Deposit Feeder	1.472	
NECC	800	Mollusca	Gastropoda	Astyris lunata	11	Predator	0.087	
NECC	800	Mollusca	Gastropoda	Bittiolum alternatum	67	Omnivore/Scavenger	0.284	
NECC	800	Mollusca	Gastropoda	Caecum pulchellum	6	Predator	0.001	
NECC	800	Mollusca	Gastropoda	Cotonopsis lafresnayi	16	Predator	2.219	
NECC	800	Mollusca	Gastropoda	Crepidula fornicata	186	Suspension Feeder	435.157	
NECC	800	Mollusca	Gastropoda	Crepidula plana	15	Suspension Feeder	0.316	
NECC	800	Mollusca	Gastropoda	Seila adamsii	1	Omnivore/Scavenger	0.026	
NECC	800	Mollusca	Gastropoda	Tritia obsoleta	5	Omnivore/Scavenger	2.868	
NECC	800	Mollusca	Polyplacophora	Chaetopleura apiculata	2	Omnivore/Scavenger	0.147	
NECC	800	Nemertea	Tubulanidae	Tubulanus pellucidus	1	Predator	< 0.001	
NECC	800	Oligochaeta	Oligochaeta	Oligochaeta spp.	24	Subsurface Deposit Feeder	0.002	
NECC	800	Polychaeta	Ampharetidae	Ampharete arctica	8	Surface Deposit Feeder	0.009	
NECC	800	Polychaeta	Ampharetidae	Ampharetidae spp.	15	Surface Deposit Feeder	0.001	juvenile
NECC	800	Polychaeta	Capitellidae	Capitella capitata	2	Subsurface Deposit Feeder	< 0.001	
NECC	800	Polychaeta	Cirratulidae	Cirratulus grandis	2	Surface Deposit Feeder	0.005	
NECC	800	Polychaeta	Cirratulidae	Tharyx spp.	5	Surface Deposit Feeder	0.001	
NECC	800	Polychaeta	Nereidae	Neanthes acuminata	1	Predator	< 0.001	
NECC	800	Polychaeta	Paraonidae	Aricidea (Acmira) catherinae	12	Surface Deposit Feeder	0.001	
NECC	800	Polychaeta	Phyllodocidae	Eumida sanguinea	3	Predator	0.003	
NECC	800	Polychaeta	Phyllodocidae	Phyllodoce groenlandica	1	Predator	<0.001	
NECC	800	Polychaeta	Polynoidae	Lepidonotus squamatus	35	Predator	0.137	

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NECC	800	Polychaeta	Polynoidae	Polynoidae spp.	15	Predator	<0.001	juvenile
NECC	800	Polychaeta	Spionidae	Polydora spp.	4	Interface Feeder	0.001	
NECC	800	Polychaeta	Spionidae	Spio spp.	2	Interface Feeder	<0.001	
NECC	800	Polychaeta	Syllidae	Eusyllis lamelligera	10	Omnivore/Scavenger	0.001	
NECC	800	Polychaeta	Syllidae	Exogone spp.	44	Omnivore/Scavenger	0.004	
NECC	800	Polychaeta	Syllidae	Haplosyllis spongiphila	1	Omnivore/Scavenger	<0.001	
NECC	800	Polychaeta	Syllidae	Odontosyllis fulgurans	7	Omnivore/Scavenger	0.001	
NECC	800	Polychaeta	Syllidae	Proceraea prismatica	2	Omnivore/Scavenger	<0.001	
NECC	800	Polychaeta	Syllidae	Salvatoria clavata	4	Omnivore/Scavenger	<0.001	
NECC	800	Polychaeta	-	Polychaete Fragments	-	-	0.021	
NECC	800	Porifera	-	Porifera spp.	-	Suspension Feeder	-	
NECC	010	Arthropoda	Leptocheliidae	Chondrochelia savignyi	2	Interface Feeder	<0.001	
NECC	010	Bryozoa	Electridae	Electra monostachys	-	Suspension Feeder	-	
NECC	010	Bryozoa	-	Ctenostomatida spp.	-	Suspension Feeder	-	
NECC	010	Echinodermata	Echinoidea	Echinarachnius parma	2	Surface Deposit Feeder	0.033	
NECC	010	Mollusca	Bivalvia	Bivavle Unidentified	1	Suspension Feeder	0.022	
NECC	010	Mollusca	Bivalvia	Lyonsia arenosa	1	Suspension Feeder	0.002	
NECC	010	Mollusca	Bivalvia	Spisula solidissima	2	Suspension Feeder	0.002	
NECC	010	Mollusca	Gastropoda	Caecum johnsoni	3	Predator	<0.001	
NECC	010	Mollusca	Gastropoda	Tritia trivittata	1	Omnivore/Scavenger	0.166	
NECC	010	Polychaeta	Cirratulidae	Cirratulidae spp.	1	Surface Deposit Feeder	0.001	
NECC	010	Polychaeta	Nephtyidae	Nephtys bucera	1	Omnivore/Scavenger	0.009	
NECC	010	Polychaeta	Opheliidae	Ophelia denticulata	3	Subsurface Deposit Feeder	0.259	
NECC	010	Polychaeta	Opheliidae	Travisia carnea	1	Subsurface Deposit Feeder	0.094	
NECC	010	Polychaeta	Sigalionidae	Sthenelais boa	1	Predator	0.006	
NECC	010	Polychaeta	Terebellidae	Polycirrus spp.	1	Subsurface Deposit Feeder	0.001	
NECC	010	Polychaeta	-	Polychaete Fragments	-	-	0.031	
NECC	012	Arthropoda	Balanidae	Balanidae spp.	-	Suspension Feeder	-	
NECC	012	Arthropoda	Diastylidae	Diastylis sculpta	1	Interface Feeder	0.005	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
NECC	012	Arthropoda	Leptocheliidae	Chondrochelia savignyi	2	Interface Feeder	<0.001	
NECC	012	Arthropoda	Panopeidae	Panopeus herbstii	1	Predator	0.004	
NECC	012	Arthropoda	Phoxocephalidae	Rhepoxynius epistomus	2	Interface Feeder	0.017	
NECC	012	Bryozoa	Electridae	Electra monostachys	-	Suspension Feeder	-	
NECC	012	Bryozoa	-	Ctenostomatida spp.	-	Suspension Feeder	-	
NECC	012	Chordata	Molgulidae	Molgula manhattensis	13	Suspension Feeder	0.433	
NECC	012	Echinodermata	Echinoidea	Echinarachnius parma	1	Surface Deposit Feeder	0.025	
NECC	012	Mollusca	Bivalvia	Ameritella agilis	5	Subsurface Deposit Feeder	0.011	
NECC	012	Mollusca	Bivalvia	Crassinella lunulata	4	Suspension Feeder	0.054	
NECC	012	Mollusca	Bivalvia	Ensis leei	1	Suspension Feeder	0.011	
NECC	012	Mollusca	Bivalvia	Lyonsia arenosa	8	Suspension Feeder	0.004	
NECC	012	Mollusca	Bivalvia	Periploma leanum	2	Suspension Feeder	0.001	
NECC	012	Mollusca	Bivalvia	Spisula solidissima	2	Suspension Feeder	0.001	
NECC	012	Mollusca	Gastropoda	Astyris lunata	2	Predator	0.009	
NECC	012	Mollusca	Gastropoda	Caecum cooperi	1	Predator	0.001	
NECC	012	Mollusca	Gastropoda	Caecum johnsoni	1	Predator	<0.001	
NECC	012	Mollusca	Gastropoda	Tritia trivittata	1	Omnivore/Scavenger	0.251	
NECC	012	Polychaeta	Ampharetidae	Ampharete arctica	2	Surface Deposit Feeder	<0.001	
NECC	012	Polychaeta	Cirratulidae	Tharyx spp.	3	Surface Deposit Feeder	0.001	
NECC	012	Polychaeta	Nephtyidae	Nephtys picta	3	Omnivore/Scavenger	0.004	
NECC	012	Polychaeta	Opheliidae	Ophelia denticulata	5	Subsurface Deposit Feeder	0.018	
NECC	012	Polychaeta	Opheliidae	Travisia carnea	1	Subsurface Deposit Feeder	0.01	
NECC	012	Polychaeta	Polygordiidae	Polygordius jouinae	4	Subsurface Deposit Feeder	0.001	
NECC	012	Polychaeta	Spionidae	Spio spp.	6	Interface Feeder	0.024	
NECC	012	Polychaeta	Spionidae	Spiophanes bombyx	7	Interface Feeder	0.002	
NECC	012	Polychaeta	Syllidae	Exogone spp.	5	Omnivore/Scavenger	<0.001	
NECC	012	Polychaeta	Terebellidae	Polycirrus spp.	10	Subsurface Deposit Feeder	0.006	
NECC	012	Polychaeta	-	Polychaete Fragments	-	-	0.022	
NECC	014	Arthropoda	Ampeliscidae	Ampelisca spp.	2	Interface Feeder	0.011	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
NECC	014	Arthropoda	Balanidae	Balanidae spp.	-	Suspension Feeder	-	
NECC	014	Bryozoa	Electridae	Electra monostachys	-	Suspension Feeder	-	
NECC	014	Bryozoa	-	Cheilostomatida spp.	-	Suspension Feeder	-	
NECC	014	Mollusca	Bivalvia	Ameritella agilis	15	Subsurface Deposit Feeder	0.091	
NECC	014	Mollusca	Bivalvia	Crassinella lunulata	1	Suspension Feeder	0.001	
NECC	014	Mollusca	Bivalvia	Ensis leei	2	Suspension Feeder	0.006	
NECC	014	Mollusca	Bivalvia	Lyonsia arenosa	8	Suspension Feeder	0.01	
NECC	014	Mollusca	Bivalvia	Nucula proxima	1	Subsurface Deposit Feeder	0.001	
NECC	014	Polychaeta	Ampharetidae	Ampharete arctica	12	Surface Deposit Feeder	0.044	
NECC	014	Polychaeta	Ampharetidae	Ampharetidae spp.	11	Surface Deposit Feeder	0.001	juvenile
NECC	014	Polychaeta	Magelonidae	Magelona longicornis	1	Surface Deposit Feeder	0.005	
NECC	014	Polychaeta	Nephtyidae	Nephtys picta	10	Omnivore/Scavenger	0.026	
NECC	014	Polychaeta	Polynoidae	Harmothoe extenuata	1	Predator	0.002	
NECC	014	Polychaeta	Spionidae	Spionidae spp.	7	Interface Feeder	0.012	
NECC	014	Polychaeta	Terebellidae	Polycirrus spp.	1	Subsurface Deposit Feeder	0.003	
NECC	014	Polychaeta	-	Polychaete Fragments	-	-	0.018	
NECC	016	Arthropoda	Anthuridae	Ptilanthura tenuis	1	Omnivore/Scavenger	0.001	
NECC	016	Arthropoda	Balanidae	Balanidae spp.	19	Suspension Feeder	0.052	
NECC	016	Arthropoda	Haustoriidae	Protohaustorius wigleyi	1	Interface Feeder	0.02	
NECC	016	Arthropoda	Leptocheliidae	Chondrochelia savignyi	1	Interface Feeder	<0.001	
NECC	016	Arthropoda	Melitidae	Melita nitida	1	Interface Feeder	0.001	
NECC	016	Arthropoda	Phoxocephalidae	Rhepoxynius epistomus	2	Interface Feeder	0.011	
NECC	016	Bryozoa	-	Cheilostomatida spp.	-	Suspension Feeder	-	
NECC	016	Bryozoa	-	Ctenostomatida spp.	-	Suspension Feeder	-	
NECC	016	Chordata	Molgulidae	Molgula manhattensis	25	Suspension Feeder	0.041	
NECC	016	Mollusca	Bivalvia	Ameritella agilis	13	Subsurface Deposit Feeder	0.224	
NECC	016	Mollusca	Bivalvia	Lyonsia arenosa	1	Suspension Feeder	<0.001	
NECC	016	Mollusca	Bivalvia	Periploma leanum	8	Suspension Feeder	0.006	
NECC	016	Mollusca	Bivalvia	Spisula solidissima	1	Suspension Feeder	0.085	

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NECC	016	Nemertea	Tubulanidae	Tubulanus pellucidus	2	Predator	<0.001	
NECC	016	Oligochaeta	Oligochaeta	Oligochaeta spp.	13	Subsurface Deposit Feeder	0.003	
NECC	016	Polychaeta	Ampharetidae	Ampharetidae spp.	1	Surface Deposit Feeder	<0.001	juvenile
NECC	016	Polychaeta	Cirratulidae	Tharyx spp.	1	Surface Deposit Feeder	<0.001	
NECC	016	Polychaeta	Dorvellidae	Parougia caeca	1	Surface Deposit Feeder	<0.001	
NECC	016	Polychaeta	Glyceridae	Glycera capitata	7	Omnivore/Scavenger	0.006	
NECC	016	Polychaeta	Maldanidae	Maldanidae spp.	1	Subsurface Deposit Feeder	<0.001	juvenile
NECC	016	Polychaeta	Nephtyidae	Nephtys bucera	1	Omnivore/Scavenger	0.028	
NECC	016	Polychaeta	Opheliidae	Travisia carnea	33	Subsurface Deposit Feeder	0.04	
NECC	016	Polychaeta	Phyllodocidae	Eumida sanguinea	4	Predator	0.001	
NECC	016	Polychaeta	Polygordiidae	Polygordius jouinae	5	Subsurface Deposit Feeder	0.001	
NECC	016	Polychaeta	Sphaerodoridae	Sphaerodoridium minutum	1	Surface Deposit Feeder	<0.001	
NECC	016	Polychaeta	Spionidae	Spionidae spp.	1	Interface Feeder	<0.001	juvenile
NECC	016	Polychaeta	Spionidae	Spiophanes bombyx	3	Interface Feeder	0.002	
NECC	016	Polychaeta	Syllidae	Exogone spp.	2	Omnivore/Scavenger	<0.001	
NECC	016	Polychaeta	Syllidae	Syllis spp.	1	Omnivore/Scavenger	<0.001	
NECC	016	Polychaeta	Terebellidae	Polycirrus spp.	35	Subsurface Deposit Feeder	0.046	
NECC	016	Polychaeta	-	Polychaete Fragments	-	-	0.019	
NECC	018	Arthropoda	Balanidae	Balanidae spp.	6	Suspension Feeder	0.002	
NECC	018	Arthropoda	Diastylidae	Diastylis sculpta	2	Interface Feeder	0.001	
NECC	018	Arthropoda	Phoxocephalidae	Rhepoxynius epistomus	9	Interface Feeder	0.016	
NECC	018	Arthropoda	Pinnotheridae	Pinnixulala retinens	1	Interface Feeder	0.009	
NECC	018	Arthropoda	Unciolidae	Unciola spp.	1	Interface Feeder	0.001	
NECC	018	Bryozoa	-	Ctenostomatida spp.	-	Suspension Feeder	-	
NECC	018	Mollusca	Bivalvia	Ameritella agilis	47	Subsurface Deposit Feeder	0.132	
NECC	018	Mollusca	Bivalvia	Lyonsia arenosa	1	Suspension Feeder	0.003	
NECC	018	Mollusca	Bivalvia	Siliqua costata	1	Suspension Feeder	0.008	
NECC	018	Mollusca	Gastropoda	Odostomia spp.	3	Predator	0.001	
NECC	018	Mollusca	Gastropoda	Tritia trivittata	1	Omnivore/Scavenger	0.089	

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NECC	018	Nemertea	Lineidae	Micrura spp.	1	Predator	0.001	
NECC	018	Oligochaeta	Oligochaeta	Oligochaeta spp.	2	Subsurface Deposit Feeder	<0.001	
NECC	018	Polychaeta	Ampharetidae	Amage auricula	25	Surface Deposit Feeder	0.004	
NECC	018	Polychaeta	Apistobranchidae	Apistobranchus tullbergi	1	Surface Deposit Feeder	<0.001	
NECC	018	Polychaeta	Capitellidae	Heteromastus spp.	163	Subsurface Deposit Feeder	0.023	
NECC	018	Polychaeta	Dorvellidae	Parougia caeca	1	Surface Deposit Feeder	<0.001	
NECC	018	Polychaeta	Magelonidae	Magelona longicornis	3	Surface Deposit Feeder	0.003	
NECC	018	Polychaeta	Nephtyidae	Nephtys picta	11	Omnivore/Scavenger	0.01	
NECC	018	Polychaeta	Paraonidae	Aricidea (Acmira) catherinae	3	Surface Deposit Feeder	0.001	
NECC	018	Polychaeta	Spionidae	Spio spp.	3	Interface Feeder	0.022	
NECC	018	Polychaeta	Spionidae	Spiophanes bombyx	6	Interface Feeder	0.002	
NECC	018	Polychaeta	Syllidae	Haplosyllis spongiphila	1	Omnivore/Scavenger	<0.001	
NECC	018	Polychaeta	-	Polychaete Fragments	-	-	0.043	
NECC	020	Arthropoda	Ampeliscidae	Ampelisca spp.	1	Interface Feeder	0.02	
NECC	020	Arthropoda	Anthuridae	Ptilanthura tenuis	2	Omnivore/Scavenger	0.001	
NECC	020	Arthropoda	Balanidae	Balanidae spp.	-	Suspension Feeder	-	
NECC	020	Arthropoda	Bathyporeiidae	Bathyporeia quoddyensis	6	Interface Feeder	0.01	
NECC	020	Arthropoda	Haustoriidae	Haustoriidae spp.	24	Interface Feeder	0.003	juvenile
NECC	020	Arthropoda	Haustoriidae	Haustorius spp.	1	Interface Feeder	0.001	
NECC	020	Arthropoda	Haustoriidae	Protohaustorius wigleyi	3	Interface Feeder	0.01	
NECC	020	Arthropoda	Leptocheliidae	Chondrochelia savignyi	5	Interface Feeder	<0.001	
NECC	020	Arthropoda	Oedicerotidae	Americhelidium americanum	4	Interface Feeder	0.004	
NECC	020	Arthropoda	Paguridae	Pagurus pollicaris	1	Omnivore/Scavenger	0.13	
NECC	020	Arthropoda	Phoxocephalidae	Rhepoxynius epistomus	41	Interface Feeder	0.034	
NECC	020	Arthropoda	-	Amphipoda spp.	3	Interface Feeder	0.002	juvenile
NECC	020	Bryozoa	-	Cheilostomatida spp.	-	Suspension Feeder	-	
NECC	020	Bryozoa	-	Ctenostomatida spp.	-	Suspension Feeder	-	
NECC	020	Chordata	Molgulidae	Molgula manhattensis	1	Suspension Feeder	0.001	
NECC	020	Echinodermata	Echinoidea	Echinarachnius parma	1	Surface Deposit Feeder	0.002	

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NECC	020	Mollusca	Bivalvia	Ameritella agilis	29	Subsurface Deposit Feeder	0.2062	
NECC	020	Mollusca	Bivalvia	Lyonsia arenosa	1	Suspension Feeder	0.003	
NECC	020	Mollusca	Gastropoda	Crepidula fornicata	2	Suspension Feeder	0.195	
NECC	020	Mollusca	Gastropoda	Cryoturris cerinella	1	Omnivore/Scavenger	0.009	
NECC	020	Mollusca	Gastropoda	Naticidae spp.	1	Predator	0.032	
NECC	020	Mollusca	Gastropoda	Tritia trivittata	3	Omnivore/Scavenger	0.357	
NECC	020	Mollusca	Gastropoda	Turbonilla spp.	1	Omnivore/Scavenger	0.001	
NECC	020	Nemertea	Tubulanidae	Tubulanus pellucidus	1	Predator	0.001	
NECC	020	Polychaeta	Cirratulidae	Tharyx spp.	2	Surface Deposit Feeder	0.001	
NECC	020	Polychaeta	Dorvellidae	Parougia caeca	2	Surface Deposit Feeder	< 0.001	
NECC	020	Polychaeta	Magelonidae	Magelona longicornis	57	Surface Deposit Feeder	0.022	
NECC	020	Polychaeta	Maldanidae	Maldanidae spp.	1	Subsurface Deposit Feeder	< 0.001	juvenile
NECC	020	Polychaeta	Nephtyidae	Nephtys picta	5	Omnivore/Scavenger	0.053	
NECC	020	Polychaeta	Paraonidae	Aricidea (Acmira) catherinae	2	Surface Deposit Feeder	0.001	
NECC	020	Polychaeta	Sigalionidae	Sthenelais boa Scolelepis (Scolelepis)	1	Predator	0.001	
NECC	020	Polychaeta	Spionidae	squamata	8	Interface Feeder	<0.001	
NECC	020	Polychaeta	-	Polychaete Fragments	-	-	0.015	
NECC	022	Arthropoda	Ampeliscidae	Ampelisca spp.	4	Interface Feeder	0.059	
NECC	022	Arthropoda	Balanidae	Balanidae spp.	31	Suspension Feeder	0.049	
NECC	022	Arthropoda	Caprellidae	Aeginina longicornis	11	Predator	0.013	
NECC	022	Arthropoda	Caprellidae	Paracaprella tenuis	16	Predator	0.001	
NECC	022	Arthropoda	Corophiidae	Corophium spp.	3	Interface Feeder	0.001	
NECC	022	Arthropoda	Corophiidae	Leptocheirus pinguis	3	Interface Feeder	0.005	
NECC	022	Arthropoda	Ischyroceridae	Ericthonius spp.	9	Interface Feeder	0.008	
NECC	022	Arthropoda	Leptocheliidae	Chondrochelia savignyi	10	Interface Feeder	0.001	
NECC	022	Arthropoda	Paguridae	Pagurus arcuatus	3	Omnivore/Scavenger	0.656	
NECC	022	Arthropoda	Phoxocephalidae	Rhepoxynius epistomus	10	Interface Feeder	0.024	
NECC	022	Arthropoda	-	Amphipoda spp.	5	Interface Feeder	<0.001	
NECC	022	Bryozoa	-	Cheilostomatida spp.	-	Suspension Feeder	-	

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NECC	022	Bryozoa	-	Ctenostomatida spp.	-	Suspension Feeder	-	
NECC	022	Chordata	Molgulidae	Molgula manhattensis	33	Suspension Feeder	0.224	
NECC	022	Cnidaria	Campanulariidae	Campanulariidae spp.	-	Suspension Feeder	-	
NECC	022	Cnidaria	Edwardsiidae	Edwardsia elegans	1	Suspension Feeder	0.027	
NECC	022	Mollusca	Bivalvia	Ameritella agilis	3	Subsurface Deposit Feeder	0.024	
NECC	022	Mollusca	Bivalvia	Crassinella lunulata	2	Suspension Feeder	0.009	
NECC	022	Mollusca	Bivalvia	Lyonsia arenosa	1	Suspension Feeder	0.051	
NECC	022	Mollusca	Bivalvia	Mytilidae spp.	3	Suspension Feeder	0.001	juvenile
NECC	022	Mollusca	Bivalvia	Periploma leanum	8	Suspension Feeder	0.003	
NECC	022	Mollusca	Bivalvia	Spisula solidissima	5	Suspension Feeder	0.088	
NECC	022	Mollusca	Gastropoda	Astyris lunata	12	Predator	0.058	
NECC	022	Mollusca	Gastropoda	Bittiolum alternatum	1	Omnivore/Scavenger	0.002	
NECC	022	Mollusca	Gastropoda	Caecum johnsoni	16	Predator	0.008	
NECC	022	Mollusca	Gastropoda	Caecum pulchellum	1	Predator	<0.001	
NECC	022	Mollusca	Gastropoda	Cotonopsis lafresnayi	3	Predator	0.684	
NECC	022	Mollusca	Gastropoda	Euspira triseriata	1	Predator	0.004	
NECC	022	Nemertea	Amphiporidae	Amphiporus angulatus	1	Predator	0.001	
NECC	022	Nemertea	Carinomidae	Carinomella lactea	5	Predator	<0.001	
NECC	022	Nemertea	Tubulanidae	Tubulanus pellucidus	1	Predator	0.001	
NECC	022	Oligochaeta	Oligochaeta	Oligochaeta spp.	46	Subsurface Deposit Feeder	0.001	
NECC	022	Polychaeta	Ampharetidae	Amage auricula	34	Surface Deposit Feeder	0.081	
NECC	022	Polychaeta	Arabellidae	Arabella iricolor	4	Predator	0.017	
NECC	022	Polychaeta	Cirratulidae	Cirratulus grandis	1	Surface Deposit Feeder	0.002	
NECC	022	Polychaeta	Cirratulidae	Tharyx spp.	3	Surface Deposit Feeder	0.002	
NECC	022	Polychaeta	Glyceridae	Glycera capitata	1	Omnivore/Scavenger	0.003	
NECC	022	Polychaeta	Maldanidae	Maldanidae spp.	5	Subsurface Deposit Feeder	<0.001	juvenile
NECC	022	Polychaeta	Nephtyidae	Nephtys picta	2	Omnivore/Scavenger	0.006	
NECC	022	Polychaeta	Phyllodocidae	Eumida sanguinea	13	Predator	0.014	
NECC	022	Polychaeta	Phyllodocidae	Phyllodoce mucosa	2	Predator	0.001	

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NECC	022	Polychaeta	Polygordiidae	Polygordius jouinae	1	Subsurface Deposit Feeder	<0.001	
NECC	022	Polychaeta	Polynoidae	Harmothoe extenuata	6	Predator	0.042	
NECC	022	Polychaeta	Spionidae	Polydora spp.	1	Interface Feeder	< 0.001	
NECC	022	Polychaeta	Spionidae	Spio spp.	29	Interface Feeder	0.069	
NECC	022	Polychaeta	Spionidae	Spiophanes bombyx	13	Interface Feeder	0.018	
NECC	022	Polychaeta	Syllidae	Autolytus spp.	3	Omnivore/Scavenger	<0.001	
NECC	022	Polychaeta	Syllidae	Exogone spp.	74	Omnivore/Scavenger	0.01	
NECC	022	Polychaeta	Terebellidae	Polycirrus spp.	35	Subsurface Deposit Feeder	0.026	
NECC	022	Polychaeta	-	Polychaete Fragments	-	-	0.368	
NECC	024	Arthropoda	Ampeliscidae	Ampelisca spp.	2	Interface Feeder	0.003	
NECC	024	Arthropoda	Ampeliscidae	Byblis serrata	3	Interface Feeder	0.002	
NECC	024	Arthropoda	Balanidae	Balanidae spp.	-	Suspension Feeder	-	
NECC	024	Arthropoda	Caprellidae	Aeginina longicornis	25	Predator	0.01	
NECC	024	Arthropoda	Corophiidae	Corophium spp.	9	Interface Feeder	0.015	
NECC	024	Arthropoda	Epialtidae	Libinia emarginata	4	Predator	0.09	
NECC	024	Arthropoda	Ischyroceridae	Ericthonius spp.	47	Interface Feeder	0.0062	
NECC	024	Arthropoda	Lysianassidae	Lysianopsis alba	86	Omnivore/Scavenger	0.153	
NECC	024	Arthropoda	Paguridae	Pagurus arcuatus	7	Omnivore/Scavenger	1.565	
NECC	024	Arthropoda	Panopeidae	Panopeus herbstii	7	Predator	1.264	
NECC	024	Arthropoda	Phoxocephalidae	Rhepoxynius epistomus	13	Interface Feeder	0.011	
NECC	024	Arthropoda	Pontogeneiidae	Pontogeneia inermis	3	Interface Feeder	<0.001	
NECC	024	Arthropoda	Unciolidae	<i>Unciola</i> spp.	32	Interface Feeder	0.101	
NECC	024	Arthropoda	-	Amphipoda spp.	8	Interface Feeder	<0.001	juvenile
NECC	024	Echinodermata	Amphiuridae	Amphipholis squamata	1	Predator	0.002	
NECC	024	Mollusca	Bivalvia	Ameritella agilis	4	Subsurface Deposit Feeder	0.001	
NECC	024	Mollusca	Bivalvia	Anadara transversa	7	Suspension Feeder	0.112	
NECC	024	Mollusca	Bivalvia	Anomia simplex	9	Suspension Feeder	18.644	
NECC	024	Mollusca	Bivalvia	Hiatella arctica	1	Suspension Feeder	0.003	
NECC	024	Mollusca	Bivalvia	Lunarca ovalis	1	Suspension Feeder	0.033	

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NECC	024	Mollusca	Bivalvia	Lyonsia arenosa	2	Suspension Feeder	0.012	
NECC	024	Mollusca	Bivalvia	Mytilus edulis	3	Suspension Feeder	0.001	
NECC	024	Mollusca	Bivalvia	Nucula proxima	8	Subsurface Deposit Feeder	0.744	
NECC	024	Mollusca	Bivalvia	Spisula solidissima	4	Suspension Feeder	0.003	
NECC	024	Mollusca	Gastropoda	Astyris lunata	78	Predator	0.507	
NECC	024	Mollusca	Gastropoda	Bittiolum alternatum	4	Omnivore/Scavenger	0.008	
NECC	024	Mollusca	Gastropoda	Caecum johnsoni	2	Predator	<0.001	
NECC	024	Mollusca	Gastropoda	Cotonopsis lafresnayi	34	Predator	2.905	
NECC	024	Mollusca	Gastropoda	Crepidula fornicata	8	Suspension Feeder	5.423	
NECC	024	Mollusca	Gastropoda	Turbonilla spp.	1	Omnivore/Scavenger	< 0.001	
NECC	024	Mollusca	Nudibranchia	Nudibranchia spp.	1	Predator	<0.001	
NECC	024	Mollusca	Polyplacophora	Chaetopleura apiculata	4	Omnivore/Scavenger	1.253	
NECC	024	Nemertea	Amphiporidae	Amphiporus angulatus	17	Predator	0.018	
NECC	024	Nemertea	Carinomidae	Carinomella lactea	23	Predator	0.002	
NECC	024	Nemertea	Lineidae	Cerebratulus lacteus	1	Predator	0.003	
NECC	024	Oligochaeta	Oligochaeta	Oligochaeta spp.	1	Subsurface Deposit Feeder	< 0.001	
NECC	024	Polychaeta	Ampharetidae	Amage auricula	18	Surface Deposit Feeder	0.094	
NECC	024	Polychaeta	Apistobranchidae	Apistobranchus tullbergi	1	Surface Deposit Feeder	< 0.001	
NECC	024	Polychaeta	Arabellidae	Arabella iricolor	7	Predator	0.054	
NECC	024	Polychaeta	Capitellidae	Capitella capitata	12	Subsurface Deposit Feeder	0.007	
NECC	024	Polychaeta	Cirratulidae	Cirratulus grandis	8	Surface Deposit Feeder	0.136	
NECC	024	Polychaeta	Cirratulidae	Tharyx spp.	2	Surface Deposit Feeder	0.001	
NECC	024	Polychaeta	Glyceridae	Glycera capitata	3	Omnivore/Scavenger	0.023	
NECC	024	Polychaeta	Hesionidae	Gyptis vittata	2	Predator	0.002	
NECC	024	Polychaeta	Maldanidae	Maldanidae spp.	31	Subsurface Deposit Feeder	0.006	juvenile
NECC	024	Polychaeta	Nephtyidae	Nephtys picta	1	Omnivore/Scavenger	0.031	
NECC	024	Polychaeta	Nereidae	Neanthes acuminata	2	Predator	0.003	
NECC	024	Polychaeta	Onuphidae	Paradiopatra quadricuspis	2	Predator	1.01	
NECC	024	Polychaeta	Phyllodocidae	Eumida sanguinea	7	Predator	0.009	

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NECC	024	Polychaeta	Phyllodocidae	Phyllodoce groenlandica	1	Predator	0.012	
NECC	024	Polychaeta	Polygordiidae	Polygordius jouinae	3	Subsurface Deposit Feeder	< 0.001	
NECC	024	Polychaeta	Polynoidae	Harmothoe extenuata	88	Predator	0.199	
NECC	024	Polychaeta	Polynoidae	Lepidonotus squamatus	35	Predator	0.614	
NECC	024	Polychaeta	Sabellaridae	Sabellaria vulgaris	42	Suspension Feeder	0.602	
NECC	024	Polychaeta	Sabellidae	Fabricia sabella	2	Suspension Feeder	0.001	
NECC	024	Polychaeta	Sabellidae	Pseudopotamilla reniformis	1	Suspension Feeder	0.011	
NECC	024	Polychaeta	Serpulidae	Hydroides dianthus	83	Suspension Feeder	1.303	
NECC	024	Polychaeta	Spionidae	Polydora spp.	10	Interface Feeder	0.015	
NECC	024	Polychaeta	Spionidae	Spio spp.	41	Interface Feeder	0.121	
NECC	024	Polychaeta	Spionidae	Spiophanes bombyx	6	Interface Feeder	0.007	
NECC	024	Polychaeta	Syllidae	Eusyllis lamelligera	3	Omnivore/Scavenger	0.001	
NECC	024	Polychaeta	Syllidae	Exogone spp.	140	Omnivore/Scavenger	0.022	
NECC	024	Polychaeta	Syllidae	Odontosyllis fulgurans	33	Omnivore/Scavenger	0.011	
NECC	024	Polychaeta	Syllidae	Proceraea cornuta	7	Omnivore/Scavenger	0.004	
NECC	024	Polychaeta	Syllidae	Salvatoria clavata	4	Omnivore/Scavenger	<0.001	
NECC	024	Polychaeta	Syllidae	Syllis spp.	10	Omnivore/Scavenger	0.01	
NECC	024	Polychaeta	Terebellidae	Polycirrus spp.	10	Subsurface Deposit Feeder	0.135	
NECC	024	Polychaeta	-	Polychaete Fragments	-	-	0.458	
NECC	026	Arthropoda	Balanidae	Balanidae spp.	-	Suspension Feeder	-	
NECC	026	Arthropoda	Caprellidae	Caprella penantis	127	Predator	0.036	
NECC	026	Arthropoda	Corophiidae	Corophium spp.	15	Interface Feeder	0.01	
NECC	026	Arthropoda	Corophiidae	Leptocheirus pinguis	36	Interface Feeder	0.003	
NECC	026	Arthropoda	Idoteidea	Edotia triloba	1	Omnivore/Scavenger	0.003	
NECC	026	Arthropoda	Ischyroceridae	Ericthonius spp.	38	Interface Feeder	0.012	
NECC	026	Arthropoda	Leptocheliidae	Chondrochelia savignyi	1	Interface Feeder	<0.001	
NECC	026	Arthropoda	Lysianassidae	Lysianopsis alba	1	Omnivore/Scavenger	0.001	
NECC	026	Arthropoda	Melitidae	Melita nitida	8	Interface Feeder	0.005	
NECC	026	Arthropoda	Paguridae	Pagurus arcuatus	2	Omnivore/Scavenger	0.076	

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NECC	026	Arthropoda	Phoxocephalidae	Rhepoxynius epistomus	8	Interface Feeder	0.008	
NECC	026	Arthropoda	Unciolidae	Unciola spp.	5	Interface Feeder	<0.001	
NECC	026	Arthropoda	-	Amphipoda spp.	9	Interface Feeder	<0.001	juvenile
NECC	026	Bryozoa	-	Cheilostomatida spp.	-	Suspension Feeder	-	
NECC	026	Bryozoa	-	Ctenostomatida spp.	-	Suspension Feeder	-	
NECC	026	Hydrozoa	-	Hydrozoa spp.	-	Suspension Feeder	-	
NECC	026	Mollusca	Bivalvia	Lyonsia arenosa	4	Suspension Feeder	0.011	
NECC	026	Mollusca	Bivalvia	Mytilus edulis	12	Suspension Feeder	0.005	juvenile
NECC	026	Mollusca	Gastropoda	Astyris lunata	062	Predator	0.232	
NECC	026	Mollusca	Gastropoda	Crepidula fornicata	4	Suspension Feeder	0.015	
NECC	026	Mollusca	Gastropoda	Euspira triseriata	5	Predator	0.002	
NECC	026	Mollusca	Gastropoda	Tritia trivittata	2	Omnivore/Scavenger	0.277	
NECC	026	Mollusca	Gastropoda	Turbonilla spp.	2	Omnivore/Scavenger	0.004	
NECC	026	Mollusca	Gastropoda	Urosalpinx cinerea	1	Predator	0.021	
NECC	026	Mollusca	Nudibranch	Cuthonella concinna	1	Predator	0.004	
NECC	026	Nemertea	Amphiporidae	Amphiporus angulatus	4	Predator	0.001	
NECC	026	Nemertea	Carinomidae	Carinomella lactea	2	Predator	<0.001	
NECC	026	Polychaeta	Ampharetidae	Amage auricula	27	Surface Deposit Feeder	0.078	
NECC	026	Polychaeta	Phyllodocidae	Eumida sanguinea	1	Predator	0.002	
NECC	026	Polychaeta	Polynoidae	Harmothoe extenuata	7	Predator	0.009	
NECC	026	Polychaeta	Sabellaridae	Sabellaria vulgaris	6	Suspension Feeder	0.006	
NECC	026	Polychaeta	Spionidae	Polydora spp.	1	Interface Feeder	0.01	
NECC	026	Polychaeta	Spionidae	Spio spp.	10	Interface Feeder	0.023	
NECC	026	Polychaeta	Syllidae	Eusyllis lamelligera	2	Omnivore/Scavenger	<0.001	
NECC	026	Polychaeta	Syllidae	Exogone spp.	6	Omnivore/Scavenger	0.002	
NECC	026	Polychaeta	Terebellidae	Pista cristata	1	Subsurface Deposit Feeder	0.023	
NECC	026	Polychaeta	-	Polychaete Fragments	-	-	0.03	
NECC	028	Arthropoda	Ampeliscidae	Ampelisca spp.	4	Interface Feeder	0.007	
NECC	028	Arthropoda	Caprellidae	Caprella penantis	28	Predator	0.003	

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NECC	028	Arthropoda	Cirolanidae	Politolana polita	4	Omnivore/Scavenger	<0.001	
NECC	028	Arthropoda	Corophiidae	Corophium spp.	23	Interface Feeder	0.017	
NECC	028	Arthropoda	Idoteidea	Erichsonella filiformis	1	Omnivore/Scavenger	0.01	
NECC	028	Arthropoda	Ischyroceridae	Ericthonius spp.	70	Interface Feeder	0.017	
NECC	028	Arthropoda	Leptocheliidae	Chondrochelia savignyi	1	Interface Feeder	<0.001	
NECC	028	Arthropoda	Lysianassidae	Lysianopsis alba	23	Omnivore/Scavenger	0.032	
NECC	028	Arthropoda	Paguridae	Paguridae spp.	1	Omnivore/Scavenger	0.027	
NECC	028	Arthropoda	Paguridae	Pagurus longicarpus	4	Omnivore/Scavenger	0.043	
NECC	028	Arthropoda	Paguridae	Parugus arcuatus	2	Omnivore/Scavenger	0.078	
NECC	028	Arthropoda	Phoxocephalidae	Rhepoxynius epistomus	10	Interface Feeder	0.008	
NECC	028	Arthropoda	Pontogeneiidae	Pontogeneia inermis	8	Interface Feeder	0.001	
NECC	028	Arthropoda	Unciolidae	<i>Unciola</i> spp.	6	Interface Feeder	0.004	
NECC	028	Arthropoda	Xanthidae	Panopeus herbstii	2	Predator	0.028	
NECC	028	Arthropoda	-	Amphipoda spp.	6	Interface Feeder	<0.001	juvenile
NECC	028	Echinodermata	Amphiuridae	Amphipholis squamata	1	Predator	0.009	
NECC	028	Mollusca	Bivalvia	Crassinella lunulata	1	Suspension Feeder	0.003	
NECC	028	Mollusca	Bivalvia	Lyonsia arenosa	6	Suspension Feeder	0.002	
NECC	028	Mollusca	Bivalvia	Lyonsia hyalina	1	Suspension Feeder	0.166	
NECC	028	Mollusca	Gastropoda	Astyris lunata	128	Predator	0.651	
NECC	028	Mollusca	Gastropoda	Caecum johnsoni	4	Predator	0.002	
NECC	028	Mollusca	Gastropoda	Caecum pulchellum	9	Predator	0.005	
NECC	028	Mollusca	Gastropoda	Crepidula fornicata	2	Suspension Feeder	0.021	
NECC	028	Mollusca	Gastropoda	Urosalpinx cinerea	9	Predator	0.616	
NECC	028	Mollusca	Nudibranch	Corambe obscura	1	Predator	0.001	
NECC	028	Mollusca	Nudibranch	Dendronotus frondosus	1	Predator	0.026	
NECC	028	Mollusca	Nudibranch	Nudibranchia spp.	2	Predator	0.001	
NECC	028	Nemertea	Amphiporidae	Amphiporus angulatus	6	Predator	0.023	
NECC	028	Nemertea	Carinomidae	Carinomella lactea	4	Predator	0.001	
NECC	028	Oligochaeta	Oligochaeta	Oligochaeta spp.	64	Subsurface Deposit Feeder	0.006	

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NECC	028	Platyhelminthes	-	Platyhelminthes spp.	1	Omnivore/Scavenger	0.001	
NECC	028	Polychaeta	Ampharetidae	Amage auricula	17	Surface Deposit Feeder	0.029	
NECC	028	Polychaeta	Ampharetidae	Ampharete arctica	3	Surface Deposit Feeder	0.179	
NECC	028	Polychaeta	Apistobranchidae	Apistobranchus tullbergi	4	Surface Deposit Feeder	0.007	
NECC	028	Polychaeta	Arabellidae	Arabella iricolor	11	Predator	0.1	
NECC	028	Polychaeta	Cirratulidae	Cirratulus cirratus	1	Surface Deposit Feeder	0.003	
NECC	028	Polychaeta	Cirratulidae	Cirratulus grandis	2	Surface Deposit Feeder	0.002	
NECC	028	Polychaeta	Dorvellidae	Parougia caeca	4	Surface Deposit Feeder	0.001	
NECC	028	Polychaeta	Hesionidae	Oxydromus obscurus	4	Predator	0.009	
NECC	028	Polychaeta	Maldanidae	Clymenella zonalis	4	Subsurface Deposit Feeder	0.041	
NECC	028	Polychaeta	Nereidae	Neanthes acuminata	1	Predator	0.001	
NECC	028	Polychaeta	Phyllodocidae	Eumida sanguinea	10	Predator	0.005	
NECC	028	Polychaeta	Phyllodocidae	Phyllodoce arenae	1	Predator	0.005	
NECC	028	Polychaeta	Phyllodocidae	Phyllodoce groenlandica	2	Predator	0.018	
NECC	028	Polychaeta	Polygordiidae	Polygordius jouinae	1	Subsurface Deposit Feeder	0.001	
NECC	028	Polychaeta	Polynoidae	Harmothoe extenuata	13	Predator	0.012	
NECC	028	Polychaeta	Sabellaridae	Sabellaria vulgaris	4	Suspension Feeder	0.005	
NECC	028	Polychaeta	Spionidae	Polydora spp.	1	Interface Feeder	0.001	
NECC	028	Polychaeta	Spionidae	Spio spp.	57	Interface Feeder	0.255	
NECC	028	Polychaeta	Syllidae	Eusyllis lamelligera	23	Omnivore/Scavenger	0.003	
NECC	028	Polychaeta	Syllidae	Exogone sp.	72	Omnivore/Scavenger	0.009	
NECC	028	Polychaeta	Syllidae	Odontosyllis fulgurans	4	Omnivore/Scavenger	0.001	
NECC	028	Polychaeta	Syllidae	Syllis cornuta	2	Omnivore/Scavenger	0.002	
NECC	028	Polychaeta	Terebellidae	Polycirrus spp.	123	Subsurface Deposit Feeder	0.216	
NECC	028	Polychaeta	-	Polychaete Fragments	-	-	0.641	
NECC	030	Arthropoda	Bodotriidae	Cyclaspis varians	1	Surface Deposit Feeder	<0.001	
NECC	030	Arthropoda	Chaetiliidae	Chiridotea tuftsi	2	Omnivore/Scavenger	0.022	
NECC	030	Arthropoda	Cirolanidae	Politolana polita	1	Omnivore/Scavenger	<0.001	
NECC	030	Arthropoda	Epialtidae	Pelia mutica	1	Omnivore/Scavenger	0.135	

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NECC	030	Arthropoda	Leptocheliidae	Chondrochelia savignyi	1	Interface Feeder	<0.001	
NECC	030	Arthropoda	Phoxocephalidae	Rhepoxynius epistomus	1	Interface Feeder	0.01	
NECC	030	Arthropoda	Unciolidae	Unciola spp.	3	Interface Feeder	0.006	
NECC	030	Bryozoa	-	Cheilostomatida spp.	-	Suspension Feeder	-	
NECC	030	Bryozoa	-	Ctenostomatida spp.	-	Suspension Feeder	-	
NECC	030	Chordata	Molgulidae	Molgula manhattensis	58	Suspension Feeder	0.189	
NECC	030	Mollusca	Bivalvia	Arctica islandica	2	Suspension Feeder	<0.001	
NECC	030	Mollusca	Bivalvia	Astarte montagui	6	Suspension Feeder	0.133	
NECC	030	Mollusca	Gastropoda	Cotonopsis lafresnayi	1	Predator	0.06	
NECC	030	Oligochaeta	Oligochaeta	Oligochaeta spp.	5	Subsurface Deposit Feeder	<0.001	
NECC	030	Polychaeta	Glyceridae	Glycera spp.	1	Omnivore/Scavenger	0.001	juvenile
NECC	030	Polychaeta	-	Polychaete Fragments	-	-	<0.001	
SECC	032	Arthropoda	Balanidae	Balanidae spp.	1	Suspension Feeder	0.001	
SECC	032	Arthropoda	Chaetiliidae	Chiridotea tuftsi	2	Omnivore/Scavenger	0.035	
SECC	032	Arthropoda	Leptocheliidae	Chondrochelia savignyi	2	Interface Feeder	0.001	
SECC	032	Arthropoda	Phoxocephalidae	Rhepoxynius epistomus	2	Interface Feeder	0.031	
SECC	032	Bryozoa	-	Cheilostomatida spp.	-	Suspension Feeder	-	
SECC	032	Bryozoa	-	Ctenostomatida spp.	-	Suspension Feeder	-	
SECC	032	Chordata	Molgulidae	Molgula manhattensis	61	Suspension Feeder	0.085	
SECC	032	Mollusca	Bivalvia	Nucula proxima	4	Subsurface Deposit Feeder	<0.001	
SECC	032	Mollusca	Bivalvia	Spisula solidissima	1	Suspension Feeder	0.001	
SECC	032	Oligochaeta	Oligochaeta	Oligochaeta spp.	3	Subsurface Deposit Feeder	<0.001	
SECC	032	Polychaeta	Glyceridae	Glycera spp.	2	Omnivore/Scavenger	< 0.001	juvenile
SECC	032	Polychaeta	Syllidae	Exogone spp.	2	Omnivore/Scavenger	<0.001	
SECC	032	Polychaeta	-	Polychaete Fragments	-	-	<0.001	
SECC	032	Sipuncula	-	Sipuncula spp.	1	Surface Deposit Feeder	<0.001	
SECC	034	Arthropoda	Ampeliscidae	Ampelisca spp.	1	Interface Feeder	0.002	
SECC	034	Arthropoda	Chaetiliidae	Chiridotea tuftsi	1	Omnivore/Scavenger	0.008	
SECC	034	Arthropoda	Cirolanidae	Politolana polita	1	Omnivore/Scavenger	0.005	

	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
SECC	034	Arthropoda	Diastylidae	Diastylis quadrispinosa	1	Interface Feeder	0.002	
SECC	034	Arthropoda	Haustoriidae	Protohaustorius wigleyi	8	Interface Feeder	0.061	
SECC	034	Arthropoda	Phoxocephalidae	Harpinia propinqua	6	Interface Feeder	0.037	
SECC	034	Arthropoda	Pseudocumatidae	Petalosarsia declivis	1	Omnivore/Scavenger	0.004	
SECC	034	Chordata	Molgulidae	Molgula manhattensis	7	Suspension Feeder	0.024	
SECC	034	Cnidaria	Campanulariidae	Campanulariidae spp.	-	Suspension Feeder	-	
SECC	034	Echinodermata	Echinoidea	Echinarachnius parma	10	Surface Deposit Feeder	2.223	
SECC	034	Mollusca	Bivalvia	Ameritella agilis	4	Subsurface Deposit Feeder	0.0062	
SECC	034	Mollusca	Bivalvia	Crassinella lunulata	1	Suspension Feeder	0.001	
SECC	034	Mollusca	Bivalvia	Lyonsia arenosa	1	Suspension Feeder	<0.001	
SECC	034	Mollusca	Gastropoda	Tritia trivittata	1	Omnivore/Scavenger	0.573	
SECC	034	Polychaeta	Ampharetidae	Ampharetidae spp.	1	Surface Deposit Feeder	<0.001	juvenile
SECC	034	Polychaeta	Polygordiidae	Polygordius jouinae	7	Subsurface Deposit Feeder	< 0.001	
SECC	034	Polychaeta	Spionidae	Scolelepis (Scolelepis) squamata	73	Interface Feeder	0.009	
SECC	034	Polychaeta	-	Polychaete Fragments	-	-	< 0.001	
SECC	036	Arthropoda	Bodotriidae	Cyclaspis varians	1	Surface Deposit Feeder	0.005	
SECC	036	Arthropoda	Chaetiliidae	Chiridotea tuftsi	1	Omnivore/Scavenger	0.014	
SECC	036	Arthropoda	Haustoriidae	Protohaustorius wigleyi	7	Interface Feeder	0.035	
SECC	036	Arthropoda	Leptocheliidae	Chondrochelia savignyi	1	Interface Feeder	< 0.001	
SECC	036	Arthropoda	Pontogeneiidae	Pontogeneia inermis	1	Interface Feeder	< 0.001	
SECC	036	Bryozoa	-	Bryozoa spp.	-	Suspension Feeder	-	
SECC	036	Mollusca	Bivalvia	Ameritella agilis	4	Subsurface Deposit Feeder	0.273	
SECC	036	Mollusca	Bivalvia	Ensis leei	1	Suspension Feeder	4.581	
SECC	036	Mollusca	Bivalvia	Nucula proxima	1	Subsurface Deposit Feeder	0.001	
SECC	036	Mollusca	Bivalvia	Spisula solidissima	2	Suspension Feeder	0.042	
SECC	036	Nemertea	Carinomidae	Carinomella lactea	1	Predator	< 0.001	
SECC	036	Oligochaeta	Oligochaeta	Oligochaeta spp.	3	Subsurface Deposit Feeder	< 0.001	
SECC	036	Polychaeta	Ampharetidae	Ampharete arctica	1	Surface Deposit Feeder	0.001	
SECC	036	Polychaeta	Ampharetidae	Ampharetidae spp.	7	Surface Deposit Feeder	<0.001	juvenile

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SECC	036	Polychaeta	Cirratulidae	Tharyx spp.	3	Surface Deposit Feeder	0.001	
SECC	036	Polychaeta	Magelonidae	Magelona longicornis	2	Surface Deposit Feeder	0.001	
SECC	036	Polychaeta	Nephtyidae	Nephtys picta	12	Omnivore/Scavenger	0.052	
SECC	036	Polychaeta	Opheliidae	Travisia carnea	4	Subsurface Deposit Feeder	0.032	
SECC	036	Polychaeta	Sigalionidae	Sthelenais spp.	1	Predator	< 0.001	juvenile
SECC	036	Polychaeta	Syllidae	Exogone spp.	1	Omnivore/Scavenger	< 0.001	
SECC	036	Polychaeta	-	Polychaete Fragments	-	-	0.043	
SECC	038	Arthropoda	Bodotriidae	Cyclaspis varians	1	Surface Deposit Feeder	0.001	
SECC	038	Arthropoda	Phoxocephalidae	Harpinia propinqua	1	Interface Feeder	0.001	
SECC	038	Arthropoda	-	Amphipoda spp.	1	Interface Feeder	0.002	
SECC	038	Chordata	Molgulidae	Molgula manhattensis	3	Suspension Feeder	< 0.001	
SECC	038	Mollusca	Bivalvia	Astarte castanea	1	Suspension Feeder	0.081	
SECC	038	Mollusca	Bivalvia	Nucula proxima	2	Subsurface Deposit Feeder	0.005	
SECC	038	Mollusca	Bivalvia	Spisula solidissima	1	Suspension Feeder	0.006	
SECC	038	Oligochaeta	Oligochaeta	Oligochaeta spp.	49	Subsurface Deposit Feeder	< 0.001	
SECC	038	Polychaeta	Ampharetidae	Ampharetidae spp.	3	Surface Deposit Feeder	<0.001	juvenile
SECC	038	Polychaeta	Cirratulidae	Tharyx spp.	1	Surface Deposit Feeder	0.001	
SECC	038	Polychaeta	Lumbrineridae	Scoletoma fragilis	1	Omnivore/Scavenger	0.06	
SECC	038	Polychaeta	Nephtyidae	Nephtys picta	5	Omnivore/Scavenger	0.008	
SECC	038	Polychaeta	Opheliidae	Ophelia bicornis	1	Subsurface Deposit Feeder	0.017	
SECC	038	Polychaeta	Syllidae	Exogone spp.	1	Omnivore/Scavenger	< 0.001	
SECC	038	Polychaeta	-	Polychaete Fragments	-	-	0.019	
SECC	040	Arthropoda	Anthuridae	Cyathura polita	3	Omnivore/Scavenger	< 0.001	
SECC	040	Arthropoda	Bodotriidae	Cyclaspis varians	1	Surface Deposit Feeder	0.01	
SECC	040	Mollusca	Bivalvia	Ameritella agilis	2	Subsurface Deposit Feeder	0.002	
SECC	040	Mollusca	Bivalvia	Nucula proxima	2	Subsurface Deposit Feeder	0.005	
SECC	040	Mollusca	Bivalvia	Spisula solidissima	2	Suspension Feeder	0.734	
SECC	040	Mollusca	Gastropoda	Tritia trivittata	1	Omnivore/Scavenger	0.465	
SECC	040	Oligochaeta	Oligochaeta	Oligochaeta spp.	48	Subsurface Deposit Feeder	0.001	

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SECC	040	Polychaeta	Ampharetidae	Ampharetidae spp.	5	Surface Deposit Feeder	<0.001	juvenile
SECC	040	Polychaeta	Glyceridae	Goniada maculata	2	Predator	0.002	
SECC	040	Polychaeta	Nephtyidae	Nephtys picta	4	Omnivore/Scavenger	0.078	
SECC	040	Polychaeta	Paraonidae	Aricidea (Acmira) catherinae	9	Surface Deposit Feeder	0.002	
SECC	040	Polychaeta	Paraonidae	Levinsenia gracilis	83	Subsurface Deposit Feeder	0.019	
SECC	040	Polychaeta	Polygordiidae	Polygordius jouinae	334	Subsurface Deposit Feeder	0.11	
SECC	040	Polychaeta	Syllidae	Exogone spp.	12	Omnivore/Scavenger	0.002	
SECC	040	Polychaeta	-	Polychaete Fragments	-	-	0.05	
SECC	042	Arthropoda	Diastylidae	Diastylis spp.	1	Interface Feeder	< 0.001	
SECC	042	Mollusca	Bivalvia	Ameritella agilis	1	Subsurface Deposit Feeder	0.057	
SECC	042	Mollusca	Bivalvia	Nucula proxima	1	Subsurface Deposit Feeder	<0.001	
SECC	042	Mollusca	Gastropoda	Tritia trivittata	1	Omnivore/Scavenger	0.072	
SECC	042	Nemertea	Tubulanidae	Tubulanus pellucidus	1	Predator	0.001	
SECC	042	Oligochaeta	Oligochaeta	Oligochaeta spp.	23	Subsurface Deposit Feeder	0.008	
SECC	042	Polychaeta	Ampharetidae	Ampharetidae spp.	3	Surface Deposit Feeder	< 0.001	juvenile
SECC	042	Polychaeta	Cirratulidae	Tharyx spp.	2	Surface Deposit Feeder	0.001	
SECC	042	Polychaeta	Glyceridae	Glycera capitata	11	Omnivore/Scavenger	0.006	
SECC	042	Polychaeta	Goniadidae	Goniada maculata	10	Predator	0.008	
SECC	042	Polychaeta	Lumbrineridae	Lumbrineris acicularum	1	Omnivore/Scavenger	0.14	
SECC	042	Polychaeta	Maldanidae	Maldanidae spp.	1	Subsurface Deposit Feeder	<0.001	juvenile
SECC	042	Polychaeta	Nephtyidae	Nephtys picta	1	Omnivore/Scavenger	0.005	
SECC	042	Polychaeta	Paraonidae	Aricidea (Acmira) catherinae	5	Surface Deposit Feeder	0.001	
SECC	042	Polychaeta	Paraonidae	Levinsenia gracilis	131	Subsurface Deposit Feeder	0.03	
SECC	042	Polychaeta	Polygordiidae	Polygordius jouinae	36	Subsurface Deposit Feeder	0.007	
SECC	042	Polychaeta	Syllidae	Exogone spp.	38	Omnivore/Scavenger	0.006	
SECC	042	Polychaeta	-	Polychaete Fragments	-	-	0.326	
SECC	044	Arthropoda	Bodotriidae	Cyclaspis varians	1	Surface Deposit Feeder	0.001	
SECC	044	Arthropoda	Caprellidae	Paracaprella tenuis	7	Predator	0.006	
SECC	044	Arthropoda	Diastylidae	Diastylis quadrispinosa	2	Interface Feeder	0.021	

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SECC	044	Arthropoda	Ischyroceridae	Ericthonius spp.	1	Interface Feeder	<0.001	
SECC	044	Arthropoda	Pontogeneiidae	Pontogeneia inermis	1	Interface Feeder	<0.001	
SECC	044	Chordata	Molgulidae	Molgula manhattensis	1	Suspension Feeder	<0.001	
SECC	044	Chordata	Styelidae	Styelidae spp	-	Suspension Feeder	-	
SECC	044	Cnidaria	Campanulariidae	Campanulariidae spp.	-	Suspension Feeder	-	
SECC	044	Mollusca	Bivalvia	Ameritella agilis	9	Subsurface Deposit Feeder	0.014	
SECC	044	Mollusca	Bivalvia	Nucula proxima	12	Subsurface Deposit Feeder	0.052	
SECC	044	Mollusca	Gastropoda	Astyris lunata	1	Predator	0.001	
SECC	044	Mollusca	Gastropoda	Tritia trivittata	2	Omnivore/Scavenger	0.93	
SECC	044	Nemertea	Carinomidae	Carinomella lactea	8	Predator	0.001	
SECC	044	Nemertea	Tubulanidae	Tubulanus pellucidus	2	Predator	0.008	
SECC	044	Oligochaeta	Oligochaeta	Oligochaeta spp.	326	Subsurface Deposit Feeder	0.034	
SECC	044	Polychaeta	Ampharetidae	Amage auricula	10	Surface Deposit Feeder	0.007	
SECC	044	Polychaeta	Ampharetidae	Ampharete arctica	4	Surface Deposit Feeder	0.004	
SECC	044	Polychaeta	Ampharetidae	Ampharetidae spp.	18	Surface Deposit Feeder	<0.001	juvenile
SECC	044	Polychaeta	Cirratulidae	Tharyx spp.	15	Surface Deposit Feeder	0.007	
SECC	044	Polychaeta	Glyceridae	Glycera capitata	3	Omnivore/Scavenger	0.063	
SECC	044	Polychaeta	Goniadidae	Goniada spp.	2	Predator	<0.001	
SECC	044	Polychaeta	Lumbrineridae	Lumbrineridae spp.	12	Omnivore/Scavenger	0.001	juvenile
SECC	044	Polychaeta	Lumbrineridae	Lumbrineris acicularum	1	Omnivore/Scavenger	0.076	
SECC	044	Polychaeta	Maldanidae	Maldanidae spp.	1	Subsurface Deposit Feeder	<0.001	juvenile
SECC	044	Polychaeta	Nephtyidae	Nephtys picta	3	Omnivore/Scavenger	0.066	
SECC	044	Polychaeta	Opheliidae	Travisia carnea	1	Subsurface Deposit Feeder	0.001	
SECC	044	Polychaeta	Paraonidae	Aricidea (Acmira) catherinae	3	Surface Deposit Feeder	0.001	
SECC	044	Polychaeta	Paraonidae	Levinsenia gracilis	10	Subsurface Deposit Feeder	0.001	
SECC	044	Polychaeta	Phyllodocidae	Hypereteone heteropoda	1	Predator	0.001	
SECC	044	Polychaeta	Polygordiidae	Polygordius jouinae	1716	Subsurface Deposit Feeder	0.544	
SECC	044	Polychaeta	Syllidae	Autolytus spp.	2	Omnivore/Scavenger	<0.001	
SECC	044	Polychaeta	Syllidae	Exogone spp.	11	Omnivore/Scavenger	0.001	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
SECC	044	Polychaeta	Syllidae	Odontosyllis fulgurans	44	Omnivore/Scavenger	0.008	
SECC	044	Polychaeta	-	Polychaete Fragments	-	-	0.543	
SECC	046	Arthropoda	Ampeliscidae	Ampelisca spp.	8	Interface Feeder	0.02	
SECC	046	Arthropoda	Corophiidae	Leptocheirus pinguis	1	Interface Feeder	0.003	
SECC	046	Arthropoda	Diastylidae	Diastylis quadrispinosa	1	Interface Feeder	0.001	
SECC	046	Arthropoda	Idoteidea	Edotia triloba	9	Omnivore/Scavenger	0.028	
SECC	046	Arthropoda	Phoxocephalidae	Phoxocephalus holbolli	1	Interface Feeder	<0.001	
SECC	046	Arthropoda	Pontogeneiidae	Pontogeneia inermis	1	Interface Feeder	<0.001	
SECC	046	Bryozoa	-	Ctenostomatida spp.	-	Suspension Feeder	-	
SECC	046	Cnidaria	Cerianthidae	Ceriantheopsis americana	1	Suspension Feeder	0.381	
SECC	046	Mollusca	Bivalvia	Ameritella agilis	34	Subsurface Deposit Feeder	0.241	
SECC	046	Mollusca	Bivalvia	Arctica islandica	1	Suspension Feeder	0.008	
SECC	046	Mollusca	Bivalvia	Ensis leei	1	Suspension Feeder	0.002	
SECC	046	Mollusca	Bivalvia	Nucula proxima	83	Subsurface Deposit Feeder	0.201	
SECC	046	Mollusca	Gastropoda	Astyris lunata	2	Predator	0.009	
SECC	046	Mollusca	Gastropoda	Tritia trivittata	7	Omnivore/Scavenger	1.483	
SECC	046	Oligochaeta	Oligochaeta	Oligochaeta spp.	403	Subsurface Deposit Feeder	0.053	
SECC	046	Polychaeta	Ampharetidae	Ampharetidae spp.	150	Surface Deposit Feeder	0.029	juvenile
SECC	046	Polychaeta	Arabellidae	Drilonereis longa	1	Predator	0.014	
SECC	046	Polychaeta	Cirratulidae	Tharyx spp.	18	Surface Deposit Feeder	0.007	
SECC	046	Polychaeta	Flabelligaridae	Pherusa affinis	1	Surface Deposit Feeder	0.101	
SECC	046	Polychaeta	Glyceridae	Glycera capitata	3	Omnivore/Scavenger	0.002	
SECC	046	Polychaeta	Lumbrineridae	Lumbrineris acicularum	5	Omnivore/Scavenger	0.154	
SECC	046	Polychaeta	Maldanidae	Maldanidae spp.	3	Subsurface Deposit Feeder	<0.001	juvenile
SECC	046	Polychaeta	Nephtyidae	Nephtys picta	6	Omnivore/Scavenger	0.208	
SECC	046	Polychaeta	Orbiniidae	Leitoscoloplos robustus	1	Subsurface Deposit Feeder	0.299	
SECC	046	Polychaeta	Paraonidae	Aricidea (Acmira) catherinae	2	Surface Deposit Feeder	<0.001	
SECC			Danassidas	Lavina ania arragilia	1	Subsurface Deposit Feeder	< 0.001	
	046	Polychaeta	Paraonidae	Levinsenia gracilis		Subsulface Deposit Feeder	<0.001	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
SECC	046	Polychaeta	Polygordiidae	Polygordius jouinae	2482	Subsurface Deposit Feeder	1.679	
SECC	046	Polychaeta	Syllidae	Exogone spp.	1	Omnivore/Scavenger	<0.001	
SECC	046	Polychaeta	Syllidae	Proceraea cornuta	7	Omnivore/Scavenger	0.004	
SECC	046	Polychaeta	-	Polychaete Fragments	-	-	0.404	
SECC	048	Arthropoda	Bodotriidae	Cyclaspis varians	1	Surface Deposit Feeder	0.001	
SECC	048	Cnidaria	Edwardsiidae	Edwardsia elegans	1	Suspension Feeder	0.022	
SECC	048	Echinodermata	Echinoidea	Echinarachnius parma	1	Surface Deposit Feeder	12.799	
SECC	048	Mollusca	Bivalvia	Ameritella agilis	2	Subsurface Deposit Feeder	0.004	
SECC	048	Mollusca	Bivalvia	Nucula proxima	16	Subsurface Deposit Feeder	0.05	
SECC	048	Mollusca	Gastropoda	Tritia trivittata	1	Omnivore/Scavenger	0.118	
SECC	048	Nemertea	Lineidae	Micrura spp.	3	Predator	0.017	
SECC	048	Oligochaeta	Oligochaeta	Oligochaeta spp.	2	Subsurface Deposit Feeder	<0.001	
SECC	048	Polychaeta	Ampharetidae	Ampharetidae spp.	2	Surface Deposit Feeder	<0.001	juvenile
SECC	048	Polychaeta	Cirratulidae	Cirratulidae spp.	2	Surface Deposit Feeder	<0.001	
SECC	048	Polychaeta	Flabelligaridae	Pherusa affinis	2	Surface Deposit Feeder	0.0062	
SECC	048	Polychaeta	Glyceridae	Glycera capitata	6	Omnivore/Scavenger	0.008	
SECC	048	Polychaeta	Lumbrineridae	Scoletoma fragilis	5	Omnivore/Scavenger	0.371	
SECC	048	Polychaeta	Orbiniidae	Leitoscoloplos fragilis	1	Subsurface Deposit Feeder	0.003	
SECC	048	Polychaeta	Paraonidae	Levinsenia gracilis	3	Subsurface Deposit Feeder	<0.001	
SECC	048	Polychaeta	Pholoidae	Pholoe minuta	2	Predator	0.021	
SECC	048	Polychaeta	Phyllodocidae	Hypereteone heteropoda	1	Predator	0.001	
SECC	048	Polychaeta	Polygordiidae	Polygordius jouinae	51	Subsurface Deposit Feeder	0.007	
SECC	048	Polychaeta	-	Polychaete Fragments	-	-	0.129	
SECC	050	Arthropoda	Caprellidae	Caprella equilibra	1	Predator	0.002	
SECC	050	Chordata	Molgulidae	Molgula manhattensis	3	Suspension Feeder	<0.001	
SECC	050	Mollusca	Bivalvia	Ameritella agilis	5	Subsurface Deposit Feeder	0.003	
SECC	050	Mollusca	Bivalvia	Nucula proxima	1	Subsurface Deposit Feeder	<0.001	
SECC	050	Mollusca	Gastropoda	Tritia trivittata	1	Omnivore/Scavenger	0.17	
SECC	050	Oligochaeta	Oligochaeta	Oligochaeta spp.	33	Subsurface Deposit Feeder	0.002	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
SECC	050	Polychaeta	Ampharetidae	Amage auricula	1	Surface Deposit Feeder	<0.001	
SECC	050	Polychaeta	Cirratulidae	Tharyx spp.	3	Surface Deposit Feeder	0.003	
SECC	050	Polychaeta	Goniadidae	Goniada spp.	5	Predator	-	juvenile
SECC	050	Polychaeta	Goniadidae	Goniada maculata	16	Predator	0.011	
SECC	050	Polychaeta	Lumbrineridae	Scoletoma fragilis	1	Omnivore/Scavenger	0.003	
SECC	050	Polychaeta	Nephtyidae	Nephtys bucera	3	Omnivore/Scavenger	0.05	
SECC	050	Polychaeta	Paraonidae	Levinsenia gracilis	2	Subsurface Deposit Feeder	0.001	
SECC	050	Polychaeta	Phyllodocidae	Hypereteone heteropoda	1	Predator	<0.001	
SECC	050	Polychaeta	Polygordiidae	Polygordius jouinae	1019	Subsurface Deposit Feeder	0.225	
SECC	050	Polychaeta	-	Polychaete Fragments	-	-	0.022	
SECC	052	Arthropoda	Ampeliscidae	Ampelisca spp.	24	Interface Feeder	0.224	
SECC	052	Arthropoda	Diastylidae	Diastylis sculpta	6	Interface Feeder	0.095	
SECC	052	Arthropoda	Ischyroceridae	Ericthonius spp.	4	Interface Feeder	0.013	
SECC	052	Arthropoda	Leuconidae	Eudorella pusilla	1	Interface Feeder	0.001	
SECC	052	Arthropoda	Phoxocephalidae	Rhepoxynius epistomus	9	Interface Feeder	0.006	
SECC	052	Arthropoda	Unciolidae	Unciola spp.	2	Interface Feeder	0.001	
SECC	052	Bryozoa	-	Ctenostomatida spp.	-	Suspension Feeder	-	
SECC	052	Cnidaria	Edwardsiidae	Edwardsia elegans	5	Suspension Feeder	0.127	
SECC	052	Mollusca	Bivalvia	Nucula proxima	2641	Subsurface Deposit Feeder	3.631	
SECC	052	Mollusca	Bivalvia	Periploma papyratium	1	Suspension Feeder	0.002	
SECC	052	Mollusca	Bivalvia	Spisula solidissima	3	Suspension Feeder	0.418	
SECC	052	Mollusca	Bivalvia	Yoldia sapotilla	3	Subsurface Deposit Feeder	0.004	
SECC	052	Nemertea	Lineidae	Cerebratulus lacteus	5	Predator	0.233	
SECC	052	Oligochaeta	Oligochaeta	Oligochaeta spp.	96	Subsurface Deposit Feeder	0.015	
SECC	052	Polychaeta	Ampharetidae	Ampharetidae spp.	21	Surface Deposit Feeder	0.04	juvenile
SECC	052	Polychaeta	Cirratulidae	Chaetozone spp.	4	Surface Deposit Feeder	0.003	
SECC	052	Polychaeta	Cirratulidae	Cirratulidae spp.	14	Surface Deposit Feeder	0.004	
SECC	052	Polychaeta	Cirratulidae	Tharyx spp.	85	Surface Deposit Feeder	0.049	
SECC	052	Polychaeta	Glyceridae	Glycera capitata	3	Omnivore/Scavenger	0.004	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
SECC	052	Polychaeta	Lumbrineridae	Ninoe nigripes	16	Omnivore/Scavenger	0.3	
SECC	052	Polychaeta	Lumbrineridae	Scoletoma tenuis	10	Omnivore/Scavenger	0.013	
SECC	052	Polychaeta	Nephtyidae	Nephtys incisa	5	Omnivore/Scavenger	0.147	
SECC	052	Polychaeta	Opheliidae	Ophelina acuminata	2	Subsurface Deposit Feeder	0.001	
SECC	052	Polychaeta	Paraonidae	Aricidea (Acmira) catherinae	33	Surface Deposit Feeder	0.017	
SECC	052	Polychaeta	Paraonidae	Levinsenia gracilis	23	Subsurface Deposit Feeder	0.05	
SECC	052	Polychaeta	Phyllodocidae	Hypereteone heteropoda	1	Predator	<0.001	
SECC	052	Polychaeta	Polygordiidae	Polygordius jouinae	59	Subsurface Deposit Feeder	0.007	
SECC	052	Polychaeta	Spionidae	Spionidae spp.	3	Interface Feeder	<0.001	juvenile
SECC	052	Polychaeta	Syllidae	Haplosyllis spongiphila	1	Omnivore/Scavenger	0.001	
SECC	052	Polychaeta	-	Polychaete Fragments	-	-	0.047	
SECC	054	Arthropoda	Ampeliscidae	Ampelisca spp.	46	Interface Feeder	0.225	
SECC	054	Arthropoda	Corophiidae	Leptocheirus pinguis	4	Interface Feeder	0.035	
SECC	054	Arthropoda	Diastylidae	Diastylis quadrispinosa	1	Interface Feeder	<0.001	
SECC	054	Arthropoda	Photidae	Photis spp.	1	Interface Feeder	<0.001	
SECC	054	Arthropoda	Unciolidae	<i>Unciola</i> spp.	3	Interface Feeder	<0.001	
SECC	054	Cnidaria	Halcampidae	Halcampa duodecimcirrata	2	Predator	0.145	
SECC	054	Mollusca	Bivalvia	Ameritella agilis	2	Subsurface Deposit Feeder	<0.001	
SECC	054	Mollusca	Bivalvia	Arctica islandica	1	Suspension Feeder	0.001	
SECC	054	Mollusca	Bivalvia	Mesodesma arctatum	2	Suspension Feeder	<0.001	
SECC	054	Mollusca	Bivalvia	Nucula proxima	1378	Subsurface Deposit Feeder	1.333	
SECC	054	Mollusca	Bivalvia	Periploma papyratium	2	Suspension Feeder	0.003	
SECC	054	Mollusca	Bivalvia	Yoldia sapotilla	2	Subsurface Deposit Feeder	0.012	
SECC	054	Nemertea	Lineidae	Cerebratulus lacteus	1	Predator	0.054	
SECC	054	Nemertea	Lineidae	Micrura spp.	1	Predator	<0.001	
SECC	054	Oligochaeta	Oligochaeta	Oligochaeta spp.	9	Subsurface Deposit Feeder	<0.001	
SECC	054	Polychaeta	Ampharetidae	Ampharete arctica	2	Surface Deposit Feeder	0.004	
SECC	054	Polychaeta	Ampharetidae	Ampharetidae spp.	5	Surface Deposit Feeder	<0.001	juvenile
SECC	054	Polychaeta	Capitellidae	Mediomastus ambiseta	1	Subsurface Deposit Feeder	<0.001	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
SECC	054	Polychaeta	Cirratulidae	Tharyx spp.	14	Surface Deposit Feeder	0.003	
SECC	054	Polychaeta	Glyceridae	Glycera capitata	1	Omnivore/Scavenger	0.001	
SECC	054	Polychaeta	Lumbrineridae	Ninoe nigripes	12	Omnivore/Scavenger	0.137	
SECC	054	Polychaeta	Lumbrineridae	Scoletoma fragilis	5	Omnivore/Scavenger	0.2	
SECC	054	Polychaeta	Lumbrineridae	Scoletoma tenuis	11	Omnivore/Scavenger	0.026	
SECC	054	Polychaeta	Nephtyidae	Nephtys incisa	4	Omnivore/Scavenger	0.109	
SECC	054	Polychaeta	Paraonidae	Aricidea (Acmira) catherinae	4	Surface Deposit Feeder	0.002	
SECC	054	Polychaeta	Paraonidae	Levinsenia gracilis	41	Subsurface Deposit Feeder	0.006	
SECC	054	Polychaeta	Polygordiidae	Polygordius jouinae	6	Subsurface Deposit Feeder	<0.001	
SECC	054	Polychaeta	Spionidae	Spionidae spp.	1	Interface Feeder	< 0.001	juvenile
SECC	054	Polychaeta	Syllidae	Syllis spp.	1	Omnivore/Scavenger	<0.001	
SECC	054	Polychaeta	-	Polychaete Fragments	-	-	0.366	
SECC	056	Arthropoda	Ampeliscidae	Ampelisca spp.	98	Interface Feeder	0.356	
SECC	056	Arthropoda	Caprellidae	Paracaprella tenuis	4	Predator	0.006	
SECC	056	Arthropoda	Corophiidae	Leptocheirus pinguis	8	Interface Feeder	0.061	
SECC	056	Arthropoda	Diastylidae	Diastylis quadrispinosa	1	Interface Feeder	0.002	
SECC	056	Arthropoda	Lysianassidae	Lysianopsis alba	2	Omnivore/Scavenger	< 0.001	
SECC	056	Arthropoda	Photidae	Photis spp.	1	Interface Feeder	<0.001	
SECC	056	Arthropoda	Phoxocephalidae	Rhepoxynius epistomus	8	Interface Feeder	0.008	
SECC	056	Arthropoda	Unciolidae	Unciola spp.	7	Interface Feeder	0.005	
SECC	056	Cnidaria	Halcampidae	Halcampa duodecimcirrata	6	Predator	0.213	
SECC	056	Mollusca	Bivalvia	Mesodesma arctatum	3	Suspension Feeder	0.001	
SECC	056	Mollusca	Bivalvia	Nucula proxima	1973	Subsurface Deposit Feeder	2.158	
SECC	056	Mollusca	Bivalvia	Periploma papyratium	1	Suspension Feeder	0.001	
SECC	056	Mollusca	Bivalvia	Yoldia sapotilla	2	Subsurface Deposit Feeder	0.032	
SECC	056	Mollusca	Gastropoda	Astyris lunata	4	Predator	0.018	
SECC	056	Nemertea	Lineidae	Micrura spp.	8	Predator	0.347	
SECC	056	Oligochaeta	Oligochaeta	Oligochaeta spp.	66	Subsurface Deposit Feeder	0.01	
SECC	056	Polychaeta	Ampharetidae	Ampharetidae spp.	12	Surface Deposit Feeder	<0.001	juvenile

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
SECC	056	Polychaeta	Cirratulidae	Cirratulidae spp.	14	Surface Deposit Feeder	0.002	
SECC	056	Polychaeta	Cirratulidae	Tharyx spp.	49	Surface Deposit Feeder	0.019	
SECC	056	Polychaeta	Flabelligaridae	Brada spp.	1	Surface Deposit Feeder	0.004	
SECC	056	Polychaeta	Glyceridae	Glycera capitata	3	Omnivore/Scavenger	0.016	
SECC	056	Polychaeta	Lumbrineridae	Ninoe nigripes	17	Omnivore/Scavenger	0.228	
SECC	056	Polychaeta	Lumbrineridae	Scoletoma fragilis	33	Omnivore/Scavenger	0.171	
SECC	056	Polychaeta	Maldanidae	Clymenella torquata	1	Subsurface Deposit Feeder	0.001	
SECC	056	Polychaeta	Nephtyidae	Nephtys incisa	5	Omnivore/Scavenger	0.167	
SECC	056	Polychaeta	Paraonidae	Aricidea (Acmira) catherinae	8	Surface Deposit Feeder	0.003	
SECC	056	Polychaeta	Paraonidae	Levinsenia gracilis	9	Subsurface Deposit Feeder	0.001	
SECC	056	Polychaeta	Polygordiidae	Polygordius jouinae	24	Subsurface Deposit Feeder	0.002	
SECC	056	Polychaeta	Spionidae	Spio spp.	3	Interface Feeder	0.008	
SECC	056	Polychaeta	Syllidae	Exogone spp.	1	Omnivore/Scavenger	<0.001	
SECC	056	Polychaeta	-	Polychaete Fragments	-	-	0.093	
SECC	058	Arthropoda	Ampeliscidae	Ampelisca spp.	64	Interface Feeder	0.279	
SECC	058	Arthropoda	Caprellidae	Paracaprella tenuis	1	Predator	<0.001	
SECC	058	Arthropoda	Corophiidae	Corophium spp.	1	Interface Feeder	<0.001	
SECC	058	Arthropoda	Corophiidae	Leptocheirus pinguis	8	Interface Feeder	0.079	
SECC	058	Arthropoda	Diastylidae	Diastylis sculpta	1	Interface Feeder	0.013	
SECC	058	Arthropoda	Ischyroceridae	Ericthonius spp.	3	Interface Feeder	0.006	
SECC	058	Arthropoda	Leuconidae	Eudorella pusilla	1	Interface Feeder	0.003	
SECC	058	Arthropoda	Lysianassidae	Lysianopsis alba	2	Omnivore/Scavenger	<0.001	
SECC	058	Arthropoda	Photidae	Photis spp.	3	Interface Feeder	0.001	
SECC	058	Arthropoda	Phoxocephalidae	Rhepoxynius epistomus	6	Interface Feeder	0.008	
SECC	058	Arthropoda	Unciolidae	Unciola spp.	15	Interface Feeder	0.038	
SECC	058	Cnidaria	Edwardsiidae	Edwardsia elegans	2	Suspension Feeder	0.044	
SECC	058	Mollusca	Bivalvia	Ameritella agilis	4	Subsurface Deposit Feeder	0.003	
SECC	058	Mollusca	Bivalvia	Nucula proxima	2709	Subsurface Deposit Feeder	4.246	
SECC	058	Mollusca	Bivalvia	Periploma papyratium	2	Suspension Feeder	0.016	

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SECC	058	Mollusca	Bivalvia	Spisula solidissima	3	Suspension Feeder	0.245	
SECC	058	Mollusca	Bivalvia	Yoldia sapotilla	5	Subsurface Deposit Feeder	0.03	
SECC	058	Mollusca	Gastropoda	Astyris lunata	4	Predator	0.018	
SECC	058	Nemertea	Lineidae	Micrura spp.	3	Predator	0.098	
SECC	058	Oligochaeta	Oligochaeta	Oligochaeta spp.	3	Subsurface Deposit Feeder	<0.001	
SECC	058	Polychaeta	Ampharetidae	Amage auricula	2	Surface Deposit Feeder	0.003	
SECC	058	Polychaeta	Cirratulidae	Tharyx spp.	6	Surface Deposit Feeder	0.002	
SECC	058	Polychaeta	Glyceridae	Glycera capitata	6	Omnivore/Scavenger	0.035	
SECC	058	Polychaeta	Lumbrineridae	Ninoe nigripes	19	Omnivore/Scavenger	0.253	
SECC	058	Polychaeta	Lumbrineridae	Scoletoma fragilis	1	Omnivore/Scavenger	<0.001	
SECC	058	Polychaeta	Lumbrineridae	Scoletoma tenuis	22	Omnivore/Scavenger	0.032	
SECC	058	Polychaeta	Maldanidae	Clymenella torquata	1	Subsurface Deposit Feeder	<0.001	juvenile
SECC	058	Polychaeta	Nephtyidae	Nephtys incisa	3	Omnivore/Scavenger	0.006	
SECC	058	Polychaeta	Paraonidae	Levinsenia gracilis	2	Subsurface Deposit Feeder	0.001	
SECC	058	Polychaeta	Sigalionidae	Sthenelais limicola	1	Predator	0.001	
SECC	058	Polychaeta	-	Polychaete Fragments	-	-	0.306	
SECC	060	Arthropoda	Ampeliscidae	Ampelisca spp.	16	Interface Feeder	0.144	
SECC	060	Arthropoda	Caprellidae	Caprella equilibra	2	Predator	0.001	
SECC	060	Arthropoda	Corophiidae	Leptocheirus pinguis	6	Interface Feeder	0.067	
SECC	060	Arthropoda	Corophiidae	Unciola spp.	1	Interface Feeder	0.001	
SECC	060	Arthropoda	Diastylidae	Diastylis sculpta	55	Interface Feeder	0.81	
SECC	060	Arthropoda	Phoxocephalidae	Harpinia propinqua	1	Interface Feeder	0.002	
SECC	060	Bryozoa	-	Bryozoa spp.	-	Suspension Feeder	-	
SECC	060	Mollusca	Bivalvia	Ameritella agilis	4	Subsurface Deposit Feeder	0.002	
SECC	060	Mollusca	Bivalvia	Nucula proxima	2604	Subsurface Deposit Feeder	2.563	
SECC	060	Mollusca	Bivalvia	Periploma papyratium	1	Suspension Feeder	0.001	
SECC	060	Mollusca	Bivalvia	Yoldia sapotilla	5	Subsurface Deposit Feeder	0.002	
SECC	060	Mollusca	Gastropoda	Astyris lunata	2	Predator	0.006	
SECC	060	Mollusca	Gastropoda	Tritia trivittata	2	Omnivore/Scavenger	0.971	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
SECC	060	Nemertea	Lineidae	Micrura spp.	3	Predator	0.078	
SECC	060	Oligochaeta	Oligochaeta	Oligochaeta spp.	062	Subsurface Deposit Feeder	0.005	
SECC	060	Polychaeta	Ampharetidae	Ampharetidae spp.	1	Surface Deposit Feeder	< 0.001	juvenile
SECC	060	Polychaeta	Cirratulidae	Tharyx spp.	19	Surface Deposit Feeder	0.005	
SECC	060	Polychaeta	Flabelligaridae	Pherusa plumosa	1	Surface Deposit Feeder	0.001	
SECC	060	Polychaeta	Glyceridae	Glycera capitata	5	Omnivore/Scavenger	0.02	
SECC	060	Polychaeta	Lumbrineridae	Lumbrineris acicularum	2	Omnivore/Scavenger	0.156	
SECC	060	Polychaeta	Lumbrineridae	Ninoe nigripes	13	Omnivore/Scavenger	0.142	
SECC	060	Polychaeta	Lumbrineridae	Scoletoma tenuis	20	Omnivore/Scavenger	0.043	
SECC	060	Polychaeta	Nephtyidae	Nephtys incisa	2	Omnivore/Scavenger	0.007	
SECC	060	Polychaeta	Nephtyidae	Nephtys picta	3	Omnivore/Scavenger	0.029	
SECC	060	Polychaeta	Sigalionidae	Sthenelais limicola	2	Predator	0.023	
SECC	060	Polychaeta	Syllidae	Exogone spp.	1	Omnivore/Scavenger	< 0.001	
SECC	060	Polychaeta	-	Polychaete Fragments	-	-	0.025	
SECC	060	Priapulida	Priapulidae	Priapulus caudatus	1	Surface Deposit Feeder	0.015	

Notes:

g ww - grams wet weight

NECC - Northern export cable corridor

SECC - Southern export cable corridor

spp. - species

< - less than

Exhibit 4. Summer 2020 Benthic Laboratory Data

North control C02 Arthropoda Leptocheliidae Chondrochelia savignyi 6 Interface Feeder c0.001 North control C02 Arthropoda Leptocheliidae Chondrochelia savignyi 6 Interface Feeder 0.001 North control C02 Mollusca Bivalvia Nucula proxima 1 Subsurface Deposit Feeder 0.004 North control C02 Mollusca Bivalvia Spisula solidissima 5 Suspension Feeder 0.174 North control C02 Mollusca Gastropoda Polinices immaculatus 1 Predator 0.059 North control C02 Normetea Tubulanidae Tubulanidae 1 Produtatus 1 Predator 0.033 North control C02 Normetea Tubulanidae 1 Produtatus 1 Predator 0.033 North control C02 Polychaeta Ampharetidae Amage aurizula 2 Surface Deposit Feeder 0.006 North control C02 Polychaeta Glycaridae Glycaridae spp. 6 Omnivore/Scavenger 0.003 damaged North control C02 Polychaeta Lumbrineridae Lumbrineridae sacuta 5 Omnivore/Scavenger 0.002 North control C02 Polychaeta Lumbrineridae Lumbrineridae sacutarum 1 Omnivore/Scavenger 0.042 North control C02 Polychaeta Lumbrineridae Nephtys picta 20 Omnivore/Scavenger 0.071 North control C02 Polychaeta Paraonidae Levinsenia graciis 14 Subsurface Deposit Feeder 0.071 North control C02 Polychaeta Paraonidae Levinsenia graciis 14 Subsurface Deposit Feeder 0.071 North control C02 Polychaeta Paraonidae Levinsenia graciis 14 Subsurface Deposit Feeder 0.071 North control C03 Arthropoda Bodotriidae Cyclespis varians 1 Surface Deposit Feeder 0.001 North control C09 Arthropoda Bodotriidae Photiss spp. 1 Interface Feeder 0.001 West control C09 Arthropoda Photidae Photiss pp. 1 Interface Feeder 0.001 West control C09 Arthropoda Photidae Photiss pp. 1 Interface Feeder 0.001 West control C09 Arthropoda Photidae Photiss pp. 1 Interface Feeder 0.001 West control C09 Mollusca Bivalvia Artatia islandica 1 Suspension Feeder 0.002 West control C09 Mollusca Bivalvia Artatia islandica 1 Suspension Feeder 0.001 West control C09 Polychaeta Oligochaeta Oligochaeta Pictonius spp. 2 Predator 0.004 West control C09 Polychaeta Ciriatulidae Dirioneris longa 2 Predator 0.001 West control C09 Polychaeta	Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
North control C02 Mollusca Bivalvia Nucula proxima 1 Subsurface Deposit Feeder 0.004 North control C02 Mollusca Bivalvia Spisula solidissima 5 Suspension Feeder 0.174 North control C02 Mollusca Gastropoda Polinices immaculatus 1 Predator 0.059 North control C02 Nemertea Tubulanidae Tubulanus pellucidus 1 Predator 0.033 North control C02 Polychaeta Ampharetidae Amage auricula 2 Surface Deposit Feeder 0.006 North control C02 Polychaeta Glyceridae Glyceridae spp. 6 Omnivore/Scavenger 0.003 damaged North control C02 Polychaeta Lumbrineridae Lumbrinerides acuta 5 Omnivore/Scavenger 0.002 North control C02 Polychaeta Lumbrineridae Lumbrineridae acuta 5 Omnivore/Scavenger 0.002 North control C02 Polychaeta Lumbrineridae Lumbrineridae acuta 5 Omnivore/Scavenger 0.002 North control C02 Polychaeta Lumbrineridae Lumbrineriae sicularum 1 Omnivore/Scavenger 0.0071 North control C02 Polychaeta Nephtyldae Nephtys picta 20 Omnivore/Scavenger 0.0071 North control C02 Polychaeta Paraonidae Levinsenia gracilis 14 Subsurface Deposit Feeder 0.001 North control C02 Polychaeta Paraonidae Ampelisca spp. 22 Interface Feeder 0.001 North control C03 Arthropoda Ampeliscidae Ampelisca spp. 22 Interface Feeder 0.005 West control C09 Arthropoda Ischyroceridae Ericthonius spp. 1 Interface Feeder 0.001 West control C09 Arthropoda Photidae Photis spp. 1 Interface Feeder 0.001 West control C09 Arthropoda Photidae Photis spp. 1 Interface Feeder 0.001 West control C09 Arthropoda Photidae Photis spp. 1 Interface Feeder 0.001 West control C09 Arthropoda Photidae Photis spp. 1 Interface Feeder 0.001 West control C09 Arthropoda Photidae Photis spp. 1 Interface Feeder 0.001 West control C09 Arthropoda Photidae Photis spp. 1 Interface Feeder 0.001 West control C09 Mollusca Bivalvia Arcita islandica 1 Suspension Feeder 0.001 West control C09 Mollusca Bivalvia Arcita islandica 1 Suspension Feeder 0.002 West control C09 Polychaeta Cirratulidae Dirionereis longa 2 Predator 0.009 West control C09 Polychaeta Crossuridae Consuridae Dirionereis longa 2 Predator	North control	C02	Arthropoda	Ampeliscidae	Ampelisca spp.	1	Interface Feeder	<0.001	
North control C02 Mollusca Bivalvia Spisula solidissima 5 Suspension Feeder 0,174 North control C02 Mollusca Gastropoda Polinices immaculatus 1 Predator 0,059 North control C02 Nemertea Tubulanidae Tubulanus pellucidus 1 Predator 0,033 North control C02 Polychaeta Ampharetidae Amage auriculatus 1 Predator 0,006 North control C02 Polychaeta Glyceridae Glyceridae spp. 6 Omnivore/Scavenger 0,003 damaged North control C02 Polychaeta Lumbrineridae Lumbrineridae socula 5 Omnivore/Scavenger 0,002 North control C02 Polychaeta Lumbrineridae Lumbrineridae socularum 1 Omnivore/Scavenger 0,002 North control C02 Polychaeta Lumbrineridae Lumbrineridae Socularum 1 Omnivore/Scavenger 0,042 North control C02 Polychaeta Paraonidae Levinseria gracifis 14 Subsurface Deposit Feeder 0,001 North control C02 Polychaeta Paraonidae Levinseria gracifis 14 Subsurface Deposit Feeder 0,001 North control C03 Arthropoda Ampeliscidae Ampelisca spp. 22 Interface Feeder 0,001 West control C09 Arthropoda Bodotriidae Cyclaspis varians 1 Surface Deposit Feeder 0,001 West control C09 Arthropoda Photidae Protis spp. 1 Interface Feeder 0,001 West control C09 Arthropoda Photidae Photis spp. 1 Interface Feeder 0,001 West control C09 Arthropoda Photidae Photis spp. 1 Interface Feeder 0,001 West control C09 Arthropoda Photidae Photis spp. 1 Interface Feeder 0,001 West control C09 Mollusca Bivalvia Thysis gouldii 1 Suspension Feeder 0,001 West control C09 Mollusca Bivalvia Thysis gouldii 1 Suspension Feeder 0,001 West control C09 Nemertea Lineidae Micron spp. 2 Predator 0,004 West control C09 Polychaeta Oligochaeta Oligochaeta spp. 2 Predator 0,009 West control C09 Polychaeta Cirratulidae Driloneries long 2 Predator 0,009 West control C09 Polychaeta Cirratulidae Driloneries long 2 Predator 0,009 West control C09 Polychaeta Cirratulidae Driloneries long 2 Predator 0,001 West control C09 Polychaeta Cirratulidae Driloneries long 2 Predator 0,001 West control C09 Polychaeta Cirratulidae Driloneries long 2 Predator 0,001	North control	C02	Arthropoda	Leptocheliidae	Chondrochelia savignyi	6	Interface Feeder	0.001	
North control C02 Mollusca Gastropoda Polinices immaculatus 1 Predator 0.059 North control C02 Nemertea Tubulanidae Tubulanus pellucidus 1 Predator 0.033 North control C02 Polychaeta Ampharetidae Amaga auricula 2 Surface Deposit Feeder 0.006 North control C02 Polychaeta Cilyceridae Giyceridae Spp. 6 Omnivore/Scavenger 0.003 damaged North control C02 Polychaeta Lumbrineridae Lumbrineridae sacuta 5 Omnivore/Scavenger 0.002 North control C02 Polychaeta Lumbrineridae Lumbrineridae acuta 1 Omnivore/Scavenger 0.002 North control C02 Polychaeta Nephtyidae Nephtys picta 20 Omnivore/Scavenger 0.071 North control C02 Polychaeta Paraonidae Levinsenia gracilis 14 Subsurface Deposit Feeder 0.001 North control C02 Polychaeta Paraonidae Levinsenia gracilis 14 Subsurface Deposit Feeder 0.001 West control C09 Arthropoda Ampeliscidae Ampelisca spp. 22 Interface Feeder 0.095 West control C09 Arthropoda Boddriidae Cyclaspis varians 1 Surface Deposit Feeder 0.001 West control C09 Arthropoda Photidae Photis spp. 1 Interface Feeder 0.001 West control C09 Arthropoda Photidae Photis spp. 1 Interface Feeder 0.001 West control C09 Arthropoda Photidae Photis spp. 1 Interface Feeder 0.001 West control C09 Arthropoda Photidae Photis spp. 1 Interface Feeder 0.001 West control C09 Arthropoda Photidae Photis spp. 1 Interface Feeder 0.001 West control C09 Arthropoda Photidae Photis spp. 1 Interface Feeder 0.001 West control C09 Mollusca Bivalvia Amphiridae Microphopholis atra 34 Surface Deposit Feeder 0.001 West control C09 Mollusca Bivalvia Arctica islandica 1 Suspension Feeder 0.002 West control C09 Nemertea Lineidae Microprioperiope 2 Predator 0.004 West control C09 Polychaeta Oligochaeta Oligochaeta spp. 1 Surface Deposit Feeder 0.001 West control C09 Polychaeta Ciratulidae Dirilonereis longa 2 Predator 0.009 West control C09 Polychaeta Cossuridae Cossuridae Pricratulidae pp. 1 Surface Deposit Feeder 0.0131 West control C09 Polychaeta Cossuridae Cossuridae Pricratulidae Spp. 1 Surface Deposit Feeder 0.0131	North control	C02	Mollusca	Bivalvia	Nucula proxima	1	Subsurface Deposit Feeder	0.004	
North control C02 Nemertea Tubulanidae Tubulanidae Tubulanidae 1 Predator 0.033 North control C02 Polychaeta Ampharetidae Amage auricula 2 Surface Deposit Feeder 0.006 North control C02 Polychaeta Glyceridae Glyceridae spp. 6 Omnivore/Scavenger 0.003 damaged North control C02 Polychaeta Lumbrineridae Lumbrineridae saciularum 1 Omnivore/Scavenger 0.002 North control C02 Polychaeta Nephtyidae Nephtys picta 20 Omnivore/Scavenger 0.001 North control C02 Polychaeta Penanidae Levinsenia gracilis 14 Subsurface Deposit Feeder 0.001 North control C02 Polychaeta Paraonidae Levinsenia gracilis 14 Subsurface Deposit Feeder 0.001 North control C02 Polychaeta Ampelisca spp. 22 Interface Feeder 0.001 West control C09 Arthropoda	North control	C02	Mollusca	Bivalvia	Spisula solidissima	5	Suspension Feeder	0.174	
North control C02 Polychaeta Ampharetidae Amage auricula 2 Surface Deposit Feeder 0.006 North control C02 Polychaeta Glyceridae Glyceridae spp. 6 Omnivore/Scavenger 0.003 damaged North control C02 Polychaeta Lumbrineridae Lumbrineridae sourla 5 Omnivore/Scavenger 0.002 North control C02 Polychaeta Lumbrineridae Lumbrineris acicularum 1 Omnivore/Scavenger 0.042 North control C02 Polychaeta Nephtyidae Nephtys picta 20 Omnivore/Scavenger 0.071 North control C02 Polychaeta Paraonidae Levinsenia gracilis 14 Subsurface Deposit Feeder 0.001 North control C02 Polychaeta Paraonidae Levinsenia gracilis 14 Subsurface Deposit Feeder 0.0177 West control C03 Arthropoda Ampeliscidae Ampelisca spp. 22 Interface Feeder 0.095 West control C09 Arthropoda Bodotridae Cyclaspis varians 1 Surface Deposit Feeder 0.001 West control C09 Arthropoda Ischyroceridae Ericthonius spp. 1 Interface Feeder 0.001 West control C09 Arthropoda Photidae Photis spp. 1 Interface Feeder 0.001 West control C09 Arthropoda Photidae Photis spp. 1 Interface Feeder 0.001 West control C09 Echinodermata Amphiuridae Microphiopholis atra 34 Surface Deposit Feeder 0.001 West control C09 Echinodermata Amphiuridae Microphiopholis atra 34 Surface Deposit Feeder 0.001 West control C09 Mollusca Bivalvia Arctica islandica 1 Suspension Feeder 0.002 West control C09 Nemertea Lineidae Microra spp. 2 Predator 0.004 West control C09 Nemertea Lineidae Microra spp. 2 Predator 0.004 West control C09 Polychaeta Oligochaeta Oligochaeta spp. 10 Subsurface Deposit Feeder 0.001 West control C09 Polychaeta Cirratulidae Cirratulidae spp. 1 Surface Deposit Feeder 0.001 West control C09 Polychaeta Cirratulidae Cirratulidae Spp. 1 Surface Deposit Feeder 0.001 West control C09 Polychaeta Cirratulidae Cirratulidae Spp. 1 Surface Deposit Feeder 0.001 West control C09 Polychaeta Flabelligeridae Pherusa plumosa 3 Surface Deposit Feeder 0.131	North control	C02	Mollusca	Gastropoda	Polinices immaculatus	1	Predator	0.059	
North control C02 Polychaeta Glyceridae Glyceridae spp. 6 Omnivore/Scavenger 0.003 damaged North control C02 Polychaeta Lumbrineridae Lumbrinerides acuta 5 Omnivore/Scavenger 0.002 North control C02 Polychaeta Lumbrineridae Lumbrineridae 2 Omnivore/Scavenger 0.042 North control C02 Polychaeta Nephtyidae Nephtys picta 20 Omnivore/Scavenger 0.071 North control C02 Polychaeta Paraonidae Levinsenia gracilis 14 Subsurface Deposit Feeder 0.001 North control C02 Polychaeta Paraonidae Levinsenia gracilis 14 Subsurface Deposit Feeder 0.001 North control C02 Polychaeta - Polychaete Fragments 0.177 West control C03 Arthropoda Ampeliscidae Ampeliscae spp. 2 Interface Feeder 0.095 West control C09 Arthropoda Bodotriidae Cyclaspis varians 1 Surface Deposit Feeder 0.001 West control C09 Arthropoda Ischyroceridae Ericthonius spp. 1 Interface Feeder 0.001 West control C09 Arthropoda Photidae Photis spp. 1 Interface Feeder 0.001 West control C09 Arthropoda Phoxocephalidae Harpinia propinqua 1 Interface Feeder 0.001 West control C09 Echinodermata Amphiuridae Microphiopholis atra 34 Surface Deposit Feeder 0.001 West control C09 Mollusca Bivalvia Arctica islandica 1 Suspension Feeder 0.002 West control C09 Nemertea Lineidae Micrura spp. 2 Predator 0.002 West control C09 Nemertea Lineidae Micrura spp. 2 Predator 0.004 West control C09 Polychaeta Arabeliidae Dirilonereis longa 2 Predator 0.009 West control C09 Polychaeta Cirratulidae Cirratulidae spp. 1 Surface Deposit Feeder 0.011 West control C09 Polychaeta Cirratulidae Cirratulidae spp. 1 Surface Deposit Feeder 0.011 West control C09 Polychaeta Cossuridae Cossura longocirrata 725 Subsurface Deposit Feeder 0.0131 West control C09 Polychaeta Flabelligeridae Pherusa plumosa 3 Surface Deposit Feeder 0.0131	North control	C02	Nemertea	Tubulanidae	Tubulanus pellucidus	1	Predator	0.033	
North control C02 Polychaeta Lumbrineridae Lumbrinerides acuta 5 Omnivore/Scavenger 0.002 North control C02 Polychaeta Lumbrineridae Lumbrineris acicularum 1 Omnivore/Scavenger 0.042 North control C02 Polychaeta Nephtyidae Nephtys picta 20 Omnivore/Scavenger 0.071 North control C02 Polychaeta Paraonidae Levinsenia gracilis 14 Subsurface Deposit Feeder 0.001 North control C02 Polychaeta - Polychaete Fragments 0.177 West control C09 Arthropoda Ampeliscidae Ampelisca spp. 22 Interface Feeder 0.095 West control C09 Arthropoda Bodotriidae Cyclaspis varians 1 Surface Deposit Feeder 0.001 West control C09 Arthropoda Bodotriidae Ericthonius spp. 1 Interface Feeder 0.001 West control C09 Arthropoda Photidae Photis spp. 1 Interface Feeder 0.001 West control C09 Arthropoda Photidae Photis spp. 1 Interface Feeder 0.001 West control C09 Arthropoda Photidae Photis spp. 1 Interface Feeder 0.001 West control C09 Arthropoda Phoxocephalidae Harpinia propinqua 1 Interface Feeder 0.001 West control C09 Echinodermata Amphiuridae Microphiopholis atra 34 Surface Deposit Feeder 3.033 West control C09 Mollusca Bivalvia Arctica islandica 1 Suspension Feeder 0.001 West control C09 Mollusca Bivalvia Thyasira gouldii 1 Suspension Feeder 0.002 West control C09 Nemertea Lineidae Micrura spp. 2 Predator 0.004 West control C09 Polychaeta Oligochaeta Oligochaeta spp. 10 Subsurface Deposit Feeder 0.009 West control C09 Polychaeta Cirratulidae Cirratulidae spp. 1 Surface Deposit Feeder 0.009 West control C09 Polychaeta Cirratulidae Cirratulidae spp. 1 Susurface Deposit Feeder 0.001 West control C09 Polychaeta Cirratulidae Cirratulidae spp. 1 Susurface Deposit Feeder 0.001 West control C09 Polychaeta Fiabelligeridae Pherusa plumosa 3 Surface Deposit Feeder 0.003	North control	C02	Polychaeta	Ampharetidae	Amage auricula	2	Surface Deposit Feeder	0.006	
North control C02 Polychaeta Lumbrineridae Lumbrineris acicularum 1 Omnivore/Scavenger 0.042 North control C02 Polychaeta Nephtyidae Nephtys picta 20 Omnivore/Scavenger 0.071 North control C02 Polychaeta Paraonidae Levinsenia gracilis 14 Subsurface Deposit Feeder 0.001 North control C02 Polychaeta - Polychaete Fragments 0.177 West control C09 Arthropoda Ampeliscidae Ampelisca spp. 22 Interface Feeder 0.095 West control C09 Arthropoda Bodotriidae Cyclaspis varians 1 Surface Deposit Feeder <0.001 West control C09 Arthropoda Ischyroceridae Ericthonius spp. 1 Interface Feeder <0.001 West control C09 Arthropoda Photidae Photis spp. 1 Interface Feeder <0.001 West control C09 Arthropoda Photidae Photis spp. 1 Interface Feeder <0.001 West control C09 Arthropoda Phoxocephalidae Harpinia propinqua 1 Interface Feeder <0.001 West control C09 Echinodermata Amphiuridae Microphiopholis atra 34 Surface Deposit Feeder 3.033 West control C09 Mollusca Bivalvia Arctica islandica 1 Suspension Feeder <0.001 West control C09 Nemertea Lineidae Microra spp. 2 Predator 0.002 West control C09 Nemertea Lineidae Microra spp. 2 Predator 0.004 West control C09 Polychaeta Arabellidae Drilonereis longa 2 Predator 0.009 West control C09 Polychaeta Cirratulidae Cirratulidae Spp. 1 Surface Deposit Feeder <0.001 West control C09 Polychaeta Fiabelligeridae Pherusa plumosa 3 Surface Deposit Feeder 0.131 West control C09 Polychaeta Fiabelligeridae Pherusa plumosa 3 Surface Deposit Feeder 0.003	North control	C02	Polychaeta	Glyceridae	Glyceridae spp.	6	Omnivore/Scavenger	0.003	damaged
North controlC02PolychaetaNephtyldaeNephtys picta20Omnivore/Scavenger0.071North controlC02PolychaetaParaonidaeLevinsenia gracilis14Subsurface Deposit Feeder0.001North controlC02Polychaeta-Polychaete Fragments0.177West controlC09ArthropodaAmpeliscidaeAmpelisca spp.22Interface Feeder0.095West controlC09ArthropodaBodotriidaeCyclaspis varians1Surface Deposit Feeder<0.001	North control	C02	Polychaeta	Lumbrineridae	Lumbrinerides acuta	5	Omnivore/Scavenger	0.002	
North control C02 Polychaeta Paraonidae Levinsenia gracilis 14 Subsurface Deposit Feeder 0.001 North control C02 Polychaeta - Polychaete Fragments - - 0.177 West control C09 Arthropoda Ampeliscidae Ampelisca spp. 22 Interface Feeder 0.001 West control C09 Arthropoda Bodotriidae Cyclaspis varians 1 Surface Deposit Feeder <0.001	North control	C02	Polychaeta	Lumbrineridae	Lumbrineris acicularum	1	Omnivore/Scavenger	0.042	
North controlC02Polychaeta-Polychaete Fragments0.177West controlC09ArthropodaAmpeliscidaeAmpelisca spp.22Interface Feeder0.095West controlC09ArthropodaBodotriidaeCyclaspis varians1Surface Deposit Feeder<0.001	North control	C02	Polychaeta	Nephtyidae	Nephtys picta	20	Omnivore/Scavenger	0.071	
West controlC09ArthropodaAmpeliscidaeAmpelisca spp.22Interface Feeder0.095West controlC09ArthropodaBodotriidaeCyclaspis varians1Surface Deposit Feeder<0.001	North control	C02	Polychaeta	Paraonidae	Levinsenia gracilis	14	Subsurface Deposit Feeder	0.001	
West controlC09ArthropodaBodotriidaeCyclaspis varians1Surface Deposit Feeder<0.001West controlC09ArthropodaIschyroceridaeEricthonius spp.1Interface Feeder<0.001	North control	C02	Polychaeta	-	Polychaete Fragments	-	-	0.177	
West controlC09ArthropodaIschyroceridaeEricthonius spp.1Interface Feeder<0.001West controlC09ArthropodaPhotidaePhotis spp.1Interface Feeder<0.001	West control	C09	Arthropoda	Ampeliscidae	Ampelisca spp.	22	Interface Feeder	0.095	
West controlC09ArthropodaPhotidaePhotis spp.1Interface Feeder<0.001West controlC09ArthropodaPhoxocephalidaeHarpinia propinqua1Interface Feeder<0.001	West control	C09	Arthropoda	Bodotriidae	Cyclaspis varians	1	Surface Deposit Feeder	<0.001	
West controlC09ArthropodaPhoxocephalidaeHarpinia propinqua1Interface Feeder<0.001West controlC09EchinodermataAmphiuridaeMicrophiopholis atra34Surface Deposit Feeder3.033West controlC09MolluscaBivalviaArctica islandica1Suspension Feeder<0.001	West control	C09	Arthropoda	Ischyroceridae	Ericthonius spp.	1	Interface Feeder	<0.001	
West controlC09EchinodermataAmphiuridaeMicrophiopholis atra34Surface Deposit Feeder3.033West controlC09MolluscaBivalviaArctica islandica1Suspension Feeder<0.001	West control	C09	Arthropoda	Photidae	Photis spp.	1	Interface Feeder	<0.001	
West controlC09MolluscaBivalviaArctica islandica1Suspension Feeder<0.001West controlC09MolluscaBivalviaThyasira gouldii1Suspension Feeder0.022West controlC09NemerteaLineidaeMicrura spp.2Predator0.004West controlC09OligochaetaOligochaetaOligochaeta spp.10Subsurface Deposit Feeder0.001West controlC09PolychaetaArabellidaeDrilonereis longa2Predator0.009West controlC09PolychaetaCirratulidaeCirratulidae spp.1Surface Deposit Feeder<0.001	West control	C09	Arthropoda	Phoxocephalidae	Harpinia propinqua	1	Interface Feeder	<0.001	
West controlC09MolluscaBivalviaThyasira gouldii1Suspension Feeder0.022West controlC09NemerteaLineidaeMicrura spp.2Predator0.004West controlC09OligochaetaOligochaetaOligochaeta spp.10Subsurface Deposit Feeder0.001West controlC09PolychaetaArabellidaeDrilonereis longa2Predator0.009West controlC09PolychaetaCirratulidaeCirratulidae spp.1Surface Deposit Feeder<0.001	West control	C09	Echinodermata	Amphiuridae	Microphiopholis atra	34	Surface Deposit Feeder	3.033	
West controlC09NemerteaLineidaeMicrura spp.2Predator0.004West controlC09OligochaetaOligochaetaOligochaeta spp.10Subsurface Deposit Feeder0.001West controlC09PolychaetaArabellidaeDrilonereis longa2Predator0.009West controlC09PolychaetaCirratulidaeCirratulidae spp.1Surface Deposit Feeder<0.001	West control	C09	Mollusca	Bivalvia	Arctica islandica	1	Suspension Feeder	<0.001	
West controlC09OligochaetaOligochaetaOligochaeta spp.10Subsurface Deposit Feeder0.001West controlC09PolychaetaArabellidaeDrilonereis longa2Predator0.009West controlC09PolychaetaCirratulidaeCirratulidae spp.1Surface Deposit Feeder<0.001	West control	C09	Mollusca	Bivalvia	Thyasira gouldii	1	Suspension Feeder	0.022	
West controlC09PolychaetaArabellidaeDrilonereis longa2Predator0.009West controlC09PolychaetaCirratulidaeCirratulidae spp.1Surface Deposit Feeder<0.001	West control	C09	Nemertea	Lineidae	Micrura spp.	2	Predator	0.004	
West controlC09PolychaetaCirratulidaeCirratulidae spp.1Surface Deposit Feeder<0.001West controlC09PolychaetaCossuridaeCossura longocirrata725Subsurface Deposit Feeder0.131West controlC09PolychaetaFlabelligeridaePherusa plumosa3Surface Deposit Feeder0.003	West control	C09	Oligochaeta	Oligochaeta	Oligochaeta spp.	10	Subsurface Deposit Feeder	0.001	
West control C09 Polychaeta Cossuridae Cossura longocirrata 725 Subsurface Deposit Feeder 0.131 West control C09 Polychaeta Flabelligeridae Pherusa plumosa 3 Surface Deposit Feeder 0.003	West control	C09	Polychaeta	Arabellidae	Drilonereis longa	2	Predator	0.009	
West control C09 Polychaeta Flabelligeridae <i>Pherusa plumosa</i> 3 Surface Deposit Feeder 0.003	West control	C09	Polychaeta	Cirratulidae	Cirratulidae spp.	1	Surface Deposit Feeder	<0.001	
	West control	C09	Polychaeta	Cossuridae	Cossura longocirrata	725	Subsurface Deposit Feeder	0.131	
West control COO Believe at Meldenides Charactelle towards Co Cuberrates Descrit Fooder COO	West control	C09	Polychaeta	Flabelligeridae	Pherusa plumosa	3	Surface Deposit Feeder	0.003	
w est control Co9 Polychaeta Maldanidae Clymenella torquata 6 Subsurface Deposit Feeder 0.039	West control	C09	Polychaeta	Maldanidae	Clymenella torquata	6	Subsurface Deposit Feeder	0.039	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
West control	C09	Polychaeta	Nephtyidae	Nephtys incisa	2	Omnivore/Scavenger	0.903	
West control	C09	Polychaeta	Nephtyidae	Nephtys spp.	4	Omnivore/Scavenger	<0.001	juvenile
West control	C09	Polychaeta	Opheliidae	Ophelina acuminata	1	Subsurface Deposit Feeder	0.001	
West control	C09	Polychaeta	Oweniidae	Owenia fusiformis	183	Suspension Feeder	0.358	
West control	C09	Polychaeta	Paraonidae	Aricidea spp.	49	Surface Deposit Feeder	0.002	
West control	C09	Polychaeta	Paraonidae	Levinsenia gracilis	15	Subsurface Deposit Feeder	<0.001	
West control	C09	Polychaeta	Scalibergmatidae	Scalibregma inflatum	1	Subsurface Deposit Feeder	0.001	
West control	C09	Polychaeta	Sternaspidae	Sternaspis scutata	12	Omnivore/Scavenger	800.0	
West control	C09	Polychaeta	Syllidae	Exogone spp.	10	Omnivore/Scavenger	<0.001	
West control	C09	Polychaeta	Trichobranchidae	Terebellides stroemii	31	Subsurface Deposit Feeder	0.133	
West control	C09	Polychaeta	-	Polychaete Fragments	-	-	0.646	
West control	C09	Sipuncula	Golfingiidae	Phascolopsis gouldii	1	Surface Deposit Feeder	<0.001	
East control	C13	Arthropoda	Ampeliscidae	Ampelisca spp.	5	Interface Feeder	0.012	
East control	C13	Arthropoda	Corophiidae	Corophium spp.	1	Interface Feeder	<0.001	
East control	C13	Arthropoda	Diastylidae	Diastylis sculpta	2	Interface Feeder	0.010	
East control	C13	Arthropoda	Idoteidea	Edotia triloba	1	Omnivore/Scavenger	<0.001	
East control	C13	Arthropoda	Nannastacidae	Almyracuma proximoculi	1	Omnivore/Scavenger	0.001	
East control	C13	Arthropoda	Phoxocephalidae	Harpinia propinqua	3	Interface Feeder	0.001	
East control	C13	Bryozoa	-	Ctenostomatida spp.	Χ	Suspension Feeder	13.302	
East control	C13	Echinodermata	Echinoidea	Echinarachnius parma	2	Surface Deposit Feeder	-	
East control	C13	Echinodermata	-	Echinoidea spp.	2	-	<0.001	
East control	C13	Mollusca	Bivalvia	Ameritella agilis	2	Subsurface Deposit Feeder	0.001	
East control	C13	Mollusca	Bivalvia	Nucula proxima	120	Subsurface Deposit Feeder	0.155	
East control	C13	Mollusca	Bivalvia	Pitar morrhuanus	3	Suspension Feeder	0.023	
East control	C13	Mollusca	Bivalvia	Yoldia limatula	3	Subsurface Deposit Feeder	0.012	
East control	C13	Mollusca	Bivalvia	Yoldia spp.	7	Subsurface Deposit Feeder	0.001	
East control	C13	Mollusca	Gastropoda	Tritia trivittata	2	Omnivore/Scavenger	0.006	
East control	C13	Oligochaeta	Oligochaeta	Oligochaeta spp.	70	Subsurface Deposit Feeder	0.008	
East control	C13	Polychaeta	Glyceridae	Glycera capitata	1	Omnivore/Scavenger	0.016	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
East control	C13	Polychaeta	Nephtyidae	Nephtys picta	1	Omnivore/Scavenger	0.001	
East control	C13	Polychaeta	Orbiniidae	Leitoscoloplos fragilis	1	Subsurface Deposit Feeder	0.001	
East control	C13	Polychaeta	Paraonidae	Levinsenia gracilis	10	Subsurface Deposit Feeder	<0.001	
East control	C13	Polychaeta	Sigalonidae	Sthenelais limicola	2	Predator	0.009	
East control	C13	Polychaeta	Sigalonidae	Sthenelais spp.	17	Predator	0.003	juvenile
East control	C13	Polychaeta	Spionidae	Spio spp.	1	Interface Feeder	0.006	
East control	C13	Polychaeta	-	Polychaete Fragments	-	-	0.010	
Lease Area	062	Arthropoda	Ampeliscidae	Ampelisca spp.	49	Interface Feeder	0.117	
Lease Area	062	Arthropoda	Caprellidae	Paracaprella tenuis	1	Predator	<0.001	
Lease Area	062	Arthropoda	Corophiidae	Corophium spp.	3	Interface Feeder	0.004	
Lease Area	062	Arthropoda	Corophiidae	Unciola spp.	5	Interface Feeder	0.037	
Lease Area	062	Arthropoda	Diastylidae	Diastylis sculpta	7	Interface Feeder	0.028	
Lease Area	062	Arthropoda	Phoxocephalidae	Harpinia propinqua	14	Interface Feeder	0.004	
Lease Area	062	Cnidaria	Halcampidae	Halcampa duodecimcirrata	3	Predator	0.110	
Lease Area	062	Mollusca	Bivalvia	Nucula proxima	3822	Subsurface Deposit Feeder	7.9062	
Lease Area	062	Mollusca	Bivalvia	Pitar morrhuanus	1	Suspension Feeder	0.002	
Lease Area	062	Mollusca	Bivalvia	Solemya borealis	1	Suspension Feeder	0.010	
Lease Area	062	Mollusca	Bivalvia	Thraciidae spp.	1	Suspension Feeder	0.003	damaged
Lease Area	062	Mollusca	Bivalvia	Yoldia sapotilla	1	Subsurface Deposit Feeder	<0.001	
Lease Area	062	Mollusca	Gastropoda	Astyris lunata	1	Predator	<0.001	
Lease Area	062	Mollusca	Gastropoda	Euspira triseriata	2	Predator	0.708	
Lease Area	062	Nemertea	Lineidae	Micrura spp.	3	Predator	0.601	
Lease Area	062	Polychaeta	Apistobranchidae	Apistobranchus tullbergi	1	Surface Deposit Feeder	0.002	
Lease Area	062	Polychaeta	Glyceridae	Glycera capitata	3	Omnivore/Scavenger	0.053	
Lease Area	062	Polychaeta	Lumbrineridae	Ninoe nigripes	25	Omnivore/Scavenger	0.720	
Lease Area	062	Polychaeta	Lumbrineridae	Scoletoma tenuis	23	Omnivore/Scavenger	0.050	
Lease Area	062	Polychaeta	Nephtyidae	Nephtys bucera	3	Omnivore/Scavenger	0.099	
Lease Area	062	Polychaeta	Paraonidae	Levinsenia gracilis	25	Subsurface Deposit Feeder	0.002	
Lease Area	062	Polychaeta	Sigalonidae	Sthenelais limicola	1	Predator	0.003	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww) Comments
Lease Area	062	Polychaeta	-	Polychaete Fragments	-	-	0.130
Lease Area	065	Arthropoda	Ampeliscidae	Ampelisca spp.	434	Interface Feeder	0.47
Lease Area	065	Arthropoda	Cancridae	Cancer irroratus	2	Predator	0.041
Lease Area	065	Arthropoda	Corophiidae	Corophium spp.	6	Interface Feeder	0.008
Lease Area	065	Arthropoda	Corophiidae	Leptocheirus pinguis	18	Interface Feeder	0.065
Lease Area	065	Arthropoda	Diastylidae	Diastylis sculpta	31	Interface Feeder	0.120
Lease Area	065	Arthropoda	Idoteidea	Edotia triloba	2	Omnivore/Scavenger	<0.001
Lease Area	065	Arthropoda	Ischyroceridae	Ericthonius spp.	4	Interface Feeder	0.001
Lease Area	065	Arthropoda	Leuconidae	Eudorella pusilla	49	Interface Feeder	0.008
Lease Area	065	Arthropoda	Lysianassidae	Lysianopsis alba	4	Omnivore/Scavenger	0.001
Lease Area	065	Arthropoda	Paguridae	Pagurus longicarpus	1	Omnivore/Scavenger	0.003
Lease Area	065	Arthropoda	Photidae	Photis spp.	2	Interface Feeder	<0.001
Lease Area	065	Arthropoda	Phoxocephalidae	Harpinia propinqua	1	Interface Feeder	0.002
Lease Area	065	Arthropoda	Phoxocephalidae	Rhepoxynius epistomus	10	Interface Feeder	0.002
Lease Area	065	Arthropoda	Pontogeneiidae	Pontogeneia inermis	2	Interface Feeder	<0.001
Lease Area	065	Arthropoda	Unciolidae	<i>Unciola</i> spp.	7	Interface Feeder	0.036
Lease Area	065	Cnidaria	Edwardsiidae	Edwardsia elegans	1	Suspension Feeder	0.018
Lease Area	065	Mollusca	Bivalvia	Arctica islandica	2	Suspension Feeder	0.018
Lease Area	065	Mollusca	Bivalvia	Mesodesma arctatum	14	Suspension Feeder	0.021
Lease Area	065	Mollusca	Bivalvia	Nucula proxima	1681	Subsurface Deposit Feeder	0.897
Lease Area	065	Mollusca	Bivalvia	Parvicardium pinnulatum	1	Suspension Feeder	0.005
Lease Area	065	Mollusca	Bivalvia	Periploma papyratium	2	Suspension Feeder	0.003
Lease Area	065	Mollusca	Bivalvia	Pitar morrhuanus	4	Suspension Feeder	0.065
Lease Area	065	Mollusca	Bivalvia	Yoldia limatula	38	Subsurface Deposit Feeder	0.148
Lease Area	065	Mollusca	Gastropoda	Astyris lunata	5	Predator	0.003
Lease Area	065	Nemertea	Lineidae	Cerebratulus lacteus	4	Predator	0.227
Lease Area	065	Polychaeta	Ampharetidae	Ampharete arctica	7	Surface Deposit Feeder	0.005
Lease Area	065	Polychaeta	Arabellidae	Drilonereis longa	1	Predator	0.004
Lease Area	065	Polychaeta	Glyceridae	Glycera spp.	1	Omnivore/Scavenger	0.001

Lesse Area 065 Polychaeta Lumbrineridae Ninoe nigripos 16 Omnivore/Scavenger 0.039 Lesse Area 065 Polychaeta Lumbrineridae Scoletoma (enuis) 34 Omnivore/Scavenger 0.025 Lesse Area 065 Polychaeta Maldanidae Clymonella torquata 51 Subsurface Deposit Feeder 3.88 Lesse Area 065 Polychaeta Paraonidae Aricklea spp. 17 Suface Deposit Feeder -0.001 Lesse Area 065 Polychaeta Paraonidae Levinsenia gracilis 38 Subsurface Deposit Feeder -0.001 Lesse Area 065 Polychaeta Paraonidae Levinsenia gracilis 38 Subsurface Deposit Feeder 0.002 Lesse Area 065 Polychaeta Spionidae Spionidae Spionplane bombtyx 2 Interface Feeder 0.002 Lesse Area 068 Arthropoda Caprellidae Argenina longicomis 1 Predator 0.589 Lesse Area 068 Arthropoda	Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww) Comments
Lease Area 065 Polycheeta Maldanidae Clymenella torquata 51 Subsurface Deposit Feeder 3.638 Lease Area 065 Polychaeta Nephtyidae Nephtys incisa 5 Omnivore/Scavenger 0.488 Lease Area 065 Polychaeta Paraonidae Aricidea spp. 17 Surface Deposit Feeder -0.001 Lease Area 065 Polychaeta Paraonidae Levinsenia gracilis 38 Subsurface Deposit Feeder -0.004 Lease Area 065 Polychaeta Paraonidae Levinsenia gracilis 38 Subsurface Deposit Feeder -0.004 Lease Area 065 Polychaeta -2 Interface Feeder 0.004 Lease Area 068 Arthropoda Caprellidae Ampelisca sapp. 272 Interface Feeder 0.008 Lease Area 068 Arthropoda Caprellidae Argacaprella terus 1 Predator 0.001 Lease Area 068 Arthropoda Corophidae Corophilae Orophilae 1	Lease Area	065	Polychaeta	Lumbrineridae	Ninoe nigripes	16	Omnivore/Scavenger	0.039
Lease Area 065 Polychaeta Nephtyidae Nephtys incisa 5 Omnivore/Scavenger 0.489 Lease Area 065 Polychaeta Paraonidae Arioidea spp. 17 Surface Deposit Feeder -0.001 Lease Area 065 Polychaeta Paraonidae Levinsenia gracilis 38 Subsurface Deposit Feeder 0.002 Lease Area 065 Polychaeta Spionidae Spionidaes bombyx 2 Interface Feeder 0.004 Lease Area 068 Polychaeta - Polychaete Fragments - - 0.003 Lease Area 068 Arthropoda Caprellidae Argelisca spp. 272 Interface Feeder 0.008 Lease Area 068 Arthropoda Corphildae Paracaprella tenuis 1 Predator 0.006 Lease Area 068 Arthropoda Corophildae Corphildae Corphildae Paracaprella tenuis 47 Interface Feeder 0.006 Lease Area 068 Arthropoda Diastylidae	Lease Area	065	Polychaeta	Lumbrineridae	Scoletoma tenuis	34	Omnivore/Scavenger	0.025
Lease Area 065 Polychaeta Paraonidae Aricidea spp. 17 Surface Deposit Feeder <.001 Lease Area 065 Polychaeta Paraonidae Levinsenia gracilis 38 Subsurface Deposit Feeder 0.002 Lease Area 065 Polychaeta Spionidae Spiophanes bombyx 2 Interface Feeder 0.004 Lease Area 065 Polychaeta - Polychaeta 0.043 Lease Area 068 Arthropoda Caprellidae Ampelisca spp. 272 Interface Feeder 0.063 Lease Area 068 Arthropoda Caprellidae Aeginina longiornis 1 Predator 0.008 Lease Area 068 Arthropoda Corophiidae Corophium spp. 5 Interface Feeder 0.006 Lease Area 068 Arthropoda Diastylidae Diastylidae poistylidae Jiastylidae 22 Interface Feeder 0.016 Lease Area 068 Arthropoda Diastylidae Diastylidae 1 Interface Feed	Lease Area	065	Polychaeta	Maldanidae	Clymenella torquata	51	Subsurface Deposit Feeder	3.638
Lease Area 065 Polychaeta Paraonidae Levinsenia gracilis 38 Subsurface Deposit Feeder 0.002 Lease Area 065 Polychaeta Spionidae Spiophanes bombyx 2 Interface Feeder 0.004 Lease Area 065 Polychaeta - Polychaete Fragments - - 0.043 Lease Area 068 Arthropoda Caprellidae Ampelisca spp. 272 Interface Feeder 0.058 Lease Area 068 Arthropoda Caprellidae Paracaprella tenuis 1 Predator 0.006 Lease Area 068 Arthropoda Corophiidae Corophium spp. 5 Interface Feeder 0.006 Lease Area 068 Arthropoda Corophiidae Lejaccheirus pinguis 47 Interface Feeder 0.248 Lease Area 068 Arthropoda Diastylidae Diastylis guadrispinosa 3 Interface Feeder 0.016 Lease Area 068 Arthropoda Ischyriace Diastylis guadrispinosa 3	Lease Area	065	Polychaeta	Nephtyidae	Nephtys incisa	5	Omnivore/Scavenger	0.489
Lease Area065PolychaetaSpionidaeSpiophanes bombyx2Interface Feeder0.004Lease Area065Polychaeta-Polychaete Fragments0.043Lease Area068ArthropodaAmpeliscidaeAmpelisca spp.272Interface Feeder0.589Lease Area068ArthropodaCaprellidaeAeginina longicornis1Predator0.006Lease Area068ArthropodaCorophildaeParacaprella tenuis1Predator0.006Lease Area068ArthropodaCorophildaeLeptocheirus pinguis47Interface Feeder0.006Lease Area068ArthropodaDiastylidaeDiastylis quadrispinosa3Interface Feeder0.016Lease Area068ArthropodaDiastylidaeDiastylis sculpta22Interface Feeder0.007Lease Area068ArthropodaGammaridaeGammarus spp.1Interface Feeder0.002Lease Area068ArthropodaLeuconidaeEricthonius spp.11Interface Feeder0.002Lease Area068ArthropodaLeuconidaeEudorella pusilla5Omnivore/Scavenger0.007Lease Area068ArthropodaPhoxocephalidaeHarpinia propinqua11Interface Feeder0.004Lease Area068ArthropodaPhoxocephalidaePhoxocephalus holbolli7Interface Feeder0.001Lease Area068B	Lease Area	065	Polychaeta	Paraonidae	Aricidea spp.	17	Surface Deposit Feeder	<0.001
Lease Area065Polychaeta-Polychaete Fragments0.043Lease Area068ArthropodaAmpeliscidaeAmpelisca spp.272Interface Feeder0.589Lease Area068ArthropodaCaprellidaeAeginina longicornis1Predator0.008Lease Area068ArthropodaCarpellidaeParacaprella tenuis1Predator<0.001	Lease Area	065	Polychaeta	Paraonidae	Levinsenia gracilis	38	Subsurface Deposit Feeder	0.002
Lease Area068ArthropodaAmpeliscidaeAmpelisca spp.272Interface Feeder0.589Lease Area068ArthropodaCaprellidaeAeginina longicornis1Predator0.008Lease Area068ArthropodaCaprellidaeParacaprella tenuis1Predator<0.001	Lease Area	065	Polychaeta	Spionidae	Spiophanes bombyx	2	Interface Feeder	0.004
Lease Area068ArthropodaCaprellidaeAeginina longicomis1Predator0.008Lease Area068ArthropodaCaprellidaeParacaprella tenuis1Predator<0.001	Lease Area	065	Polychaeta	-	Polychaete Fragments	-	-	0.043
Lease Area068ArthropodaCaprellidaeParacaprella tenuis1Predator<0.001Lease Area068ArthropodaCorophiidaeCorophium spp.5Interface Feeder0.006Lease Area068ArthropodaCorophiidaeLeptocheirus pinguis47Interface Feeder0.248Lease Area068ArthropodaDiastylidaeDiastylis quadrispinosa3Interface Feeder0.016Lease Area068ArthropodaDiastylidaeDiastylis sculpta22Interface Feeder0.007Lease Area068ArthropodaGammaridaeGammarus spp.1Interface Feeder0.002Lease Area068ArthropodaLeuconidaeEicthonilus spp.11Interface Feeder0.010Lease Area068ArthropodaLeuconidaeEudorella pusilla82Interface Feeder0.027Lease Area068ArthropodaLysianassidaeLysianopsis alba5Omnivore/Scavenger0.007Lease Area068ArthropodaPhoxocephalidaePhoxocephalius holbolli7Interface Feeder0.004Lease Area068ArthropodaUnciolidaeUnciole spp.14Interface Feeder0.009Lease Area068ArthropodaUnciolidaeUnciole sppSuspension Feeder-Lease Area068MolluscaBivalviaArctica islandica3Suspension Feeder0.001Lease Area068Mollu	Lease Area	068	Arthropoda	Ampeliscidae	Ampelisca spp.	272	Interface Feeder	0.589
Lease Area068ArthropodaCorophiidaeCorophiim spp.5Interface Feeder0.006Lease Area068ArthropodaCorophiidaeLeptocheirus pinguis47Interface Feeder0.248Lease Area068ArthropodaDiastylidaeDiastylis quadrispinosa3Interface Feeder0.016Lease Area068ArthropodaDiastylidaeDiastylis sculpta22Interface Feeder0.007Lease Area068ArthropodaGammaridaeGammarus spp.1Interface Feeder0.002Lease Area068ArthropodaIschyroceridaeEricthonius spp.11Interface Feeder0.010Lease Area068ArthropodaLeuconidaeEudorella pusilla82Interface Feeder0.027Lease Area068ArthropodaLysianassidaeLysianopsis alba5Omnivore/Scavenger0.007Lease Area068ArthropodaPhoxocephalidaeHarpinia propinqua11Interface Feeder0.004Lease Area068ArthropodaPhoxocephalidaePhoxocephalius holbolli7Interface Feeder0.001Lease Area068ArthropodaUnciolidaeUnciola spp.14Interface Feeder0.009Lease Area068MolluscaBivalviaArctica islandica3Suspension Feeder0.017Lease Area068MolluscaBivalviaMesodesma arctatum63Subsurface Deposit Feeder0.066Lease	Lease Area	068	Arthropoda	Caprellidae	Aeginina longicornis	1	Predator	0.008
Lease Area068ArthropodaCorophilidaeLeptocheirus pinguis47Interface Feeder0.248Lease Area068ArthropodaDiastylidaeDiastylis quadrispinosa3Interface Feeder0.016Lease Area068ArthropodaDiastylidaeDiastylis sculpta22Interface Feeder0.007Lease Area068ArthropodaGammaridaeGammarus spp.1Interface Feeder0.002Lease Area068ArthropodaIschyroceridaeEricthonius spp.11Interface Feeder0.010Lease Area068ArthropodaLeuconidaeEudorella pusilla82Interface Feeder0.027Lease Area068ArthropodaLysianassidaeLysianopsis alba5Omnivore/Scavenger0.007Lease Area068ArthropodaPhoxocephalidaeHarpinia propinqua11Interface Feeder0.004Lease Area068ArthropodaPhoxocephalidaePhoxocephalius holbolli7Interface Feeder0.001Lease Area068ArthropodaUnciolidaeUnciola spp.14Interface Feeder0.009Lease Area068Bryozoa-Ctenostomatida sppSuspension Feeder0.017Lease Area068MolluscaBivalviaMesodesma arctatum63Suspension Feeder0.061Lease Area068MolluscaBivalviaParvicardium pinnulatum1Suspension Feeder0.005Lease Area <td>Lease Area</td> <td>068</td> <td>Arthropoda</td> <td>Caprellidae</td> <td>Paracaprella tenuis</td> <td>1</td> <td>Predator</td> <td><0.001</td>	Lease Area	068	Arthropoda	Caprellidae	Paracaprella tenuis	1	Predator	<0.001
Lease Area 068 Arthropoda Diastylidae Diastylis quadrispinosa 3 Interface Feeder 0.016 Lease Area 068 Arthropoda Diastylidae Diastylis sculpta 22 Interface Feeder 0.077 Lease Area 068 Arthropoda Gammaridae Gammarus spp. 1 Interface Feeder 0.002 Lease Area 068 Arthropoda Ischyroceridae Ericthonius spp. 11 Interface Feeder 0.010 Lease Area 068 Arthropoda Leuconidae Eudorella pusilla 82 Interface Feeder 0.027 Lease Area 068 Arthropoda Lysianassidae Lysianopsis alba 5 Omnivore/Scavenger 0.007 Lease Area 068 Arthropoda Phoxocephalidae Harpinia propinqua 11 Interface Feeder 0.004 Lease Area 068 Arthropoda Phoxocephalidae Phoxocephalus holbolli 7 Interface Feeder 0.001 Lease Area 068 Arthropoda Unciolidae Unciola spp. 14 Interface Feeder 0.009 Lease Area 068 Bryozoa - Ctenostomatida spp Suspension Feeder - Lease Area 068 Mollusca Bivalvia Arctica islandica 3 Suspension Feeder 0.017 Lease Area 068 Mollusca Bivalvia Mesodesma arctatum 63 Suspension Feeder 0.061 Lease Area 068 Mollusca Bivalvia Parvicardium pinnulatum 1 Suspension Feeder 0.005 Lease Area 068 Mollusca Bivalvia Parvicardium pinnulatum 1 Suspension Feeder 0.005 Lease Area 068 Mollusca Bivalvia Parvicardium pinnulatum 1 Suspension Feeder 0.005	Lease Area	068	Arthropoda	Corophiidae	Corophium spp.	5	Interface Feeder	0.006
Lease Area068ArthropodaDiastylidaeDiastylis sculpta22Interface Feeder0.077Lease Area068ArthropodaGammaridaeGammarus spp.1Interface Feeder0.002Lease Area068ArthropodaIschyroceridaeEricthonius spp.11Interface Feeder0.010Lease Area068ArthropodaLeuconidaeEudorella pusilla82Interface Feeder0.027Lease Area068ArthropodaLysianassidaeLysianopsis alba5Omnivore/Scavenger0.007Lease Area068ArthropodaPhoxocephalidaeHarpinia propinqua11Interface Feeder0.004Lease Area068ArthropodaPhoxocephalidaePhoxocephalus holbolli7Interface Feeder0.001Lease Area068ArthropodaUnciolidaeUnciola spp.14Interface Feeder0.009Lease Area068Bryozoa-Ctenostomatida sppSuspension Feeder0.017Lease Area068MolluscaBivalviaMesodesma arctatum63Suspension Feeder0.061Lease Area068MolluscaBivalviaNucula proxima536Subsurface Deposit Feeder0.606Lease Area068MolluscaBivalviaParvicardium pinnulatum1Suspension Feeder0.005Lease Area068MolluscaBivalviaPeriploma papyratium11Suspension Feeder0.005	Lease Area	068	Arthropoda	Corophiidae	Leptocheirus pinguis	47	Interface Feeder	0.248
Lease Area068ArthropodaGammaridaeGammarus spp.1Interface Feeder0.002Lease Area068ArthropodaIschyroceridaeEricthonius spp.11Interface Feeder0.010Lease Area068ArthropodaLeuconidaeEudorella pusilla82Interface Feeder0.027Lease Area068ArthropodaLysianassidaeLysianopsis alba5Omnivore/Scavenger0.007Lease Area068ArthropodaPhoxocephalidaeHarpinia propinqua11Interface Feeder0.004Lease Area068ArthropodaPhoxocephalidaePhoxocephalus holbolli7Interface Feeder0.001Lease Area068ArthropodaUnciolidaeUnciola spp.14Interface Feeder0.009Lease Area068Bryozoa-Ctenostomatida sppSuspension Feeder-Lease Area068MolluscaBivalviaArctica islandica3Suspension Feeder0.017Lease Area068MolluscaBivalviaMesodesma arctatum63Suspension Feeder0.606Lease Area068MolluscaBivalviaParvicardium pinnulatum1Suspension Feeder0.005Lease Area068MolluscaBivalviaPeriploma papyratium11Suspension Feeder0.005	Lease Area	068	Arthropoda	Diastylidae	Diastylis quadrispinosa	3	Interface Feeder	0.016
Lease Area 068 Arthropoda Ischyroceridae Ericthonius spp. 11 Interface Feeder 0.010 Lease Area 068 Arthropoda Leuconidae Eudorella pusilla 82 Interface Feeder 0.027 Lease Area 068 Arthropoda Lysianassidae Lysianopsis alba 5 Omnivore/Scavenger 0.007 Lease Area 068 Arthropoda Phoxocephalidae Harpinia propinqua 11 Interface Feeder 0.004 Lease Area 068 Arthropoda Phoxocephalidae Phoxocephalus holbolli 7 Interface Feeder 0.001 Lease Area 068 Arthropoda Unciolidae Unciola spp. 14 Interface Feeder 0.009 Lease Area 068 Bryozoa - Ctenostomatida spp Suspension Feeder - Lease Area 068 Mollusca Bivalvia Arctica islandica 3 Suspension Feeder 0.017 Lease Area 068 Mollusca Bivalvia Mesodesma arctatum 63 Suspension Feeder 0.061 Lease Area 068 Mollusca Bivalvia Parvicardium pinnulatum 1 Suspension Feeder 0.005 Lease Area 068 Mollusca Bivalvia Parvicardium pinnulatum 1 Suspension Feeder 0.005 Lease Area 068 Mollusca Bivalvia Periploma papyratium 11 Suspension Feeder 0.005	Lease Area	068	Arthropoda	Diastylidae	Diastylis sculpta	22	Interface Feeder	0.077
Lease Area 068 Arthropoda Leuconidae Eudorella pusilla 82 Interface Feeder 0.027 Lease Area 068 Arthropoda Lysianassidae Lysianopsis alba 5 Omnivore/Scavenger 0.007 Lease Area 068 Arthropoda Phoxocephalidae Harpinia propinqua 11 Interface Feeder 0.004 Lease Area 068 Arthropoda Phoxocephalidae Phoxocephalus holbolli 7 Interface Feeder 0.001 Lease Area 068 Arthropoda Unciolidae Unciola spp. 14 Interface Feeder 0.009 Lease Area 068 Bryozoa - Ctenostomatida spp Suspension Feeder - Lease Area 068 Mollusca Bivalvia Arctica islandica 3 Suspension Feeder 0.017 Lease Area 068 Mollusca Bivalvia Mesodesma arctatum 63 Suspension Feeder 0.061 Lease Area 068 Mollusca Bivalvia Nucula proxima 536 Subsurface Deposit Feeder 0.606 Lease Area 068 Mollusca Bivalvia Parvicardium pinnulatum 1 Suspension Feeder 0.005 Lease Area 068 Mollusca Bivalvia Periploma papyratium 11 Suspension Feeder 0.003	Lease Area	068	Arthropoda	Gammaridae	Gammarus spp.	1	Interface Feeder	0.002
Lease Area 068 Arthropoda Lysianassidae Lysianopsis alba 5 Omnivore/Scavenger 0.007 Lease Area 068 Arthropoda Phoxocephalidae Harpinia propinqua 11 Interface Feeder 0.004 Lease Area 068 Arthropoda Phoxocephalidae Phoxocephalus holbolli 7 Interface Feeder 0.001 Lease Area 068 Arthropoda Unciolidae Unciola spp. 14 Interface Feeder 0.009 Lease Area 068 Bryozoa - Ctenostomatida spp Suspension Feeder - Lease Area 068 Mollusca Bivalvia Arctica islandica 3 Suspension Feeder 0.017 Lease Area 068 Mollusca Bivalvia Mesodesma arctatum 63 Suspension Feeder 0.061 Lease Area 068 Mollusca Bivalvia Nucula proxima 536 Subsurface Deposit Feeder 0.606 Lease Area 068 Mollusca Bivalvia Parvicardium pinnulatum 1 Suspension Feeder 0.005 Lease Area 068 Mollusca Bivalvia Periploma papyratium 11 Suspension Feeder 0.005	Lease Area	068	Arthropoda	Ischyroceridae	Ericthonius spp.	11	Interface Feeder	0.010
Lease Area068ArthropodaPhoxocephalidaeHarpinia propinqua11Interface Feeder0.004Lease Area068ArthropodaPhoxocephalidaePhoxocephalus holbolli7Interface Feeder0.001Lease Area068ArthropodaUnciolidaeUnciola spp.14Interface Feeder0.009Lease Area068Bryozoa-Ctenostomatida sppSuspension Feeder-Lease Area068MolluscaBivalviaArctica islandica3Suspension Feeder0.017Lease Area068MolluscaBivalviaMesodesma arctatum63Suspension Feeder0.061Lease Area068MolluscaBivalviaNucula proxima536Subsurface Deposit Feeder0.606Lease Area068MolluscaBivalviaParvicardium pinnulatum1Suspension Feeder0.005Lease Area068MolluscaBivalviaPeriploma papyratium11Suspension Feeder0.023	Lease Area	068	Arthropoda	Leuconidae	Eudorella pusilla	82	Interface Feeder	0.027
Lease Area068ArthropodaPhoxocephalidaePhoxocephalus holbolli7Interface Feeder0.001Lease Area068ArthropodaUnciolidaeUnciola spp.14Interface Feeder0.009Lease Area068Bryozoa-Ctenostomatida sppSuspension Feeder-Lease Area068MolluscaBivalviaArctica islandica3Suspension Feeder0.017Lease Area068MolluscaBivalviaMesodesma arctatum63Suspension Feeder0.061Lease Area068MolluscaBivalviaNucula proxima536Subsurface Deposit Feeder0.606Lease Area068MolluscaBivalviaParvicardium pinnulatum1Suspension Feeder0.005Lease Area068MolluscaBivalviaPeriploma papyratium11Suspension Feeder0.023	Lease Area	068	Arthropoda	Lysianassidae	Lysianopsis alba	5	Omnivore/Scavenger	0.007
Lease Area 068 Arthropoda Unciolidae Unciola spp. 14 Interface Feeder 0.009 Lease Area 068 Bryozoa - Ctenostomatida spp Suspension Feeder - Lease Area 068 Mollusca Bivalvia Arctica islandica 3 Suspension Feeder 0.017 Lease Area 068 Mollusca Bivalvia Mesodesma arctatum 63 Suspension Feeder 0.061 Lease Area 068 Mollusca Bivalvia Nucula proxima 536 Subsurface Deposit Feeder 0.606 Lease Area 068 Mollusca Bivalvia Parvicardium pinnulatum 1 Suspension Feeder 0.005 Lease Area 068 Mollusca Bivalvia Periploma papyratium 11 Suspension Feeder 0.023	Lease Area	068	Arthropoda	Phoxocephalidae	Harpinia propinqua	11	Interface Feeder	0.004
Lease Area068Bryozoa-Ctenostomatida sppSuspension Feeder-Lease Area068MolluscaBivalviaArctica islandica3Suspension Feeder0.017Lease Area068MolluscaBivalviaMesodesma arctatum63Suspension Feeder0.061Lease Area068MolluscaBivalviaNucula proxima536Subsurface Deposit Feeder0.606Lease Area068MolluscaBivalviaParvicardium pinnulatum1Suspension Feeder0.005Lease Area068MolluscaBivalviaPeriploma papyratium11Suspension Feeder0.023	Lease Area	068	Arthropoda	Phoxocephalidae	Phoxocephalus holbolli	7	Interface Feeder	0.001
Lease Area 068 Mollusca Bivalvia Arctica islandica 3 Suspension Feeder 0.017 Lease Area 068 Mollusca Bivalvia Mesodesma arctatum 63 Suspension Feeder 0.061 Lease Area 068 Mollusca Bivalvia Nucula proxima 536 Subsurface Deposit Feeder 0.606 Lease Area 068 Mollusca Bivalvia Parvicardium pinnulatum 1 Suspension Feeder 0.005 Lease Area 068 Mollusca Bivalvia Periploma papyratium 11 Suspension Feeder 0.023	Lease Area	068	Arthropoda	Unciolidae	Unciola spp.	14	Interface Feeder	0.009
Lease Area068MolluscaBivalviaMesodesma arctatum63Suspension Feeder0.061Lease Area068MolluscaBivalviaNucula proxima536Subsurface Deposit Feeder0.606Lease Area068MolluscaBivalviaParvicardium pinnulatum1Suspension Feeder0.005Lease Area068MolluscaBivalviaPeriploma papyratium11Suspension Feeder0.023	Lease Area	068	Bryozoa	-	Ctenostomatida spp.	-	Suspension Feeder	-
Lease Area068MolluscaBivalviaNucula proxima536Subsurface Deposit Feeder0.606Lease Area068MolluscaBivalviaParvicardium pinnulatum1Suspension Feeder0.005Lease Area068MolluscaBivalviaPeriploma papyratium11Suspension Feeder0.023	Lease Area	068	Mollusca	Bivalvia	Arctica islandica	3	Suspension Feeder	0.017
Lease Area068MolluscaBivalviaParvicardium pinnulatum1Suspension Feeder0.005Lease Area068MolluscaBivalviaPeriploma papyratium11Suspension Feeder0.023	Lease Area	068	Mollusca	Bivalvia	Mesodesma arctatum	63	Suspension Feeder	0.061
Lease Area 068 Mollusca Bivalvia <i>Periploma papyratium</i> 11 Suspension Feeder 0.023	Lease Area	068	Mollusca	Bivalvia	Nucula proxima	536	Subsurface Deposit Feeder	0.606
	Lease Area	068	Mollusca	Bivalvia	Parvicardium pinnulatum	1	Suspension Feeder	0.005
Lasse Area 068 Mollusca Biyalvia Pitar morrhuanus 6 Suspension Feeder 0.104	Lease Area	068	Mollusca	Bivalvia	Periploma papyratium	11	Suspension Feeder	0.023
Ecase Area 600 infoliasea Bivaria Filar Hormanias 6 Suspension Feder 6.104	Lease Area	068	Mollusca	Bivalvia	Pitar morrhuanus	6	Suspension Feeder	0.104

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww) Comments
Lease Area	068	Mollusca	Bivalvia	Thyasira gouldii	2	Suspension Feeder	0.012
Lease Area	068	Mollusca	Bivalvia	Yoldia spp.	2	Subsurface Deposit Feeder	0.001
Lease Area	068	Mollusca	Gastropoda	Euspira triseriata	1	Predator	0.896
Lease Area	068	Mollusca	Gastropoda	Tritia trivittata	3	Omnivore/Scavenger	0.656
Lease Area	068	Nemertea	Tubulanidae	Tubulanus pellucidus	1	Predator	0.006
Lease Area	068	Oligochaeta	Oligochaeta	Oligochaeta spp.	10	Subsurface Deposit Feeder	0.002
Lease Area	068	Polychaeta	Ampharetidae	Ampharete arctica	1	Surface Deposit Feeder	0.026
Lease Area	068	Polychaeta	Lumbrineridae	Ninoe nigripes	10	Omnivore/Scavenger	0.243
Lease Area	068	Polychaeta	Lumbrineridae	Scoletoma tenuis	19	Omnivore/Scavenger	0.044
Lease Area	068	Polychaeta	Maldanidae	Clymenella torquata	44	Subsurface Deposit Feeder	0.25
Lease Area	068	Polychaeta	Nephtyidae	Nephtys incisa	10	Omnivore/Scavenger	0.018
Lease Area	068	Polychaeta	Opheliidae	Ophelina acuminata	1	Subsurface Deposit Feeder	0.009
Lease Area	068	Polychaeta	Orbiniidae	Leitoscoloplos fragilis	1	Subsurface Deposit Feeder	0.017
Lease Area	068	Polychaeta	Paraonidae	Aricidea spp.	7	Surface Deposit Feeder	0.001
Lease Area	068	Polychaeta	Paraonidae	Levinsenia gracilis	76	Subsurface Deposit Feeder	0.017
Lease Area	068	Polychaeta	Trichobranchidae	Terebellides stroemii	1	Subsurface Deposit Feeder	0.016
Lease Area	068	Polychaeta	-	Polychaete Fragments	-	-	0.145
Lease Area	072	Arthropoda	Ampeliscidae	Ampelisca spp.	298	Interface Feeder	0.414
Lease Area	072	Arthropoda	Cancridae	Cancer irroratus	2	Predator	0.021
Lease Area	072	Arthropoda	Caprellidae	Caprella equilibra	41	Predator	0.073
Lease Area	072	Arthropoda	Corophiidae	Corophium spp.	2	Interface Feeder	<0.001
Lease Area	072	Arthropoda	Corophiidae	Leptocheirus pinguis	8	Interface Feeder	0.051
Lease Area	072	Arthropoda	Diastylidae	Diastylis quadrispinosa	1	Interface Feeder	0.007
Lease Area	072	Arthropoda	Idoteidea	Edotia triloba	1	Omnivore/Scavenger	<0.001
Lease Area	072	Arthropoda	Ischyroceridae	Ericthonius spp.	1	Interface Feeder	<0.001
Lease Area	072	Arthropoda	Leuconidae	Eudorella pusilla	87	Interface Feeder	0.014
Lease Area	072	Arthropoda	Lysianassidae	Lysianopsis alba	1	Omnivore/Scavenger	0.004
Lease Area	072	Arthropoda	Unciolidae	Unciola spp.	10	Interface Feeder	0.028
Lease Area	072	Arthropoda	-	Brachyura spp.	1	-	0.005

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
Lease Area	072	Arthropoda	Phoxocephalidae	Rhepoxynius epistomus	1	Interface Feeder	<0.001	
Lease Area	072	Cnidaria	Edwardsiidae	Edwardsia elegans	1	Suspension Feeder	0.008	
Lease Area	072	Mollusca	Bivalvia	Arctica islandica	5	Suspension Feeder	0.028	
Lease Area	072	Mollusca	Bivalvia	Mesodesma arctatum	31	Suspension Feeder	0.098	
Lease Area	072	Mollusca	Bivalvia	Nucula proxima	196	Subsurface Deposit Feeder	0.088	
Lease Area	072	Mollusca	Bivalvia	Periploma papyratium	17	Suspension Feeder	0.028	
Lease Area	072	Mollusca	Bivalvia	Pitar morrhuanus	2	Suspension Feeder	0.003	
Lease Area	072	Mollusca	Bivalvia	Thyasira gouldii	1	Suspension Feeder	0.015	
Lease Area	072	Mollusca	Bivalvia	Yoldia limatula	12	Subsurface Deposit Feeder	0.008	
Lease Area	072	Mollusca	Gastropoda	Tritia trivittata	1	Omnivore/Scavenger	0.366	
Lease Area	072	Nemertea	Tubulanidae	Tubulanus pellucidus	1	Predator	<0.001	
Lease Area	072	Polychaeta	Ampharetidae	Ampharete arctica	1	Surface Deposit Feeder	0.004	
Lease Area	072	Polychaeta	Flabelligeridae	Pherusa affinis	2	Surface Deposit Feeder	0.032	
Lease Area	072	Polychaeta	Lumbrineridae	Lumbrineridae spp.	40	Omnivore/Scavenger	0.003	juvenile
Lease Area	072	Polychaeta	Lumbrineridae	Ninoe nigripes	9	Omnivore/Scavenger	0.079	
Lease Area	072	Polychaeta	Lumbrineridae	Scoletoma tenuis	11	Omnivore/Scavenger	0.012	
Lease Area	072	Polychaeta	Maldanidae	Clymenella torquata	18	Subsurface Deposit Feeder	0.734	
Lease Area	072	Polychaeta	Nephtyidae	Nephtys incisa	13	Omnivore/Scavenger	0.042	
Lease Area	072	Polychaeta	Oweniidae	Owenia fusiformis	8	Suspension Feeder	0.148	
Lease Area	072	Polychaeta	Paraonidae	Aricidea spp.	8	Surface Deposit Feeder	0.002	
Lease Area	072	Polychaeta	Paraonidae	Levinsenia gracilis	79	Subsurface Deposit Feeder	0.010	
Lease Area	072	Polychaeta	Syllidae	Exogone spp.	2	Omnivore/Scavenger	<0.001	
Lease Area	072	Polychaeta	Syllidae	Haplosyllis spongiphila	1	Omnivore/Scavenger	<0.001	
Lease Area	072	Polychaeta	Trichobranchidae	Terebellides stroemii	1	Subsurface Deposit Feeder	0.010	
Lease Area	072	Polychaeta	-	Polychaete Fragments	-	-	0.257	
Lease Area	072	Sipuncula	Golfingiidae	Phascolopsis gouldii	1	Surface Deposit Feeder	0.001	
Lease Area	074	Arthropoda	Ampeliscidae	Ampelisca spp.	191	Interface Feeder	0.601	
Lease Area	074	Arthropoda	Cancridae	Cancer irroratus	4	Predator	0.034	
Lease Area	074	Arthropoda	Caprellidae	Aeginina longicornis	1	Predator	0.004	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww) Comments
Lease Area	074	Arthropoda	Corophiidae	Corophium spp.	7	Interface Feeder	0.008
Lease Area	074	Arthropoda	Corophiidae	Leptocheirus pinguis	8	Interface Feeder	0.013
Lease Area	074	Arthropoda	Diastylidae	Diastylis quadrispinosa	2	Interface Feeder	0.014
Lease Area	074	Arthropoda	Ischyroceridae	Ericthonius spp.	3	Interface Feeder	0.005
Lease Area	074	Arthropoda	Leuconidae	Eudorella pusilla	23	Interface Feeder	0.006
Lease Area	074	Arthropoda	Lysianassidae	Lysianopsis alba	3	Omnivore/Scavenger	0.004
Lease Area	074	Arthropoda	Paguridae	Pagurus arcuatus	1	Omnivore/Scavenger	0.017
Lease Area	074	Arthropoda	Phoxocephalidae	Harpinia propinqua	3	Interface Feeder	0.002
Lease Area	074	Arthropoda	Unciolidae	Unciola spp.	6	Interface Feeder	0.009
Lease Area	074	Chordata	Molgulidae	Molgula manhattensis	2	Suspension Feeder	2.055
Lease Area	074	Cnidaria	Edwardsiidae	Edwardsia elegans	1	Suspension Feeder	0.028
Lease Area	074	Mollusca	Bivalvia	Mesodesma arctatum	38	Suspension Feeder	0.031
Lease Area	074	Mollusca	Bivalvia	Nucula proxima	610	Subsurface Deposit Feeder	0.316
Lease Area	074	Mollusca	Bivalvia	Periploma papyratium	6	Suspension Feeder	0.08
Lease Area	074	Mollusca	Bivalvia	Pitar morrhuanus	4	Suspension Feeder	0.303
Lease Area	074	Mollusca	Bivalvia	Thyasira gouldii	6	Suspension Feeder	0.052
Lease Area	074	Mollusca	Bivalvia	Yoldia limatula	2	Subsurface Deposit Feeder	0.104
Lease Area	074	Polychaeta	Lumbrineridae	Ninoe nigripes	9	Omnivore/Scavenger	0.018
Lease Area	074	Polychaeta	Lumbrineridae	Scoletoma tenuis	2	Omnivore/Scavenger	0.012
Lease Area	074	Polychaeta	Maldanidae	Clymenella torquata	14	Subsurface Deposit Feeder	0.997
Lease Area	074	Polychaeta	Nephtyidae	Nephtys incisa	40	Omnivore/Scavenger	0.12
Lease Area	074	Polychaeta	Oweniidae	Owenia fusiformis	3	Suspension Feeder	0.102
Lease Area	074	Polychaeta	Paraonidae	Levinsenia gracilis	23	Subsurface Deposit Feeder	0.008
Lease Area	074	Polychaeta	-	Polychaete Fragments	-	-	0.086
Lease Area	074	Sipuncula	Golfingiidae	Phascolopsis gouldii	1	Surface Deposit Feeder	<0.001
Lease Area	075	Arthropoda	Ampeliscidae	Ampelisca spp.	400	Interface Feeder	1.160
Lease Area	075	Arthropoda	Cancridae	Cancer irroratus	2	Predator	0.036
Lease Area	075	Arthropoda	Caprellidae	Aeginina longicornis	1	Predator	0.002
Lease Area	075	Arthropoda	Corophiidae	Corophium spp.	4	Interface Feeder	0.003

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww) Comments
Lease Area	075	Arthropoda	Corophiidae	Leptocheirus pinguis	36	Interface Feeder	0.217
Lease Area	075	Arthropoda	Corophiidae	Unciola spp.	16	Interface Feeder	0.028
Lease Area	075	Arthropoda	Diastylidae	Diastylis quadrispinosa	2	Interface Feeder	0.013
Lease Area	075	Arthropoda	Leuconidae	Eudorella pusilla	85	Interface Feeder	0.023
Lease Area	075	Arthropoda	Paguridae	Pagurus arcuatus	1	Omnivore/Scavenger	0.011
Lease Area	075	Arthropoda	Phoxocephalidae	Harpinia propinqua	21	Interface Feeder	0.006
Lease Area	075	Arthropoda	Phoxocephalidae	Phoxocephalus holbolli	2	Interface Feeder	<0.001
Lease Area	075	Arthropoda	Pontogeneiidae	Pontogeneia inermis	17	Interface Feeder	0.006
Lease Area	075	Arthropoda	-	Amphipoda spp.	8	Interface Feeder	0.001
Lease Area	075	Mollusca	Bivalvia	Mesodesma arctatum	47	Suspension Feeder	0.028
Lease Area	075	Mollusca	Bivalvia	Nucula proxima	1338	Subsurface Deposit Feeder	0.455
Lease Area	075	Mollusca	Bivalvia	Parvicardium pinnulatum	2	Suspension Feeder	0.010
Lease Area	075	Mollusca	Bivalvia	Periploma papyratium	9	Suspension Feeder	0.058
Lease Area	075	Mollusca	Bivalvia	Thyasira gouldii	10	Suspension Feeder	0.105
Lease Area	075	Mollusca	Bivalvia	Yoldia limatula	10	Subsurface Deposit Feeder	0.156
Lease Area	075	Mollusca	Gastropoda	Tritia trivittata	3	Omnivore/Scavenger	0.712
Lease Area	075	Nemertea	Tubulanidae	Tubulanus pellucidus	1	Predator	0.018
Lease Area	075	Polychaeta	Ampharetidae	Ampharete arctica	1	Surface Deposit Feeder	0.014
Lease Area	075	Polychaeta	Lumbrineridae	Ninoe nigripes	13	Omnivore/Scavenger	0.179
Lease Area	075	Polychaeta	Lumbrineridae	Scoletoma tenuis	4	Omnivore/Scavenger	0.025
Lease Area	075	Polychaeta	Maldanidae	Clymenella torquata	9	Subsurface Deposit Feeder	0.607
Lease Area	075	Polychaeta	Nephtyidae	Nephtys incisa	19	Omnivore/Scavenger	0.047
Lease Area	075	Polychaeta	Paraonidae	Levinsenia gracilis	57	Subsurface Deposit Feeder	0.012
Lease Area	075	Polychaeta	Trichobranchidae	Terebellides stroemii	1	Subsurface Deposit Feeder	0.061
Lease Area	075	Sipuncula	Golfingiidae	Phascolopsis gouldii	1	Surface Deposit Feeder	0.005
Lease Area	078	Arthropoda	Ampeliscidae	Ampelisca spp.	512	Interface Feeder	1.005
Lease Area	078	Arthropoda	Cancridae	Cancer irroratus	1	Predator	0.009
Lease Area	078	Arthropoda	Corophiidae	Corophium spp.	13	Interface Feeder	0.023
Lease Area	078	Arthropoda	Corophiidae	Leptocheirus pinguis	163	Interface Feeder	0.7062

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww) Comments
Lease Area	078	Arthropoda	Ischyroceridae	Ericthonius spp.	29	Interface Feeder	0.023
Lease Area	078	Arthropoda	Leuconidae	Eudorella pusilla	116	Interface Feeder	0.042
Lease Area	078	Arthropoda	Lysianassidae	Lysianopsis alba	21	Omnivore/Scavenger	0.010
Lease Area	078	Arthropoda	Phoxocephalidae	Harpinia propinqua	18	Interface Feeder	0.004
Lease Area	078	Arthropoda	Phoxocephalidae	Phoxocephalus holbolli	4	Interface Feeder	0.001
Lease Area	078	Arthropoda	Unciolidae	Unciola spp.	31	Interface Feeder	0.022
Lease Area	078	Mollusca	Bivalvia	Ameritella agilis	1	Subsurface Deposit Feeder	0.001
Lease Area	078	Mollusca	Bivalvia	Astarte castanea	1	Suspension Feeder	0.002
Lease Area	078	Mollusca	Bivalvia	Lucinoma filosa	1	Suspension Feeder	0.023
Lease Area	078	Mollusca	Bivalvia	Mesodesma arctatum	29	Suspension Feeder	0.010
Lease Area	078	Mollusca	Bivalvia	Nucula proxima	48	Subsurface Deposit Feeder	0.024
Lease Area	078	Mollusca	Bivalvia	Parvicardium pinnulatum	3	Suspension Feeder	0.002
Lease Area	078	Mollusca	Bivalvia	Periploma papyratium	8	Suspension Feeder	0.007
Lease Area	078	Mollusca	Bivalvia	Pitar morrhuanus	8	Suspension Feeder	0.010
Lease Area	078	Mollusca	Bivalvia	Yoldia sapotilla	5	Subsurface Deposit Feeder	0.003
Lease Area	078	Polychaeta	Ampharetidae	Ampharete arctica	1	Surface Deposit Feeder	0.002
Lease Area	078	Polychaeta	Glyceridae	Glycera capitata	4	Omnivore/Scavenger	0.047
Lease Area	078	Polychaeta	Lumbrineridae	Ninoe nigripes	8	Omnivore/Scavenger	0.076
Lease Area	078	Polychaeta	Lumbrineridae	Scoletoma tenuis	8	Omnivore/Scavenger	0.015
Lease Area	078	Polychaeta	Maldanidae	Clymenella torquata	4	Subsurface Deposit Feeder	0.042
Lease Area	078	Polychaeta	Nephtyidae	Nephtys picta	9	Omnivore/Scavenger	0.105
Lease Area	078	Polychaeta	Opheliidae	Ophelina acuminata	1	Subsurface Deposit Feeder	0.017
Lease Area	078	Polychaeta	Paraonidae	Levinsenia gracilis	10	Subsurface Deposit Feeder	<0.001
Lease Area	078	Polychaeta	Trichobranchidae	Terebellides stroemii	1	Subsurface Deposit Feeder	0.054
Lease Area	078	Polychaeta	-	Polychaete Fragments	-	-	0.845
Lease Area	081	Arthropoda	Ampeliscidae	Ampelisca spp.	384	Interface Feeder	1.105
Lease Area	081	Arthropoda	Anthuridae	Cyathura polita	1	Omnivore/Scavenger	<0.001
Lease Area	081	Arthropoda	Cancridae	Cancer irroratus	4	Predator	0.07
Lease Area	081	Arthropoda	Caprellidae	Aeginina longicornis	1	Predator	0.024

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww) Comments
Lease Area	081	Arthropoda	Caprellidae	Paracaprella tenuis	1	Predator	<0.001
Lease Area	081	Arthropoda	Corophiidae	Corophium spp.	11	Interface Feeder	0.008
Lease Area	081	Arthropoda	Corophiidae	Leptocheirus pinguis	167	Interface Feeder	1.315
Lease Area	081	Arthropoda	Diastylidae	Diastylis sculpta	3	Interface Feeder	0.009
Lease Area	081	Arthropoda	Gammaridae	Gammarus spp.	1	Interface Feeder	0.003
Lease Area	081	Arthropoda	Idoteidea	Edotia triloba	1	Omnivore/Scavenger	<0.001
Lease Area	081	Arthropoda	Ischyroceridae	Ericthonius spp.	60	Interface Feeder	0.069
Lease Area	081	Arthropoda	Leuconidae	Eudorella pusilla	84	Interface Feeder	0.052
Lease Area	081	Arthropoda	Lysianassidae	Lysianopsis alba	10	Omnivore/Scavenger	0.003
Lease Area	081	Arthropoda	Photidae	Photis spp.	5	Interface Feeder	<0.001
Lease Area	081	Arthropoda	Phoxocephalidae	Harpinia propinqua	49	Interface Feeder	0.015
Lease Area	081	Arthropoda	Phoxocephalidae	Phoxocephalus holbolli	3	Interface Feeder	0.003
Lease Area	081	Arthropoda	Unciolidae	Unciola spp.	56	Interface Feeder	0.089
Lease Area	081	Arthropoda	-	Amphipoda spp.	3	Interface Feeder	0.004
Lease Area	081	Chordata	Molgulidae	Molgula manhattensis	6	Suspension Feeder	2.631
Lease Area	081	Mollusca	Bivalvia	Mesodesma arctatum	67	Suspension Feeder	0.024
Lease Area	081	Mollusca	Bivalvia	Nucula proxima	124	Subsurface Deposit Feeder	0.072
Lease Area	081	Mollusca	Bivalvia	Parvicardium pinnulatum	3	Suspension Feeder	0.01
Lease Area	081	Mollusca	Bivalvia	Pitar morrhuanus	9	Suspension Feeder	0.013
Lease Area	081	Mollusca	Bivalvia	Thyasira gouldii	4	Suspension Feeder	0.01
Lease Area	081	Mollusca	Bivalvia	Yoldia spp.	2	Subsurface Deposit Feeder	<0.001
Lease Area	081	Mollusca	Gastropoda	Euspira triseriata	1	Predator	0.014
Lease Area	081	Polychaeta	Ampharetidae	Ampharete arctica	2	Surface Deposit Feeder	0.048
Lease Area	081	Polychaeta	Lumbrineridae	Ninoe nigripes	11	Omnivore/Scavenger	0.109
Lease Area	081	Polychaeta	Lumbrineridae	Scoletoma tenuis	3	Omnivore/Scavenger	0.006
Lease Area	081	Polychaeta	Maldanidae	Clymenella torquata	14	Subsurface Deposit Feeder	0.077
Lease Area	081	Polychaeta	Nephtyidae	Nephtys incisa	12	Omnivore/Scavenger	0.591
Lease Area	081	Polychaeta	Opheliidae	Ophelina acuminata	1	Subsurface Deposit Feeder	0.008
Lease Area	081	Polychaeta	Oweniidae	Owenia fusiformis	2	Suspension Feeder	0.043

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww) Comments
Lease Area	081	Polychaeta	Paraonidae	Levinsenia gracilis	13	Subsurface Deposit Feeder	<0.001
Lease Area	081	Polychaeta	Syllidae	Exogone spp.	1	Omnivore/Scavenger	<0.001
Lease Area	081	Polychaeta	-	Polychaete Fragments	-	-	0.518
Lease Area	084	Arthropoda	Ampeliscidae	Ampelisca spp.	347	Interface Feeder	0.564
Lease Area	084	Arthropoda	Caprellidae	Paracaprella tenuis	5	Predator	0.003
Lease Area	084	Arthropoda	Corophiidae	Corophium spp.	15	Interface Feeder	0.008
Lease Area	084	Arthropoda	Corophiidae	Leptocheirus pinguis	10	Interface Feeder	0.183
Lease Area	084	Arthropoda	Diastylidae	Diastylis quadrispinosa	4	Interface Feeder	0.026
Lease Area	084	Arthropoda	Diastylidae	Diastylis sculpta	7	Interface Feeder	0.024
Lease Area	084	Arthropoda	Ischyroceridae	Ericthonius spp.	26	Interface Feeder	0.012
Lease Area	084	Arthropoda	Leuconidae	Eudorella pusilla	65	Interface Feeder	0.024
Lease Area	084	Arthropoda	Lysianassidae	Lysianopsis alba	6	Omnivore/Scavenger	0.009
Lease Area	084	Arthropoda	Phoxocephalidae	Harpinia propinqua	12	Interface Feeder	0.008
Lease Area	084	Arthropoda	Phoxocephalidae	Phoxocephalus holbolli	5	Interface Feeder	0.001
Lease Area	084	Arthropoda	Pontogeneiidae	Pontogeneia inermis	3	Interface Feeder	<0.001
Lease Area	084	Arthropoda	Unciolidae	Unciola spp.	25	Interface Feeder	0.013
Lease Area	084	Mollusca	Bivalvia	Arctica islandica	2	Suspension Feeder	0.006
Lease Area	084	Mollusca	Bivalvia	Mesodesma arctatum	37	Suspension Feeder	0.017
Lease Area	084	Mollusca	Bivalvia	Nucula proxima	121	Subsurface Deposit Feeder	0.056
Lease Area	084	Mollusca	Bivalvia	Parvicardium pinnulatum	4	Suspension Feeder	0.005
Lease Area	084	Mollusca	Bivalvia	Periploma papyratium	13	Suspension Feeder	0.05
Lease Area	084	Mollusca	Bivalvia	Pitar morrhuanus	17	Suspension Feeder	0.076
Lease Area	084	Mollusca	Bivalvia	Thyasira gouldii	2	Suspension Feeder	0.011
Lease Area	084	Mollusca	Bivalvia	Yoldia limatula	1	Subsurface Deposit Feeder	0.011
Lease Area	084	Mollusca	Bivalvia	Yoldia sapotilla	7	Subsurface Deposit Feeder	0.004
Lease Area	084	Mollusca	Gastropoda	Haminella solitaria	1	Predator	<0.001
Lease Area	084	Nemertea	Tubulanidae	Tubulanus pellucidus	2	Predator	0.217
Lease Area	084	Oligochaeta	Oligochaeta	Oligochaeta spp.	20	Subsurface Deposit Feeder	0.002
Lease Area	084	Polychaeta	Ampharetidae	Ampharete arctica	2	Surface Deposit Feeder	0.03

Lease Area	084	Dalvahaata		Species	Count	Trophic Guild	(g ww)	Comments
		Polychaeta	Lumbrineridae	Ninoe nigripes	7	Omnivore/Scavenger	0.101	
Lease Area	084	Polychaeta	Maldanidae	Clymenella torquata	1	Subsurface Deposit Feeder	<0.001	
Lease Area	084	Polychaeta	Nephtyidae	Nephtys incisa	6	Omnivore/Scavenger	0.021	
Lease Area	084	Polychaeta	Nephtyidae	Nephtys picta	2	Omnivore/Scavenger	0.002	
Lease Area	084	Polychaeta	Paraonidae	Aricidea spp.	2	Surface Deposit Feeder	<0.001	
Lease Area	084	Polychaeta	Paraonidae	Levinsenia gracilis	25	Subsurface Deposit Feeder	0.005	
Lease Area	084	Polychaeta	-	Polychaete Fragments	-	-	0.024	
Lease Area	087	Arthropoda	Ampeliscidae	Ampelisca spp.	155	Interface Feeder	0.251	
Lease Area	087	Arthropoda	Cancridae	Cancer irroratus	1	Predator	0.007	
Lease Area	087	Arthropoda	Corophiidae	Corophium spp.	12	Interface Feeder	0.020	
Lease Area	087	Arthropoda	Corophiidae	Leptocheirus pinguis	4	Interface Feeder	0.034	
Lease Area	087	Arthropoda	Diastylidae	Diastylis sculpta	1	Interface Feeder	<0.001	
Lease Area	087	Arthropoda	Leuconidae	Eudorella pusilla	12	Interface Feeder	0.010	
Lease Area	087	Arthropoda	Lysianassidae	Lysianopsis alba	6	Omnivore/Scavenger	0.006	
Lease Area	087	Arthropoda	Photidae	Photis spp.	2	Interface Feeder	<0.001	
Lease Area	087	Arthropoda	Phoxocephalidae	Rhepoxynius epistomus	3	Interface Feeder	0.002	
Lease Area	087	Arthropoda	Unciolidae	Unciola spp.	3	Interface Feeder	0.011	
Lease Area	087	Cnidaria	Halcampidae	Halcampa duodecimcirrata	1	Predator	0.001	
Lease Area	087	Mollusca	Bivalvia	Arctica islandica	2	Suspension Feeder	0.006	
Lease Area	087	Mollusca	Bivalvia	Mesodesma arctatum	11	Suspension Feeder	0.005	
Lease Area	087	Mollusca	Bivalvia	Nucula proxima	81	Subsurface Deposit Feeder	0.052	
Lease Area	087	Mollusca	Bivalvia	Periploma papyratium	3	Suspension Feeder	0.007	
Lease Area	087	Mollusca	Bivalvia	Pitar morrhuanus	15	Suspension Feeder	0.024	
Lease Area	087	Mollusca	Bivalvia	Thyasira gouldii	1	Suspension Feeder	0.001	
Lease Area	087	Mollusca	Bivalvia	Yoldia sapotilla	3	Subsurface Deposit Feeder	0.060	
Lease Area	087	Mollusca	Gastropoda	Frigidoalvania carinata	3	Predator	0.005	
Lease Area	087	Oligochaeta	Oligochaeta	Oligochaeta spp.	3	Subsurface Deposit Feeder	<0.001	
Lease Area	087	Polychaeta	Ampharetidae	Ampharete arctica	1	Surface Deposit Feeder	0.024	
Lease Area	087	Polychaeta	Cossuridae	Cossura longocirrata	5	Subsurface Deposit Feeder	<0.001	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww) Com	ments
Lease Area	087	Polychaeta	Flabelligeridae	Pherusa affinis	2	Surface Deposit Feeder	0.26	
Lease Area	087	Polychaeta	Lumbrineridae	Ninoe nigripes	16	Omnivore/Scavenger	0.172	
Lease Area	087	Polychaeta	Nephtyidae	Nephtys incisa	5	Omnivore/Scavenger	0.008	
Lease Area	087	Polychaeta	Opheliidae	Ophelina acuminata	1	Subsurface Deposit Feeder	0.005	
Lease Area	087	Polychaeta	Paraonidae	Aricidea spp.	1	Surface Deposit Feeder	<0.001	
Lease Area	087	Polychaeta	Paraonidae	Levinsenia gracilis	5	Subsurface Deposit Feeder	0.001	
Lease Area	087	Polychaeta	-	Polychaete Fragments	-	-	0.074	
Lease Area	097	Arthropoda	Ampeliscidae	Ampelisca spp.	184	Interface Feeder	0.519	
Lease Area	097	Arthropoda	Corophiidae	Corophium spp.	5	Interface Feeder	0.007	
Lease Area	097	Arthropoda	Corophiidae	Leptocheirus pinguis	4	Interface Feeder	0.007	
Lease Area	097	Arthropoda	Diastylidae	Diastylis quadrispinosa	1	Interface Feeder	0.006	
Lease Area	097	Arthropoda	Ischyroceridae	Ericthonius spp.	7	Interface Feeder	0.005	
Lease Area	097	Arthropoda	Leuconidae	Eudorella pusilla	9	Interface Feeder	0.005	
Lease Area	097	Arthropoda	Phoxocephalidae	Harpinia propinqua	14	Interface Feeder	0.005	
Lease Area	097	Arthropoda	Unciolidae	Unciola spp.	3	Interface Feeder	0.006	
Lease Area	097	Mollusca	Bivalvia	Arctica islandica	11	Suspension Feeder	0.009	
Lease Area	097	Mollusca	Bivalvia	Nucula proxima	85	Subsurface Deposit Feeder	0.054	
Lease Area	097	Mollusca	Bivalvia	Periploma papyratium	8	Suspension Feeder	0.008	
Lease Area	097	Mollusca	Bivalvia	Pitar morrhuanus	4	Suspension Feeder	0.026	
Lease Area	097	Mollusca	Bivalvia	Yoldia sapotilla	5	Subsurface Deposit Feeder	0.007	
Lease Area	097	Mollusca	Gastropoda	Frigidoalvania carinata	4	Predator	0.004	
Lease Area	097	Polychaeta	Arabellidae	Drilonereis longa	2	Predator	0.013	
Lease Area	097	Polychaeta	Goniadidae	Goniada maculata	1	Predator	0.022	
Lease Area	097	Polychaeta	Lumbrineridae	Ninoe nigripes	21	Omnivore/Scavenger	0.173	
Lease Area	097	Polychaeta	Lumbrineridae	Scoletoma tenuis	4	Omnivore/Scavenger	0.004	
Lease Area	097	Polychaeta	Maldanidae	Clymenella torquata	4	Subsurface Deposit Feeder	0.081	
Lease Area	097	Polychaeta	Nephtyidae	Nephtys incisa	7	Omnivore/Scavenger	0.049	
Lease Area	097	Polychaeta	Opheliidae	Ophelina acuminata	1	Subsurface Deposit Feeder	0.011	
Lease Area	097	Polychaeta	Paraonidae	Levinsenia gracilis	37	Subsurface Deposit Feeder	0.003	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
Lease Area	097	Polychaeta	Phyllodocidae	Phyllodocidae spp.	1	Predator	0.001	
Lease Area	097	Polychaeta	-	Polychaete Fragments	-	-	0.745	
Lease Area	099	Arthropoda	Ampeliscidae	Ampelisca spp.	725	Interface Feeder	1.132	
Lease Area	099	Arthropoda	Anthuridae	Cyathura polita	1	Omnivore/Scavenger	<0.001	
Lease Area	099	Arthropoda	Caprellidae	Paracaprella tenuis	1	Predator	<0.001	
Lease Area	099	Arthropoda	Corophiidae	Corophium spp.	57	Interface Feeder	0.026	
Lease Area	099	Arthropoda	Corophiidae	Leptocheirus pinguis	25	Interface Feeder	0.279	
Lease Area	099	Arthropoda	Diastylidae	Diastylis quadrispinosa	2	Interface Feeder	0.009	
Lease Area	099	Arthropoda	Diastylidae	Diastylis sculpta	5	Interface Feeder	0.007	
Lease Area	099	Arthropoda	Idoteidea	Edotia triloba	1	Omnivore/Scavenger	0.001	
Lease Area	099	Arthropoda	Ischyroceridae	Ericthonius spp.	36	Interface Feeder	0.019	
Lease Area	099	Arthropoda	Leuconidae	Eudorella pusilla	67	Interface Feeder	0.02	
Lease Area	099	Arthropoda	Lysianassidae	Lysianopsis alba	9	Omnivore/Scavenger	0.007	
Lease Area	099	Arthropoda	Phoxocephalidae	Harpinia propinqua	63	Interface Feeder	0.033	
Lease Area	099	Arthropoda	Phoxocephalidae	Rhepoxynius epistomus	7	Interface Feeder	0.005	
Lease Area	099	Arthropoda	Unciolidae	Unciola spp.	37	Interface Feeder	0.145	
Lease Area	099	Chordata	Molgulidae	Molgula manhattensis	1	Suspension Feeder	0.217	
Lease Area	099	Echinodermata	Amphiuridae	Amphipholis squamata	5	Predator	0.01	
Lease Area	099	Mollusca	Bivalvia	Arctica islandica	3	Suspension Feeder	0.144	
Lease Area	099	Mollusca	Bivalvia	Lucinoma filosa	1	Suspension Feeder	0.027	
Lease Area	099	Mollusca	Bivalvia	Mesodesma arctatum	9	Suspension Feeder	0.004	
Lease Area	099	Mollusca	Bivalvia	Nucula proxima	152	Subsurface Deposit Feeder	0.089	
Lease Area	099	Mollusca	Bivalvia	Parvicardium pinnulatum	6	Suspension Feeder	0.003	
Lease Area	099	Mollusca	Bivalvia	Periploma papyratium	6	Suspension Feeder	0.011	
Lease Area	099	Mollusca	Bivalvia	Pitar morrhuanus	13	Suspension Feeder	0.0022	
Lease Area	099	Mollusca	Bivalvia	Thyasira gouldii	2	Suspension Feeder	0.001	
Lease Area	099	Mollusca	Bivalvia	Yoldia sapotilla	9	Subsurface Deposit Feeder	0.004	juvenile
Lease Area	099	Mollusca	Gastropoda	Colus pygmaeus	2	Omnivore/Scavenger	0.924	
Lease Area	099	Nemertea	Amphiporidae	Amphiporus angulatus	1	Predator	0.019	

Lesse Area 099 Polychaeta Ampharetde arcica 1 Surface Deposit Feeder 0.013 Lesse Area 099 Polychaeta Glyceridae Glyceridae spp. 1 Omnivore/Scavenger 0.009 Lesse Area 099 Polychaeta Lumbrineridae Glyceridae spp. 1 Omnivore/Scavenger 0.007 Lesse Area 099 Polychaeta Lumbrineridae Scoletoma tenus 2 Omnivore/Scavenger 0.007 Lesse Area 099 Polychaeta Nephtylade Nephtylae Nephtylae	Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
Lease Area 099 Polychaeta Glyceridae Olyceridae spp. 1 Omnivore/Scavenger 0.004 damaged Lease Area 099 Polychaeta Lumbrineridae Ninnon Ingripes 10 Omnivore/Scavenger 0.012 Lease Area 099 Polychaeta Lumbrineridae Scoletona tenuls 2 Omnivore/Scavenger 0.007 Lease Area 099 Polychaeta Maldanidae Clymenella torquata 7 Subsurface Deposit Feeder 0.035 Lease Area 099 Polychaeta Nephtyidae Nephtys incisa 11 Omnivore/Scavenger 0.001 Lease Area 099 Polychaeta Nephtysidae Nephtys incisa 11 Omnivore/Scavenger 0.001 Lease Area 099 Polychaeta Nephtysidae Nephtysincisa 11 Omnivore/Scavenger 0.002 Lease Area 099 Polychaeta Paraonidae Levinenia graciis 47 Subsurface Deposit Feeder 0.002 Lease Area 102 Arthropoda Ampleiscida	Lease Area	099	Polychaeta	Ampharetidae	Ampharete arctica	1	Surface Deposit Feeder	0.013	
Lease Area 099 Polychaeta Lumbrineridae Ninoe nigripes 10 Omnivore/Scavenger 0.192 Lease Area 099 Polychaeta Lumbrineridae Scoletoma tenuis 2 Omnivore/Scavenger 0.007 Lease Area 099 Polychaeta Nephtydae Nephtys aeca 1 Omnivore/Scavenger 0.001 Lease Area 099 Polychaeta Nephtyidae Nephtys incisa 11 Omnivore/Scavenger 0.0774 Lease Area 099 Polychaeta Ophelidae Ophelina acuminata 1 Subsurface Deposit Feeder 0.002 Lease Area 099 Polychaeta Paracnidae Levinseria graciils 47 Subsurface Deposit Feeder 0.007 Lease Area 099 Polychaeta - Polychaeta Fragments - 0.021 Lease Area 102 Arthropoda Amplitoidae Amplitoidae Amplitoidae Opmadusa compta 10 Interface Feeder 0.015 Lease Area 102 Arthropoda Caprellidae	Lease Area	099	Polychaeta	Glyceridae	Glycera capitata	1	Omnivore/Scavenger	0.009	
Lease Area 099 Polychaeta Lumbrineridae Scoletora tenuis 2 Omnivore/Scavenger 0.007 Lease Area 099 Polychaeta Maldanidae Clymenella torquata 7 Subsurface Deposit Feeder 0.035 Lease Area 099 Polychaeta Nephtyidae Nephtys aceca 1 Omnivore/Scavenger 0.001 Lease Area 099 Polychaeta Ophelidae Ophelina acuminata 1 Subsurface Deposit Feeder 0.002 Lease Area 099 Polychaeta Paraonidae Levinsenia gracilis 47 Subsurface Deposit Feeder 0.007 Lease Area 099 Polychaeta - Paraonidae Levinsenia gracilis 47 Subsurface Deposit Feeder 0.007 Lease Area 102 Arthropoda Ampeliscidae Ampelisca spp. 240 Interface Feeder 0.783 Lease Area 102 Arthropoda Ampeliscidae Ampelisca spp. 10 Interface Feeder 0.015 Lease Area 102 Arthropoda Caprellidae	Lease Area	099	Polychaeta	Glyceridae	Glyceridae spp.	1	Omnivore/Scavenger	0.004	damaged
Lease Area099PolychaetaMaldanidaeClymenella torquata7Subsurface Deposit Feeder0.035Lease Area099PolychaetaNephtyidaeNephtys caeca1Omnivore/Scavenger0.001Lease Area099PolychaetaNephtyidaeNephtys incisa11Omnivore/Scavenger0.774Lease Area099PolychaetaOphellinaUphellina acuminata1Subsurface Deposit Feeder0.002Lease Area099PolychaetaParaonidaeLevinsenia gracilis47Subsurface Deposit Feeder0.007Lease Area099Polychaeta-Polychaeta Fragments0.219Lease Area102ArthropodaAmpeliscidaeAmpelisca spp.240Interface Feeder0.783Lease Area102ArthropodaAmthribidaeCymadusa compta10Interface Feeder0.015Lease Area102ArthropodaAnthribidaePilianthura tenuis1Omnivore/Scavenger0.005Lease Area102ArthropodaCorophilidaeParacaprella tenuis1Predator0.005Lease Area102ArthropodaCorophilidaeCorophilim spp.14Interface Feeder0.005Lease Area102ArthropodaDiastylidaeDiastylis quadrispinosa1Interface Feeder0.007Lease Area102ArthropodaDiastylidaeDiastylis sculpta2Interface Feeder0.001Lease Area10	Lease Area	099	Polychaeta	Lumbrineridae	Ninoe nigripes	10	Omnivore/Scavenger	0.192	
Lease Area099PolychaettaNephtyidaeNephtys aeca1Omnivore/Scavenger0.001Lease Area099PolychaetaNephtyidaeNephtys incisa11Omnivore/Scavenger0.774Lease Area099PolychaetaOphelidaeOphelina acuminala1Subsurface Deposit Feeder0.002Lease Area099PolychaetaParaonidaeLevinsenia graciiis47Subsurface Deposit Feeder0.007Lease Area099Polychaeta-Polychaete Fragments0.219Lease Area102ArthropodaAmpeliscidaeAmpelisca spp.240Interface Feeder0.0783Lease Area102ArthropodaAmpithoidaeCyrnadusa compta10Interface Feeder0.015Lease Area102ArthropodaCaprellidaeParacaprella tenuis1Omnivore/Scavenger0.005Lease Area102ArthropodaCaprellidaeParacaprella tenuis1Predator<0.001	Lease Area	099	Polychaeta	Lumbrineridae	Scoletoma tenuis	2	Omnivore/Scavenger	0.007	
Lease Area099PolychaetaNephtyldaeNephtys incisa11Omnivore/Scavenger0.774Lease Area099PolychaetaOphellidaeOphellina acuminata1Subsurface Deposit Feeder0.002Lease Area099PolychaetaParaonidaeLevinsenia gracilis47Subsurface Deposit Feeder0.007Lease Area109Polychaeta-Polychaete Fragments0.219Lease Area102ArthropodaAmpeliscidaeAmpelisca spp.240Interface Feeder0.078Lease Area102ArthropodaAmpithoidaeCymadusa compta10Interface Feeder0.015Lease Area102ArthropodaAnthuridaePilanthura tenuis1Omnivore/Scavenger0.005Lease Area102ArthropodaCaprellidaeParacaprella tenuis1Predator<0.001	Lease Area	099	Polychaeta	Maldanidae	Clymenella torquata	7	Subsurface Deposit Feeder	0.035	
Lease Area099PolychaetaOphellidaeOphellina acuminata1Subsurface Deposit Feeder0.002Lease Area099PolychaetaParaonidaeLevinsenia gracilis47Subsurface Deposit Feeder0.007Lease Area099Polychaeta-Polychaete Fragments0.219Lease Area102ArthropodaAmpeliscidaeAmpelisca spp.240Interface Feeder0.783Lease Area102ArthropodaAmpithoidaeCymadusa compta10Interface Feeder0.015Lease Area102ArthropodaAnthuridaePtilanthura tenuis1Omnivore/Scavenger0.005Lease Area102ArthropodaCorphilidaeParacaprella tenuis1Predator0.001Lease Area102ArthropodaCorophiidaeCorophium spp.14Interface Feeder0.005Lease Area102ArthropodaDiastylidaeDiastylis quadrispinosa1Interface Feeder0.009Lease Area102ArthropodaDiastylidaeDiastylis sculpta2Interface Feeder0.007Lease Area102ArthropodaIschyroceridaeEricthonius spp.24Interface Feeder0.016Lease Area102ArthropodaPontogeneiidaePontogeneia inermis1Interface Feeder<0.001	Lease Area	099	Polychaeta	Nephtyidae	Nephtys caeca	1	Omnivore/Scavenger	0.001	
Lease Area099PolychaetaParaonidaeLevinsenia gracilis47Subsurface Deposit Feeder0.007Lease Area099Polychaeta-Polychaete Fragments0.219Lease Area102ArthropodaAmpeliscidaeAmpelisca spp.240Interface Feeder0.783Lease Area102ArthropodaAmpithoidaeCymadusa compta10Interface Feeder0.015Lease Area102ArthropodaAnthuridaePtilanthura tenuis1Omnivore/Scavenger0.005Lease Area102ArthropodaCaprellidaeParacaprella tenuis1Predator<0.001	Lease Area	099	Polychaeta	Nephtyidae	Nephtys incisa	11	Omnivore/Scavenger	0.774	
Lease Area099Polychaeta-Polychaete Fragments0.219Lease Area102ArthropodaAmpeliscidaeAmpelisca spp.240Interface Feeder0.783Lease Area102ArthropodaAmpithoidaeCymadusa compta10Interface Feeder0.015Lease Area102ArthropodaAnthuridaePtilanthura tenuis1Omnivore/Scavenger0.005Lease Area102ArthropodaCaprellidaeParacaprella tenuis1Predator<0.001	Lease Area	099	Polychaeta	Opheliidae	Ophelina acuminata	1	Subsurface Deposit Feeder	0.002	
Lease Area102ArthropodaAmpeliscidaeAmpelisca spp.240Interface Feeder0.783Lease Area102ArthropodaAmpithoidaeCymadusa compta10Interface Feeder0.015Lease Area102ArthropodaAnthuridaePtilanthura tenuis1Omnivore/Scavenger0.005Lease Area102ArthropodaCaprellidaeParacaprella tenuis1Predator<0.001	Lease Area	099	Polychaeta	Paraonidae	Levinsenia gracilis	47	Subsurface Deposit Feeder	0.007	
Lease Area 102 Arthropoda Ampithoidae Cymadusa compta 10 Interface Feeder 0.015 Lease Area 102 Arthropoda Anthuridae Pilanthura tenuis 1 Omnivore/Scavenger 0.005 Lease Area 102 Arthropoda Caprellidae Paracaprella tenuis 1 Predator <0.001 Lease Area 102 Arthropoda Corophiidae Corophium spp. 14 Interface Feeder 0.005 Lease Area 102 Arthropoda Corophiidae Leptocheirus pinguis 11 Interface Feeder 0.020 Lease Area 102 Arthropoda Diastylidae Diastylis quadrispinosa 1 Interface Feeder 0.009 Lease Area 102 Arthropoda Diastylidae Diastylis sculpta 2 Interface Feeder 0.007 Lease Area 102 Arthropoda Ischyroceridae Ericthonius spp. 24 Interface Feeder 0.010 Lease Area 102 Arthropoda Leuconidae Eudorella pusilla 22 Interface Feeder 0.016 Lease Area 102 Arthropoda Hoxocephalidae Harpinia propinqua 4 Interface Feeder 0.001 Lease Area 102 Arthropoda Phoxocephalidae Harpinia propinqua 4 Interface Feeder 0.001 Lease Area 102 Arthropoda Pontogeneiidae Pontogeneia inermis 1 Interface Feeder 0.001 Lease Area 102 Arthropoda Unciolidae Unciola spp. 7 Interface Feeder 0.034 Lease Area 102 Arthropoda - Amphipoda spp. 205 Interface Feeder 0.023 Lease Area 102 Arthropoda - Brachyura spp. 2 - 0.013 Lease Area 102 Echinodermata - 0.001 Lease Area 102 Mollusca Bivalvia Arctica islandica 16 Suspension Feeder 0.0021	Lease Area	099	Polychaeta	-	Polychaete Fragments	-	-	0.219	
Lease Area102ArthropodaAnthuridaePtilanthura tenuis1Omnivore/Scavenger0.005Lease Area102ArthropodaCaprellidaeParacaprella tenuis1Predator<0.001	Lease Area	102	Arthropoda	Ampeliscidae	Ampelisca spp.	240	Interface Feeder	0.783	
Lease Area 102 Arthropoda Caprellidae Paracaprella tenuis 1 Predator <0.001 Lease Area 102 Arthropoda Corophiidae Corophium spp. 14 Interface Feeder 0.005 Lease Area 102 Arthropoda Corophiidae Leptocheirus pinguis 11 Interface Feeder 0.020 Lease Area 102 Arthropoda Diastylidae Diastylis quadrispinosa 1 Interface Feeder 0.009 Lease Area 102 Arthropoda Diastylidae Diastylis sculpta 2 Interface Feeder 0.007 Lease Area 102 Arthropoda Ischyroceridae Ericthonius spp. 24 Interface Feeder 0.010 Lease Area 102 Arthropoda Leuconidae Eudorella pusilla 22 Interface Feeder 0.016 Lease Area 102 Arthropoda Phoxocephalidae Harpinia propinqua 4 Interface Feeder <0.001 Lease Area 102 Arthropoda Pontogeneiidae Pontogeneia inermis 1 Interface Feeder <0.001 Lease Area 102 Arthropoda Unciolidae Unciola spp. 7 Interface Feeder 0.034 Lease Area 102 Arthropoda - Amphipoda spp. 205 Interface Feeder 0.023 Lease Area 102 Arthropoda - Brachyura spp. 2 - 0.013 Lease Area 102 Arthropoda - Brachyura spp. 1 - 0.001 Lease Area 102 Arthropoda - Brachyura spp. 2 - 0.001 Lease Area 102 Arthropoda - Brachyura spp. 1 - 0.001 Lease Area 102 Bivalvia Arctica islandica 16 Suspension Feeder 0.004	Lease Area	102	Arthropoda	Ampithoidae	Cymadusa compta	10	Interface Feeder	0.015	
Lease Area 102 Arthropoda Corophiidae Corophium spp. 14 Interface Feeder 0.005 Lease Area 102 Arthropoda Corophiidae Leptocheirus pinguis 11 Interface Feeder 0.020 Lease Area 102 Arthropoda Diastylidae Diastylis quadrispinosa 1 Interface Feeder 0.009 Lease Area 102 Arthropoda Diastylidae Diastylis sculpta 2 Interface Feeder 0.007 Lease Area 102 Arthropoda Ischyroceridae Ericthonius spp. 24 Interface Feeder 0.010 Lease Area 102 Arthropoda Leuconidae Eudorella pusilla 22 Interface Feeder 0.016 Lease Area 102 Arthropoda Phoxocephalidae Harpinia propinqua 4 Interface Feeder 0.001 Lease Area 102 Arthropoda Pontogeneiidae Pontogeneia inermis 1 Interface Feeder 0.001 Lease Area 102 Arthropoda Unciolidae Unciola spp. 7 Interface Feeder 0.034 Lease Area 102 Arthropoda - Amphipoda spp. 205 Interface Feeder 0.023 Lease Area 102 Arthropoda - Brachyura spp. 2 - 0.013 Lease Area 102 Echinodermata - Ophiuroidea spp. 1 - 0.001 Lease Area 102 Echinodermata - Ophiuroidea spp. 1 - 0.001	Lease Area	102	Arthropoda	Anthuridae	Ptilanthura tenuis	1	Omnivore/Scavenger	0.005	
Lease Area 102 Arthropoda Corophiidae Leptocheirus pinguis 11 Interface Feeder 0.020 Lease Area 102 Arthropoda Diastylidae Diastylis quadrispinosa 1 Interface Feeder 0.009 Lease Area 102 Arthropoda Diastylidae Diastylis sculpta 2 Interface Feeder 0.007 Lease Area 102 Arthropoda Ischyroceridae Ericthonius spp. 24 Interface Feeder 0.010 Lease Area 102 Arthropoda Leuconidae Eudorella pusilla 22 Interface Feeder 0.016 Lease Area 102 Arthropoda Phoxocephalidae Harpinia propinqua 4 Interface Feeder <0.001 Lease Area 102 Arthropoda Pontogeneiidae Pontogeneia inermis 1 Interface Feeder <0.001 Lease Area 102 Arthropoda Unciolidae Unciola spp. 7 Interface Feeder 0.034 Lease Area 102 Arthropoda - Amphipoda spp. 205 Interface Feeder 0.023 Lease Area 102 Arthropoda - Brachyura spp. 2 - 0.013 Lease Area 102 Echinodermata - Ophiuroidea spp. 1 - 0.001 Lease Area 102 Mollusca Bivalvia Arctica islandica 16 Suspension Feeder 0.042	Lease Area	102	Arthropoda	Caprellidae	Paracaprella tenuis	1	Predator	<0.001	
Lease Area102ArthropodaDiastylidaeDiastylis quadrispinosa1Interface Feeder0.009Lease Area102ArthropodaDiastylidaeDiastylis sculpta2Interface Feeder0.007Lease Area102ArthropodaIschyroceridaeEricthonius spp.24Interface Feeder0.010Lease Area102ArthropodaLeuconidaeEudorella pusilla22Interface Feeder0.016Lease Area102ArthropodaPhoxocephalidaeHarpinia propinqua4Interface Feeder<0.001	Lease Area	102	Arthropoda	Corophiidae	Corophium spp.	14	Interface Feeder	0.005	
Lease Area 102 Arthropoda Diastylidae Diastylis sculpta 2 Interface Feeder 0.007 Lease Area 102 Arthropoda Ischyroceridae Ericthonius spp. 24 Interface Feeder 0.010 Lease Area 102 Arthropoda Leuconidae Eudorella pusilla 22 Interface Feeder 0.016 Lease Area 102 Arthropoda Phoxocephalidae Harpinia propinqua 4 Interface Feeder <0.001 Lease Area 102 Arthropoda Pontogeneiidae Pontogeneia inermis 1 Interface Feeder <0.001 Lease Area 102 Arthropoda Unciolidae Unciola spp. 7 Interface Feeder 0.034 Lease Area 102 Arthropoda - Amphipoda spp. 205 Interface Feeder 0.023 Lease Area 102 Arthropoda - Brachyura spp. 2 - 0.013 Lease Area 102 Echinodermata - Ophiuroidea spp. 1 - 0.001 Lease Area 102 Mollusca Bivalvia Arctica islandica 16 Suspension Feeder 0.042	Lease Area	102	Arthropoda	Corophiidae	Leptocheirus pinguis	11	Interface Feeder	0.020	
Lease Area 102 Arthropoda Ischyroceridae Ericthonius spp. 24 Interface Feeder 0.010 Lease Area 102 Arthropoda Leuconidae Eudorella pusilla 22 Interface Feeder 0.016 Lease Area 102 Arthropoda Phoxocephalidae Harpinia propinqua 4 Interface Feeder <0.001 Lease Area 102 Arthropoda Pontogeneiidae Pontogeneia inermis 1 Interface Feeder <0.001 Lease Area 102 Arthropoda Unciolidae Unciola spp. 7 Interface Feeder 0.034 Lease Area 102 Arthropoda - Amphipoda spp. 205 Interface Feeder 0.023 Lease Area 102 Arthropoda - Brachyura spp. 2 - 0.013 Lease Area 102 Echinodermata - Ophiuroidea spp. 1 - 0.001 Lease Area 102 Mollusca Bivalvia Arctica islandica 16 Suspension Feeder 0.042	Lease Area	102	Arthropoda	Diastylidae	Diastylis quadrispinosa	1	Interface Feeder	0.009	
Lease Area 102 Arthropoda Leuconidae Eudorella pusilla 22 Interface Feeder 0.016 Lease Area 102 Arthropoda Phoxocephalidae Harpinia propinqua 4 Interface Feeder <0.001 Lease Area 102 Arthropoda Pontogeneiidae Pontogeneia inermis 1 Interface Feeder <0.001 Lease Area 102 Arthropoda Unciolidae Unciola spp. 7 Interface Feeder 0.034 Lease Area 102 Arthropoda - Amphipoda spp. 205 Interface Feeder 0.023 Lease Area 102 Arthropoda - Brachyura spp. 2 - 0.013 Lease Area 102 Echinodermata - Ophiuroidea spp. 1 - 0.001 Lease Area 102 Mollusca Bivalvia Arctica islandica 16 Suspension Feeder 0.042	Lease Area	102	Arthropoda	Diastylidae	Diastylis sculpta	2	Interface Feeder	0.007	
Lease Area102ArthropodaPhoxocephalidaeHarpinia propinqua4Interface Feeder<0.001Lease Area102ArthropodaPontogeneiidaePontogeneia inermis1Interface Feeder<0.001	Lease Area	102	Arthropoda	Ischyroceridae	Ericthonius spp.	24	Interface Feeder	0.010	
Lease Area102ArthropodaPontogeneiidaePontogeneia inermis1Interface Feeder<0.001Lease Area102ArthropodaUnciolidaeUnciola spp.7Interface Feeder0.034Lease Area102Arthropoda-Amphipoda spp.205Interface Feeder0.023Lease Area102Arthropoda-Brachyura spp.2-0.013Lease Area102Echinodermata-Ophiuroidea spp.1-0.001Lease Area102MolluscaBivalviaArctica islandica16Suspension Feeder0.042	Lease Area	102	Arthropoda	Leuconidae	Eudorella pusilla	22	Interface Feeder	0.016	
Lease Area102ArthropodaUnciolidaeUnciola spp.7Interface Feeder0.034Lease Area102Arthropoda-Amphipoda spp.205Interface Feeder0.023Lease Area102Arthropoda-Brachyura spp.2-0.013Lease Area102Echinodermata-Ophiuroidea spp.1-0.001Lease Area102MolluscaBivalviaArctica islandica16Suspension Feeder0.042	Lease Area	102	Arthropoda	Phoxocephalidae	Harpinia propinqua	4	Interface Feeder	<0.001	
Lease Area102Arthropoda-Amphipoda spp.205Interface Feeder0.023Lease Area102Arthropoda-Brachyura spp.2-0.013Lease Area102Echinodermata-Ophiuroidea spp.1-0.001Lease Area102MolluscaBivalviaArctica islandica16Suspension Feeder0.042	Lease Area	102	Arthropoda	Pontogeneiidae	Pontogeneia inermis	1	Interface Feeder	<0.001	
Lease Area102Arthropoda-Brachyura spp.2-0.013Lease Area102Echinodermata-Ophiuroidea spp.1-0.001Lease Area102MolluscaBivalviaArctica islandica16Suspension Feeder0.042	Lease Area	102	Arthropoda	Unciolidae	Unciola spp.	7	Interface Feeder	0.034	
Lease Area 102 Echinodermata - Ophiuroidea spp. 1 - 0.001 Lease Area 102 Mollusca Bivalvia Arctica islandica 16 Suspension Feeder 0.042	Lease Area	102	Arthropoda	-	Amphipoda spp.	205	Interface Feeder	0.023	
Lease Area 102 Mollusca Bivalvia Arctica islandica 16 Suspension Feeder 0.042	Lease Area	102	Arthropoda	-	Brachyura spp.	2	-	0.013	
·	Lease Area	102	Echinodermata	-	Ophiuroidea spp.	1	-	0.001	
Lease Area 102 Mollusca Bivalvia <i>Mesodesma arctatum</i> 10 Suspension Feeder 0.004	Lease Area	102	Mollusca	Bivalvia	Arctica islandica	16	Suspension Feeder	0.042	
	Lease Area	102	Mollusca	Bivalvia	Mesodesma arctatum	10	Suspension Feeder	0.004	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww) Comm	ients
Lease Area	102	Mollusca	Bivalvia	Nucula proxima	240	Subsurface Deposit Feeder	0.081	
Lease Area	102	Mollusca	Bivalvia	Parvicardium pinnulatum	4	Suspension Feeder	0.003	
Lease Area	102	Mollusca	Bivalvia	Periploma papyratium	18	Suspension Feeder	0.028	
Lease Area	102	Mollusca	Bivalvia	Pitar morrhuanus	15	Suspension Feeder	0.052	
Lease Area	102	Mollusca	Bivalvia	Thyasira gouldii	10	Suspension Feeder	0.017	
Lease Area	102	Mollusca	Bivalvia	Yoldia sapotilla	4	Subsurface Deposit Feeder	0.009	
Lease Area	102	Mollusca	Gastropoda	Frigidoalvania carinata	27	Predator	0.038	
Lease Area	102	Polychaeta	Lumbrineridae	Ninoe nigripes	7	Omnivore/Scavenger	0.121	
Lease Area	102	Polychaeta	Lumbrineridae	Scoletoma tenuis	8	Omnivore/Scavenger	0.025	
Lease Area	102	Polychaeta	Maldandiae	Clymenella torquata	7	Subsurface Deposit Feeder	0.042	
Lease Area	102	Polychaeta	Nephtyidae	Nephtys incisa	10	Omnivore/Scavenger	0.049	
Lease Area	102	Polychaeta	Opheliidae	Ophelina acuminata	1	Subsurface Deposit Feeder	0.016	
Lease Area	102	Polychaeta	Paraonidae	Levinsenia gracilis	38	Subsurface Deposit Feeder	0.007	
Lease Area	102	Polychaeta	Trichobranchidae	Terebellides stroemii	1	Subsurface Deposit Feeder	0.006	
Lease Area	102	Polychaeta	-	Polychaete Fragments	-	-	0.206	
Lease Area	105	Arthropoda	Ampeliscidae	Ampelisca spp.	292	Interface Feeder	0.71	
Lease Area	105	Arthropoda	Ampithoidae	Cymadusa compta	1	Interface Feeder	0.006	
Lease Area	105	Arthropoda	Corophiidae	Corophium spp.	2	Interface Feeder	<0.001	
Lease Area	105	Arthropoda	Corophiidae	Leptocheirus pinguis	7	Interface Feeder	0.004	
Lease Area	105	Arthropoda	Diastylidae	Diastylis sculpta	3	Interface Feeder	0.001	
Lease Area	105	Arthropoda	Ischyroceridae	Ericthonius spp.	5	Interface Feeder	0.002	
Lease Area	105	Arthropoda	Phoxocephalidae	Harpinia propinqua	13	Interface Feeder	0.014	
Lease Area	105	Arthropoda	Pseudocumatidae	Petalosarsia declivis	4	Omnivore/Scavenger	0.001	
Lease Area	105	Arthropoda	-	Brachyura spp.	1	-	0.006	
Lease Area	105	Mollusca	Aplacophora	Chaetoderma nitidulum	1	Subsurface Deposit Feeder	0.001	
Lease Area	105	Mollusca	Bivalvia	Arctica islandica	21	Suspension Feeder	0.038	
Lease Area	105	Mollusca	Bivalvia	Nucula proxima	43	Subsurface Deposit Feeder	0.025	
Lease Area	105	Mollusca	Bivalvia	Periploma papyratium	14	Suspension Feeder	0.077	
Lease Area	105	Mollusca	Bivalvia	Pitar morrhuanus	19	Suspension Feeder	0.06	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww) Comment
Lease Area	105	Mollusca	Bivalvia	Thyasira gouldii	9	Suspension Feeder	0.011
Lease Area	105	Mollusca	Bivalvia	Yoldia sapotilla	2	Subsurface Deposit Feeder	0.005
Lease Area	105	Mollusca	Gastropoda	Frigidoalvania carinata	6	Predator	0.007
Lease Area	105	Polychaeta	Arabellidae	Drilonereis longa	3	Predator	0.043
Lease Area	105	Polychaeta	Cossuridae	Cossura longocirrata	8	Subsurface Deposit Feeder	0.001
Lease Area	105	Polychaeta	Lumbrineridae	Ninoe nigripes	13	Omnivore/Scavenger	0.206
Lease Area	105	Polychaeta	Lumbrineridae	Scoletoma tenuis	7	Omnivore/Scavenger	0.015
Lease Area	105	Polychaeta	Maldanidae	Clymenella torquata	5	Subsurface Deposit Feeder	0.023
Lease Area	105	Polychaeta	Nephtyidae	Nephtys incisa	13	Omnivore/Scavenger	0.749
Lease Area	105	Polychaeta	Paraonidae	Levinsenia gracilis	88	Subsurface Deposit Feeder	0.039
Lease Area	105	Polychaeta	Syllidae	Exogone spp.	2	Omnivore/Scavenger	<0.001
Lease Area	105	Polychaeta	Trichobranchidae	Terebellides stroemii	12	Subsurface Deposit Feeder	0.019
Lease Area	105	Polychaeta	-	Polychaete Fragments	-	-	0.174
Lease Area	107	Arthropoda	Ampeliscidae	Ampelisca spp.	103	Interface Feeder	0.359
Lease Area	107	Arthropoda	Ampithoidae	Cymadusa compta	1	Interface Feeder	0.001
Lease Area	107	Arthropoda	Corophiidae	Leptocheirus pinguis	5	Interface Feeder	0.004
Lease Area	107	Arthropoda	Ischyroceridae	Ericthonius spp.	1	Interface Feeder	<0.001
Lease Area	107	Arthropoda	Leuconidae	Eudorella pusilla	3	Interface Feeder	<0.001
Lease Area	107	Arthropoda	Phoxocephalidae	Harpinia propinqua	12	Interface Feeder	0.004
Lease Area	107	Arthropoda	Unciolidae	Unciola spp.	1	Interface Feeder	0.005
Lease Area	107	Mollusca	Bivalvia	Arctica islandica	9	Suspension Feeder	0.012
Lease Area	107	Mollusca	Bivalvia	Nucula proxima	51	Subsurface Deposit Feeder	0.037
Lease Area	107	Mollusca	Bivalvia	Periploma papyratium	6	Suspension Feeder	0.044
Lease Area	107	Mollusca	Bivalvia	Pitar morrhuanus	10	Suspension Feeder	0.010
Lease Area	107	Mollusca	Bivalvia	Thyasira gouldii	5	Suspension Feeder	0.072
Lease Area	107	Mollusca	Bivalvia	Yoldia sapotilla	8	Subsurface Deposit Feeder	0.020
Lease Area	107	Mollusca	Gastropoda	Frigidoalvania carinata	17	Predator	0.025
Lease Area	107	Oligochaeta	Oligochaeta	Oligochaeta spp.	2	Subsurface Deposit Feeder	<0.001
Lease Area	107	Polychaeta	Arabellidae	Drilonereis longa	1	Predator	0.001

Lease Area 107 Polychaeta Cossuridae Cossuridae 7 Subsurface Deposit Feeder <0.001	Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
Lease Area107PolychaettaLumbrineridaeScoletoma tenuis9Omnivore/Scavenger0.016Lease Area107PolychaettaMaldanidaeClymenella torquata1Subsurface Deposit Feeder0.048Lease Area107PolychaettaNephtyidaeNephtys incisa17Omnivore/Scavenger0.723Lease Area107PolychaettaOphelidaeOphelina acuminata1Subsurface Deposit Feeder0.004Lease Area107PolychaettaParaonidaeLevinsenia gracilis80Subsurface Deposit Feeder0.007Lease Area107PolychaettaTrichobranchidaeTerebellides stroemii4Subsurface Deposit Feeder0.003Lease Area1107Polychaetta-Polychaete Fragments0.322Lease Area113ArthropodaAmpeliscidaeAmpelisca spp.226Interface Feeder0.0527Lease Area113ArthropodaDiastylidaeDiastylis sculpta1Interface Feeder-0.001Lease Area113ArthropodaIschyroceridaeEricthonius spp.22Interface Feeder0.001Lease Area113ArthropodaPhoxocephalidaeHarpinia propinqua5Interface Feeder0.003Lease Area113MolluscaBivalviaBivalvia UNID1Lease Area113MolluscaBivalviaPitar morrhuanus2Suspension Feeder0.001Lease	Lease Area	107	Polychaeta	Cossuridae	Cossura longocirrata	7	Subsurface Deposit Feeder	<0.001	
Lease Area 107 Polychaeta Maldanidae Clymenella torquata 1 Subsurface Deposit Feeder 0.048 Lease Area 107 Polychaeta Nephtyldae Nephtys incisa 17 Omnivore/Scavenger 0.723 Lease Area 107 Polychaeta Opheliidae Ophelina acuminata 1 Subsurface Deposit Feeder 0.004 Lease Area 107 Polychaeta Paraonidae Levinsenia graciils 80 Subsurface Deposit Feeder 0.007 Lease Area 107 Polychaeta Trichobranchidae Terebellides stroemii 4 Subsurface Deposit Feeder 0.003 Lease Area 107 Polychaeta - Polychaete Fragments 0.322 Lease Area 113 Arthropoda Ampeliscidae Ampelisciae Polychaete Fragments 0.322 Lease Area 113 Arthropoda Corophildae Leptocheirus pinguis 7 Interface Feeder 0.0527 Lease Area 113 Arthropoda Diastylidae Diastylis sculpta 1 Interface Feeder 0.001 Lease Area 113 Arthropoda Ischyroceridae Eichorluis spp. 22 Interface Feeder 0.008 Lease Area 113 Arthropoda Leuconidae Eudorella pusilla 2 Interface Feeder 0.008 Lease Area 113 Arthropoda Phoxocephalidae Harpinia propinqua 5 Interface Feeder 0.001 Lease Area 113 Arthropoda Bischyriae Phoxocephalidae Phoxocephalidae Phoxocephalidae 2 Predator 0.013 Lease Area 113 Mollusca Bivalvia Bivalvia Nucula proxima 2 Subsurface Deposit Feeder 0.001 Lease Area 113 Mollusca Bivalvia Periploma papyratium 2 Suspension Feeder 0.001 Lease Area 113 Mollusca Bivalvia Pira mornuanus 1 Suspension Feeder 0.001 Lease Area 113 Mollusca Bivalvia Pira mornuanus 1 Suspension Feeder 0.001 Lease Area 113 Mollusca Bivalvia Pira mornuanus 1 Suspension Feeder 0.001 Lease Area 113 Mollusca Bivalvia Pira mornuanus 1 Suspension Feeder 0.001 Lease Area 113 Mollusca Bivalvia Pira mornuanus 1 Suspension Feeder 0.001 Lease Area 113 Mollusca Bivalvia Pira mornuanus 1 Suspension Feeder 0.001 Lease Area 113 Mollusca Bivalvia Pira mornuanus 6 Pira mornuanus 1 Suspension Feeder 0.001 Lease Area 113 Mollusca Bivalvia Pira mornuanus 6 Pira mornuanus 1 Suspension Feeder 0.001 Lease Area 113 Mollusca Bivalvia Pira mornuanus 6 Pira mornuanus 1 Suspension Feeder 0.001 Lease Area 113 Mollusc	Lease Area	107	Polychaeta	Lumbrineridae	Ninoe nigripes	15	Omnivore/Scavenger	0.116	
Lease Area 107 Polychaeta Nephtyidae Nephtys incisa 17 Omnivore/Scavenger 0.723 Lease Area 107 Polychaeta Opheliidae Ophelina acuminata 1 Subsurface Deposit Feeder 0.004 Lease Area 107 Polychaeta Paraonidae Levinsenia gracilis 80 Subsurface Deposit Feeder 0.007 Lease Area 107 Polychaeta Trichobranchidae Terebellides stroemii 4 Subsurface Deposit Feeder 0.003 Lease Area 107 Polychaeta - Polychaeta Fragments - 0.322 Lease Area 113 Arthropoda Ampeliscidae Ampelisca spp. 226 Interface Feeder 0.527 Lease Area 113 Arthropoda Corophilidae Leptocheirus pinguis 7 Interface Feeder 0.018 Lease Area 113 Arthropoda Diastylidae Diastylis sculpta 1 Interface Feeder 0.001 Lease Area 113 Arthropoda Eschyroceridae Eindonius spp. 22 Interface Feeder 0.008 Lease Area 113 Arthropoda Leuconidae Eudorelia pusilla 2 Interface Feeder 0.001 Lease Area 113 Arthropoda Phoxocephalidae Harpinia propinqua 5 Interface Feeder 0.003 Lease Area 113 Arthropoda Phoxocephalidae Harpinia propinqua 5 Interface Feeder 0.003 Lease Area 113 Mollusca Bivalvia Bivalvia Nucula proxima 2 Subsurface Deposit Feeder 0.001 Lease Area 113 Mollusca Bivalvia Periploma papyratium 2 Suspension Feeder 0.001 Lease Area 113 Mollusca Bivalvia Pitar morrhuanus 1 Suspension Feeder 0.001 Lease Area 113 Mollusca Bivalvia Thyasira gouldii 2 Suspension Feeder 0.001 Lease Area 113 Mollusca Bivalvia Thyasira gouldii 2 Suspension Feeder 0.001 Lease Area 113 Mollusca Bivalvia Thyasira gouldii 2 Suspension Feeder 0.001 Lease Area 113 Mollusca Bivalvia Thyasira gouldii 2 Suspension Feeder 0.001 Lease Area 113 Nemertea Lineidae Cerebratulus lacteus 6 Predator 0.0052	Lease Area	107	Polychaeta	Lumbrineridae	Scoletoma tenuis	9	Omnivore/Scavenger	0.016	
Lease Area 107 Polychaeta Opheliidae Opheliina acuminata 1 Subsurface Deposit Feeder 0.004 Lease Area 107 Polychaeta Paraonidae Levinsenia gracilis 80 Subsurface Deposit Feeder 0.007 Lease Area 107 Polychaeta Trichobranchidae Terebellides stroemii 4 Subsurface Deposit Feeder 0.003 Lease Area 107 Polychaeta - Polychaete Fragments 0.322 Lease Area 113 Arthropoda Ampeliscidae Ampelisca spp. 226 Interface Feeder 0.527 Lease Area 113 Arthropoda Corophiidae Leptocheirus pinguis 7 Interface Feeder 0.018 Lease Area 113 Arthropoda Diastylidae Diastylis sculpta 1 Interface Feeder 0.001 Lease Area 113 Arthropoda Ischyroceridae Ericthonius spp. 22 Interface Feeder 0.008 Lease Area 113 Arthropoda Leuconidae Eudorella pusilla 2 Interface Feeder 0.001 Lease Area 113 Arthropoda Hencoridae Eudorella pusilla 2 Interface Feeder 0.003 Lease Area 113 Arthropoda Bivalvia Bivalvia Diavolidae Diavolidae Processe Processe Area 113 Arthropoda Phoxocephalidae Harpinia propinqua 5 Interface Feeder 0.003 Lease Area 113 Arthropoda Phoxocephalidae Harpinia propinqua 5 Interface Feeder 0.003 Lease Area 113 Mollusca Bivalvia Bivalvia Diavolidae Proxima 2 Subsurface Deposit Feeder 0.001 Lease Area 113 Mollusca Bivalvia Pitar morrhuanus 1 Suspension Feeder 0.009 Lease Area 113 Mollusca Bivalvia Pitar morrhuanus 1 Suspension Feeder 0.001 Lease Area 113 Mollusca Bivalvia Pitar morrhuanus 1 Suspension Feeder 0.001 Lease Area 113 Mollusca Bivalvia Pitar morrhuanus 1 Suspension Feeder 0.001 Lease Area 113 Mollusca Bivalvia Pitar morrhuanus 1 Suspension Feeder 0.001 Lease Area 113 Nemertea Lineidae Cerebratulus lacteus 6 Predator 0.0052	Lease Area	107	Polychaeta	Maldanidae	Clymenella torquata	1	Subsurface Deposit Feeder	0.048	
Lease Area107PolychaettaParaonidaeLevinsenia gracilis80Subsurface Deposit Feeder0.007Lease Area107PolychaettaTrichobranchidaeTerebellides stroemii4Subsurface Deposit Feeder0.003Lease Area107Polychaetta-Polychaette Fragments0.322Lease Area113ArthropodaAmpeliscidaeAmpelisca spp.226Interface Feeder0.527Lease Area113ArthropodaCorophiidaeLeptocheirus pinguis7Interface Feeder0.018Lease Area113ArthropodaDiastylidaeDiastylis sculpta1Interface Feeder-0.001Lease Area113ArthropodaIschyroceridaeEricthonius spp.22Interface Feeder0.008Lease Area113ArthropodaLeuconidaeEudorella pusilla2Interface Feeder0.001Lease Area113ArthropodaPhoxocephalidaeHarpinia propinqua5Interface Feeder0.003Lease Area113MolluscaBivalviaBivalvia UNID1Lease Area113MolluscaBivalviaNucula proxima2Subsurface Deposit Feeder0.001Lease Area113MolluscaBivalviaPitar morrhuanus1Suspension FeederLease Area113MolluscaBivalviaPitar morrhuanus1Subsurface Deposit FeederLea	Lease Area	107	Polychaeta	Nephtyidae	Nephtys incisa	17	Omnivore/Scavenger	0.723	
Lease Area107PolychaetaTrichobranchidaeTerebellides stroemii4Subsurface Deposit Feeder0.003Lease Area107Polychaeta-Polychaete Fragments0.322Lease Area113ArthropodaAmpeliscidaeAmpelisca spp.226Interface Feeder0.527Lease Area113ArthropodaCorophildaeLeptocheirus pinguis7Interface Feeder0.018Lease Area113ArthropodaDiastylidaeDiastylis sculpta1Interface Feeder0.001Lease Area113ArthropodaIschyroceridaeEricthonius spp.22Interface Feeder0.008Lease Area113ArthropodaLeuconidaeEudorella pusilla2Interface Feeder0.001Lease Area113ArthropodaPhoxocephalidaeHarpinia propinqua5Interface Feeder0.003Lease Area113MolluscaBivalviaBivalvia UNID10.001Lease Area113MolluscaBivalviaNucula proxima2Subsurface Deposit Feeder0.001Lease Area113MolluscaBivalviaPeriploma papyratium2Suspension Feeder0.001Lease Area113MolluscaBivalviaPitar morrhuanus1Suspension Feeder0.001Lease Area113MolluscaBivalviaThyasira gouldii2Suspension Feeder0.001Lease Area113Mollu	Lease Area	107	Polychaeta	Opheliidae	Ophelina acuminata	1	Subsurface Deposit Feeder	0.004	
Lease Area107Polychaeta-Polychaete Fragments0.322Lease Area113ArthropodaAmpeliscidaeAmpelisca spp.226Interface Feeder0.527Lease Area113ArthropodaCorophilidaeLeptocheirus pinguis7Interface Feeder0.018Lease Area113ArthropodaDiastylidaeDiastylis sculpta1Interface Feeder<0.001	Lease Area	107	Polychaeta	Paraonidae	Levinsenia gracilis	80	Subsurface Deposit Feeder	0.007	
Lease Area 113 Arthropoda Ampeliscidae Ampelisca spp. 226 Interface Feeder 0.527 Lease Area 113 Arthropoda Corophiidae Leptocheirus pinguis 7 Interface Feeder 0.018 Lease Area 113 Arthropoda Diastylidae Diastylis sculpta 1 Interface Feeder <0.001 Lease Area 113 Arthropoda Ischyroceridae Ericthonius spp. 22 Interface Feeder 0.008 Lease Area 113 Arthropoda Leuconidae Eudorella pusilla 2 Interface Feeder 0.001 Lease Area 113 Arthropoda Harpinia propinqua 5 Interface Feeder 0.003 Lease Area 113 Echinodermata Amphiuridae Amphipholis squamata 2 Predator 0.138 Lease Area 113 Mollusca Bivalvia Bivalvia UNID 1 - <0.001 Lease Area 113 Mollusca Bivalvia Nucula proxima 2 Subsurface Deposit Feeder 0.001 Lease Area 113 Mollusca Bivalvia Periploma papyratium 2 Suspension Feeder 0.009 Lease Area 113 Mollusca Bivalvia Pitar morrhuanus 1 Suspension Feeder 0.001 Lease Area 113 Mollusca Bivalvia Pitar morrhuanus 1 Suspension Feeder 0.001 Lease Area 113 Mollusca Bivalvia Pitar morrhuanus 1 Suspension Feeder 0.001 Lease Area 113 Mollusca Bivalvia Pitar morrhuanus 1 Suspension Feeder 0.001 Lease Area 113 Mollusca Bivalvia Pitar morrhuanus 1 Suspension Feeder 0.001 Lease Area 113 Mollusca Bivalvia Pitar morrhuanus 1 Suspension Feeder 0.001 Lease Area 113 Mollusca Bivalvia Pitar morrhuanus 1 Suspension Feeder 0.001 Lease Area 113 Mollusca Bivalvia Pitar morrhuanus 6 Predator 0.001 Lease Area 113 Nemertea Lineidae Cerebratulus lacteus 6 Predator 0.052 Lease Area 113 Nemertea Lineidae Cerebratulus lacteus 6 Predator 0.0052	Lease Area	107	Polychaeta	Trichobranchidae	Terebellides stroemii	4	Subsurface Deposit Feeder	0.003	
Lease Area113ArthropodaCorophilidaeLeptocheirus pinguis7Interface Feeder0.018Lease Area113ArthropodaDiastylidaeDiastylis sculpta1Interface Feeder<0.001	Lease Area	107	Polychaeta	-	Polychaete Fragments	-	-	0.322	
Lease Area 113 Arthropoda Diastylidae Diastylis sculpta 1 Interface Feeder <0.001 Lease Area 113 Arthropoda Ischyroceridae Ericthonius spp. 22 Interface Feeder 0.008 Lease Area 113 Arthropoda Leuconidae Eudorella pusilla 2 Interface Feeder 0.001 Lease Area 113 Arthropoda Phoxocephalidae Harpinia propinqua 5 Interface Feeder 0.003 Lease Area 113 Echinodermata Amphiuridae Amphipholis squamata 2 Predator 0.138 Lease Area 113 Mollusca Bivalvia Bivalvia UNID 1 - <0.001 Lease Area 113 Mollusca Bivalvia Nucula proxima 2 Subsurface Deposit Feeder 0.001 Lease Area 113 Mollusca Bivalvia Periploma papyratium 2 Suspension Feeder 0.009 Lease Area 113 Mollusca Bivalvia Pitar morrhuanus 1 Suspension Feeder 0.001 Lease Area 113 Mollusca Bivalvia Pitar morrhuanus 1 Suspension Feeder 0.001 Lease Area 113 Mollusca Bivalvia Pitar morrhuanus 1 Suspension Feeder 0.001 Lease Area 113 Mollusca Bivalvia Poldia spp. 1 Subsurface Deposit Feeder 0.001 Lease Area 113 Nemertea Lineidae Cerebratulus lacteus 6 Predator 0.052 Lease Area 113 Oligochaeta Oligochaeta Spp. 5 Subsurface Deposit Feeder <0.001	Lease Area	113	Arthropoda	Ampeliscidae	Ampelisca spp.	226	Interface Feeder	0.527	
Lease Area 113 Arthropoda Ischyroceridae Ericthonius spp. 22 Interface Feeder 0.008 Lease Area 113 Arthropoda Leuconidae Eudorella pusilla 2 Interface Feeder 0.001 Lease Area 113 Arthropoda Phoxocephalidae Harpinia propinqua 5 Interface Feeder 0.003 Lease Area 113 Echinodermata Amphiuridae Amphipholis squamata 2 Predator 0.138 Lease Area 113 Mollusca Bivalvia Bivavlia UNID 1 - <0.001 Lease Area 113 Mollusca Bivalvia Nucula proxima 2 Subsurface Deposit Feeder 0.001 Lease Area 113 Mollusca Bivalvia Periploma papyratium 2 Suspension Feeder 0.009 Lease Area 113 Mollusca Bivalvia Pitar morrhuanus 1 Suspension Feeder 0.001 Lease Area 113 Mollusca Bivalvia Thyasira gouldii 2 Suspension Feeder 0.001 Lease Area 113 Mollusca Bivalvia Yoldia spp. 1 Subsurface Deposit Feeder 0.001 Lease Area 113 Nemertea Lineidae Cerebratulus lacteus 6 Predator 0.052 Lease Area 113 Nemertea Lineidae Oligochaeta spp. 5 Subsurface Deposit Feeder <0.001	Lease Area	113	Arthropoda	Corophiidae	Leptocheirus pinguis	7	Interface Feeder	0.018	
Lease Area 113 Arthropoda Leuconidae Eudorella pusilla 2 Interface Feeder 0.001 Lease Area 113 Arthropoda Phoxocephalidae Harpinia propinqua 5 Interface Feeder 0.003 Lease Area 113 Echinodermata Amphiuridae Amphipholis squamata 2 Predator 0.138 Lease Area 113 Mollusca Bivalvia Bivavlia UNID 1 - <0.001 Lease Area 113 Mollusca Bivalvia Nucula proxima 2 Subsurface Deposit Feeder 0.001 Lease Area 113 Mollusca Bivalvia Periploma papyratium 2 Suspension Feeder 0.009 Lease Area 113 Mollusca Bivalvia Pitar morrhuanus 1 Suspension Feeder 0.001 Lease Area 113 Mollusca Bivalvia Thyasira gouldii 2 Suspension Feeder 0.001 Lease Area 113 Mollusca Bivalvia Thyasira gouldii 2 Suspension Feeder 0.001 Lease Area 113 Mollusca Bivalvia Yoldia spp. 1 Subsurface Deposit Feeder <0.001 Lease Area 113 Nemertea Lineidae Cerebratulus lacteus 6 Predator 0.052 Lease Area 113 Oligochaeta Oligochaeta spp. 5 Subsurface Deposit Feeder <0.001	Lease Area	113	Arthropoda	Diastylidae	Diastylis sculpta	1	Interface Feeder	<0.001	
Lease Area113ArthropodaPhoxocephalidaeHarpinia propinqua5Interface Feeder0.003Lease Area113EchinodermataAmphiuridaeAmphipholis squamata2Predator0.138Lease Area113MolluscaBivalviaBivalvia UNID1-<0.001	Lease Area	113	Arthropoda	Ischyroceridae	Ericthonius spp.	22	Interface Feeder	0.008	
Lease Area113EchinodermataAmphiuridaeAmphipholis squamata2Predator0.138Lease Area113MolluscaBivalviaBivavlia UNID1-<0.001	Lease Area	113	Arthropoda	Leuconidae	Eudorella pusilla	2	Interface Feeder	0.001	
Lease Area 113 Mollusca Bivalvia Bivavlia UNID 1 - <0.001 Lease Area 113 Mollusca Bivalvia Nucula proxima 2 Subsurface Deposit Feeder 0.001 Lease Area 113 Mollusca Bivalvia Periploma papyratium 2 Suspension Feeder 0.009 Lease Area 113 Mollusca Bivalvia Pitar morrhuanus 1 Suspension Feeder <0.001 Lease Area 113 Mollusca Bivalvia Thyasira gouldii 2 Suspension Feeder 0.001 Lease Area 113 Mollusca Bivalvia Yoldia spp. 1 Subsurface Deposit Feeder <0.001 Lease Area 113 Nemertea Lineidae Cerebratulus lacteus 6 Predator 0.052 Lease Area 113 Oligochaeta Oligochaeta Spp. 5 Subsurface Deposit Feeder <0.001	Lease Area	113	Arthropoda	Phoxocephalidae	Harpinia propinqua	5	Interface Feeder	0.003	
Lease Area113MolluscaBivalviaNucula proxima2Subsurface Deposit Feeder0.001Lease Area113MolluscaBivalviaPeriploma papyratium2Suspension Feeder0.009Lease Area113MolluscaBivalviaPitar morrhuanus1Suspension Feeder<0.001	Lease Area	113	Echinodermata	Amphiuridae	Amphipholis squamata	2	Predator	0.138	
Lease Area113MolluscaBivalviaPeriploma papyratium2Suspension Feeder0.009Lease Area113MolluscaBivalviaPitar morrhuanus1Suspension Feeder<0.001	Lease Area	113	Mollusca	Bivalvia	Bivavlia UNID	1	-	<0.001	
Lease Area113MolluscaBivalviaPitar morrhuanus1Suspension Feeder<0.001Lease Area113MolluscaBivalviaThyasira gouldii2Suspension Feeder0.001Lease Area113MolluscaBivalviaYoldia spp.1Subsurface Deposit Feeder<0.001	Lease Area	113	Mollusca	Bivalvia	Nucula proxima	2	Subsurface Deposit Feeder	0.001	
Lease Area113MolluscaBivalviaThyasira gouldii2Suspension Feeder0.001Lease Area113MolluscaBivalviaYoldia spp.1Subsurface Deposit Feeder<0.001	Lease Area	113	Mollusca	Bivalvia	Periploma papyratium	2	Suspension Feeder	0.009	
Lease Area113MolluscaBivalviaYoldia spp.1Subsurface Deposit Feeder<0.001Lease Area113NemerteaLineidaeCerebratulus lacteus6Predator0.052Lease Area113OligochaetaOligochaetaOligochaeta spp.5Subsurface Deposit Feeder<0.001	Lease Area	113	Mollusca	Bivalvia	Pitar morrhuanus	1	Suspension Feeder	<0.001	
Lease Area113NemerteaLineidaeCerebratulus lacteus6Predator0.052Lease Area113OligochaetaOligochaetaOligochaeta spp.5Subsurface Deposit Feeder<0.001	Lease Area	113	Mollusca	Bivalvia	Thyasira gouldii	2	Suspension Feeder	0.001	
Lease Area 113 Oligochaeta Oligochaeta Oligochaeta spp. 5 Subsurface Deposit Feeder <0.001	Lease Area	113	Mollusca	Bivalvia	Yoldia spp.	1	Subsurface Deposit Feeder	<0.001	
	Lease Area	113	Nemertea	Lineidae	Cerebratulus lacteus	6	Predator	0.052	
Lease Area 113 Polychaeta Arabellidae <i>Drilonereis longa</i> 1 Predator 0.005	Lease Area	113	Oligochaeta	Oligochaeta	Oligochaeta spp.	5	Subsurface Deposit Feeder	<0.001	
	Lease Area	113	Polychaeta	Arabellidae	Drilonereis longa	1	Predator	0.005	
Lease Area 113 Polychaeta Cossuridae Cossura longocirrata 39 Subsurface Deposit Feeder 0.001	Lease Area	113	Polychaeta	Cossuridae	Cossura longocirrata	39	Subsurface Deposit Feeder	0.001	
Lease Area 113 Polychaeta Goniadidae Goniadidae spp. 2 Predator 0.001 juvenile	Lease Area	113	Polychaeta	Goniadidae	Goniadidae spp.	2	Predator	0.001	juvenile
Lease Area 113 Polychaeta Lumbrineridae <i>Ninoe nigripes</i> 10 Omnivore/Scavenger 0.006	Lease Area	113	Polychaeta	Lumbrineridae	Ninoe nigripes	10	Omnivore/Scavenger	0.006	
Lease Area 113 Polychaeta Maldanidae <i>Clymenella torquata</i> 3 Subsurface Deposit Feeder 0.009	Lease Area	113	Polychaeta	Maldanidae	Clymenella torquata	3	Subsurface Deposit Feeder	0.009	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
Lease Area	113	Polychaeta	Nephtyidae	Nephtys incisa	3	Omnivore/Scavenger	0.026	
Lease Area	113	Polychaeta	Opheliidae	Ophelina acuminata	5	Subsurface Deposit Feeder	0.020	
Lease Area	113	Polychaeta	Paraonidae	Levinsenia gracilis	55	Subsurface Deposit Feeder	0.005	
Lease Area	113	Polychaeta	Trichobranchidae	Terebellides stroemii	20	Subsurface Deposit Feeder	0.073	
Lease Area	113	Polychaeta	-	Polychaete Fragments	-	-	0.074	
Lease Area	115	Arthropoda	Ampeliscidae	Ampelisca spp.	193	Interface Feeder	0.799	
Lease Area	115	Arthropoda	Ampithoidae	Cymadusa compta	8	Interface Feeder	0.007	
Lease Area	115	Arthropoda	Corophiidae	Corophium spp.	2	Interface Feeder	<0.001	
Lease Area	115	Arthropoda	Corophiidae	Leptocheirus pinguis	7	Interface Feeder	0.059	
Lease Area	115	Arthropoda	Diastylidae	Diastylis quadrispinosa	1	Interface Feeder	800.0	
Lease Area	115	Arthropoda	Diastylidae	Diastylis sculpta	2	Interface Feeder	0.001	
Lease Area	115	Arthropoda	Ischyroceridae	Ericthonius spp.	10	Interface Feeder	0.002	
Lease Area	115	Arthropoda	Leuconidae	Eudorella pusilla	3	Interface Feeder	0.004	
Lease Area	115	Arthropoda	Phoxocephalidae	Harpinia propinqua	2	Interface Feeder	0.003	
Lease Area	115	Echinodermata	Amphiuiridae	Amphipholis squamata	3	Predator	0.334	juvenile
Lease Area	115	Mollusca	Bivalvia	Nucula proxima	10	Subsurface Deposit Feeder	0.007	
Lease Area	115	Mollusca	Bivalvia	Periploma papyratium	8	Suspension Feeder	0.014	
Lease Area	115	Mollusca	Bivalvia	Pitar morrhuanus	7	Suspension Feeder	0.004	
Lease Area	115	Mollusca	Bivalvia	Thyasira gouldii	1	Suspension Feeder	0.004	
Lease Area	115	Mollusca	Bivalvia	Yoldia sapotilla	3	Subsurface Deposit Feeder	0.011	
Lease Area	115	Nemertea	Lineidae	Micrura spp.	3	Predator	0.03	
Lease Area	115	Oligochaeta	Oligochaeta	Oligochaeta spp.	5	Subsurface Deposit Feeder	<0.001	
Lease Area	115	Polychaeta	Ampharetidae	Ampharetidae spp.	4	Surface Deposit Feeder	0.006	damaged
Lease Area	115	Polychaeta	Arabellidae	Drilonereis longa	4	Predator	0.008	
Lease Area	115	Polychaeta	Cossuridae	Cossura longocirrata	34	Subsurface Deposit Feeder	0.001	
Lease Area	115	Polychaeta	Goniadidae	Goniada maculata	2	Predator	0.001	
Lease Area	115	Polychaeta	Lumbrineridae	Ninoe nigripes	9	Omnivore/Scavenger	0.06	
Lease Area	115	Polychaeta	Lumbrineridae	Scoletoma tenuis	6	Omnivore/Scavenger	0.002	
Lease Area	115	Polychaeta	Maldanidae	Clymenella torquata	9	Subsurface Deposit Feeder	0.103	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comment
Lease Area	115	Polychaeta	Nephtyidae	Nephtys incisa	6	Omnivore/Scavenger	0.699	
Lease Area	115	Polychaeta	Opheliidae	Ophelina acuminata	5	Subsurface Deposit Feeder	0.07	
Lease Area	115	Polychaeta	Paraonidae	Levinsenia gracilis	92	Subsurface Deposit Feeder	0.007	
Lease Area	115	Polychaeta	-	Polychaete Fragments	-	-	1.028	
Lease Area	119	Arthropoda	Ampeliscidae	Ampelisca spp.	30	Interface Feeder	0.068	
Lease Area	119	Arthropoda	Diastylidae	Diastylis sculpta	1	Interface Feeder	<0.001	
Lease Area	119	Arthropoda	Ischyroceridae	Ericthonius spp.	5	Interface Feeder	0.002	
Lease Area	119	Arthropoda	Leuconidae	Eudorella pusilla	2	Interface Feeder	<0.001	
Lease Area	119	Arthropoda	Phoxocephalidae	Harpinia propinqua	1	Interface Feeder	<0.001	
Lease Area	119	Echinodermata	Amphiuiridae	Microphiopholis atra	8	Surface Deposit Feeder	0.730	
Lease Area	119	Echinodermata	Astropectinidae	Astropecten americanus	2	Predator	8.700	
Lease Area	119	Hydrozoa	-	Hydrozoa spp.	-	Suspension Feeder	-	
_ease Area	119	Mollusca	Bivalvia	Mesodesma arctatum	2	Suspension Feeder	0.002	
_ease Area	119	Mollusca	Bivalvia	Nucula proxima	3	Subsurface Deposit Feeder	<0.001	
Lease Area	119	Mollusca	Bivalvia	Periploma papyratium	3	Suspension Feeder	0.019	
Lease Area	119	Mollusca	Bivalvia	Pitar morrhuanus	6	Suspension Feeder	0.002	
_ease Area	119	Mollusca	Bivalvia	Thyasira gouldii	2	Suspension Feeder	0.048	
_ease Area	119	Mollusca	Bivalvia	Yoldia sapotilla	1	Subsurface Deposit Feeder	0.001	
Lease Area	119	Polychaeta	Arabellidae	Drilonereis longa	2	Predator	0.008	
Lease Area	119	Polychaeta	Cossuridae	Cossura longocirrata	181	Subsurface Deposit Feeder	0.010	
Lease Area	119	Polychaeta	Lumbrineridae	Ninoe nigripes	24	Omnivore/Scavenger	0.003	
Lease Area	119	Polychaeta	Lumbrineridae	Scoletoma tenuis	30	Omnivore/Scavenger	0.005	
Lease Area	119	Polychaeta	Nephtyidae	Nephtys incisa	13	Omnivore/Scavenger	0.523	
Lease Area	119	Polychaeta	Nephtyidae	Nephtys spp.	12	Omnivore/Scavenger	0.002	juvenile
Lease Area	119	Polychaeta	Paraonidae	Levinsenia gracilis	36	Subsurface Deposit Feeder	0.001	
Lease Area	119	Polychaeta	Trichobranchidae	Terebellides stroemii	3	Subsurface Deposit Feeder	0.003	
Lease Area	119	Polychaeta	-	Polychaete Fragments	-	-	0.067	
NECC	003	Arthropoda	Ampeliscidae	Ampelisca spp.	3	Interface Feeder	0.002	
NECC	003	Arthropoda	Ampithoidae	Cymadusa compta	2	Interface Feeder	0.001	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww) Comments
NECC	003	Arthropoda	Corophiidae	Corophium spp.	8	Interface Feeder	0.006
NECC	003	Arthropoda	Corophiidae	Leptocheirus pinguis	1	Interface Feeder	0.003
NECC	003	Arthropoda	Ischyroceridae	Ericthonius spp.	20	Interface Feeder	0.003
NECC	003	Arthropoda	Lysianassidae	Lysianopsis alba	13	Omnivore/Scavenger	0.005
NECC	003	Arthropoda	Paguridae	Pagurus arcuatus	12	Omnivore/Scavenger	0.752
NECC	003	Arthropoda	Panopeidae	Panopeus herbstii	29	Predator	1.110
NECC	003	Arthropoda	Phoxocephalidae	Eobrolgus spinosus	3	Interface Feeder	<0.001
NECC	003	Arthropoda	Phoxocephalidae	Rhepoxynius epistomus	2	Interface Feeder	<0.001
NECC	003	Arthropoda	-	Amphipoda spp.	1	Interface Feeder	<0.001
NECC	003	Arthropoda	-	Isopoda spp.	1	-	<0.001
NECC	003	Mollusca	Bivalvia	Anadara transversa	1	Suspension Feeder	0.363
NECC	003	Mollusca	Bivalvia	Anomia simplex	1	Suspension Feeder	3.882
NECC	003	Mollusca	Bivalvia	Crassinella lunulata	4	Suspension Feeder	0.034
NECC	003	Mollusca	Bivalvia	Modiolus modiolus	6	Suspension Feeder	53.002
NECC	003	Mollusca	Bivalvia	Nucula proxima	9	Subsurface Deposit Feeder	0.274
NECC	003	Mollusca	Gastropoda	Astyris lunata	18	Predator	0.077
NECC	003	Mollusca	Gastropoda	Caecum johnsoni	3	Predator	0.001
NECC	003	Mollusca	Gastropoda	Caecum pulchellum	8	Predator	0.004
NECC	003	Mollusca	Gastropoda	Cotonopsis lafresnayi	8	Predator	1.336
NECC	003	Mollusca	Gastropoda	Crepidula fornicata	4	Suspension Feeder	0.021
NECC	003	Mollusca	Gastropoda	Urosalpinx cinerea	8	Predator	1.900
NECC	003	Mollusca	Polyplacophora	Chaetopleura apiculata	7	Omnivore/Scavenger	1.603
NECC	003	Polychaeta	Ampharetidae	Ampharete arctica	3	Surface Deposit Feeder	0.002
NECC	003	Polychaeta	Arabellidae	Arabella iricolor	5	Predator	0.021
NECC	003	Polychaeta	Polynoidae	Lepidonotus squamatus	1	Predator	0.010
NECC	003	Polychaeta	Sabellaridae	Sabellaria vulgaris	2	Suspension Feeder	0.004
NECC	003	Polychaeta	Syllidae	Exogone spp.	18	Omnivore/Scavenger	<.001
NECC	003	Polychaeta	Terebellidae	Polycirrus spp.	2	Subsurface Deposit Feeder	0.009
NECC	003	Polychaeta	-	Polychaete Fragments	-	-	0.070

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
NECC	006	Bryozoa	-	Cheilostomatida spp.	-	Suspension Feeder	-	
NECC	006	Bryozoa	-	Ctenostomatida spp.	-	Suspension Feeder	-	
NECC	006	Chordata	Molgulidae	Molgula manhattensis	6	Suspension Feeder	0.106	
NECC	006	Mollusca	Bivalvia	Crassinella lunulata	4	Suspension Feeder	0.057	
NECC	006	Mollusca	Bivalvia	Modiolus modiolus	1	Suspension Feeder	<0.001	juvenile
NECC	006	Mollusca	Bivalvia	Spisula solidissima	3	Suspension Feeder	0.054	
NECC	006	Mollusca	Gastropoda	Caecum johnsoni	45	Predator	0.024	
NECC	006	Polychaeta	Glyceridae	Glycera capitata	4	Omnivore/Scavenger	0.005	
NECC	006	Polychaeta	Opheliidae	Travisia carnea	4	Subsurface Deposit Feeder	0.01	
NECC	006	Polychaeta	Terebellidae	Polycirrus spp.	1	Subsurface Deposit Feeder	<0.001	
NECC	006	Polychaeta	-	Polychaete Fragments	-	-	0.001	
NECC	007	Arthropoda	Ampeliscidae	Ampelisca spp.	6	Interface Feeder	0.020	
NECC	007	Arthropoda	Ampithoidae	Cymadusa compta	15	Interface Feeder	0.014	
NECC	007	Arthropoda	Caprellidae	Aeginina longicornis	15	Predator	0.006	
NECC	007	Arthropoda	Caprellidae	Paracaprella tenuis	34	Predator	0.003	
NECC	007	Arthropoda	Cirolanidae	Politolana polita	2	Omnivore/Scavenger	<0.001	
NECC	007	Arthropoda	Corophiidae	Corophium spp.	12	Interface Feeder	0.002	
NECC	007	Arthropoda	Epialtidae	Libinia emarginata	5	Predator	0.113	
NECC	007	Arthropoda	Ischyroceridae	Ericthonius spp.	25	Interface Feeder	0.003	
NECC	007	Arthropoda	Leptocheliidae	Chondrochelia savignyi	2	Interface Feeder	<0.001	
NECC	007	Arthropoda	Nannastacidae	Almyracuma proximoculi	1	Omnivore/Scavenger	0.001	
NECC	007	Arthropoda	Paguridae	Pagurus longicarpus	17	Omnivore/Scavenger	0.479	
NECC	007	Arthropoda	Panopeidae	Panopeus herbstii	11	Predator	0.158	
NECC	007	Arthropoda	Phoxocephalidae	Eobrolgus spinosus	2	Interface Feeder	0.001	
NECC	007	Arthropoda	Phoxocephalidae	Phoxocephalus holbolli	7	Interface Feeder	<0.001	
NECC	007	Arthropoda	Phoxocephalidae	Rhepoxynius epistomus	8	Interface Feeder	0.001	
NECC	007	Arthropoda	Unciolidae	Unciola spp.	18	Interface Feeder	0.016	
NECC	007	Arthropoda	-	Amphipoda spp.	11	Interface Feeder	<0.001	
NECC	007	Arthropoda	-	Isopoda spp.	3	-	<0.001	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww) Comments
NECC	007	Bryozoa	-	Ctenostomatida spp.	-	Suspension Feeder	-
NECC	007	Chordata	-	Ascideacea spp.	-	Suspension Feeder	-
NECC	007	Cnidaria	-	Actiniaria spp.	1	Suspension Feeder	0.033
NECC	007	Mollusca	Bivalvia	Ameritella agilis	2	Subsurface Deposit Feeder	0.189
NECC	007	Mollusca	Bivalvia	Anadara transversa	2	Suspension Feeder	<0.001
NECC	007	Mollusca	Bivalvia	Anomia simplex	7	Suspension Feeder	0.040
NECC	007	Mollusca	Bivalvia	Crassinella lunulata	12	Suspension Feeder	0.880
NECC	007	Mollusca	Bivalvia	Modiolus modiolus	3	Suspension Feeder	0.001
NECC	007	Mollusca	Bivalvia	Mya arenaria	1	Suspension Feeder	0.058
NECC	007	Mollusca	Bivalvia	Nucula proxima	16	Subsurface Deposit Feeder	1.099
NECC	007	Mollusca	Gastropoda	Astyris lunata	86	Predator	0.177
NECC	007	Mollusca	Gastropoda	Caecum johnsoni	87	Predator	0.041
NECC	007	Mollusca	Gastropoda	Caecum pulchellum	29	Predator	0.014
NECC	007	Mollusca	Gastropoda	Cotonopsis lafresnayi	9	Predator	0.365
NECC	007	Mollusca	Gastropoda	Crepidula fornicata	2	Suspension Feeder	0.028
NECC	007	Mollusca	Gastropoda	Euspira triseriata	7	Predator	<0.001
NECC	007	Mollusca	Gastropoda	Gastropoda spp.	8	-	0.014
NECC	007	Mollusca	Polyplacophora	Chaetopleura apiculata	2	Omnivore/Scavenger	0.500
NECC	007	Nemertea	-	Nemertea spp.	2	Predator	0.003
NECC	007	Polychaeta	Ampharetidae	Ampharete arctica	27	Surface Deposit Feeder	0.022
NECC	007	Polychaeta	Arabellidae	Arabella iricolor	2	Predator	0.042
NECC	007	Polychaeta	Glyceridae	Glycera capitata	4	Omnivore/Scavenger	0.007
NECC	007	Polychaeta	Nephtyidae	Nephtys picta	1	Omnivore/Scavenger	0.030
NECC	007	Polychaeta	Opheliidae	Travisia carnea	1	Subsurface Deposit Feeder	0.001
NECC	007	Polychaeta	Polynoidae	Lepidonotus squamatus	8	Predator	0.200
NECC	007	Polychaeta	Sabellaridae	Sabellaria vulgaris	2	Suspension Feeder	0.016
NECC	007	Polychaeta	Sabellidae	Bispira crassicornis	1	Suspension Feeder	0.001
NECC	007	Polychaeta	Serpulidae	Hydroides dianthus	2	Suspension Feeder	0.091
NECC	007	Polychaeta	Spionidae	<i>Spio</i> spp.	1	Interface Feeder	0.003

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
NECC	007	Polychaeta	Syllidae	Exogone spp.	25	Omnivore/Scavenger	<0.001	
NECC	007	Polychaeta	Syllidae	Syllis spp.	5	Omnivore/Scavenger	0.003	
NECC	007	Polychaeta	Terebellidae	Polycirrus spp.	8	Subsurface Deposit Feeder	0.008	
NECC	007	Polychaeta	-	Polychaete Fragments	-	-	0.076	
NECC	007	Sipuncula	Golfingiidae	Phascolopsis gouldii	2	Surface Deposit Feeder	0.002	
NECC	800	Arthropoda	Ampeliscidae	Ampelisca spp.	5	Interface Feeder	0.001	
NECC	800	Arthropoda	Ampithoidae	Cymadusa compta	2	Interface Feeder	0.001	
NECC	800	Arthropoda	Balanidae	Balanidae spp.	-	Suspension Feeder	-	
NECC	800	Arthropoda	Caprellidae	Paracaprella tenuis	1	Predator	<0.001	
NECC	800	Arthropoda	Cirolanidae	Politolana polita	1	Omnivore/Scavenger	<0.001	
NECC	800	Arthropoda	Corophiidae	Corophium spp.	8	Interface Feeder	0.004	
NECC	800	Arthropoda	Diastylidae	Diastylis sculpta	1	Interface Feeder	<0.001	
NECC	800	Arthropoda	Epialtidae	Libinia emarginata	1	Predator	0.01	juvenile
NECC	800	Arthropoda	Ischyroceridae	Ericthonius spp.	7	Interface Feeder	0.001	
NECC	800	Arthropoda	Leptocheliidae	Chondrochelia savignyi	1	Interface Feeder	<0.001	
NECC	800	Arthropoda	Lysianassidae	Lysianopsis alba	1	Omnivore/Scavenger	0.002	
NECC	800	Arthropoda	Paguridae	Pagurus arcuatus	7	Omnivore/Scavenger	0.016	
NECC	800	Arthropoda	Panopeidae	Panopeus herbstii	7	Predator	0.317	
NECC	800	Arthropoda	Phoxocephalidae	Rhepoxynius epistomus	3	Interface Feeder	<0.001	
NECC	800	Bryozoa	-	Cheilostomatida spp.	-	Suspension Feeder	-	
NECC	800	Bryozoa	-	Ctenostomatida spp.	-	Suspension Feeder	-	
NECC	800	Mollusca	Bivalvia	Crassinella lunulata	4	Suspension Feeder	0.06	
NECC	800	Mollusca	Gastropoda	Astyris lunata	6	Predator	0.015	
NECC	800	Mollusca	Gastropoda	Caecum johnsoni	1	Predator	<0.001	
NECC	800	Mollusca	Gastropoda	Caecum pulchellum	16	Predator	0.009	
NECC	800	Oligochaeta	Oligochaeta	Oligochaeta spp.	21	Subsurface Deposit Feeder	0.001	
NECC	800	Polychaeta	Ampharetidae	Ampharete arctica	6	Surface Deposit Feeder	0.001	
NECC	800	Polychaeta	Nereidae	Alitta virens	1	Predator	0.001	
NECC	800	Polychaeta	Terebellidae	Polycirrus spp.	1	Subsurface Deposit Feeder	0.001	

ECC 010 Arthropoda Amplibidae Cymadusa compta 2 Interface Feeder 0.003 ECC 010 Arthropoda Anthuridae Cyathura polita 1 Omnivore/Scavenger <0.001 ECC 010 Arthropoda Corophilde Corophilum spp. 2 Interface Feeder 0.001 ECC 010 Arthropoda Leptochelilde Corophilum spp. 59 Interface Feeder 0.002 ECC 010 Arthropoda Leptochelilde Corophilum spp. 59 Interface Feeder 0.002 ECC 010 Mollusca Bivalvia Ameriella agillis 1 Suspension Feeder 0.017 ECC 010 Mollusca Bivalvia Spisula solidissima 3 Suspension Feeder 0.001 ECC 010 Mollusca Gastropoda Astyris funata 1 Predator 0.002 ECC 010 Mollusca Gastropoda Astyris funata 1 Predator 0.003	Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww) Comments
ECC 010 Arthropoda Anthuridae Cyathura polita 1 Omnivore/Scavenger <0.001 ECC 010 Arthropoda Corophildae Corophildae Corophildae 2 Interface Feeder 0.001 ECC 010 Arthropoda Leptochellidae Chondrochelia savignyi 59 Interface Feeder 0.002 ECC 010 Chordata Molguldae Molgula manhattensis 13 Suspension Feeder 0.017 ECC 010 Mollusca Bivalvia Armertella agilis 1 Suspension Feeder 0.001 ECC 010 Mollusca Bivalvia Spisula solidissima 3 Suspension Feeder 0.004 ECC 010 Mollusca Gastropoda Astyris lunata 1 Predator 0.002 ECC 010 Mollusca Gastropoda Astyris lunata 1 Predator 0.002 ECC 010 Mollusca Nephtylidae Nephtys picta 1 Orminore/Scavenger 0.005 <td>NECC</td> <td>800</td> <td>Polychaeta</td> <td>-</td> <td>Polychaete Fragments</td> <td>-</td> <td>-</td> <td>0.016</td>	NECC	800	Polychaeta	-	Polychaete Fragments	-	-	0.016
ECC 010 Arthropoda Corophilidae Corophilm spp. 2 Interface Feeder 0.001 ECC 010 Arthropoda Leptochelidae Chondrochelia savignyi 59 Interface Feeder 0.002 ECC 010 Chordata Molguidae Molgula manhattensis 13 Suspension Feeder 0.056 ECC 010 Mollusca Bivalivia Ameritella agillis 1 Subspension Feeder 0.004 ECC 010 Mollusca Bivalivia Spisula solidissima 3 Suspension Feeder 0.004 ECC 010 Mollusca Gastropoda Astyris lunata 1 Predator 0.002 ECC 010 Mollusca Gastropoda Caecum johnsoni 63 Predator 0.002 ECC 010 Polychaeta Neprhylade Neprhys picta 1 Omnivore/Scavenger 0.005 ECC 010 Polychaeta Nereidae Altra viens 2 Predator 0.001 ECC	NECC	010	Arthropoda	Ampithoidae	Cymadusa compta	2	Interface Feeder	0.003
ECC 010 Arthropoda Leptocheliidae Chondrochelia savignyi 59 Interface Feeder 0.002 ECC 010 Chordata Molgulidae Molgula manhattensis 13 Suspension Feeder 0.556 ECC 010 Mollusca Bivalvia Ameritella agilis 1 Subsurface Deposit Feeder 0.017 ECC 010 Mollusca Bivalvia Crassinella funulata 2 Suspension Feeder 0.004 ECC 010 Mollusca Gastropoda Astyris lunata 1 Predator 0.002 ECC 010 Mollusca Gastropoda Caecum Johnsoni 63 Predator 0.002 ECC 010 Mollusca Gastropoda Caecum Johnsoni 63 Predator 0.002 ECC 010 Polychaeta Nephtys picta 1 Omnivore/Scavenger 0.005 ECC 010 Polychaeta Nephtys picta 1 Subsurface Deposit Feeder 0.001 ECC 010 <td< td=""><td>NECC</td><td>010</td><td>Arthropoda</td><td>Anthuridae</td><td>Cyathura polita</td><td>1</td><td>Omnivore/Scavenger</td><td><0.001</td></td<>	NECC	010	Arthropoda	Anthuridae	Cyathura polita	1	Omnivore/Scavenger	<0.001
ECC 010 Chordata Molgulidae Molgulia manhattensis 13 Suspension Feeder 0.556 ECC 010 Mollusca Bivalvia Ameritella agills 1 Subsurface Deposit Feeder 0.017 ECC 010 Mollusca Bivalvia Crassinella funulata 2 Suspension Feeder 0.004 ECC 010 Mollusca Gastropoda Astryris Junata 1 Predator 0.002 ECC 010 Mollusca Gastropoda Caecum johnsoni 63 Predator 0.032 ECC 010 Mollusca Gastropoda Caecum johnsoni 63 Predator 0.032 ECC 010 Polychaeta Nephtyldae Nephtys picta 1 Omnivore/Scavenger 0.005 ECC 010 Polychaeta Nereidae Allta virens 2 Predator 0.001 ECC 010 Polychaeta Terebellidae Polycirus spp. 1 Subsurface Deposit Feeder 0.0001 ECC<	NECC	010	Arthropoda	Corophiidae	Corophium spp.	2	Interface Feeder	0.001
ECC 010 Mollusca Bivalvia Ameritella agilis 1 Subsurface Deposit Feeder 0.017 ECC 010 Mollusca Bivalvia Crassinella lunulata 2 Suspension Feeder 0.004 ECC 010 Mollusca Bivalvia Spisula solidissima 3 Suspension Feeder 0.001 ECC 010 Mollusca Gastropoda Astyris lunata 1 Predator 0.002 ECC 010 Mollusca Gastropoda Caecum johnsoni 63 Predator 0.003 ECC 010 Polychaeta Nereidae Alita virens 2 Predator 0.005 ECC 010 Polychaeta Nereidae Alita virens 2 Predator 0.001 ECC 010 Polychaeta Nereidae Alita virens 2 Predator 0.004 ECC 010 Polychaeta Terebellidae Polycinus spp. 1 Subsurface Deposit Feeder <0.001	NECC	010	Arthropoda	Leptocheliidae	Chondrochelia savignyi	59	Interface Feeder	0.002
ECC 010 Mollusca Bivalvia Crassinella lunulata 2 Suspension Feeder 0.004 ECC 010 Mollusca Bivalvia Spisula solidissima 3 Suspension Feeder 0.001 ECC 010 Mollusca Gastropoda Astyris lunata 1 Predator 0.002 ECC 010 Mollusca Gastropoda Caecum johnsoni 63 Predator 0.032 ECC 010 Polychaeta Nephtyidae Nephtys picta 1 Omnivore/Scavenger 0.005 ECC 010 Polychaeta Nereidae Alita virens 2 Predator 0.001 ECC 010 Polychaeta Terebellidae Leitoscoloplos fragilis 1 Subsurface Deposit Feeder 0.004 ECC 010 Polychaeta Terebellidae Polycirrus spp. 1 Subsurface Deposit Feeder 0.008 ECC 011 Polychaeta - Polychaete Fragments 0.008 ECC 012 Arthropoda Ampeliscidae Ampelisca spp. 2 Interface Feeder 0.002 ECC 012 Arthropoda Ealanidae Balanidae spp Suspension Feeder 0.001 ECC 012 Arthropoda Corophiidae Corophium spp. 1 Interface Feeder 0.001 ECC 012 Arthropoda Leptocheliidae Corophium spp. 1 Interface Feeder 0.001 ECC 012 Arthropoda Leptocheliidae Corophium spp. 1 Interface Feeder 0.001 ECC 012 Arthropoda Leptocheliidae Corophium spp. 1 Interface Feeder 0.001 ECC 012 Arthropoda Leptocheliidae Chondrochelia savignyi 5 Interface Feeder 0.001 ECC 012 Arthropoda Leptocheliidae Paguridae spp. 2 Omnivore/Scavenger 0.001 ECC 012 Arthropoda Leptocheliidae Paguridae spp. 2 Omnivore/Scavenger 0.001 ECC 012 Arthropoda Phoxocephalidae Harpinia propinqua 6 Interface Feeder 0.002 ECC 012 Bryozoa - Cheiostomatida spp Suspension Feeder - 0.002 ECC 012 Bryozoa - Cheiostomatida spp Suspension Feeder - 0.002 ECC 012 Bryozoa - Cheiostomatida spp Suspension Feeder - 0.009 ECC 012 Mollusca Molguldae Molgula manhattensis 16 Suspension Feeder 0.009	NECC	010	Chordata	Molgulidae	Molgula manhattensis	13	Suspension Feeder	0.556
ECC 010 Mollusca Bivalvia Spisula solidissima 3 Suspension Feeder 0.001 ECC 010 Mollusca Gastropoda Astyris lunata 1 Predator 0.002 ECC 010 Mollusca Gastropoda Caecum johnsoni 63 Predator 0.032 ECC 010 Polychaeta Nephtyidae Nephtys picta 1 Omnivore/Scavenger 0.005 ECC 010 Polychaeta Nereidae Alita virens 2 Predator 0.001 ECC 010 Polychaeta Orbiniidae Leitoscoloplos fragilis 1 Subsurface Deposit Feeder 0.004 ECC 010 Polychaeta Terebellidae Polycirrus spp. 1 Subsurface Deposit Feeder 0.008 ECC 010 Polychaeta - Polychaete Fragments - 0.008 ECC 011 Polychaeta - Polychaete Fragments - 0.008 ECC 012 Arthropoda Ampeliscidae Ampelisca spp. 2 Interface Feeder 0.002 ECC 012 Arthropoda Balanidae Balanidae spp Suspension Feeder 0.001 ECC 012 Arthropoda Caprellidae Paracaprella tenuis 2 Predator 0.001 ECC 012 Arthropoda Corophildae Corophium spp. 1 Interface Feeder 0.001 ECC 012 Arthropoda Leptocheliidae Chondrochelia savignyi 5 Interface Feeder 0.001 ECC 012 Arthropoda Leptocheliidae Paguridae spp. 2 Omnivore/Scavenger 0.001 ECC 012 Arthropoda Phoxocephalidae Paguridae spp. 2 Omnivore/Scavenger 0.001 ECC 012 Arthropoda Hopoda Paguridae Paguridae spp. 3 Interface Feeder 0.002 ECC 012 Arthropoda Leptocheliidae Chondrochelia savignyi 5 Interface Feeder 0.001 ECC 012 Arthropoda Hopoda Harpinia propinqua 6 Interface Feeder 0.002 ECC 012 Bryozoa - Chelostomatida spp Suspension Feeder 0.002 ECC 012 Bryozoa - Chelostomatida spp Suspension Feeder - 0.002 ECC 012 Bryozoa - Chelostomatida spp Suspension Feeder - 0.002 ECC 012 Bryozoa - Chelostomatida spp Suspension Feeder 0.009 ECC 012 Mollusca Bivalvia Ameritella agilis 2 Subsurface Deposit Feeder 0.009	NECC	010	Mollusca	Bivalvia	Ameritella agilis	1	Subsurface Deposit Feeder	0.017
ECC 010 Mollusca Gastropoda Astyris lunata 1 Predator 0.002 ECC 010 Mollusca Gastropoda Caecum johnsoni 63 Predator 0.032 ECC 010 Polychaeta Nephtyidae Nephtys picta 1 Omnivore/Scavenger 0.005 ECC 010 Polychaeta Nereidae Alitta virens 2 Predator 0.001 ECC 010 Polychaeta Orbiniidae Leitoscoloplos fragilis 1 Subsurface Deposit Feeder 0.004 ECC 010 Polychaeta Terebellidae Polycirrus spp. 1 Subsurface Deposit Feeder 0.001 ECC 010 Polychaeta - Polychaete Fragments 0.008 ECC 011 Arthropoda Ampeliscidae Ampelisca spp. 2 Interface Feeder 0.002 ECC 012 Arthropoda Balanidae Balanidae spp Suspension Feeder 0.001 ECC 012 Arthropoda Caprellidae Paracaprella tenuis 2 Predator 0.001 ECC 012 Arthropoda Corophiidae Corophium spp. 1 Interface Feeder 0.001 ECC 012 Arthropoda Leptochellidae Paracaprella tenuis 2 Predator 0.001 ECC 012 Arthropoda Leptochellidae Paguridae savignyi 5 Interface Feeder 0.001 ECC 012 Arthropoda Leptochellidae Paguridae spp. 2 Omnivore/Scavenger 0.013 ECC 012 Arthropoda Paguridae Paguridae spp. 2 Omnivore/Scavenger 0.001 ECC 012 Arthropoda Paguridae Paguridae spp. 2 Omnivore/Scavenger 0.004 ECC 012 Arthropoda Phoxocephalidae Harpinia propinqua 6 Interface Feeder 0.002 ECC 012 Bryozoa - Cheilostomatida spp Suspension Feeder - ECC 012 Bryozoa - Cheilostomatida spp Suspension Feeder - ECC 012 Bryozoa - Cheilostomatida spp Suspension Feeder - ECC 012 Chordata Molgulidae Molgulia manhattensis 16 Suspension Feeder 0.009	NECC	010	Mollusca	Bivalvia	Crassinella lunulata	2	Suspension Feeder	0.004
ECC 010 Mollusca Gastropoda Caecum johnsoni 63 Predator 0.032 ECC 010 Polychaeta Nephtyidae Nephtys picta 1 0mnivore/Scavenger 0.005 ECC 010 Polychaeta Nereidae Alitta virens 2 Predator 0.001 ECC 010 Polychaeta Orbiniidae Leitoscoloplos fragilis 1 Subsurface Deposit Feeder 0.004 ECC 010 Polychaeta Terebellidae Polycirrus spp. 1 Subsurface Deposit Feeder 0.001 ECC 010 Polychaeta - Polychaete Fragments 0.008 ECC 011 Arthropoda Ampeliscidae Ampelisca spp. 2 Interface Feeder 0.002 ECC 012 Arthropoda Balanidae Balanidae spp Suspension Feeder 0.001 ECC 012 Arthropoda Caprellidae Paracaprella tenuis 2 Predator 0.001 ECC 012 Arthropoda Corophiidae Corophium spp. 1 Interface Feeder 0.001 ECC 012 Arthropoda Leptocheliidae Chondrochelia savignyi 5 Interface Feeder 0.001 ECC 012 Arthropoda Lysianassidae Lysianopsis alba 1 Omnivore/Scavenger 0.013 ECC 012 Arthropoda Paguridae Paguridae spp. 2 Omnivore/Scavenger 0.001 ECC 012 Arthropoda Phoxocephalidae Harpinia propinqua 6 Interface Feeder 0.002 ECC 012 Arthropoda Phoxocephalidae Harpinia propinqua 6 Interface Feeder 0.002 ECC 012 Arthropoda Phoxocephalidae Harpinia propinqua 6 Interface Feeder 0.002 ECC 012 Arthropoda Phoxocephalidae Harpinia propinqua 6 Interface Feeder 0.002 ECC 012 Arthropoda Phoxocephalidae Harpinia propinqua 6 Interface Feeder 0.002 ECC 012 Bryozoa - Cheilostomatida spp Suspension Feeder - ECC 0.012 Bryozoa - Cheilostomatida spp Suspension Feeder - ECC 0.012 Bryozoa - Cheilostomatida spp Suspension Feeder - Suspension Feeder - ECC 0.012 Chordata Molgulidae Molgula manhattensis 16 Suspension Feeder 0.0099	NECC	010	Mollusca	Bivalvia	Spisula solidissima	3	Suspension Feeder	0.001
Polychaeta Nephtyidae Nephtys picta 1 Omnivore/Scavenger 0.005 ECC 010 Polychaeta Nereidae Alitta virens 2 Predator 0.001 ECC 010 Polychaeta Orbiniidae Leitoscoloplos fragilis 1 Subsurface Deposit Feeder 0.004 ECC 010 Polychaeta Terebellidae Polycirrus spp. 1 Subsurface Deposit Feeder 0.001 ECC 010 Polychaeta - Polychaete Fragments 0.008 ECC 011 Arthropoda Ampeliscidae Ampelisca spp. 2 Interface Feeder 0.002 ECC 012 Arthropoda Balanidae Balanidae spp Suspension Feeder 0.001 ECC 013 Arthropoda Caprellidae Paracaprella tenuis 2 Predator 0.001 ECC 014 Arthropoda Corophiidae Corophium spp. 1 Interface Feeder 0.001 ECC 015 Arthropoda Leptocheliidae Chondrochelia savignyi 5 Interface Feeder 0.001 ECC 016 Arthropoda Lysianassidae Lysianopsis alba 1 Omnivore/Scavenger 0.013 ECC 017 Arthropoda Paguridae Paguridae spp. 2 Omnivore/Scavenger 0.004 ECC 018 Arthropoda Paguridae Paguridae spp. 2 Omnivore/Scavenger 0.004 ECC 019 Arthropoda Phoxocephalidae Harpinia propinqua 6 Interface Feeder 0.002 ECC 011 Bryozoa - Cheilostomatida spp Suspension Feeder - ECC 012 Bryozoa - Ctenostomatida spp Suspension Feeder - Suspension Feeder - ECC 012 Bryozoa - Ctenostomatida spp Suspension Feeder - 0.009 ECC 012 Mollusca Bivalvia Ameritella agilis 2 Subsurface Deposit Feeder 0.013	NECC	010	Mollusca	Gastropoda	Astyris lunata	1	Predator	0.002
Peter Delicated Nereidae Alitta virens 2 Predator 0.001 ECC 010 Polychaeta Orbiniidae Leitoscoloplos fragilis 1 Subsurface Deposit Feeder 0.004 ECC 010 Polychaeta Terebellidae Polycirrus spp. 1 Subsurface Deposit Feeder 0.001 ECC 010 Polychaeta - Polychaete Fragments 0.008 ECC 012 Arthropoda Ampeliscidae Ampelisca spp. 2 Interface Feeder 0.002 ECC 012 Arthropoda Balanidae Balanidae spp Suspension Feeder - 0.001 ECC 012 Arthropoda Caprellidae Paracaprella tenuis 2 Predator 0.001 ECC 012 Arthropoda Corophiidae Corophium spp. 1 Interface Feeder 0.001 ECC 012 Arthropoda Leptocheliidae Chondrochelia savignyi 5 Interface Feeder 0.001 ECC 012 Arthropoda Lysianassidae Lysianopsis alba 1 Omnivore/Scavenger 0.013 ECC 012 Arthropoda Paguridae Paguridae spp. 2 Omnivore/Scavenger 0.004 ECC 012 Arthropoda Paguridae Paguridae spp. 2 Omnivore/Scavenger 0.004 ECC 012 Bryozoa - Cheilostomatida spp Suspension Feeder - ECC 012 Bryozoa - Ctenostomatida spp Suspension Feeder - ECC 012 Mollusca Bivalvia Ameritella agilis 2 Subsurface Deposit Feeder 0.009	NECC	010	Mollusca	Gastropoda	Caecum johnsoni	63	Predator	0.032
ECC 010 Polychaeta Orbiniidae Leitoscoloplos fragilis 1 Subsurface Deposit Feeder 0.004 ECC 010 Polychaeta Terebellidae Polycirrus spp. 1 Subsurface Deposit Feeder <0.001 ECC 010 Polychaeta - Polychaete Fragments 0.008 ECC 011 Arthropoda Ampeliscidae Ampelisca spp. 2 Interface Feeder <0.002 ECC 012 Arthropoda Balanidae Balanidae spp Suspension Feeder <0.001 ECC 013 Arthropoda Caprellidae Paracaprella tenuis 2 Predator <0.001 ECC 014 Arthropoda Corophiidae Corophium spp. 1 Interface Feeder <0.001 ECC 015 Arthropoda Leptocheliidae Chondrochelia savignyi 5 Interface Feeder <0.001 ECC 016 Arthropoda Lysianassidae Lysianopsis alba 1 Omnivore/Scavenger 0.013 ECC 017 Arthropoda Paguridae Paguridae spp. 2 Omnivore/Scavenger 0.004 ECC 018 Arthropoda Phoxocephalidae Harpinia propinqua 6 Interface Feeder 0.002 ECC 019 Bryozoa - Cheilostomatida spp Suspension Feeder - ECC 012 Bryozoa - Ctenostomatida spp Suspension Feeder - ECC 012 Bryozoa - Ctenostomatida spp Suspension Feeder - ECC 012 Mollusca Bivalvia Ameritella agilis 2 Subsurface Deposit Feeder 0.009	NECC	010	Polychaeta	Nephtyidae	Nephtys picta	1	Omnivore/Scavenger	0.005
ECC 010 Polychaeta Terebellidae Polycirrus spp. 1 Subsurface Deposit Feeder <0.001 ECC 010 Polychaeta - Polychaete Fragments 0.008 ECC 012 Arthropoda Ampeliscidae Ampelisca spp. 2 Interface Feeder <0.002 ECC 012 Arthropoda Balanidae Balanidae spp Suspension Feeder ECC 012 Arthropoda Caprellidae Paracaprella tenuis 2 Predator <0.001 ECC 012 Arthropoda Corophiidae Corophium spp. 1 Interface Feeder <0.001 ECC 012 Arthropoda Leptochellidae Chondrochella savignyi 5 Interface Feeder <0.001 ECC 012 Arthropoda Lysianassidae Lysianopsis alba 1 Omnivore/Scavenger 0.013 ECC 012 Arthropoda Paguridae Paguridae spp. 2 Omnivore/Scavenger 0.004 ECC 012 Arthropoda Phoxocephalidae Harpinia propinqua 6 Interface Feeder 0.002 ECC 012 Bryozoa - Cheilostomatida spp Suspension Feeder - ECC 012 Bryozoa - Ctenostomatida spp Suspension Feeder - ECC 012 Chordata Molgulidae Molgula manhattensis 16 Suspension Feeder 0.099 ECC 012 Mollusca Bivalvia Ameritella agilis 2 Subsurface Deposit Feeder 0.013	NECC	010	Polychaeta	Nereidae	Alitta virens	2	Predator	0.001
ECC 010 Polychaeta - Polychaete Fragments 0.008 ECC 0112 Arthropoda Ampeliscidae Ampelisca spp. 2 Interface Feeder <0.002 ECC 0112 Arthropoda Balanidae Balanidae spp Suspension Feeder	NECC	010	Polychaeta	Orbiniidae	Leitoscoloplos fragilis	1	Subsurface Deposit Feeder	0.004
Arthropoda Ampeliscidae Ampelisca spp. 2 Interface Feeder <0.002 ECC 012 Arthropoda Balanidae Balanidae spp Suspension Feeder - ECC 012 Arthropoda Caprellidae Paracaprella tenuis 2 Predator <0.001 ECC 012 Arthropoda Corophiidae Corophium spp. 1 Interface Feeder <0.001 ECC 012 Arthropoda Leptocheliidae Chondrochelia savignyi 5 Interface Feeder <0.001 ECC 012 Arthropoda Lysianassidae Lysianopsis alba 1 Omnivore/Scavenger 0.013 ECC 012 Arthropoda Paguridae Paguridae spp. 2 Omnivore/Scavenger 0.004 ECC 012 Arthropoda Phoxocephalidae Harpinia propinqua 6 Interface Feeder 0.002 ECC 012 Bryozoa - Cheilostomatida spp Suspension Feeder - ECC 012 Bryozoa - Ctenostomatida spp Suspension Feeder - ECC 012 Mollusca Bivalvia Ameritella agilis 2 Subsurface Deposit Feeder 0.013	NECC	010	Polychaeta	Terebellidae	Polycirrus spp.	1	Subsurface Deposit Feeder	<0.001
Balanidae Balanidae Balanidae Spp Suspension Feeder - ECC 012 Arthropoda Caprellidae Paracaprella tenuis 2 Predator <0.001 ECC 012 Arthropoda Corophiidae Corophium spp. 1 Interface Feeder <0.001 ECC 012 Arthropoda Leptocheliidae Chondrochelia savignyi 5 Interface Feeder <0.001 ECC 012 Arthropoda Lysianassidae Lysianopsis alba 1 Omnivore/Scavenger 0.013 ECC 012 Arthropoda Paguridae Paguridae spp. 2 Omnivore/Scavenger 0.004 ECC 012 Arthropoda Phoxocephalidae Harpinia propinqua 6 Interface Feeder 0.002 ECC 012 Bryozoa - Cheilostomatida spp Suspension Feeder - ECC 012 Bryozoa - Ctenostomatida spp Suspension Feeder - ECC 012 Bryozoa - Ctenostomatida spp Suspension Feeder - ECC 012 Bryozoa - Ctenostomatida spp Suspension Feeder - ECC 012 Bryozoa - Ctenostomatida spp Suspension Feeder - ECC 012 Mollusca Bivalvia Ameritella agilis 2 Subsurface Deposit Feeder 0.013	NECC	010	Polychaeta	-	Polychaete Fragments	-	-	0.008
ECC 012 Arthropoda Caprellidae Paracaprella tenuis 2 Predator <0.001 ECC 012 Arthropoda Corophiidae Corophium spp. 1 Interface Feeder <0.001 ECC 012 Arthropoda Leptocheliidae Chondrochelia savignyi 5 Interface Feeder <0.001 ECC 012 Arthropoda Lysianassidae Lysianopsis alba 1 Omnivore/Scavenger 0.013 ECC 012 Arthropoda Paguridae Paguridae spp. 2 Omnivore/Scavenger 0.004 ECC 012 Arthropoda Phoxocephalidae Harpinia propinqua 6 Interface Feeder 0.002 ECC 012 Bryozoa - Cheilostomatida spp Suspension Feeder - ECC 012 Bryozoa - Ctenostomatida spp Suspension Feeder - ECC 012 Chordata Molgulidae Molgula manhattensis 16 Suspension Feeder 0.009 ECC 012 Mollusca Bivalvia Ameritella agilis 2 Subsurface Deposit Feeder 0.013	NECC	012	Arthropoda	Ampeliscidae	Ampelisca spp.	2	Interface Feeder	<0.002
ECC 012 Arthropoda Corophiidae Corophium spp. 1 Interface Feeder <0.001 ECC 012 Arthropoda Leptocheliidae Chondrochelia savignyi 5 Interface Feeder <0.001 ECC 012 Arthropoda Lysianassidae Lysianopsis alba 1 Omnivore/Scavenger 0.013 ECC 012 Arthropoda Paguridae Paguridae spp. 2 Omnivore/Scavenger 0.004 ECC 012 Arthropoda Phoxocephalidae Harpinia propinqua 6 Interface Feeder 0.002 ECC 012 Bryozoa - Cheilostomatida spp Suspension Feeder - ECC 012 Bryozoa - Ctenostomatida spp Suspension Feeder - ECC 012 Chordata Molgulidae Molgula manhattensis 16 Suspension Feeder 0.009 ECC 012 Mollusca Bivalvia Ameritella agilis 2 Subsurface Deposit Feeder 0.013	NECC	012	Arthropoda	Balanidae	Balanidae spp.	-	Suspension Feeder	-
ECC 012 Arthropoda Leptocheliidae Chondrochelia savignyi 5 Interface Feeder <0.001 ECC 012 Arthropoda Lysianassidae Lysianopsis alba 1 Omnivore/Scavenger 0.013 ECC 012 Arthropoda Paguridae Paguridae spp. 2 Omnivore/Scavenger 0.004 ECC 012 Arthropoda Phoxocephalidae Harpinia propinqua 6 Interface Feeder 0.002 ECC 012 Bryozoa - Cheilostomatida spp Suspension Feeder - ECC 012 Bryozoa - Ctenostomatida spp Suspension Feeder - ECC 012 Chordata Molgulidae Molgula manhattensis 16 Suspension Feeder 0.099 ECC 012 Mollusca Bivalvia Ameritella agilis 2 Subsurface Deposit Feeder 0.013	NECC	012	Arthropoda	Caprellidae	Paracaprella tenuis	2	Predator	<0.001
ECC 012 Arthropoda Lysianassidae Lysianopsis alba 1 Omnivore/Scavenger 0.013 ECC 012 Arthropoda Paguridae Paguridae spp. 2 Omnivore/Scavenger 0.004 ECC 012 Arthropoda Phoxocephalidae Harpinia propinqua 6 Interface Feeder 0.002 ECC 012 Bryozoa - Cheilostomatida spp Suspension Feeder - ECC 012 Bryozoa - Ctenostomatida spp Suspension Feeder - ECC 012 Chordata Molgulidae Molgula manhattensis 16 Suspension Feeder 0.009 ECC 012 Mollusca Bivalvia Ameritella agilis 2 Subsurface Deposit Feeder 0.013	NECC	012	Arthropoda	Corophiidae	Corophium spp.	1	Interface Feeder	<0.001
ECC 012 Arthropoda Paguridae Paguridae spp. 2 Omnivore/Scavenger 0.004 ECC 012 Arthropoda Phoxocephalidae Harpinia propinqua 6 Interface Feeder 0.002 ECC 012 Bryozoa - Cheilostomatida spp Suspension Feeder - ECC 012 Bryozoa - Ctenostomatida spp Suspension Feeder - ECC 012 Chordata Molgulidae Molgula manhattensis 16 Suspension Feeder 0.099 ECC 012 Mollusca Bivalvia Ameritella agilis 2 Subsurface Deposit Feeder 0.013	NECC	012	Arthropoda	Leptocheliidae	Chondrochelia savignyi	5	Interface Feeder	<0.001
ECC 012 Arthropoda Phoxocephalidae Harpinia propinqua 6 Interface Feeder 0.002 ECC 012 Bryozoa - Cheilostomatida spp Suspension Feeder - ECC 012 Bryozoa - Ctenostomatida spp Suspension Feeder - ECC 012 Chordata Molgulidae Molgula manhattensis 16 Suspension Feeder 0.099 ECC 012 Mollusca Bivalvia Ameritella agilis 2 Subsurface Deposit Feeder 0.013	NECC	012	Arthropoda	Lysianassidae	Lysianopsis alba	1	Omnivore/Scavenger	0.013
ECC 012 Bryozoa - Cheilostomatida spp Suspension Feeder - ECC 012 Bryozoa - Ctenostomatida spp Suspension Feeder - ECC 012 Chordata Molgulidae Molgula manhattensis 16 Suspension Feeder 0.099 ECC 012 Mollusca Bivalvia Ameritella agilis 2 Subsurface Deposit Feeder 0.013	NECC	012	Arthropoda	Paguridae	Paguridae spp.	2	Omnivore/Scavenger	0.004
ECC 012 Bryozoa - Ctenostomatida spp Suspension Feeder - ECC 012 Chordata Molgulidae Molgula manhattensis 16 Suspension Feeder 0.099 ECC 012 Mollusca Bivalvia Ameritella agilis 2 Subsurface Deposit Feeder 0.013	NECC	012	Arthropoda	Phoxocephalidae	Harpinia propinqua	6	Interface Feeder	0.002
ECC 012 Chordata Molgulidae <i>Molgula manhattensis</i> 16 Suspension Feeder 0.099 ECC 012 Mollusca Bivalvia <i>Ameritella agilis</i> 2 Subsurface Deposit Feeder 0.013	NECC	012	Bryozoa	-	Cheilostomatida spp.	-	Suspension Feeder	-
ECC 012 Mollusca Bivalvia Ameritella agilis 2 Subsurface Deposit Feeder 0.013	NECC	012	Bryozoa	-	Ctenostomatida spp.	-	Suspension Feeder	-
	NECC	012	Chordata	Molgulidae	Molgula manhattensis	16	Suspension Feeder	0.099
ECC 012 Mollusca Bivalvia <i>Anomia simplex</i> 1 Suspension Feeder <0.001	NECC	012	Mollusca	Bivalvia	Ameritella agilis	2	Subsurface Deposit Feeder	0.013
	NECC	012	Mollusca	Bivalvia	Anomia simplex	1	Suspension Feeder	<0.001

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
NECC	012	Mollusca	Bivalvia	Spisula solidissima	2	Suspension Feeder	0.005	
NECC	012	Mollusca	Gastropoda	Astyris lunata	3	Predator	0.005	
NECC	012	Mollusca	Gastropoda	Caecum cooperi	4	Predator	0.004	
NECC	012	Mollusca	Gastropoda	Caecum johnsoni	45	Predator	0.025	
NECC	012	Mollusca	Gastropoda	Crepidula fornicata	1	Suspension Feeder	0.003	
NECC	012	Polychaeta	Ampharetidae	Ampharete arctica	4	Surface Deposit Feeder	0.003	
NECC	012	Polychaeta	Glyceridae	Glycera spp.	6	Omnivore/Scavenger	0.002	juvenile
NECC	012	Polychaeta	Nephtyidae	Nephtys picta	2	Omnivore/Scavenger	0.020	
NECC	012	Polychaeta	Opheliidae	Travisia carnea	1	Subsurface Deposit Feeder	0.025	
NECC	012	Polychaeta	Orbiniidae	Leitoscoloplos fragilis	1	Subsurface Deposit Feeder	0.008	
NECC	012	Polychaeta	Syllidae	Exogone spp.	5	Omnivore/Scavenger	<0.001	
NECC	012	Polychaeta	Terebellidae	Pista maculata	1	Subsurface Deposit Feeder	0.008	
NECC	012	Polychaeta	Terebellidae	Polycirrus spp.	3	Subsurface Deposit Feeder	0.002	
NECC	014	Arthropoda	Ampeliscidae	Ampelisca spp.	15	Interface Feeder	0.043	
NECC	014	Arthropoda	Ampithoidae	Cymadusa compta	5	Interface Feeder	0.008	
NECC	014	Arthropoda	Caprellidae	Aeginina longicornis	2	Predator	0.001	
NECC	014	Arthropoda	Caprellidae	Caprella penantis	3	Predator	<0.001	
NECC	014	Arthropoda	Diastylidae	Diastylis sculpta	1	Interface Feeder	0.002	
NECC	014	Arthropoda	Epialtidae	Libinia emarginata	3	Predator	0.184	
NECC	014	Arthropoda	Maeridae	Elasmopus levis	6	Omnivore/Scavenger	0.002	
NECC	014	Arthropoda	Paguridae	Pagurus longicarpus	5	Omnivore/Scavenger	0.01	
NECC	014	Arthropoda	Panopeidae	Panopeus herbstii	2	Predator	0.231	
NECC	014	Arthropoda	Unciolidae	Unciola spp.	2	Interface Feeder	<0.001	
NECC	014	Arthropoda	-	Brachyuran spp.	1	-	0.001	
NECC	014	Bryozoa	-	Ctenostomatida spp.	-	Suspension Feeder	-	
NECC	014	Chordata	Molgulidae	Molgula manhattensis	2	Suspension Feeder	<0.001	
NECC	014	Mollusca	Bivalvia	Ameritella agilis	2	Subsurface Deposit Feeder	0.007	
NECC	014	Mollusca	Bivalvia	Ensis leei	1	Suspension Feeder	0.019	
NECC	014	Mollusca	Bivalvia	Lyonsia hyalina	5	Suspension Feeder	0.006	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
NECC	014	Mollusca	Gastropoda	Astyris lunata	35	Predator	0.76	
NECC	014	Polychaeta	Ampharetidae	Ampharete arctica	11	Surface Deposit Feeder	0.029	
NECC	014	Polychaeta	Lumbrineridae	Scoletoma spp.	13	Omnivore/Scavenger	0.001	juvenile
NECC	014	Polychaeta	Nephtyidae	Nephtys picta	1	Omnivore/Scavenger	0.004	
NECC	014	Polychaeta	Onuphidae	Diopatra cuprea	3	Predator	0.531	
NECC	014	Polychaeta	Syllidae	Exogone spp.	9	Omnivore/Scavenger	0.003	
NECC	014	Polychaeta	Terebellidae	Pista cristata	2	Subsurface Deposit Feeder	0.154	
NECC	014	Polychaeta	Terebellidae	Pista maculata	8	Subsurface Deposit Feeder	0.146	
NECC	014	Polychaeta	Terebellidae	Polycirrus spp.	1	Subsurface Deposit Feeder	0.017	
NECC	014	Polychaeta	-	Polychaete Fragments	-	-	0.234	
NECC	016	Arthropoda	Diastylidae	Diastylis sculpta	1	Interface Feeder	0.001	
NECC	016	Arthropoda	Leptocheliidae	Chondrochelia savignyi	3	Interface Feeder	<0.001	
NECC	016	Arthropoda	Melitidae	Melita nitida	1	Interface Feeder	<0.001	
NECC	016	Arthropoda	Phoxocephalidae	Rhepoxynius epistomus	1	Interface Feeder	0.002	
NECC	016	Mollusca	Bivalvia	Ameritella agilis	3	Subsurface Deposit Feeder	0.020	
NECC	016	Mollusca	Bivalvia	Lyonsia hyalina	2	Suspension Feeder	0.001	
NECC	016	Mollusca	Bivalvia	Nucula proxima	1	Subsurface Deposit Feeder	0.004	
NECC	016	Mollusca	Bivalvia	Pandora gouldiana	1	Suspension Feeder	0.003	
NECC	016	Mollusca	Bivalvia	Spisula solidissima	10	Suspension Feeder	0.012	
NECC	016	Mollusca	Gastropoda	Caecum johnsoni	15	Predator	0.007	
NECC	016	Mollusca	Gastropoda	Euspira triseriata	1	Predator	0.031	
NECC	016	Mollusca	Gastropoda	Tritia trivittata	2	Omnivore/Scavenger	0.479	
NECC	016	Polychaeta	Ampharetidae	Ampharete arctica	2	Surface Deposit Feeder	0.001	
NECC	016	Polychaeta	Glyceridae	Glyceridae spp.	2	Omnivore/Scavenger	0.001	
NECC	016	Polychaeta	Orbiniidae	Leitoscoloplos fragilis	1	Subsurface Deposit Feeder	0.011	
NECC	016	Polychaeta	Syllidae	Exogone spp.	3	Omnivore/Scavenger	<0.001	
NECC	016	Polychaeta	Terebellidae	Polycirrus spp.	4	Subsurface Deposit Feeder	0.021	
NECC	016	Polychaeta	-	Polychaete Fragments	-	-	0.048	
NECC	018	Arthropoda	Paguridae	Pagurus spp.	1	Omnivore/Scavenger	<0.001	

NECC018ArthropodaPhoxocephalidaeRhepoxynius epistomus17Interface FeederNECC018Arthropoda-Brachyura spp.1-NECC018MolluscaBivalviaAmeritella agilis4Subsurface Deposit FeederNECC018MolluscaBivalviaEnsis leei1Suspension FeederNECC018MolluscaGastropodaAstyris lunata1PredatorNECC018MolluscaGastropodaCotonopsis lafresnayi1PredatorNECC018PolychaetaGoniadidaeGoniada gigantea1PredatorNECC018PolychaetaNephtyidaeNephtyidae spp.4Omnivore/ScavengerNECC018PolychaetaOweniidaeOwenia fusiformis1Suspension FeederNECC019ArthropodaAmpithoidaeCymadusa compta34Interface FeederNECC019ArthropodaBalanidaeBalanidae sppSuspension FeederNECC019ArthropodaCaprellidaeAeginina longicornis1PredatorNECC019ArthropodaIschyroceridaeEricthonius spp.1Interface FeederNECC019ArthropodaPanopeidaePanopeus herbstii29PredatorNECC019ArthropodaUnciolidaeUnciolidaeUnciola sppSuspension FeederNECC019Bryozoa-Cheilostomatida spp	(g ww) Cor	mments
NECC 018 Mollusca Bivalvia Ameritella agilis 4 Subsurface Deposit Feeder NECC 018 Mollusca Bivalvia Ensis leei 1 Suspension Feeder NECC 018 Mollusca Gastropoda Astyris lunata 1 Predator NECC 018 Mollusca Gastropoda Cotonopsis lafresnayi 1 Predator NECC 018 Polychaeta Goniadidae Goniada gigantea 1 Predator NECC 018 Polychaeta Nephtyidae Nephtyidae spp. 4 Omnivore/Scavenger NECC 018 Polychaeta Oweniidae Owenia fusiformis 1 Suspension Feeder NECC 019 Arthropoda Ampithoidae Cymadusa compta 34 Interface Feeder NECC 019 Arthropoda Balanidae Balanidae spp Suspension Feeder NECC 019 Arthropoda Caprellidae Aeginina longicornis 1 Predator NECC 019 Arthropoda Ischyroceridae Ericthonius spp. 1 Interface Feeder NECC 019 Arthropoda Panopeidae Panopeus herbstii 29 Predator NECC 019 Arthropoda Unciolidae Unciolia spp. 9 Interface Feeder	0.007	
NECC018MolluscaBivalviaEnsis leei1Suspension FeederNECC018MolluscaGastropodaAstyris lunata1PredatorNECC018MolluscaGastropodaCotonopsis lafresnayi1PredatorNECC018PolychaetaGoniadidaeGoniada gigantea1PredatorNECC018PolychaetaNephtyidaeNephtyidae spp.4Omnivore/ScavengerNECC018PolychaetaOweniidaeOwenia fusiformis1Suspension FeederNECC019ArthropodaAmpithoidaeCymadusa compta34Interface FeederNECC019ArthropodaBalanidaeBalanidae sppSuspension FeederNECC019ArthropodaCaprellidaeAeginina longicornis1PredatorNECC019ArthropodaIschyroceridaeEricthonius spp.1Interface FeederNECC019ArthropodaPanopeidaePanopeus herbstii29PredatorNECC019ArthropodaUnciolidaeUnciola spp.9Interface Feeder	0.001	
NECC018MolluscaGastropodaAstyris lunata1PredatorNECC018MolluscaGastropodaCotonopsis lafresnayi1PredatorNECC018PolychaetaGoniadidaeGoniada gigantea1PredatorNECC018PolychaetaNephtyidaeNephtyidae spp.4Omnivore/ScavengerNECC018PolychaetaOweniidaeOwenia fusiformis1Suspension FeederNECC019ArthropodaAmpithoidaeCymadusa compta34Interface FeederNECC019ArthropodaBalanidaeBalanidae sppSuspension FeederNECC019ArthropodaCaprellidaeAeginina longicornis1PredatorNECC019ArthropodaIschyroceridaeEricthonius spp.1Interface FeederNECC019ArthropodaPanopeidaePanopeus herbstii29PredatorNECC019ArthropodaUnciolidaeUnciola spp.9Interface Feeder	0.011	
NECC 018 Mollusca Gastropoda Cotonopsis lafresnayi 1 Predator NECC 018 Polychaeta Goniadidae Goniada gigantea 1 Predator NECC 018 Polychaeta Nephtyidae Nephtyidae spp. 4 Omnivore/Scavenger NECC 018 Polychaeta Oweniidae Owenia fusiformis 1 Suspension Feeder NECC 019 Arthropoda Ampithoidae Cymadusa compta 34 Interface Feeder NECC 019 Arthropoda Balanidae Balanidae spp Suspension Feeder NECC 019 Arthropoda Caprellidae Aeginina longicomis 1 Predator NECC 019 Arthropoda Ischyroceridae Ericthonius spp. 1 Interface Feeder NECC 019 Arthropoda Panopeidae Panopeus herbstii 29 Predator NECC 019 Arthropoda Unciolidae Unciola spp. 9 Interface Feeder	0.023	
NECC018PolychaetaGoniadidaeGoniada gigantea1PredatorNECC018PolychaetaNephtyidaeNephtyidae spp.4Omnivore/ScavengerNECC018PolychaetaOweniidaeOwenia fusiformis1Suspension FeederNECC019ArthropodaAmpithoidaeCymadusa compta34Interface FeederNECC019ArthropodaBalanidaeBalanidae sppSuspension FeederNECC019ArthropodaCaprellidaeAeginina longicornis1PredatorNECC019ArthropodaIschyroceridaeEricthonius spp.1Interface FeederNECC019ArthropodaPanopeidaePanopeus herbstii29PredatorNECC019ArthropodaUnciolidaeUnciola spp.9Interface Feeder	0.002	
NECC018PolychaetaNephtyidaeNephtyidae spp.4Omnivore/ScavengerNECC018PolychaetaOweniidaeOwenia fusiformis1Suspension FeederNECC019ArthropodaAmpithoidaeCymadusa compta34Interface FeederNECC019ArthropodaBalanidaeBalanidae sppSuspension FeederNECC019ArthropodaCaprellidaeAeginina longicornis1PredatorNECC019ArthropodaIschyroceridaeEricthonius spp.1Interface FeederNECC019ArthropodaPanopeidaePanopeus herbstii29PredatorNECC019ArthropodaUnciolidaeUnciola spp.9Interface Feeder	0.132	
NECC018PolychaetaOweniidaeOwenia fusiformis1Suspension FeederNECC019ArthropodaAmpithoidaeCymadusa compta34Interface FeederNECC019ArthropodaBalanidaeBalanidae sppSuspension FeederNECC019ArthropodaCaprellidaeAeginina longicornis1PredatorNECC019ArthropodaIschyroceridaeEricthonius spp.1Interface FeederNECC019ArthropodaPanopeidaePanopeus herbstii29PredatorNECC019ArthropodaUnciolidaeUnciola spp.9Interface Feeder	0.117	
NECC019ArthropodaAmpithoidaeCymadusa compta34Interface FeederNECC019ArthropodaBalanidaeBalanidae sppSuspension FeederNECC019ArthropodaCaprellidaeAeginina longicornis1PredatorNECC019ArthropodaIschyroceridaeEricthonius spp.1Interface FeederNECC019ArthropodaPanopeidaePanopeus herbstii29PredatorNECC019ArthropodaUnciolidaeUnciola spp.9Interface Feeder	0.010 dam	naged
NECC019ArthropodaBalanidaeBalanidae sppSuspension FeederNECC019ArthropodaCaprellidaeAeginina longicornis1PredatorNECC019ArthropodaIschyroceridaeEricthonius spp.1Interface FeederNECC019ArthropodaPanopeidaePanopeus herbstii29PredatorNECC019ArthropodaUnciolidaeUnciola spp.9Interface Feeder	<0.001	
NECC019ArthropodaCaprellidaeAeginina longicornis1PredatorNECC019ArthropodaIschyroceridaeEricthonius spp.1Interface FeederNECC019ArthropodaPanopeidaePanopeus herbstii29PredatorNECC019ArthropodaUnciolidaeUnciola spp.9Interface Feeder	0.012	
NECC019ArthropodaIschyroceridaeEricthonius spp.1Interface FeederNECC019ArthropodaPanopeidaePanopeus herbstii29PredatorNECC019ArthropodaUnciolidaeUnciola spp.9Interface Feeder	-	
NECC019ArthropodaPanopeidaePanopeus herbstii29PredatorNECC019ArthropodaUnciolidaeUnciola spp.9Interface Feeder	<0.001	
NECC 019 Arthropoda Unciolidae <i>Unciola</i> spp. 9 Interface Feeder	<0.001	
	2.010	
NECC 019 Bryozoa - Cheilostomatida spp Suspension Feeder	0.002	
	-	
NECC 019 Bryozoa - Ctenostomatida spp Suspension Feeder	-	
NECC 019 Hydrozoa - Hydrozoa spp Suspension Feeder	-	
NECC 019 Mollusca Bivalvia Ameritella agilis 2 Subsurface Deposit Feeder	0.002	
NECC 019 Mollusca Bivalvia Anadara transversa 10 Suspension Feeder	9.167	
NECC 019 Mollusca Bivalvia Anomia simplex 23 Suspension Feeder	5.392	
NECC 019 Mollusca Bivalvia <i>Nucula proxima</i> 1 Subsurface Deposit Feeder	0.030	
NECC 019 Mollusca Gastropoda Astyris lunata 85 Predator	0.419	
NECC 019 Mollusca Gastropoda Bittiolum alternatum 255 Omnivore/Scavenger	0.166	
NECC 019 Mollusca Gastropoda Cotonopsis lafresnayi 13 Predator	2.914	
NECC 019 Mollusca Gastropoda <i>Crepidula fornicata</i> 680 Suspension Feeder	871.788	
NECC 019 Mollusca Gastropoda <i>Crepidula plana</i> 10 Suspension Feeder	0.405	
NECC 019 Mollusca Gastropoda Seila adamsii 13 Omnivore/Scavenger	0.004	
NECC 019 Mollusca Gastropoda <i>Urosalpinx cinerea</i> 6 Predator	2.648	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
NECC	019	Oligochaeta	Oligochaeta	Oligochaeta spp.	3	Subsurface Deposit Feeder	0.001	
NECC	019	Polychaeta	Lumbrineridae	Lumbrineridae spp.	1	Omnivore/Scavenger	<0.001	juvenile
NECC	019	Polychaeta	Nereidae	Neanthes acuminata	1	Predator	<0.001	
NECC	019	Polychaeta	Pectnaridae	Pectinaria gouldii	1	Suspension Feeder	0.059	
NECC	019	Polychaeta	Polynoidae	Lepidonotus squamatus	7	Predator	0.060	
NECC	019	Polychaeta	Sabellaridae	Sabellaria vulgaris	4	Suspension Feeder	0.008	
NECC	019	Polychaeta	Serpulidae	Hydroides dianthus	1	Suspension Feeder	0.018	
NECC	019	Polychaeta	Spionidae	Spiophanes bombyx	2	Interface Feeder	<0.001	
NECC	019	Polychaeta	Syllidae	Exogone spp.	1	Omnivore/Scavenger	<0.001	
NECC	019	Polychaeta	Syllidae	Haplosyllis spongiphila	2	Omnivore/Scavenger	<0.001	
NECC	019	Polychaeta	-	Polychaete Fragments	-	-	0.005	
NECC	030	Arthropoda	Chaetiliidae	Chiridotea tuftsi	17	Omnivore/Scavenger	0.032	
NECC	030	Arthropoda	Cirolanidae	Politolana concharum	3	Omnivore/Scavenger	0.034	
NECC	030	Arthropoda	Corophiidae	Leptocheirus pinguis	1	Interface Feeder	0.003	
NECC	030	Arthropoda	Leptocheliidae	Chondrochelia savignyi	4	Interface Feeder	<0.001	
NECC	030	Arthropoda	Paguridae	Pagurus longicarpus	1	Omnivore/Scavenger	0.003	
NECC	030	Arthropoda	Unciolidae	Unciola spp.	3	Interface Feeder	0.013	
NECC	030	Arthropoda	-	Brachyura spp.	1	-	0.001	
NECC	030	Bryozoa	-	Ctenostomatida spp.	-	Suspension Feeder	-	
NECC	030	Chordata	Molgulidae	Molgula manhattensis	37	Suspension Feeder	0.147	
NECC	030	Cnidaria	Halcampidae	Halcampa duodecimcirrata	2	Predator	0.08	
NECC	030	Mollusca	Bivalvia	Arctica islandica	8	Suspension Feeder	0.057	
NECC	030	Mollusca	Bivalvia	Nucula proxima	2	Subsurface Deposit Feeder	0.002	
NECC	030	Mollusca	Bivalvia	Periploma leanum	27	Suspension Feeder	0.011	
NECC	030	Mollusca	Bivalvia	Spisula solidissima	15	Suspension Feeder	0.011	
NECC	030	Mollusca	Gastropoda	Astyris lunata	3	Predator	0.004	
NECC	030	Mollusca	Gastropoda	Bittiolum alternatum	1	Omnivore/Scavenger	0.002	
NECC	030	Mollusca	Gastropoda	Caecum johnsoni	1	Predator	<0.001	
NECC	030	Polychaeta	Glyceridae	Glyceridae spp.	2	Omnivore/Scavenger	0.002	damaged

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
NECC	030	Polychaeta	Nereidae	Alitta virens	5	Predator	0.001	
NECC	030	Polychaeta	Sigalonidae	Sthenelais limicola	1	Predator	0.006	
NECC	030	Polychaeta	Syllidae	Exogone spp.	84	Omnivore/Scavenger	0.005	
NECC	030	Polychaeta	-	Polychaete Fragments	-	-	0.009	
SECC	032	Arthropoda	Balanidae	Balanidae spp.	-	Suspension Feeder	-	
SECC	032	Arthropoda	Chaetiliidae	Chiridotea tuftsi	20	Omnivore/Scavenger	0.047	
SECC	032	Arthropoda	Cirolanidae	Politolana polita	2	Omnivore/Scavenger	0.001	
SECC	032	Arthropoda	Lysianassidae	Lysianopsis alba	1	Omnivore/Scavenger	0.006	
SECC	032	Chordata	Molgulidae	Molgula manhattensis	33	Suspension Feeder	0.259	
SECC	032	Mollusca	Bivalvia	Periploma leanum	145	Suspension Feeder	0.032	
SECC	032	Mollusca	Bivalvia	Spisula solidissima	105	Suspension Feeder	0.035	
SECC	032	Mollusca	Gastropoda	Polinices immaculatus	2	Predator	0.002	
SECC	032	Polychaeta	Glyceridae	Glycera capitata	6	Omnivore/Scavenger	0.002	
SECC	032	Polychaeta	-	Polychaete Fragments	-	-	0.001	
SECC	034	Arthropoda	Haustoriidae	Protohaustorius wigleyi	7	Interface Feeder	0.022	
SECC	034	Arthropoda	Leptocheliidae	Chondrochelia savignyi	32	Interface Feeder	0.003	
SECC	034	Arthropoda	Phoxocephalidae	Harpinia propinqua	24	Interface Feeder	0.0062	
SECC	034	Echinodermata	Echino	Echinarachnius parma	5	Surface Deposit Feeder	0.491	
SECC	034	Mollusca	Bivalvia	Ameritella agilis	7	Subsurface Deposit Feeder	0.119	
SECC	034	Mollusca	Bivalvia	Pandora gouldiana	1	Suspension Feeder	<0.001	
SECC	034	Mollusca	Bivalvia	Spisula solidissima	22	Suspension Feeder	0.020	
SECC	034	Polychaeta	Magelonidae	Magelona spp.	5	Surface Deposit Feeder	<0.001	
SECC	034	Polychaeta	Nephtyidae	Nephtys picta	2	Omnivore/Scavenger	0.007	
SECC	034	Polychaeta	Nephtyidae	Nephtys spp.	13	Omnivore/Scavenger	<0.001	juvenile
SECC	034	Polychaeta	Phyllodocidae	Eteone spp.	2	Predator	<0.001	
SECC	034	Polychaeta	-	Polychaete Fragments	-	-	0.004	
SECC	036	Arthropoda	Cancridae	Cancer irroratus	1	Predator	0.034	
SECC	036	Arthropoda	Corophiidae	Corophium spp.	1	Interface Feeder	0.001	
SECC	036	Arthropoda	Diastylidae	Diastylis sculpta	1	Interface Feeder	0.003	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
SECC	036	Arthropoda	Haustoriidae	Protohaustorius wigleyi	11	Interface Feeder	0.017	
SECC	036	Arthropoda	Leptocheliidae	Chondrochelia savignyi	1	Interface Feeder	<0.001	
SECC	036	Arthropoda	Pontogeneiidae	Pontogeneia inermis	2	Interface Feeder	<0.001	
SECC	036	Bryozoa	-	Cheilostomatida spp.	-	Suspension Feeder	-	
SECC	036	Bryozoa	-	Ctenostomatida spp.	-	Suspension Feeder	-	
SECC	036	Chordata	Molgulidae	Molgula manhattensis	2	Suspension Feeder	0.046	
SECC	036	Echinodermata	Echinoidea	Echinarachnius parma	1	Surface Deposit Feeder	0.016	
SECC	036	Mollusca	Bivalvia	Lyonsia arenosa	6	Suspension Feeder	<0.001	
SECC	036	Mollusca	Bivalvia	Spisula solidissima	41	Suspension Feeder	0.01	
SECC	036	Mollusca	Gastropoda	Gastropoda UNID	1	-	0.001	
SECC	036	Mollusca	Gastropoda	Polinices immaculatus	1	Predator	0.205	
SECC	036	Mollusca	Gastropoda	Tritia trivittata	1	Omnivore/Scavenger	0.064	
SECC	036	Nemertea	Tubulanidae	Tubulanus pellucidus	1	Predator	0.009	
SECC	036	Polychaeta	Ampharetidae	Amage auricula	2	Surface Deposit Feeder	0.005	
SECC	036	Polychaeta	Ampharetidae	Ampharete arctica	4	Surface Deposit Feeder	0.006	
SECC	036	Polychaeta	Lumbrineridae	Lumbrineris acicularum	1	Omnivore/Scavenger	0.001	
SECC	036	Polychaeta	Magelonidae	Magelona spp.	2	Surface Deposit Feeder	0.001	
SECC	036	Polychaeta	Nephtyidae	Nephtys picta	25	Omnivore/Scavenger	0.045	
SECC	036	Polychaeta	Spionidae	Spio spp.	5	Interface Feeder	0.044	
SECC	036	Polychaeta	-	Polychaete Fragments	-	-	0.206	
SECC	038	Arthropoda	Ampeliscidae	Ampelisca spp.	2	Interface Feeder	0.001	
SECC	038	Arthropoda	Diastylidae	Diastylis sculpta	2	Interface Feeder	<0.001	
SECC	038	Arthropoda	Leptocheliidae	Chondrochelia savignyi	3	Interface Feeder	<0.001	
SECC	038	Echinodermata	-	Echinoidea spp.	1	-	<0.001	juvenile
SECC	038	Mollusca	Bivalvia	Ameritella agilis	1	Subsurface Deposit Feeder	0.018	
SECC	038	Mollusca	Bivalvia	Astarte castanea	3	Suspension Feeder	0.179	
SECC	038	Mollusca	Bivalvia	Nucula proxima	10	Subsurface Deposit Feeder	0.009	
SECC	038	Mollusca	Bivalvia	Spisula solidissima	23	Suspension Feeder	0.021	
SECC	038	Nemertea	Tubulanidae	Tubulanus pellucidus	1	Predator	0.006	

SECC 038 Polychaeta Ampharetidae Amage auricula 9 Surface Deposit Feeder 0.033 SECC 038 Polychaeta Ampharetidae 4mpharete arcica 1 Surface Deposit Feeder 0.001 SECC 038 Polychaeta Nephtyidae Nephtys spp. 15 Omnivore/Scavenger 0.004 juvenile SECC 038 Polychaeta Paraonidae Levirsenia graciils 1 Subsurface Deposit Feeder <0.001 SECC 038 Polychaeta - Polychaeta Fragments 5 Interface Feeder <0.001 SECC 040 Arthropoda Carcinidae Carcinus maenas 1 Omnivore/Scavenger 0.009 SECC 040 Arthropoda Diastylidae Diastylia sculpta 1 Interface Feeder 0.003 SECC 040 Arthropoda Diastylidae Diastylia sculpta 1 Interface Feeder 0.009 SECC 040 Arthropoda Leptochelidae Chordochelia savignyi 6 <th>Area</th> <th>Station</th> <th>Phylum</th> <th>Family</th> <th>Species</th> <th>Count</th> <th>Trophic Guild</th> <th>Biomass (g ww)</th> <th>Comments</th>	Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
SECC 038 Polychaeta Nephtyidae Nephtys bucera 1 Omnivore/Scavenger 0.031 Juvenile SECC 038 Polychaeta Nephtyldae Nephtys spp. 15 Omnivore/Scavenger 0.004 juvenile SECC 038 Polychaeta - 0.031 - 0.001 SECC 038 Polychaeta - 0.053 - 0.003 SECC 040 Arthropoda Ampeliscidae Ampelisca spp. 5 Interface Feeder 0.003 SECC 040 Arthropoda Disstylidae Disstylidae 1 Omnivore/Scavenger 0.009 SECC 040 Arthropoda Leptochelidae Chordrochelia savignyi 6 Interface Feeder 0.001 SECC 040 Arthropoda Paguridae Pagurus longisarapus 1 Omnivore/Scavenger 0.128 SECC 040 Mollusca Bivalvia Astarte castanea 2 Suspension Feeder 0.008 SECC <	SECC	038	Polychaeta	Ampharetidae	Amage auricula	9	Surface Deposit Feeder	0.033	
SECC 038 Polychaeta Nephtyldae Nephtys spp. 15 Omnivore/Scavenger 0.004 juvenile SECC 038 Polychaeta Paraonidae Levinsenia graciiis 1 Subsurface Deposit Feeder -0.001 SECC 038 Polychaeta - Polychaeta - 0.583 SECC 040 Arthropoda Carcinidae Carcinus means 1 Omnivore/Scavenger 0.003 SECC 040 Arthropoda Diastylidae Diastylis sculpta 1 Interface Feeder 0.004 SECC 040 Arthropoda Leptochelidae Chondrochelis savignyi 6 Interface Feeder -0.001 SECC 040 Arthropoda Leptochelidae Chondrochelis savignyi 6 Interface Feeder 0.001 SECC 040 Arthropoda Bayulridae Pagurus longicarpus 1 Omnivore/Scavenger 0.129 SCEC 040 Mollusca Bivalvia Astarte castanea 1 Subsurface Deposit Feeder	SECC	038	Polychaeta	Ampharetidae	Ampharete arctica	1	Surface Deposit Feeder	0.001	
SECC 038 Pdychaeta Paraonidae Levinsenia gracilis 1 Subsurface Deposit Feeder <.0.001 SECC 038 Polychaeta - Polychaete Fragments - - - 0.583 SECC 040 Arthropoda Ampeliscidae Ampelisca spp. 5 Interface Feeder 0.003 SECC 040 Arthropoda Diastylidae Diastylis sculpta 1 Interface Feeder 0.004 SECC 040 Arthropoda Leptochelidae Chondrochelia savignyi 6 Interface Feeder 0.001 SECC 040 Arthropoda Paguridae Paguridae 1 Omnivore/Scavenger 0.129 SECC 040 Mollusca Bivalvia Astarte castanea 2 Subsurface Deposit Feeder 0.128 SECC 040 Mollusca Bivalvia Astarte castanea 1 Subsurface Deposit Feeder 0.129 SECC 040 Mollusca Bivalvia Astarte castanea 1 Subsurface Deposit Feede	SECC	038	Polychaeta	Nephtyidae	Nephtys bucera	1	Omnivore/Scavenger	0.031	
SECC 038 Polychaeta - Polychaeta Fragments -	SECC	038	Polychaeta	Nephtyidae	Nephtys spp.	15	Omnivore/Scavenger	0.004	juvenile
SECC 040 Arthropoda Ampeliscidae Ampelisca spp. 5 Interface Feeder 0.003 SECC 040 Arthropoda Carcinidae Carcinus maenas 1 Omnivore/Scavenger 0.009 SECC 040 Arthropoda Leptochelidae Chondrochelia savignyi 6 Interface Feeder <0.001	SECC	038	Polychaeta	Paraonidae	Levinsenia gracilis	1	Subsurface Deposit Feeder	<0.001	
SECC 040 Arthropoda Carcinidae Carcinus menas 1 Omnivore/Scavenger 0.009 SECC 040 Arthropoda Diastylidae Diastylis sculpta 1 Interface Feeder 0.004 SECC 040 Arthropoda Leptochelidae Chondrochelia savignyri 6 Interface Feeder <0.001	SECC	038	Polychaeta	-	Polychaete Fragments	-	-	0.583	
SECC 040 Arthropoda Diastylidae Diastylis sculpta 1 Interface Feeder 0.004 SECC 040 Arthropoda Leptocheliidae Chondrochelia savignyi 6 Interface Feeder <0.001	SECC	040	Arthropoda	Ampeliscidae	Ampelisca spp.	5	Interface Feeder	0.003	
SECC 040 Arthropoda Leptocheliidae Chondrochelia savignyi 6 Interface Feeder <-0.001 SECC 040 Arthropoda Paguridae Pagurus longicarpus 1 Omnivore/Scavenger 0.129 SECC 040 Mollusca Bivalvia Astarte castanea 2 Suspension Feeder 0.108 SECC 040 Mollusca Bivalvia Nucula proxima 12 Subsurface Deposit Feeder 0.202 SECC 040 Mollusca Bivalvia Spisula solidissima 1 Suspension Feeder 1.294 SECC 040 Mollusca Gastropoda Tritia trivitata 1 Omnivore/Scavenger 0.388 SECC 040 Polychaeta Goniadidae Goniadidae 1 Predator 0.001 juvenile SECC 040 Polychaeta Lumbrineridae Lumbrineris acicularum 4 Omnivore/Scavenger 0.147 SECC 040 Polychaeta Nephtysi picta 3 Omnivore/Scavenger 0.017 SECC 044 Arthropoda CaNECCidae Cancer irroratus 1	SECC	040	Arthropoda	Carcinidae	Carcinus maenas	1	Omnivore/Scavenger	0.009	
SECC040ArthropodaPaguridaePagurus longicarpus1Omnivore/Scavenger0.129SECC040MolluscaBivalviaAstarte castanea2Suspension Feeder0.00SECC040MolluscaBivalviaNucula proxima12Subsurface Deposit Feeder0.020SECC040MolluscaBivalviaSpisula solidissima1Suspension Feeder1.294SECC040MolluscaGastropodaTritia trivittata1Omnivore/Scavenger0.388SECC040PolychaetaGoniadidaeGoniada spp.1Predator<0.001	SECC	040	Arthropoda	Diastylidae	Diastylis sculpta	1	Interface Feeder	0.004	
SECC040MolluscaBivalviaAstarte castanea2Suspension Feeder0.108SECC040MolluscaBivalviaNucula proxima12Subsurface Deposit Feeder0.020SECC040MolluscaBivalviaSpisula solidissima1Suspension Feeder1.294SECC040MolluscaGastropodaTritia trivittata1Omnivore/Scavenger0.388SECC040PolychaetaGoniadidaeGoniada spp.1Predator<0.001	SECC	040	Arthropoda	Leptocheliidae	Chondrochelia savignyi	6	Interface Feeder	<0.001	
SECC 040 Mollusca Bivalvia Nucula proxima 12 Subsurface Deposit Feeder 0.020 SECC 040 Mollusca Bivalvia Spisula solidissima 1 Suspension Feeder 1.294 SECC 040 Mollusca Gastropoda Tritia trivitata 1 Omnivore/Scavenger 0.388 SECC 040 Polychaeta Goniadidae Goniada spp. 1 Predator 0.001 juvenile SECC 040 Polychaeta Lumbrineridae Lumbrineris acicularum 4 Omnivore/Scavenger 0.147 1 SECC 040 Polychaeta Nephtydae Nephtys picta 3 Omnivore/Scavenger 0.077 0.085 1 SECC 044 Arthropoda Cancer irroratus 1 Predator 0.085 1 0.085 1 1 Predator 0.047 1 1 1 Predator 0.047 1 1 1 1 1 1 1 1 1 1	SECC	040	Arthropoda	Paguridae	Pagurus longicarpus	1	Omnivore/Scavenger	0.129	
SECC040MolluscaBivalviaSpisula solidissima1Suspension Feeder1.294SECC040MolluscaGastropodaTritia trivittata1Omnivore/Scavenger0.388SECC040PolychaetaGoniadidaeGoniada spp.1Predator<0.001	SECC	040	Mollusca	Bivalvia	Astarte castanea	2	Suspension Feeder	0.108	
SECC040MolluscaGastropodaTritia trivitata1Omnivore/Scavenger0.388SECC040PolychaetaGoniadidaeGoniada spp.1Predator<0.001	SECC	040	Mollusca	Bivalvia	Nucula proxima	12	Subsurface Deposit Feeder	0.020	
SECC040PolychaetaGoniadidaeGoniada spp.1Predator<0.001juvenileSECC040PolychaetaLumbrineridaeLumbrineris acicularum4Omnivore/Scavenger0.147SECC040PolychaetaNephtyidaeNephtys picta3Omnivore/Scavenger0.077SECC040Polychaeta-Polychaete Fragments0.085SECC044ArthropodaCaNECCidaeCancer irroratus1Predator0.047SECC044Bryozoa-Cheilostomatida sppSuspension Feeder-SECC044Bryozoa-Ctenostomatida sppSuspension Feeder-SECC044Bryozoa-Ctenostomatida sppSuspension Feeder-SECC044MolluscaEchinoideaEchinarachnius parma1Surface Deposit Feeder7.025SECC044MolluscaBivalviaAmeritella agilis5Subsurface Deposit Feeder0.033SECC044MolluscaBivalviaNucula proxima14Subsurface Deposit Feeder0.003SECC044PolychaetaAmpharetidaeAmpharete arctica2Surface Deposit Feeder0.008SECC044PolychaetaArabellidaeDrilonereis longa1Predator0.008	SECC	040	Mollusca	Bivalvia	Spisula solidissima	1	Suspension Feeder	1.294	
SECC040PolychaetaLumbrineridaeLumbrineris acicularum4Omnivore/Scavenger0.147SECC040PolychaetaNephtyidaeNephtys picta3Omnivore/Scavenger0.077SECC040Polychaeta-Polychaete Fragments0.085SECC044ArthropodaCaNECCidaeCancer irroratus1Predator0.047SECC044Bryozoa-Cheilostomatida sppSuspension Feeder-SECC044Bryozoa-Ctenostomatida sppSuspension Feeder-SECC044EchinodermataEchinoideaEchinarachnius parma1Surface Deposit Feeder7.025SECC044MolluscaBivalviaAmeritella agilis5Subsurface Deposit Feeder0.024SECC044MolluscaBivalviaNucula proxima14Subsurface Deposit Feeder0.033SECC044OligochaetaOligochaetaOligochaeta spp.8Subsurface Deposit Feeder0.001SECC044PolychaetaAmpharetidaeAmpharete arctica2Surface Deposit Feeder0.008SECC044PolychaetaArabellidaeDrilonereis longa1Predator0.008	SECC	040	Mollusca	Gastropoda	Tritia trivittata	1	Omnivore/Scavenger	0.388	
SECC040PolychaetaNephtyidaeNephtys picta3Omnivore/Scavenger0.077SECC040Polychaeta-Polychaete Fragments0.085SECC044ArthropodaCaNECCidaeCancer irroratus1Predator0.047SECC044Bryozoa-Cheilostomatida sppSuspension Feeder-SECC044Bryozoa-Ctenostomatida sppSuspension Feeder-SECC044EchinodermataEchinoideaEchinarachnius parma1Surface Deposit Feeder7.025SECC044MolluscaBivalviaAmeritella agilis5Subsurface Deposit Feeder0.024SECC044MolluscaBivalviaNucula proxima14Subsurface Deposit Feeder0.033SECC044OligochaetaOligochaetaOligochaeta spp.8Subsurface Deposit Feeder0.001SECC044PolychaetaAmpharetidaeAmpharete arctica2Surface Deposit Feeder0.008SECC044PolychaetaArabellidaeDrilonereis longa1Predator0.008	SECC	040	Polychaeta	Goniadidae	Goniada spp.	1	Predator	<0.001	juvenile
SECC040Polychaeta-Polychaete Fragments0.085SECC044ArthropodaCaNECCidaeCancer irroratus1Predator0.047SECC044Bryozoa-Cheilostomatida sppSuspension Feeder-SECC044Bryozoa-Ctenostomatida sppSuspension Feeder-SECC044EchinodermataEchinoideaEchinarachnius parma1Surface Deposit Feeder7.025SECC044MolluscaBivalviaAmeritella agilis5Subsurface Deposit Feeder0.024SECC044MolluscaBivalviaNucula proxima14Subsurface Deposit Feeder0.033SECC044OligochaetaOligochaetaOligochaeta spp.8Subsurface Deposit Feeder0.001SECC044PolychaetaAmpharetidaeAmpharete arctica2Surface Deposit Feeder0.008SECC044PolychaetaArabellidaeDrilonereis longa1Predator0.008	SECC	040	Polychaeta	Lumbrineridae	Lumbrineris acicularum	4	Omnivore/Scavenger	0.147	
SECC 044 Arthropoda CaNECCidae Cancer irroratus 1 Predator 0.047 SECC 044 Bryozoa - Cheilostomatida spp Suspension Feeder - SECC 044 Bryozoa - Ctenostomatida spp Suspension Feeder - SECC 044 Echinodermata Echinoidea Echinarachnius parma 1 Surface Deposit Feeder 7.025 SECC 044 Mollusca Bivalvia Ameritella agilis 5 Subsurface Deposit Feeder 0.024 SECC 044 Mollusca Bivalvia Nucula proxima 14 Subsurface Deposit Feeder 0.033 SECC 044 Oligochaeta Oligochaeta Oligochaeta spp. 8 Subsurface Deposit Feeder 0.001 SECC 044 Polychaeta Ampharetidae Ampharete arctica 2 Surface Deposit Feeder 0.008 SECC 044 Polychaeta Arabellidae Drilonereis longa 1 Predator 0.008	SECC	040	Polychaeta	Nephtyidae	Nephtys picta	3	Omnivore/Scavenger	0.077	
SECC044Bryozoa-Cheilostomatida sppSuspension Feeder-SECC044Bryozoa-Ctenostomatida sppSuspension Feeder-SECC044EchinodermataEchinoideaEchinarachnius parma1Surface Deposit Feeder7.025SECC044MolluscaBivalviaAmeritella agilis5Subsurface Deposit Feeder0.024SECC044MolluscaBivalviaNucula proxima14Subsurface Deposit Feeder0.033SECC044OligochaetaOligochaetaOligochaeta spp.8Subsurface Deposit Feeder0.001SECC044PolychaetaAmpharetidaeAmpharete arctica2Surface Deposit Feeder0.008SECC044PolychaetaArabellidaeDrilonereis longa1Predator0.008	SECC	040	Polychaeta	-	Polychaete Fragments	-	-	0.085	
SECC 044 Bryozoa - Ctenostomatida spp Suspension Feeder - SECC 044 Echinodermata Echinoidea Echinarachnius parma 1 Surface Deposit Feeder 7.025 SECC 044 Mollusca Bivalvia Ameritella agilis 5 Subsurface Deposit Feeder 0.024 SECC 044 Mollusca Bivalvia Nucula proxima 14 Subsurface Deposit Feeder 0.033 SECC 044 Oligochaeta Oligochaeta Oligochaeta spp. 8 Subsurface Deposit Feeder 0.001 SECC 044 Polychaeta Ampharetidae Ampharete arctica 2 Surface Deposit Feeder 0.008 SECC 044 Polychaeta Arabellidae Drilonereis longa 1 Predator 0.008	SECC	044	Arthropoda	CaNECCidae	Cancer irroratus	1	Predator	0.047	
SECC 044 Echinodermata Echinoidea Echinarachnius parma 1 Surface Deposit Feeder 7.025 SECC 044 Mollusca Bivalvia Ameritella agilis 5 Subsurface Deposit Feeder 0.024 SECC 044 Mollusca Bivalvia Nucula proxima 14 Subsurface Deposit Feeder 0.033 SECC 044 Oligochaeta Oligochaeta Oligochaeta spp. 8 Subsurface Deposit Feeder 0.001 SECC 044 Polychaeta Ampharetidae Ampharete arctica 2 Surface Deposit Feeder 0.008 SECC 044 Polychaeta Arabellidae Drilonereis longa 1 Predator 0.008	SECC	044	Bryozoa	-	Cheilostomatida spp.	-	Suspension Feeder	-	
SECC044MolluscaBivalviaAmeritella agilis5Subsurface Deposit Feeder0.024SECC044MolluscaBivalviaNucula proxima14Subsurface Deposit Feeder0.033SECC044OligochaetaOligochaetaOligochaeta spp.8Subsurface Deposit Feeder0.001SECC044PolychaetaAmpharetidaeAmpharete arctica2Surface Deposit Feeder0.008SECC044PolychaetaArabellidaeDrilonereis longa1Predator0.008	SECC	044	Bryozoa	-	Ctenostomatida spp.	-	Suspension Feeder	-	
SECC 044 Mollusca Bivalvia Nucula proxima 14 Subsurface Deposit Feeder 0.033 SECC 044 Oligochaeta Oligochaeta Oligochaeta spp. 8 Subsurface Deposit Feeder 0.001 SECC 044 Polychaeta Ampharetidae Ampharete arctica 2 Surface Deposit Feeder 0.008 SECC 044 Polychaeta Arabellidae Drilonereis longa 1 Predator 0.008	SECC	044	Echinodermata	Echinoidea	Echinarachnius parma	1	Surface Deposit Feeder	7.025	
SECC044OligochaetaOligochaetaOligochaeta spp.8Subsurface Deposit Feeder0.001SECC044PolychaetaAmpharetidaeAmpharete arctica2Surface Deposit Feeder0.008SECC044PolychaetaArabellidaeDrilonereis longa1Predator0.008	SECC	044	Mollusca	Bivalvia	Ameritella agilis	5	Subsurface Deposit Feeder	0.024	
SECC 044 Polychaeta Ampharetidae Ampharete arctica 2 Surface Deposit Feeder 0.008 SECC 044 Polychaeta Arabellidae Drilonereis longa 1 Predator 0.008	SECC	044	Mollusca	Bivalvia	Nucula proxima	14	Subsurface Deposit Feeder	0.033	
SECC 044 Polychaeta Arabellidae <i>Drilonereis longa</i> 1 Predator 0.008	SECC	044	Oligochaeta	Oligochaeta	Oligochaeta spp.	8	Subsurface Deposit Feeder	0.001	
· · · · · · · · · · · · · · · · · · ·	SECC	044	Polychaeta	Ampharetidae	Ampharete arctica	2	Surface Deposit Feeder	0.008	
SECC 044 Polychaeta Cirratulidae Cirratulidae spp. 2 Surface Deposit Feeder <0.001	SECC	044	Polychaeta	Arabellidae	Drilonereis longa	1	Predator	0.008	
	SECC	044	Polychaeta	Cirratulidae	Cirratulidae spp.	2	Surface Deposit Feeder	<0.001	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
SECC	044	Polychaeta	Goniadidae	Goniada maculata	27	Predator	0.008	
SECC	044	Polychaeta	Lumbrineridae	Lumbrineridae spp.	9	Omnivore/Scavenger	0.001	juvenile
SECC	044	Polychaeta	Lumbrineridae	Lumbrineris acicularum	1	Omnivore/Scavenger	<0.001	
SECC	044	Polychaeta	Lumbrineridae	Scoletoma tenuis	1	Omnivore/Scavenger	0.004	
SECC	044	Polychaeta	Nephtyidae	Nephtys spp.	10	Omnivore/Scavenger	0.006	juvenile
SECC	044	Polychaeta	Polygordiidae	Polygordius jouinae	309	Subsurface Deposit Feeder	0.02	
SECC	044	Sipuncula	Golfingiidae	Phascolopsis gouldii	1	Surface Deposit Feeder	<0.001	
SECC	044	-	-	Polychaete Fragments	-	-	0.055	
SECC	046	Arthropoda	Ampeliscidae	Ampelisca spp.	32	Interface Feeder	0.098	
SECC	046	Arthropoda	Bodotriidae	Cyclaspis varians	1	Surface Deposit Feeder	0.002	
SECC	046	Arthropoda	Diastylidae	Diastylis sculpta	1	Interface Feeder	0.005	
SECC	046	Arthropoda	Idoteidea	Edotia triloba	1	Omnivore/Scavenger	0.003	
SECC	046	Arthropoda	Ischyroceridae	Ericthonius spp.	1	Interface Feeder	<0.001	
SECC	046	Arthropoda	Paguridae	Pagurus longicarpus	1	Omnivore/Scavenger	0.139	
SECC	046	Arthropoda	Panopeidae	Rhithropanopeus harrisii	1	Omnivore/Scavenger	<0.001	
SECC	046	Arthropoda	-	Amphipoda spp.	10	Interface Feeder	0.002	
SECC	046	Mollusca	Bivalvia	Nucula proxima	239	Subsurface Deposit Feeder	0.673	
SECC	046	Mollusca	Bivalvia	Pitar morrhuanus	1	Suspension Feeder	0.073	
SECC	046	Mollusca	Bivalvia	Yoldia sapotilla	3	Subsurface Deposit Feeder	<0.001	
SECC	046	Mollusca	Gastropoda	Tritia trivittata	5	Omnivore/Scavenger	2.223	
SECC	046	Polychaeta	Arabellidae	Drilonereis longa	4	Predator	0.046	
SECC	046	Polychaeta	Glyceridae	Glycera capitata	2	Omnivore/Scavenger	0.008	
SECC	046	Polychaeta	Lumbrineridae	Lumbrineris acicularum	1	Omnivore/Scavenger	0.118	
SECC	046	Polychaeta	Lumbrineridae	Ninoe nigripes	18	Omnivore/Scavenger	0.302	
SECC	046	Polychaeta	Lumbrineridae	Scoletoma fragilis	14	Omnivore/Scavenger	0.032	
SECC	046	Polychaeta	Nephtyidae	Nephtys incisa	2	Omnivore/Scavenger	0.031	
SECC	046	Polychaeta	Nephtyidae	Nephtys picta	2	Omnivore/Scavenger	0.010	
SECC	046	Polychaeta	Orbiniidae	Leitoscoloplos fragilis	5	Subsurface Deposit Feeder	0.146	
SECC	046	Polychaeta	Phyllodocidae	Hypereteone heteropoda	2	Predator	0.063	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
SECC	046	Polychaeta	Sigalonidae	Sthenelais limicola	1	Predator	0.030	
SECC	046	Polychaeta	-	Polychaete Fragments	-	-	0.429	
SECC	050	Arthropoda	Ampeliscidae	Ampelisca spp.	2	Interface Feeder	0.002	
SECC	050	Arthropoda	Leptocheliidae	Chondrochelia savignyi	4	Interface Feeder	<0.001	
SECC	050	Arthropoda	Phoxocephalidae	Harpinia propinqua	1	Interface Feeder	0.001	
SECC	050	Chordata	Molgulidae	Molgula manhattensis	3	Suspension Feeder	0.136	
SECC	050	Mollusca	Bivalvia	Ameritella agilis	8	Subsurface Deposit Feeder	0.041	
SECC	050	Mollusca	Bivalvia	Nucula proxima	3	Subsurface Deposit Feeder	0.003	
SECC	050	Mollusca	Bivalvia	Spisula solidissima	1	Suspension Feeder	0.24	
SECC	050	Nemertea	-	Nemertea spp.	1	Predator	0.007	
SECC	050	Polychaeta	Ampharetidae	Amage auricula	2	Surface Deposit Feeder	0.016	
SECC	050	Polychaeta	Glyceridae	Glycera spp.	8	Omnivore/Scavenger	0.003	juvenile
SECC	050	Polychaeta	Lumbrineridae	Lumbrineris acicularum	10	Omnivore/Scavenger	0.133	
SECC	050	Polychaeta	Nephtyidae	Nephtys caeca	14	Omnivore/Scavenger	0.288	
SECC	050	Polychaeta	Scalibergmatidae	Scalibregma inflatum	6	Subsurface Deposit Feeder	0.041	
SECC	050	Polychaeta	-	Polychaete Fragments	-	-	0.482	
SECC	054	Arthropoda	Ampeliscidae	Ampelisca spp.	926	Interface Feeder	0.711	
SECC	054	Arthropoda	Bodotriidae	Cyclaspis varians	2	Surface Deposit Feeder	<0.001	
SECC	054	Arthropoda	Cancridae	Cancer irroratus	3	Predator	0.159	
SECC	054	Arthropoda	Corophiidae	Leptocheirus pinguis	2	Interface Feeder	0.018	
SECC	054	Arthropoda	Ischyroceridae	Ericthonius spp.	1	Interface Feeder	<0.001	
SECC	054	Arthropoda	Phoxocephalidae	Phoxocephalus holbolli	21	Interface Feeder	0.006	
SECC	054	Arthropoda	Unciolidae	Unciola spp.	10	Interface Feeder	0.061	
SECC	054	Cnidaria	Halcampidae	Halcampa duodecimcirrata	1	Predator	<0.001	
SECC	054	Mollusca	Bivalvia	Astarte castanea	5	Suspension Feeder	0.004	
SECC	054	Mollusca	Bivalvia	Nucula proxima	4467	Subsurface Deposit Feeder	6.739	
SECC	054	Mollusca	Bivalvia	Periploma papyratium	1	Suspension Feeder	0.002	
SECC	054	Mollusca	Bivalvia	Pitar morrhuanus	1	Suspension Feeder	0.317	
SECC	054	Mollusca	Bivalvia	Yoldia limatula	5	Subsurface Deposit Feeder	0.012	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww) Comments
SECC	054	Nemertea	Lineidae	<i>Micrura</i> spp.	3	Predator	0.133
SECC	054	Oligochaeta	Oligochaeta	Oligochaeta spp.	8	Subsurface Deposit Feeder	0.001
SECC	054	Polychaeta	Ampharetidae	Ampharetidae spp.	1	Surface Deposit Feeder	<0.001
SECC	054	Polychaeta	Arabellidae	Drilonereis longa	3	Predator	0.026
SECC	054	Polychaeta	Flabelligeridae	Pherusa affinis	1	Surface Deposit Feeder	0.200
SECC	054	Polychaeta	Glyceridae	Glycera capitata	3	Omnivore/Scavenger	0.014
SECC	054	Polychaeta	Lumbrineridae	Lumbrineris acicularum	12	Omnivore/Scavenger	0.229
SECC	054	Polychaeta	Lumbrineridae	Ninoe nigripes	29	Omnivore/Scavenger	0.580
SECC	054	Polychaeta	Lumbrineridae	Scoletoma tenuis	21	Omnivore/Scavenger	0.029
SECC	054	Polychaeta	Maldanidae	Clymenella torquata	4	Subsurface Deposit Feeder	0.049
SECC	054	Polychaeta	Nephtyidae	Nephtys incisa	5	Omnivore/Scavenger	0.053
SECC	054	Polychaeta	Paraonidae	Aricidea spp.	20	Surface Deposit Feeder	0.002
SECC	054	Polychaeta	Paraonidae	Levinsenia gracilis	61	Subsurface Deposit Feeder	0.005
SECC	054	Polychaeta	Scalibergmatidae	Scalibregma inflatum	1	Subsurface Deposit Feeder	0.018
SECC	054	Polychaeta	-	Polychaete Fragments	-	-	0.233
SECC	058	Arthropoda	Ampeliscidae	Ampelisca spp.	115	Interface Feeder	0.172
SECC	058	Arthropoda	Ampithoidae	Cymadusa compta	1	Interface Feeder	0.013
SECC	058	Arthropoda	Cancridae	Cancer irroratus	2	Predator	0.071
SECC	058	Arthropoda	Caprellidae	Aeginina longicornis	18	Predator	0.017
SECC	058	Arthropoda	Chaetiliidae	Chiridotea tuftsi	1	Omnivore/Scavenger	0.004
SECC	058	Arthropoda	Corophiidae	Corophium spp.	7	Interface Feeder	0.026
SECC	058	Arthropoda	Corophiidae	Leptocheirus pinguis	3	Interface Feeder	0.019
SECC	058	Arthropoda	Diastylidae	Diastylis sculpta	36	Interface Feeder	0.18
SECC	058	Arthropoda	Leuconidae	Eudorella pusilla	1	Interface Feeder	<0.001
SECC	058	Arthropoda	Photidae	Photis spp.	1	Interface Feeder	<0.001
SECC	058	Arthropoda	Phoxocephalidae	Rhepoxynius epistomus	8	Interface Feeder	0.005
SECC	058	Arthropoda	Unciolidae	Unciola spp.	1	Interface Feeder	0.013
SECC	058	Cnidaria	Edwardsiidae	Edwardsia elegans	1	Suspension Feeder	0.083
SECC	058	Mollusca	Bivalvia	Ameritella agilis	1	Subsurface Deposit Feeder	<0.001

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww) Comme	ents
SECC	058	Mollusca	Bivalvia	Nucula proxima	1710	Subsurface Deposit Feeder	2.144	
SECC	058	Mollusca	Bivalvia	Yoldia limatula	5	Subsurface Deposit Feeder	0.771	
SECC	058	Mollusca	Bivalvia	Yoldia sapotilla	8	Subsurface Deposit Feeder	0.004	
SECC	058	Mollusca	Gastropoda	Astyris lunata	7	Predator	0.005	
SECC	058	Mollusca	Gastropoda	Tritia trivittata	1	Omnivore/Scavenger	0.147	
SECC	058	Nemertea	Lineidae	Micrura spp.	5	Predator	0.285	
SECC	058	Polychaeta	Apistobranchidae	Apistobranchus tullbergi	2	Surface Deposit Feeder	0.001	
SECC	058	Polychaeta	Glyceridae	Glycera capitata	2	Omnivore/Scavenger	0.025	
SECC	058	Polychaeta	Lumbrineridae	Lumbrineris acicularum	1	Omnivore/Scavenger	0.153	
SECC	058	Polychaeta	Lumbrineridae	Ninoe nigripes	9	Omnivore/Scavenger	0.174	
SECC	058	Polychaeta	Lumbrineridae	Scoletoma fragilis	14	Omnivore/Scavenger	0.011	
SECC	058	Polychaeta	Nephtyidae	Nephtys incisa	4	Omnivore/Scavenger	0.036	
SECC	058	Polychaeta	Paraonidae	Levinsenia gracilis	32	Subsurface Deposit Feeder	0.003	
SECC	058	Polychaeta	Sigalonidae	Sthenelais limicola	1	Predator	0.018	
SECC	058	Polychaeta	Syllidae	Haplosyllis spongiphila	1	Omnivore/Scavenger	0.001	
SECC	058	-	-	Polychaete Fragments	-	-	0.199	
SECC	124	Brachiopoda	-	Brachiopoda spp.	4	Suspension Feeder	0.001	
SECC	124	Bryozoa	-	Ctenostomatida spp.	-	Suspension Feeder	-	
SECC	124	Mollusca	Bivalvia	Ameritella agilis	2	Subsurface Deposit Feeder	0.039	
SECC	124	Mollusca	Bivalvia	Nucula proxima	942	Subsurface Deposit Feeder	4.098	
SECC	124	Mollusca	Bivalvia	Yoldia limatula	1	Subsurface Deposit Feeder	0.126	
SECC	124	Mollusca	Gastropoda	Tritia trivittata	1	Omnivore/Scavenger	0.329	
SECC	124	Oligochaeta	Oligochaeta	Oligochaeta spp.	10	Subsurface Deposit Feeder	0.001	
SECC	124	Polychaeta	Ampharetidae	Amage auricula	3	Surface Deposit Feeder	0.025	
SECC	124	Polychaeta	Ampharetidae	Ampharete arctica	2	Surface Deposit Feeder	0.013	
SECC	124	Polychaeta	Lumbrineridae	Ninoe nigripes	1	Omnivore/Scavenger	0.031	
SECC	124	Polychaeta	Lumbrineridae	Scoletoma tenuis	3	Omnivore/Scavenger	0.006	
SECC	124	Polychaeta	Maldanidae	Clymenella torquata	3	Subsurface Deposit Feeder	0.016	
SECC	124	Polychaeta	Nephtyidae	Nephtys picta	3	Omnivore/Scavenger	0.010	

Area	Station	Phylum	Family	Species	Count	Trophic Guild	Biomass (g ww)	Comments
SECC	124	Polychaeta	Paraonidae	Aricidea spp.	1	Surface Deposit Feeder	<0.001	
SECC	124	Polychaeta	-	Polychaete Fragments	-	-	0.342	

Notes:

g ww - grams wet weight

NECC – Northern export cable corridor

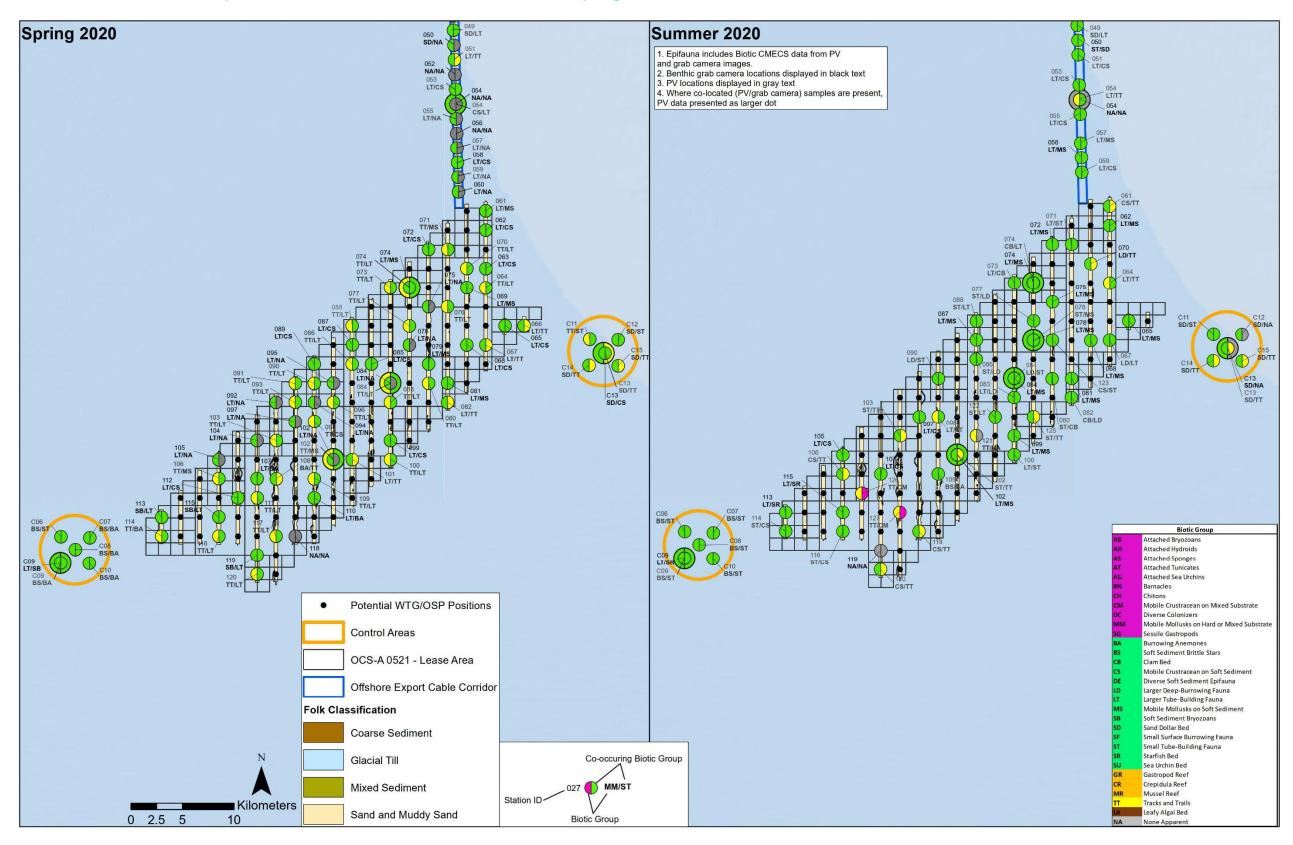
SECC - Southern export cable corridor

spp. - species

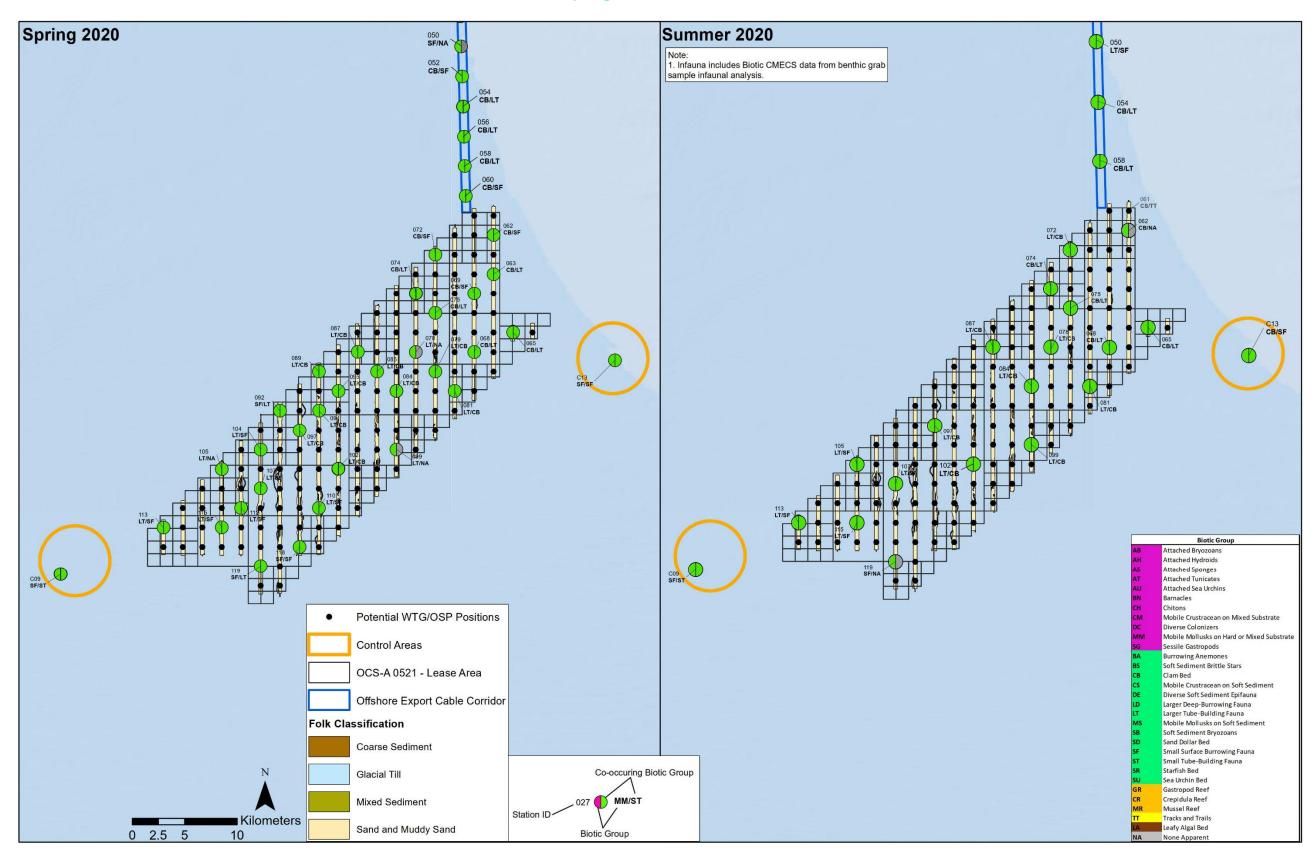
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ATTACHMENT 8 - Benthic Community, Folk Classifications, and Seafloor Morphology

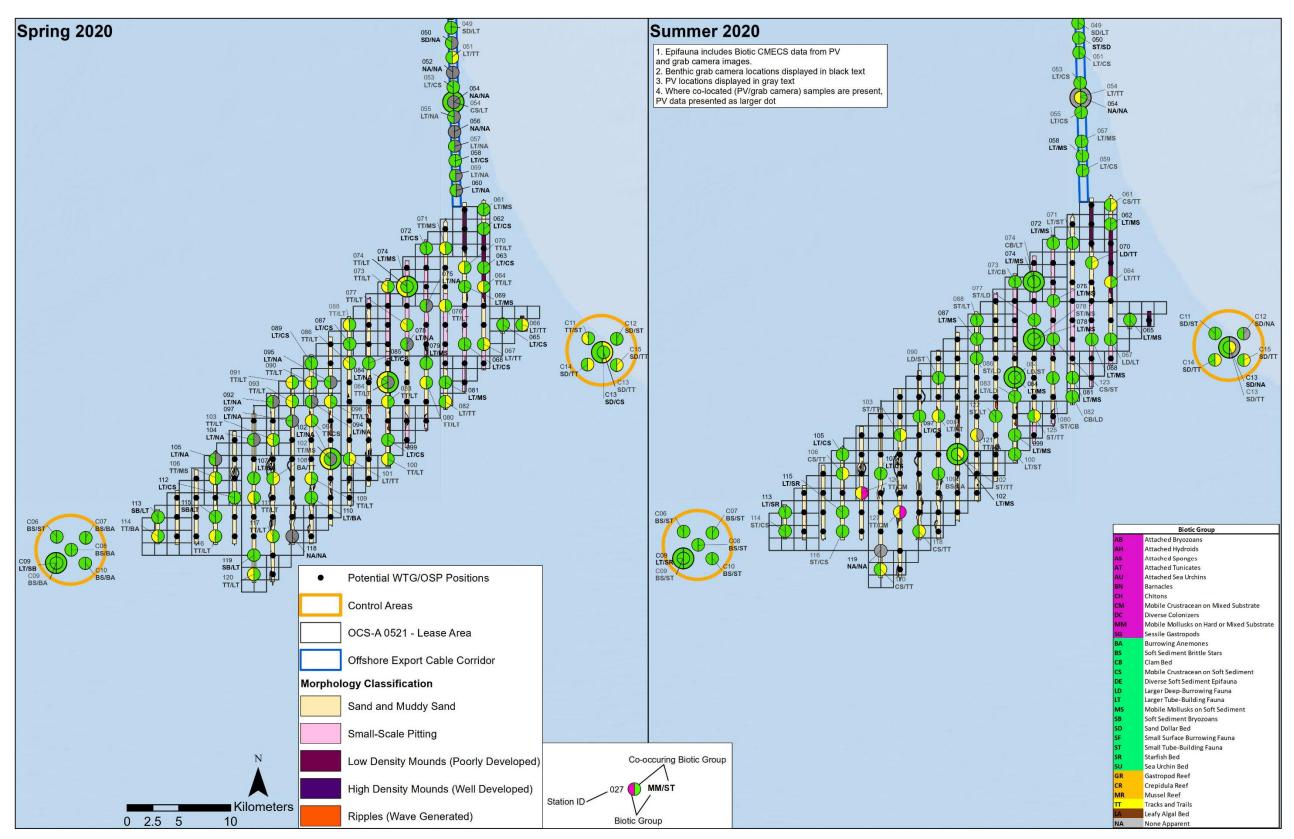
Attachment 8a. Lease Area CMECS Biotic Epifauna and Folk Substrate Classifications for Spring and Summer 2020



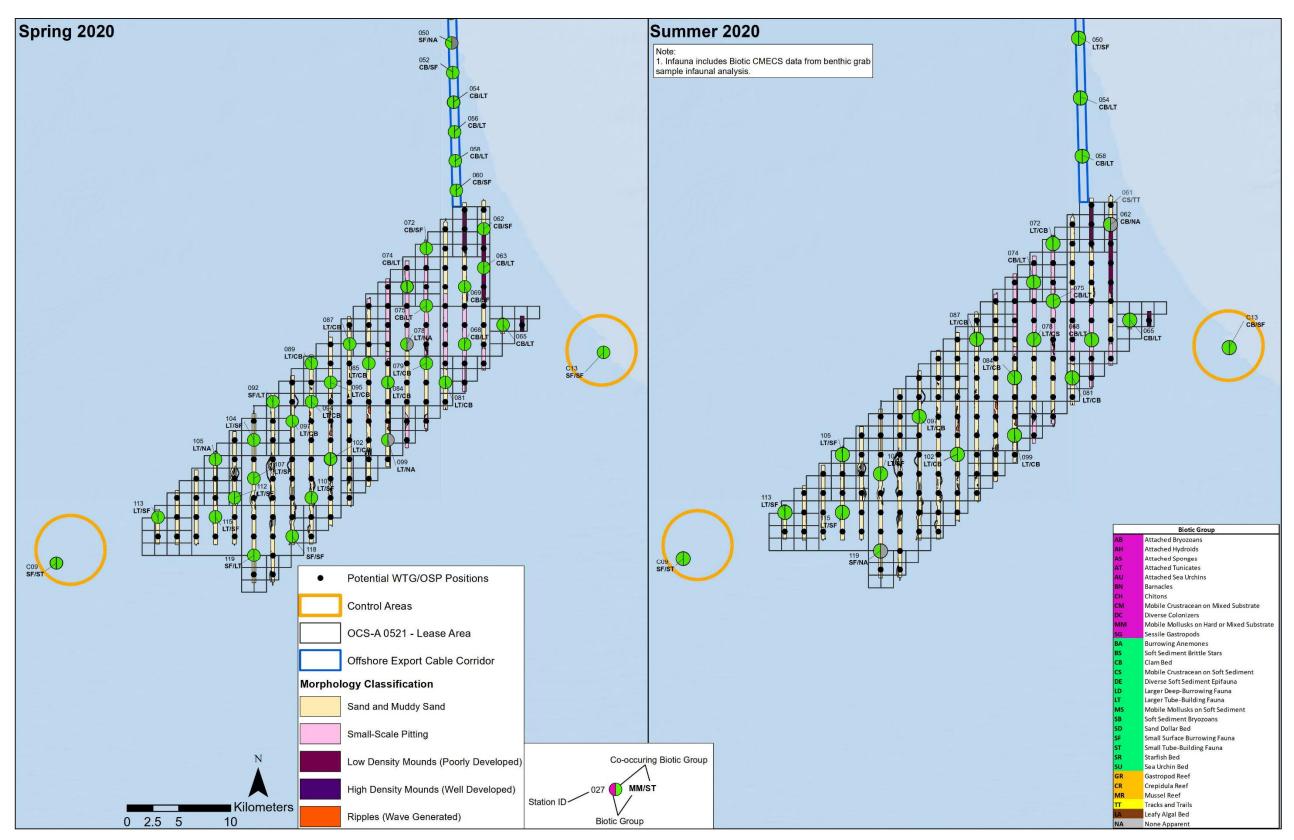
Attachment 8b. Lease Area CMECS Biotic Infauna and Folk Substrate Classifications for Spring and Summer 2020



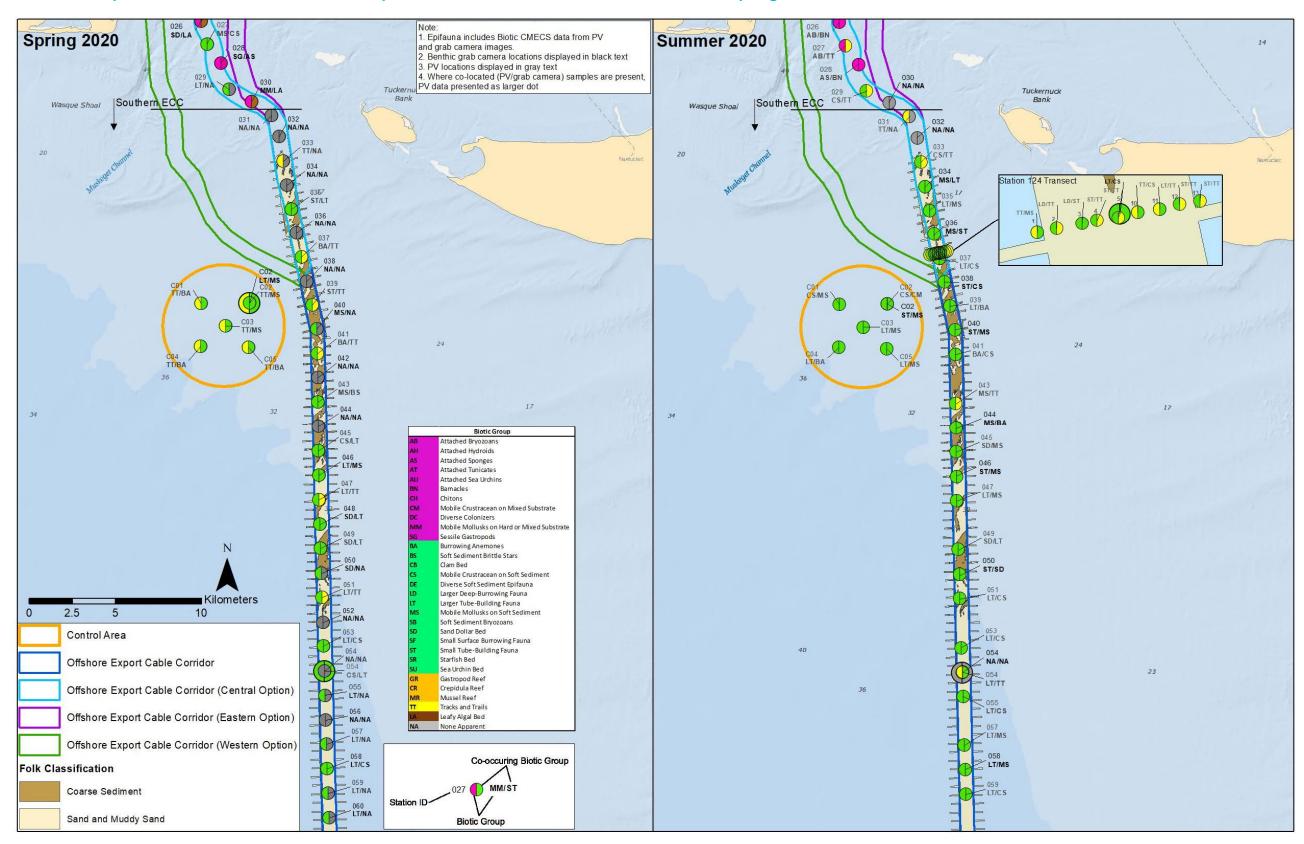
Attachment 8c. Lease Area CMECS Biotic Epifauna Classifications and Seafloor Morphology for Spring and Summer 2020



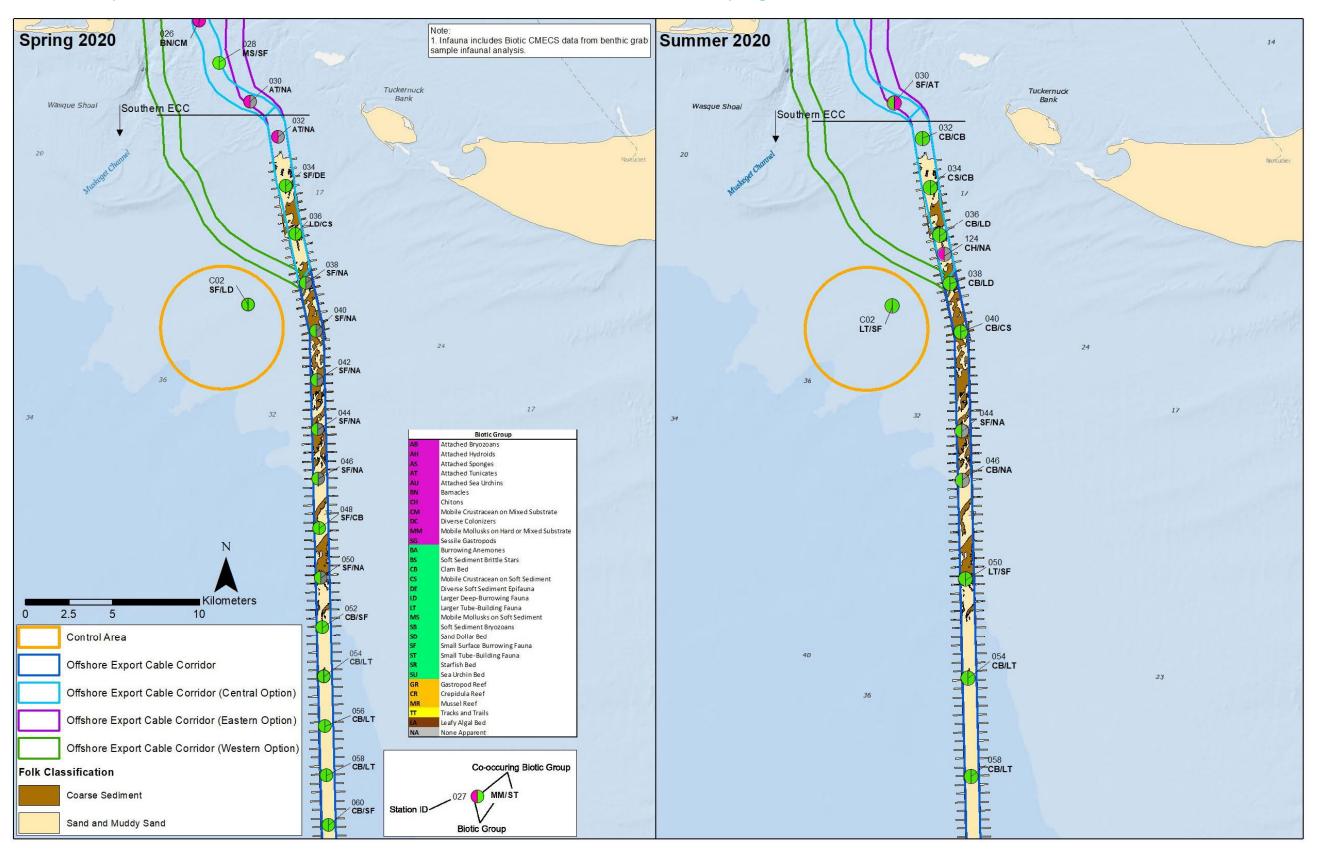
Attachment 8d. Lease Area CMECS Biotic Infauna Classifications and Seafloor Morphology for Spring and Summer 2020



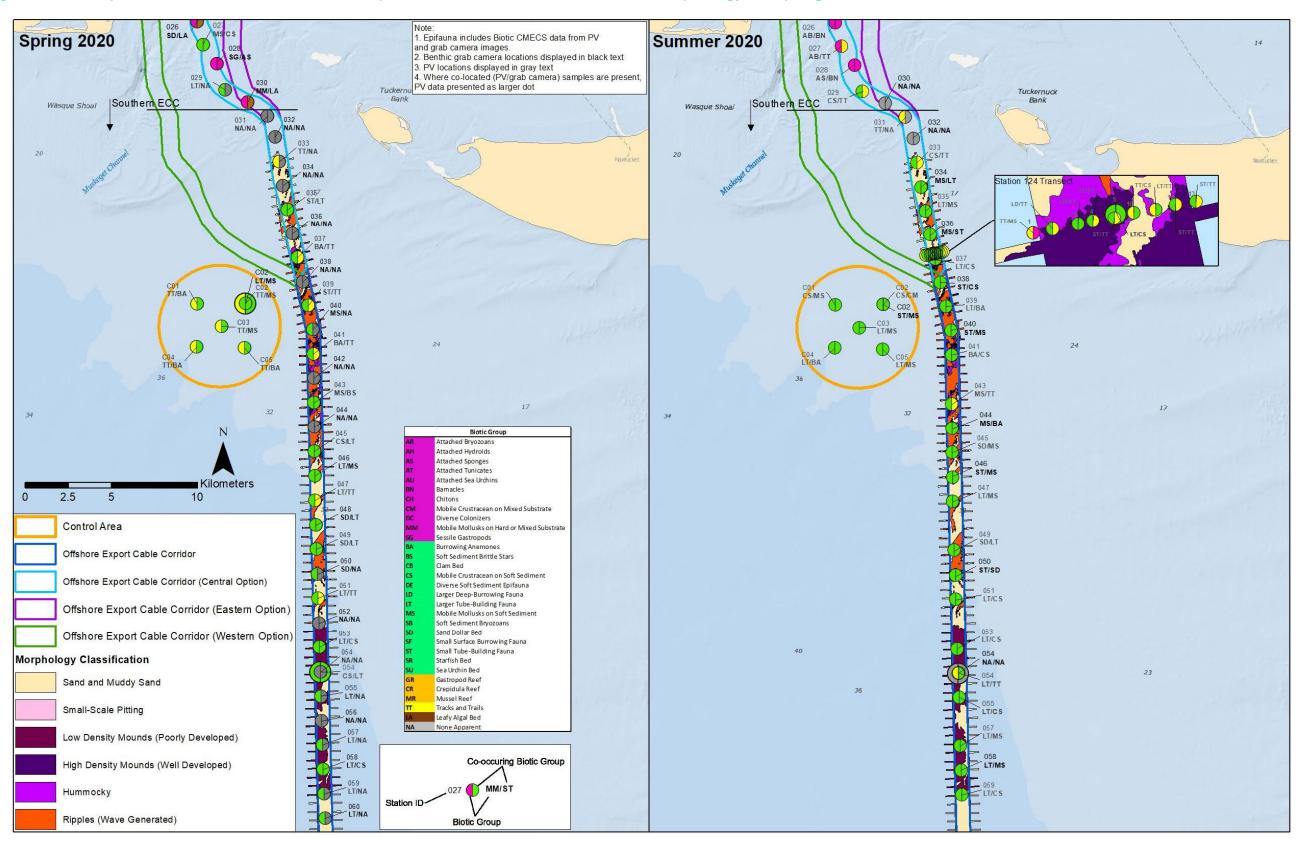
Attachment 8e. Southern Export Cable Corridor CMECS Biotic Epifauna and Folk Substrate Classifications for Spring and Summer 2020



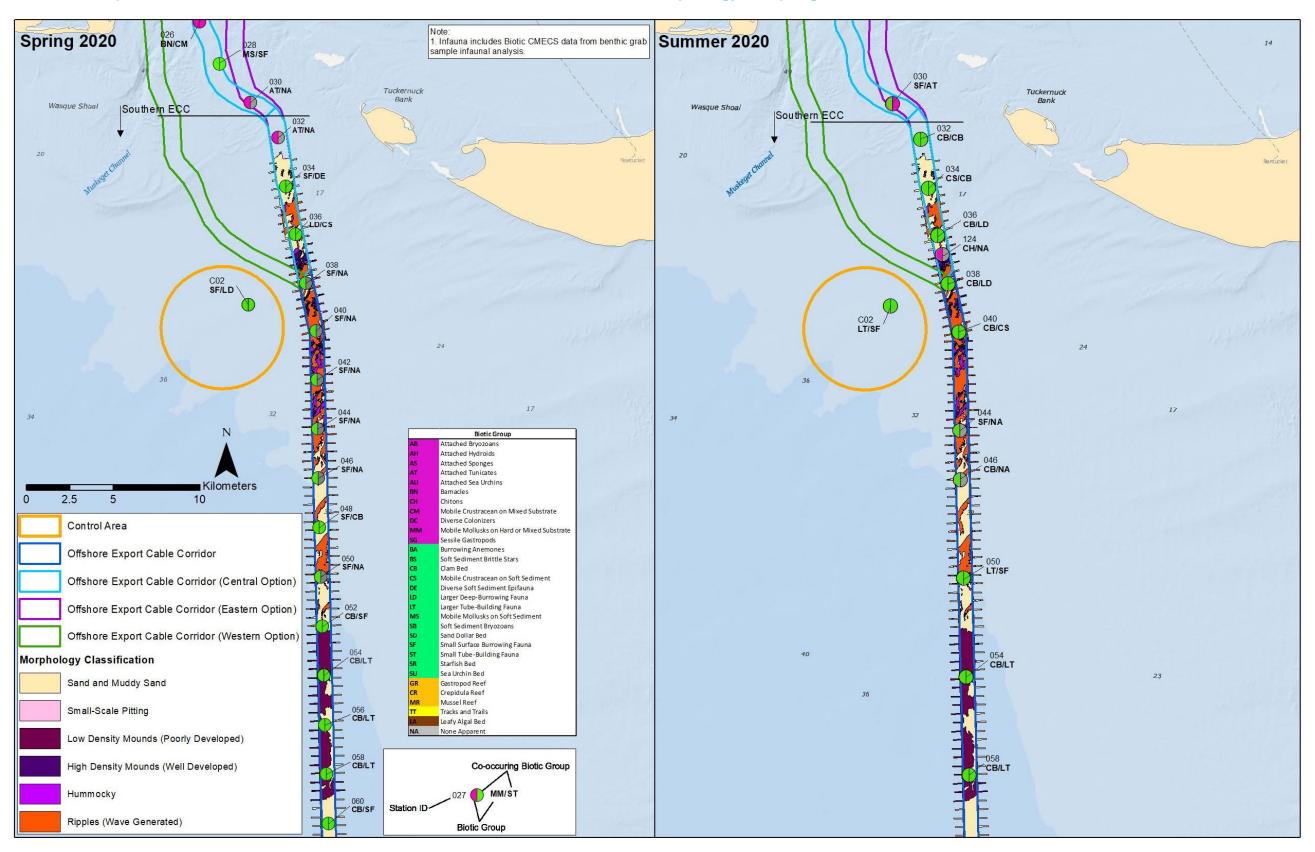
Attachment 8f. Southern Export Cable Corridor CMECS Biotic Infauna and Folk Substrate Classifications for Spring and Summer 2020



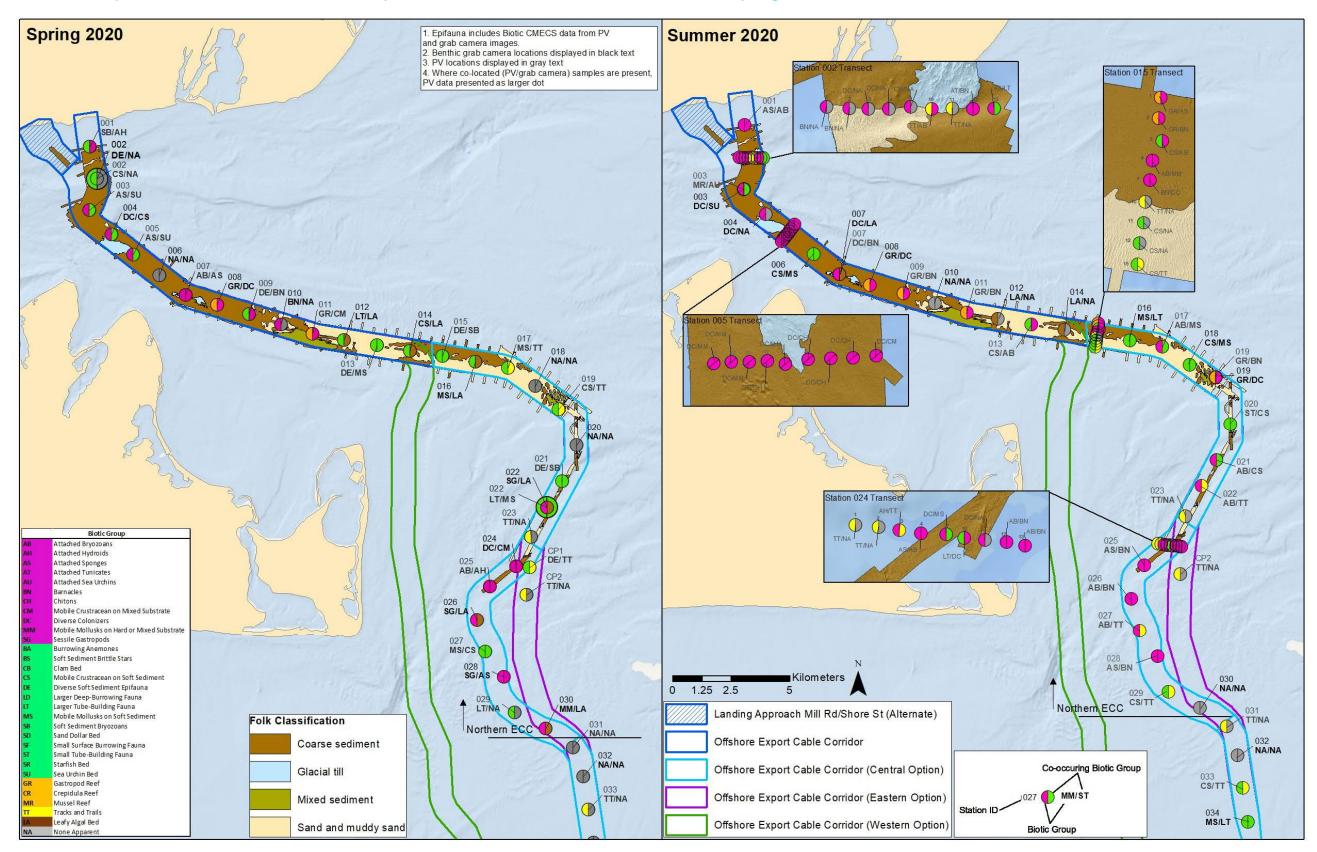
Attachment 8g. Southern Export Cable Corridor CMECS Biotic Epifauna Classifications and Seafloor Morphology for Spring and Summer 2020



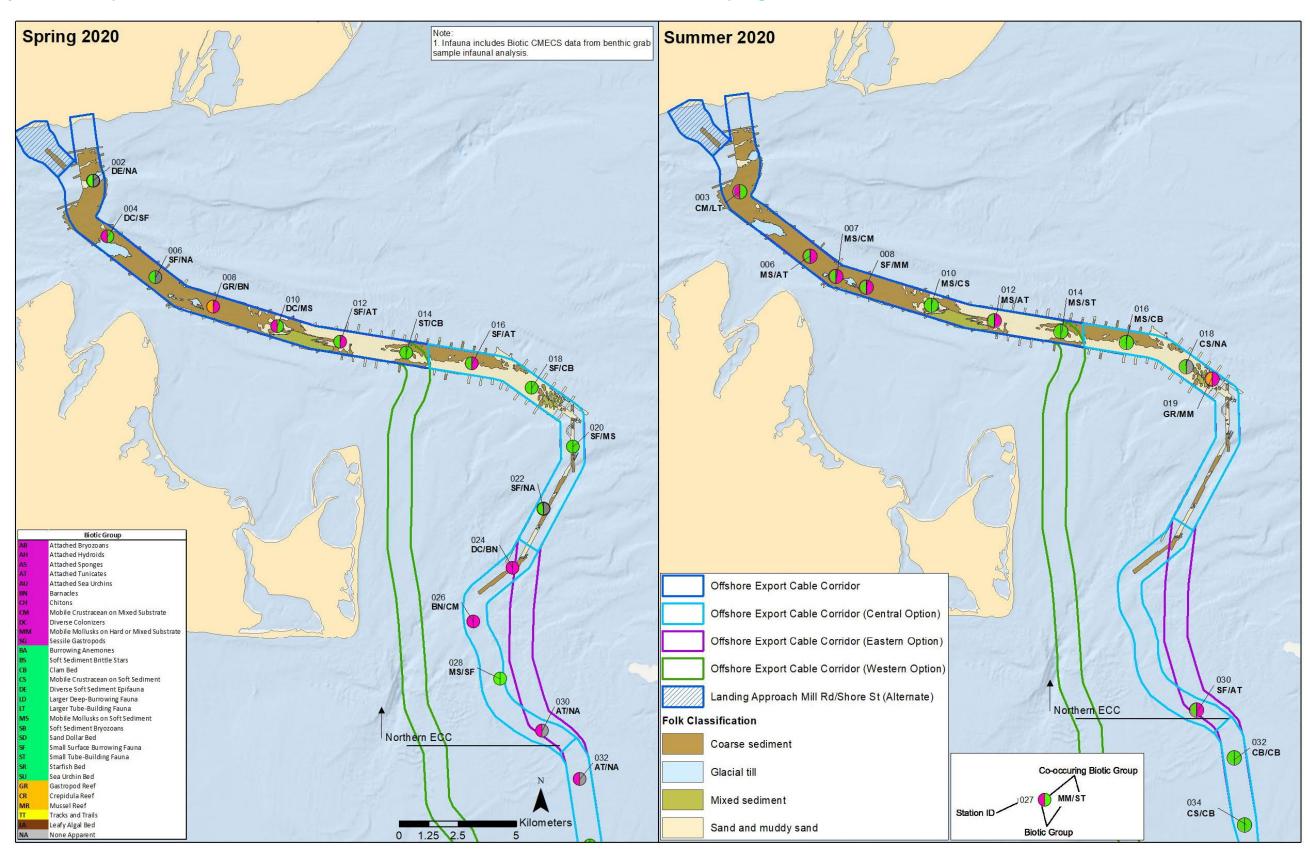
Attachment 8h. Southern Export Cable Corridor CMECS Biotic Infauna Classifications and Seafloor Morphology for Spring and Summer 2020



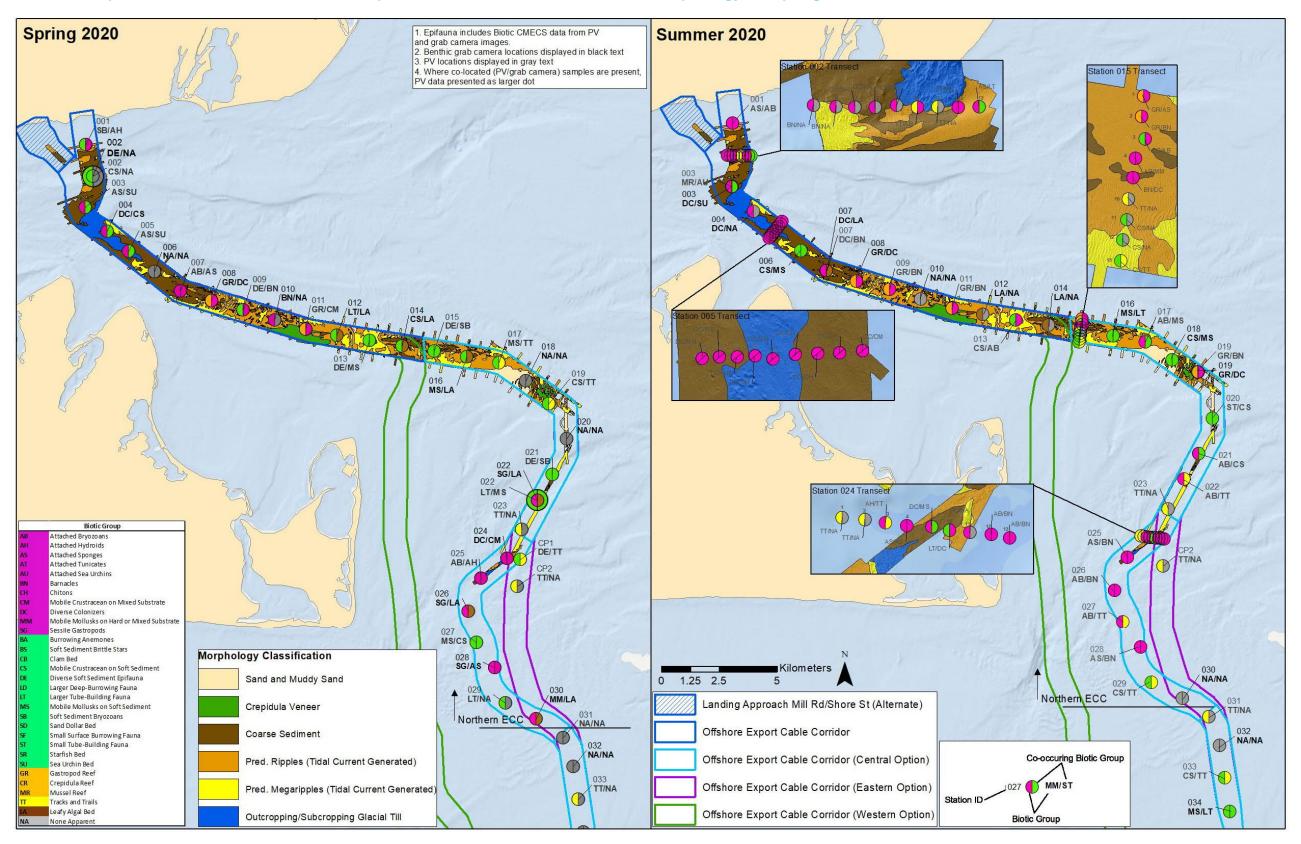
Attachment 8i. Northern Export Cable Corridor CMECS Biotic Epifauna and Folk Substrate Classifications for Spring and Summer 2020



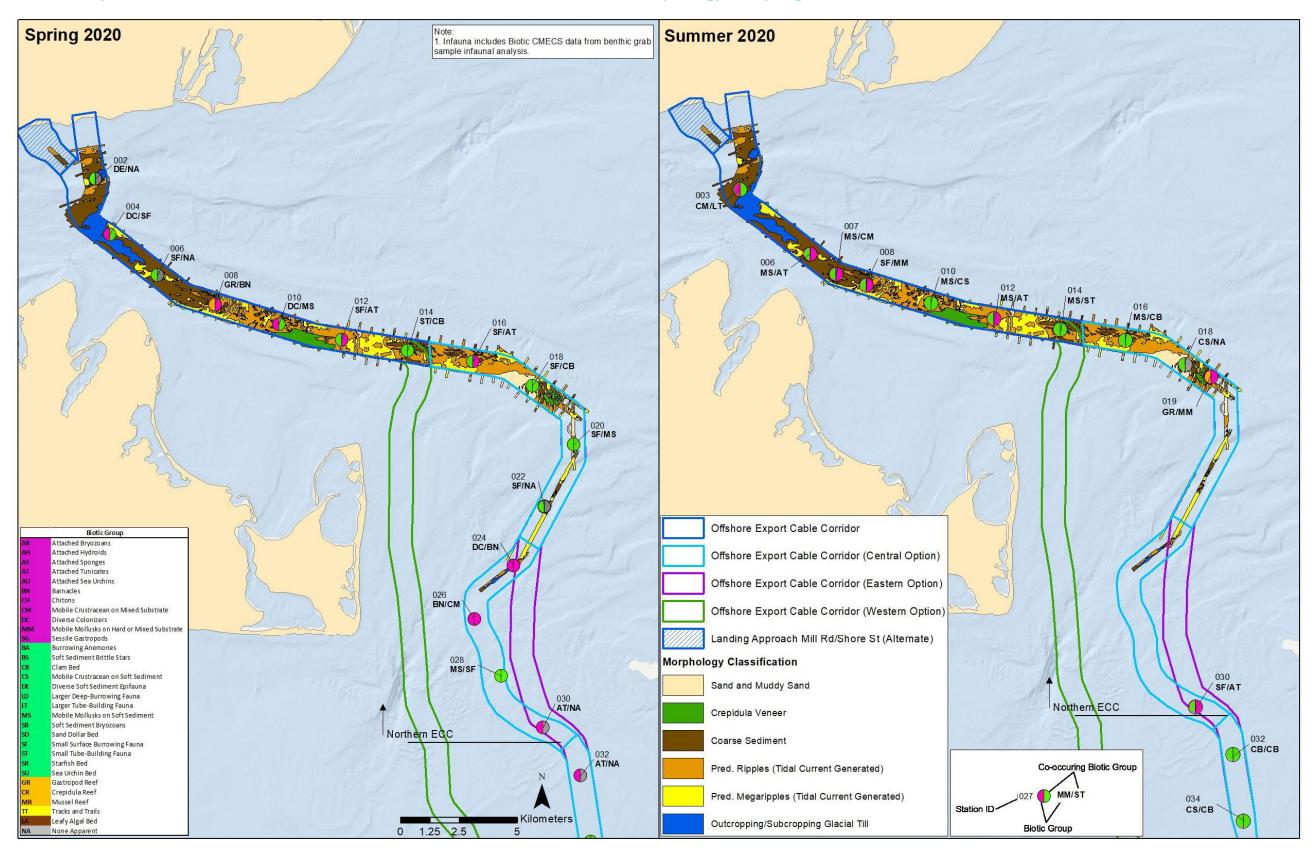
Attachment 8j. Northern Export Cable Corridor CMECS Biotic Infauna and Folk Substrate Classifications for Spring and Summer 2020



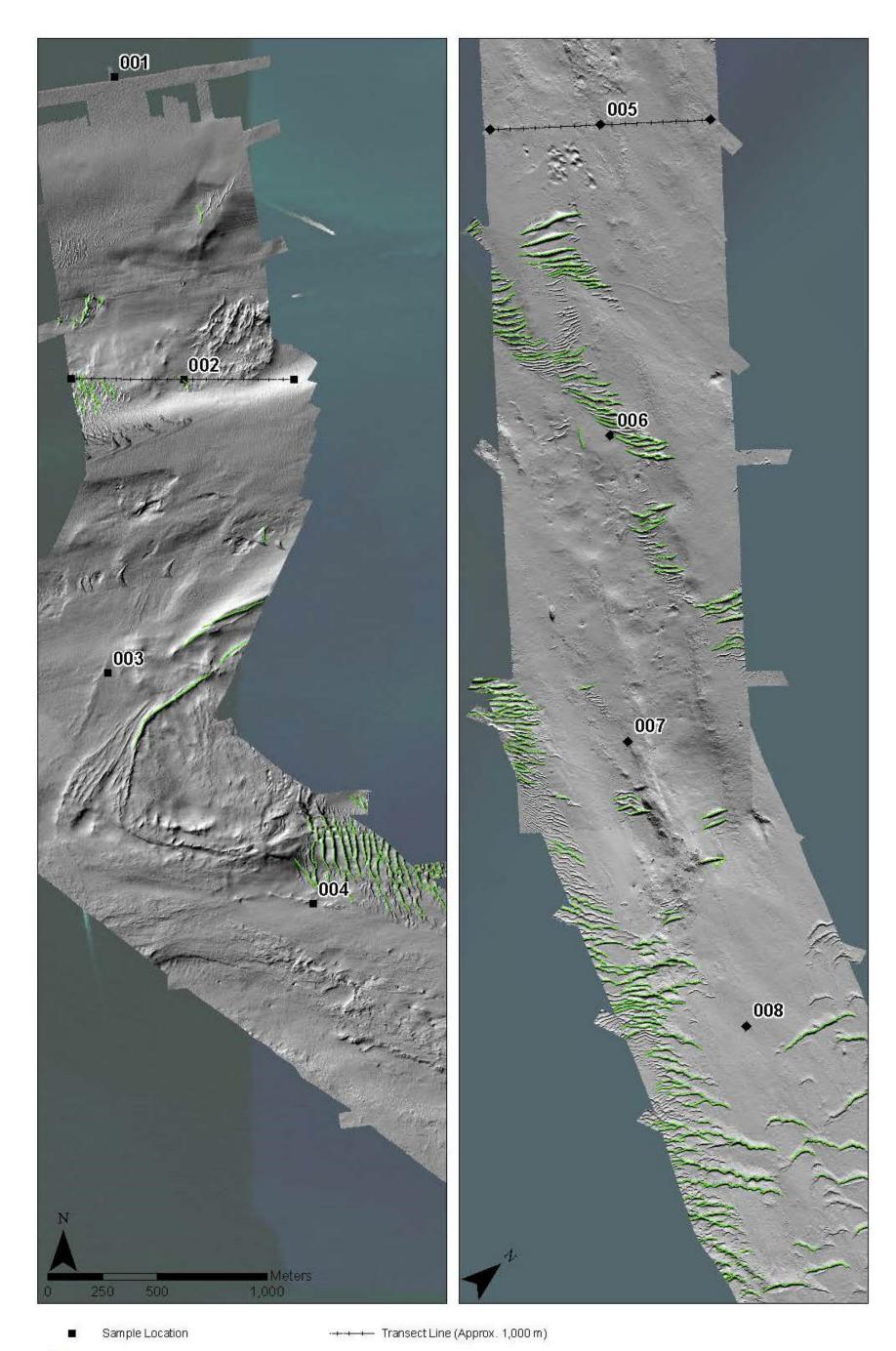
Attachment 8k. Northern Export Cable Corridor CMECS Biotic Epifauna Classifications and Seafloor Morphology for Spring and Summer 2020



Attachment 8I. Northern Export Cable Corridor CMECS Biotic Infauna Classifications and Seafloor Morphology for Spring and Summer 2020

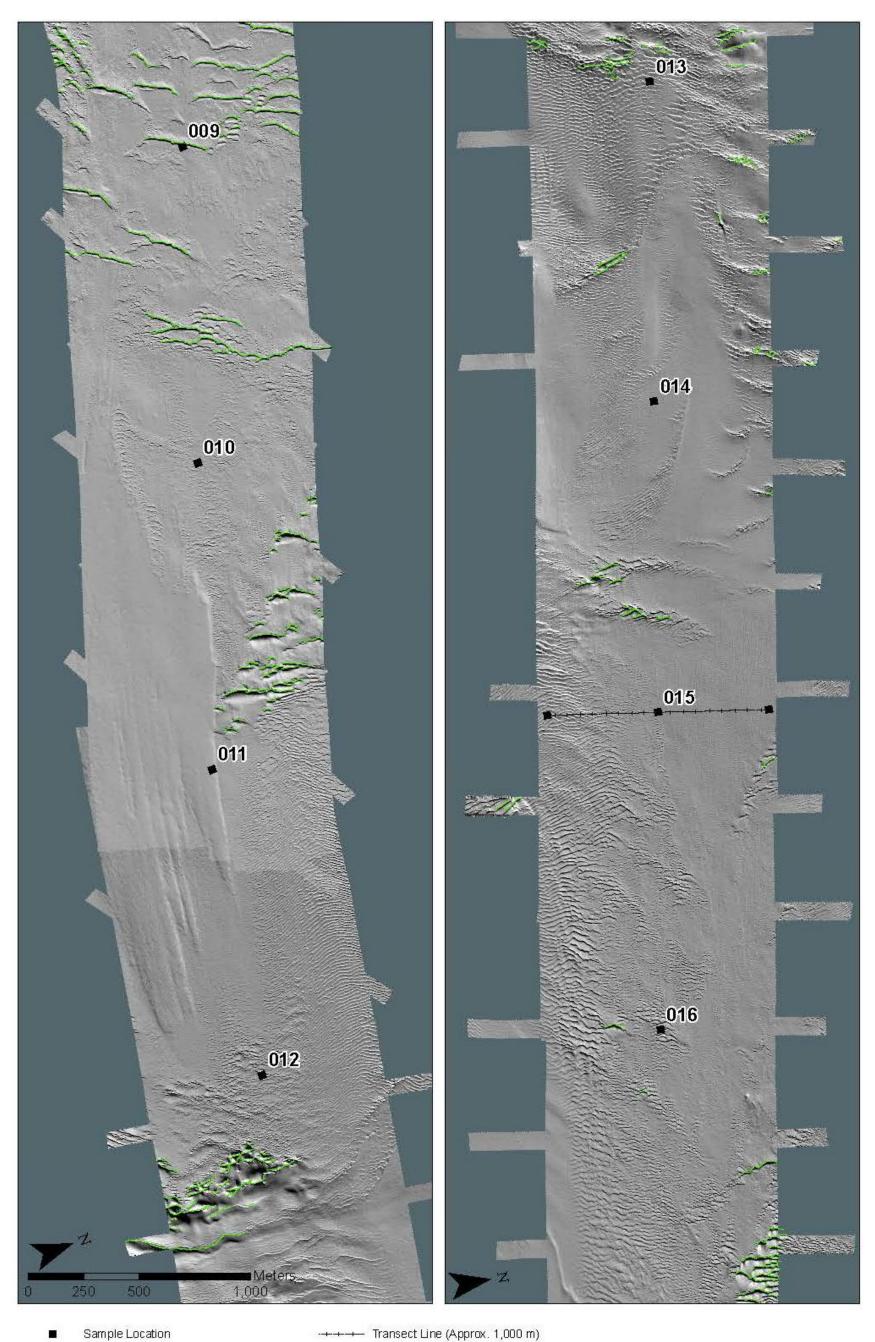


Attachment 8m. Summer 2020 Northern Export Cable Corridor Stations 001 to 008 Seafloor Morphology with Sandwave Crests



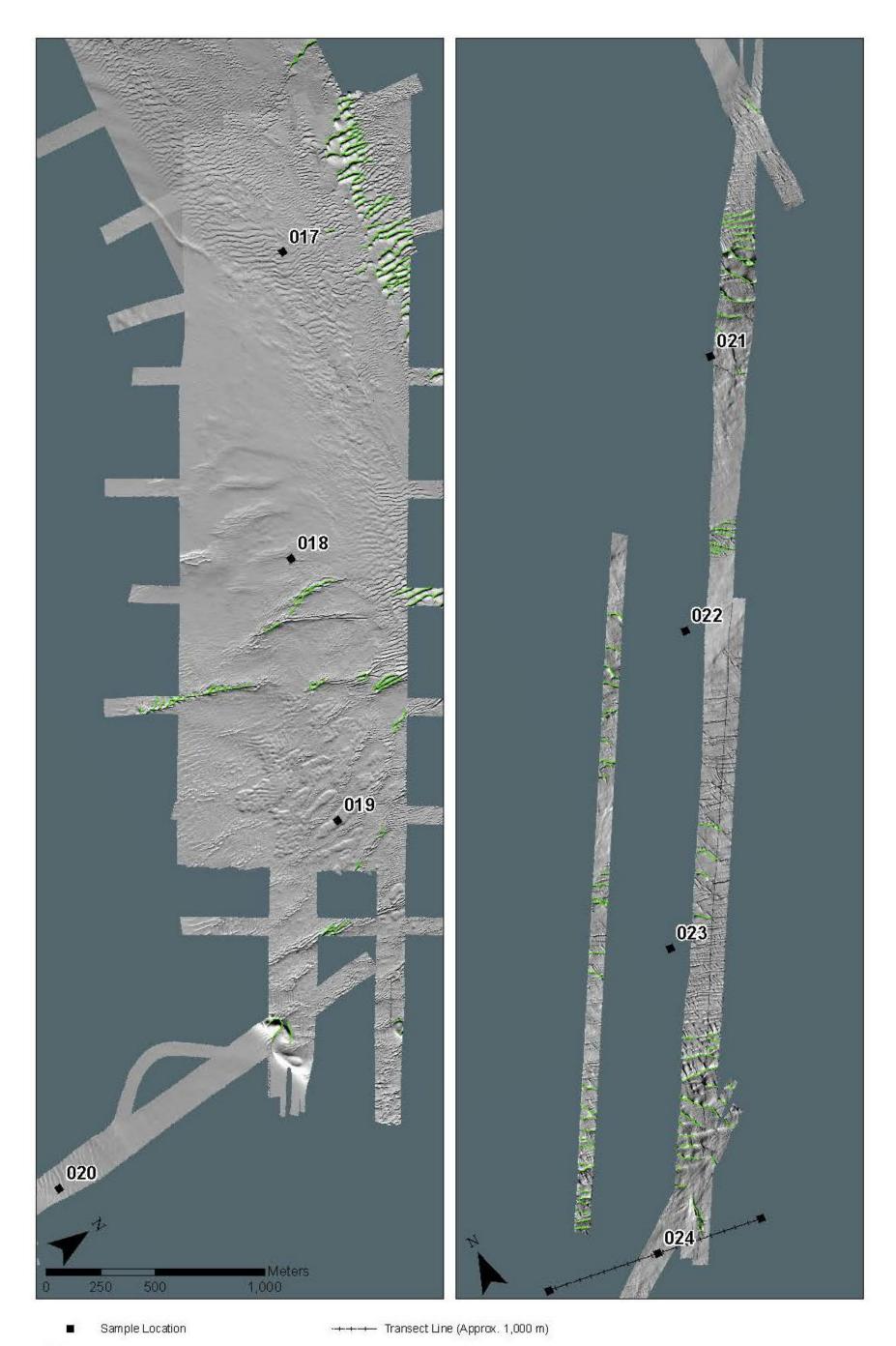
Sandwave Crests (Bedforms > 1.5 m High)

Attachment 8n. Summer 2020 Northern Export Cable Corridor Stations 009 to 016 Seafloor Morphology with Sandwave Crests



Sandwave Crests (Bedforms > 1.5 m High)

Attachment 8o. Summer 2020 Northern Export Cable Corridor Stations 017 to 024 Seafloor Morphology with Sandwave Crests



Sandwave Crests (Bedforms > 1.5 m High)

Addendum to Benthic and Shellfish Resources Characterization Report

August 2021

Since the submission of the Construction and Operations Plan (COP) for the proposed Mayflower Wind Energy LLC (Mayflower Wind) project (the Project) in February 2021, changes have been made to the Project Design Envelope (PDE). An updated Project description is provided in Attachment 1 to this Addendum. The following summarizes the primary changes to the Offshore Project Area:

- The Eastern and Central export cable corridor (ECC) options from the Lease Area to Falmouth have been down-selected.
- The Western option remains as the viable corridor through Muskeget Channel and has been repositioned slightly during the design.
- The Mill Road landfall location in Falmouth has been down-selected and Central Park has been added as an alternate landfall location. The Central Park landfall location is located approximately 213 feet (700 m) west of the preferred Worcester Avenue landfall location.
- A new export cable corridor has been included in the PDE. This route goes from the Lease Area to Brayton Point in Somerset, Massachusetts.

The purpose of this Addendum to COP Appendix M – Benthic and Shellfish Resources Characterization Report, is to summarize the status of benthic data collected from the updated PDE.

The benthic habitat evaluation presented in COP Appendix M is based on data collected from Spring and Summer 2020, which included the original Eastern and Central route options through Muskeget Channel. The Field Sampling Plans from these events are provided as Attachments 2 and 3 to this Addendum.

Table 1 presents a summary of the samples that are presented and discussed in Appendix M that are no longer part of the PDE.

Table 1. Station Locations and Data Presented in Appendix M that are No Longer in PDE

Station ID	Data Collected Spring 2020	Data Collected Summer 2020
	Central Route Option	
015	SPI/PV	SPI/PV
016	Benthic Grab	Benthic Grab
017	SPI/PV	SPI/PV
018	Benthic Grab	Benthic Grab
019	SPI/PV	SPI/PV/Benthic Grab
020	Benthic Grab	SPI/PV
021	SPI/PV	SPI/PV
022	Benthic Grab	SPI/PV
023	SPI/PV	SPI/PV
024	Benthic Grab	SPI/PV
025	SPI/PV	SPI/PV
026	Benthic Grab	SPI/PV

Station ID	Data Collected Spring 2020	Data Collected Summer 2020							
027	SPI/PV	SPI/PV							
028	Benthic Grab	SPI/PV							
029	SPI/PV	SPI/PV							
030	Benthic Grab	Benthic Grab							
031	SPI/PV	SPI/PV							
032	Benthic Grab	Benthic Grab							
033	SPI/PV	SPI/PV							
034	Benthic Grab	Benthic Grab							
035	SPI/PV	SPI/PV							
036	Benthic Grab	Benthic Grab							
037	SPI/PV	SPI/PV							
	Eastern Route Option								
CP1	SPI/PV	Not sampled							
CP2	SPI/PV	SPI/PV							

Additional data has been collected during benthic surveys in Fall 2020, Spring 2021, and Summer 2021. Field Sampling Plans are provided as Attachments 4, 5, and 6 to this Addendum, respectively. A summary of the available data is provided in Table 2 on the following page:

Table 2. Summary of Data Collected after Spring 2020

	_		
		Fall 2020	
Sample Type	Lease Area	Falmouth ECC	Brayton Point ECC
SPI/PV	20	41 (4 not in updated PDE)	0
SPI/PV Transect	0	8 (1 not in updated PDE)	0
Video Transect	0	0	0
Benthic Grab	19	26 (3 not in updated PDE)	0
		Spring 2021	
Sample Type	Lease Area	Falmouth ECC	Brayton Point ECC
SPI/PV	15	8	0
SPI/PV Transect	1	13	0
Video Transect	0	3	0
Benthic Grab	18	17	0
		Summer 2021	
Sample Type	Lease Area	Falmouth ECC	Brayton Point ECC
SPI/PV	0	0	64
SPI/PV Transect	0	0	10
Video Transect	0	1	7
Benthic Grab	0	0 3	
		4	

The data from the recent benthic surveys will be reported and integrated with acoustic mapping data from the entire PDE in the final version of Appendix M.

ATTACHMENT 1 – Updated Project Description

Prepared for: Mayflower Wind, LLC

Project Description

Project Overview

The Mayflower Wind Project includes a Lease Area located in federal waters south of Martha's Vineyard and Nantucket (Figure 1). Wind turbine generators (WTGs) constructed within the Lease Area will deliver power via inter-array cables to the offshore substation platforms (OSPs). The WTG/OSP positions have been established based on a 1 x 1 nautical mile (nm) (1.9 x 1.9 kilometer [km]) grid oriented along the cardinal directions to maintain a uniform spacing of WTGs across all the lease areas within the Massachusetts/Rhode Island Wind Energy Area. Submarine offshore export cables will be installed within offshore export cable corridors (ECCs) to carry the electricity from the OSPs within the Lease Area to the onshore transmission systems via two different ECCs. One ECC will make landfall in Falmouth, Massachusetts and the other will make landfall at Brayton Point, in Somerset, Massachusetts.

The proposed Falmouth ECC will extend from the Lease Area and enter Massachusetts state waters south of Nantucket Island and Martha's Vineyard, and pass through Muskeget Channel into Nantucket Sound. The offshore export cables will make landfall via horizontal directional drilling (HDD). Potential landing location(s) for the Falmouth ECC include Shore Street, Central Park, or Worcester Avenue in Falmouth, Massachusetts. The proposed Brayton Point ECC will run north and west from the Lease Area through Rhode Island Sound to the Sakonnet River. It will then run north up the Sakonnet River, cross land at Aquidneck Island to Mount Hope Bay, and then north into Massachusetts state waters to Brayton Point. Landfall will be made via HDD at one of two potential landing locations in Somerset on the western side of Brayton Point from the Lee River (preferred) or the eastern side from the Taunton River (alternate).

The Offshore Project Area includes the Lease Area, Falmouth and Brayton Point ECCs, and the HDD at the landfall locations.

Specific Project Details

Each primary offshore Project component is briefly described below in Table 1. Additional details may be found in the COP Section 3 –Description of Proposed Activities.

Table 1. Key Project Details

Project Attribute	Description
Lease Area Size	127,388 acres (51,552 hectares [ha])
Layout and Project Size	Up to 149 WTG/OSP positions Up to 147 WTGs Up to 5 OSP(s)
WTGs	Rotor diameter: 721.7 – 918.6 feet (ft) (220.0 – 280.0 meters [m]) Blade length of 351.0 – 452.8 ft (107.0 – 138.0 m) Hub height above Mean Lower Low Water (MLLW): 418.7 – 605.1 ft (127.6 – 184.4 m)
OSP(s)	Top of topside height above MLLW: 160.8 – 344.5 ft (49.0 – 105.0 m)
WTG/OSP Substructures	Monopile, piled jacket, suction-bucket jacket, and/or gravity-based structure Seabed penetration: $0-295.3 \ \text{ft} \ (0-90.0 \ \text{m})$ Scour protection for up to all positions
Inter-Array Cables	Nominal inter-array cable voltage: 60 kilovolts (kV) to 72.5 kV Length of inter-array cables beneath seafloor: 124.3 – 497.1 miles (mi) (200 – 800 km) Target burial depth (below level seabed): 3.2 – 8.2 ft (1 – 2.5 m)
Landfall Location(s)	Falmouth, MA Three locations under consideration: Worcester Avenue (preferred), Shore Street, and Central Park

Prepared for: Mayflower Wind, LLC

Project Attribute Description Somerset, MA

Two locations under consideration: the western (preferred) and eastern (alternate)

shorelines of Brayton Point Aquidneck Island, Portsmouth, RI

Several locations under consideration for intermediate landfall across the island

Offshore Export Cables

Falmouth ECC

Anticipated Cable Type: high voltage alternating current (HVAC)

Number of export cables: up to 5

Nominal export cable voltage: 200 – 345 kV

Length per export cable beneath seabed: 51.6 – 87.0 mi (83 – 140 km)

Cable crossings: up to 9

Target burial depth (below level seabed): 3.2 - 13.1 ft (1 - 4 m)

Brayton Point ECC

Cable Type: high voltage direct current (HVDC)

Number of export cables: up to 6

Up to 4 export power cables and up to 2 communication cables

Nominal export cable voltage: ±320 kV

Length per export cable beneath seabed: 97 – 124 mi (156 – 200 km)

Cable/pipeline crossings: up to 16 (total)

Target burial depth (below level seabed): 3.2 - 13.1 ft (1 - 4 m)

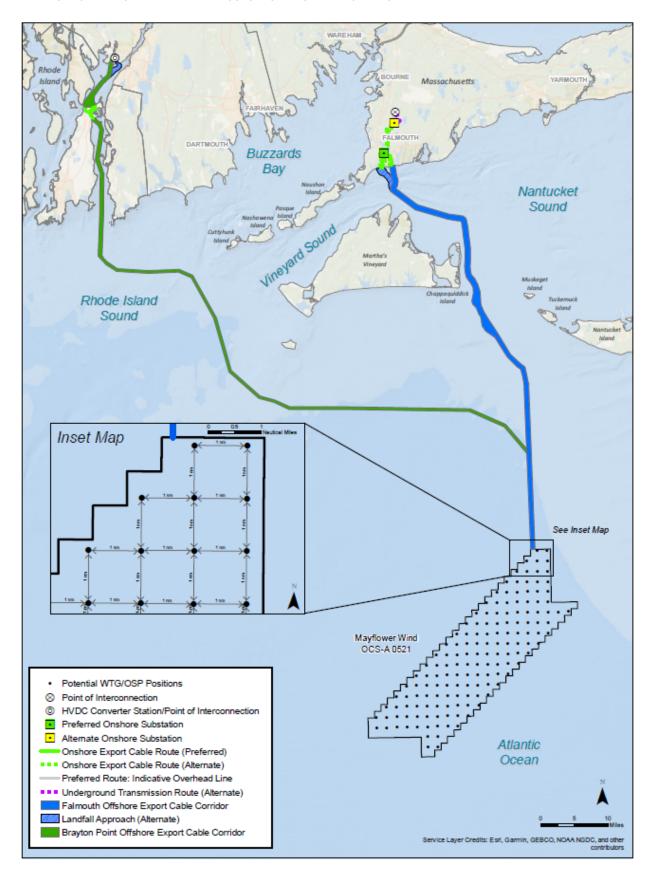


Figure 1. Location of Mayflower Wind Offshore Wind Renewable Energy Generation Project

ATTACHMENT 2 – Mayflower Wind Benthic Infaunal and Seafloor Habitat Field Study Plan, Spring 2020

Prepared for: Mayflower Wind, LLC



MEMORANDUM

Subject

Mayflower Wind Benthic Field Survey Plan (FSP) - Addendum #1 Mayflower Wind Benthic Quality Assurance Project Plan (QAPP) -Addendum #1

Prepared for:

Jennifer Flood, Heather Cousson

Date

5/11/2020

Prepared by: **AECOM**

Project Number Project Name 60618498 Mayflower Wind

The following serves as an addendum to the Mayflower Wind Benthic Infaunal and Seafloor Habitat Field Study Plan (FSP), Spring 2020 Rev 1 dated May 6, 2020 and Quality Assurance Project Plan (QAPP) dated May 1, 2020. These addenda clarify selected procedures associated with field sample collection.

FSP Table of Contents (Revisions)

5.1.1	Sample Locations and Frequency	.1
5.2.1	Sample Locations	.1
5.2.2	Subsample Collection for Sediment Characterization	.2
QAPP Ta	able of Contents (Revisions)	
2.4.2.1 T	otal Organic Carbon	2
Appendix	B.3 SOP for Chemical/Physical Laboratory Sample Analysis	2

1. Revisions to the FSP section number are provided in the pages that follow.

Sample Locations and Frequency

Six of the previously identified sampling locations will now also have co-located SPI/PV data collection. Attached Table 5-1 (revised) and Table 5-2 (revised) identify the locations for SPI/PV co-location with planned benthic infauna sampling (Attachment 1). Control areas already have co-located benthic infaunal and SPI/PV samples; therefore no changes are proposed to the control area sampling.

5.2.1 **Sample Locations**

The following provides clarification to language that already is presented in this section regarding the relocation of sampling stations.

Conditions may be encountered that may preclude the collection of acceptable benthic infaunal grab samples and/or SPI/PV images at a given location. Such conditions warranting the relocation of sampling stations may include, but are not limited to, underlying geologic and sediment conditions, physical obstructions on the bottom, active fishing gear, water depth.

Where an initial attempt to collect a benthic grab sample or SPI/PV image fails, up to three attempts may be made to collect a benthic grab or SPI/PV images at a given location. However, if evidence is such that



repeated attempts will not likely yield a successful outcome, then relocation may occur without repeat attempts to secure a sample/image at the original location.

Where necessary, sampling stations along the planned export cable route may be relocated:

- By reducing the separation distance between stations to locate the sample station to avoid the
 obstructing condition while maintaining approximately the same center line as the existing sampling
 station locations; changes in the separation of sampling locations should be the minimum required
 to avoid the obstructing condition; or
- By shifting off the centerline of the current sampling locations to a nearby location which avoids the
 obstructing condition; the distance of the shift off the center line should be the minimum required to
 avoid the obstructing condition.

Where necessary, sampling stations within the lease area may be relocated to the nearest tower location which does not already have a sampling location. A table of coordinates is attached (Attachment 2) for the tower locations that do not have a sample station per this FSP. Towers that are in an area of potential hardbottom/complex habitat previously identified have been excluded.

Where relocation is necessary, the field records should document the obstructing condition encountered, and the coordinates of the new sampling location. Available physical evidence which supports a decision to relocate (e.g., photographs, water depth information, grab cam video or SPI/PV images) should be retained.

Decisions for sampling station relocations will be made in consultation with the client representative onboard the vessel.

5.2.2 Subsample Collection for Sediment Characterization

Table 5-4 is modified as follows:

Table 5-1. Proposed Samples to be Collected

Sample (Naming Code)	Analytes	Sampling Procedure/ Preservation	Storage	Holding Time	Analysis Method	Method Detection Limit (with unit)
Physico- chemical Parameters (P1)	тос	120- mL or 4-ounce glass jar with Teflon lined cap, approximately 80% full	≤6°C	14 days or 28 days	Lloyd Kahn or 9060A	0.05% or 0.01 %
No changes to other	r rows in the table	ruli				

Should sufficient volume not be available in a single grab bucket to obtain duplicate samples for both TOC and grain size, the grain size duplicate will be collected at the next benthic grab station. Sample jar labels will be updated as necessary to reflect the actual location where duplicate samples are collected.

2. Revisions to the QAPP section number are provided in the pages that follow.

2.4.2.1 Total Organic Carbon

"TOC analysis will be performed according to Environmental Protection Agency (EPA) Method 9060A Mod.": is changed to "TOC analysis will be performed according to EPA Region 2 Lloyd Kahn methodology or Environmental Protection Agency (EPA) Method 9060A Mod depending on holding period for samples collected. If any samples collected will exceed 28 days holding time, which is two times the holding time for the Lloyd Kahn method (i.e., 14 days), then all samples will be analyzed by EPA 9060A Mod.

Appendix B.3 SOP for Chemical/Physical Laboratory Sample Analysis

Appendix B.3 is hereby amended to include the Lloyd Kahn method (Attachment 3).



Attachment 1 – Tables 5-1 and 5-2 Revised

Table 5 1. Benthic Sampling Stations and Sample IDs in Mayflower Wind OCS-A-0521 Lease Area (REVISED)

061 062 063 064 065 066 067 068	20SP-MW0521-061-SPI 20SP-MW0521-062-BG 20SP-MW0521-063-BG 20SP-MW0521-064-SPI 20SP-MW0521-065-BG 20SP-MW0521-066-SPI 20SP-MW0521-067-SPI 20SP-MW0521-068-BG 20SP-MW0521-069-BG	UTM Zone 19 N / WGS 84	393806 393806 393806 393806 395658 397510	4530924 4529072 4525368 4523516 4519812 4519812	40.92254 40.90586 40.8725 40.85582 40.8227	-70.2612 -70.26088 -70.26025 -70.25993 -70.23734	-35 -37 -38 -44	12300 12300 12300 12300
063 064 065 066 067 068	20SP-MW0521-063-BG 20SP-MW0521-064-SPI 20SP-MW0521-065-BG 20SP-MW0521-066-SPI 20SP-MW0521-067-SPI 20SP-MW0521-068-BG	UTM Zone 19 N / WGS 84 UTM Zone 19 N / WGS 84	393806 393806 395658 397510	4525368 4523516 4519812	40.8725 40.85582	-70.26025 -70.25993	-38	12300
064 065 066 067 068	20SP-MW0521-064-SPI 20SP-MW0521-065-BG 20SP-MW0521-066-SPI 20SP-MW0521-067-SPI 20SP-MW0521-068-BG	UTM Zone 19 N / WGS 84 UTM Zone 19 N / WGS 84 UTM Zone 19 N / WGS 84 UTM Zone 19 N / WGS 84	393806 395658 397510	4523516 4519812	40.85582	-70.25993		
065 066 067 068	20SP-MW0521-065-BG 20SP-MW0521-066-SPI 20SP-MW0521-067-SPI 20SP-MW0521-068-BG	UTM Zone 19 N / WGS 84 UTM Zone 19 N / WGS 84 UTM Zone 19 N / WGS 84	395658 397510	4519812			-44	12300
066 067 068	20SP-MW0521-066-SPI 20SP-MW0521-067-SPI 20SP-MW0521-068-BG	UTM Zone 19 N / WGS 84 UTM Zone 19 N / WGS 84	397510		40.8227	70 22724		
067 068	20SP-MW0521-067-SPI 20SP-MW0521-068-BG	UTM Zone 19 N / WGS 84		4E10012		-10.23134	-40	12300
068	20SP-MW0521-068-BG			4519612	40.82293	-70.21539	-38	12300
			393806	4517960	40.80578	-70.25898	-44	12300
069	20SP-MW0521-069-BG	UTM Zone 19 N / WGS 84	391954	4517960	40.80554	-70.28094	-44	12300
000		UTM Zone 19 N / WGS 84	391954	4523516	40.85558	-70.2819	-44	12300
070	20SP-MW0521-070-SPI	UTM Zone 19 N / WGS 84	391954	4525368	40.87226	-70.28222	-40	12300
071	20SP-MW0521-071-SPI	UTM Zone 19 N / WGS 84	390102	4527220	40.88869	-70.30452	-42	12300
072	20SP-MW0521-072-BG	UTM Zone 19 N / WGS 84	388250	4527220	40.88844	-70.3265	-42	12300
073	20SP-MW0521-073-SPI	UTM Zone 19 N / WGS 84	384546	4523516	40.85457	-70.36977	-47	12300
074	20SP-MW0521-074-BG	LITM Zono 40 NI / WCC 04	206200	4500546	40.05402	70 2470	46	42200
074	20SP-MW0521-074-SPI	UTM Zone 19 N / WGS 84	386398	4523516	40.85483	-70.3478	-46	12300
075	20SP-MW0521-075-BG	UTM Zone 19 N / WGS 84	388250	4521664	40.8384	-70.3255	-46	12300
076	20SP-MW0521-076-SPI	UTM Zone 19 N / WGS 84	390102	4521664	40.83865	-70.30354	-45	12300
077	20SP-MW0521-077-SPI	UTM Zone 19 N / WGS 84	386398	4519812	40.82147	-70.34713	-48	12300
078	20SP-MW0521-078-BG	UTM Zone 19 N / WGS 84	386398	4517960	40.80479	-70.34679	-48	12300
079	20SP-MW0521-079-BG	UTM Zone 19 N / WGS 84	388250	4516108	40.78837	-70.32451	-44	12300
080	20SP-MW0521-080-SPI	UTM Zone 19 N / WGS 84	388250	4514256	40.77169	-70.32417	-48	12300
081	20SP-MW0521-081-BG	UTM Zone 19 N / WGS 84	390102	4514256	40.77194	-70.30223	-46	12300
082	20SP-MW0521-082-SPI	UTM Zone 19 N / WGS 84	390102	4512404	40.75526	-70.30191	-47	12300
083	20SP-MW0521-083-SPI	UTM Zone 19 N / WGS 84	384546	4512404	40.7545	-70.36771	-48	12300
004	20SP-MW0521-084-BG	LITA 7 40 N (MOO 04	004540	4544050	40.77447	70.00005	40	12300
084	20SP-MW0521-084-SPI	UTM Zone 19 N / WGS 84	384546	4514256	40.77117	-70.36805	-49	
085	20SP-MW0521-085-BG	UTM Zone 19 N / WGS 84	382694	4516108	40.78759	-70.39034	-49	12300
086	20SP-MW0521-086-SPI	UTM Zone 19 N / WGS 84	380842	4516108	40.78732	-70.41228	-51	12300
087	20SP-MW0521-087-BG	UTM Zone 19 N / WGS 84	380842	4517960	40.804	-70.41264	-49	12300
088	20SP-MW0521-088-SPI	UTM Zone 19 N / WGS 84	380842	4519812	40.82068	-70.41299	-48	12300
089	20SP-MW0521-089-BG	UTM Zone 19 N / WGS 84	377138	4516108	40.78678	-70.45617	-51	12300
090	20SP-MW0521-090-SPI	UTM Zone 19 N / WGS 84	377138	4514256	40.7701	-70.45581	-51	12300
091	20SP-MW0521-091-SPI	UTM Zone 19 N / WGS 84	375286	4514256	40.76982	-70.47774	-51	12300
092	20SP-MW0521-092-BG	UTM Zone 19 N / WGS 84	373434	4512404	40.75286	-70.49931	-55	12300
093	20SP-MW0521-093-SPI	UTM Zone 19 N / WGS 84	375286	4512404	40.75314	-70.47738	-53	12300
20.1	20SP-MW0521-094-BG	LITA 7 46 11 (11/20 7 1		4546464	10.75010			40555
094	0SP-MW0521-094-BG-DUP	UTM Zone 19 N / WSG 84	377138	4512404	40.75342	-70.45544	-51	12300
095	20SP-MW0521-095-BG	UTM Zone 19 N / WGS 84	378990	4514256	40.77038	-70.43387	-51	12300

Table 5 1. Benthic Sampling Stations and Sample IDs in Mayflower Wind OCS-A-0521 Lease Area (REVISED)

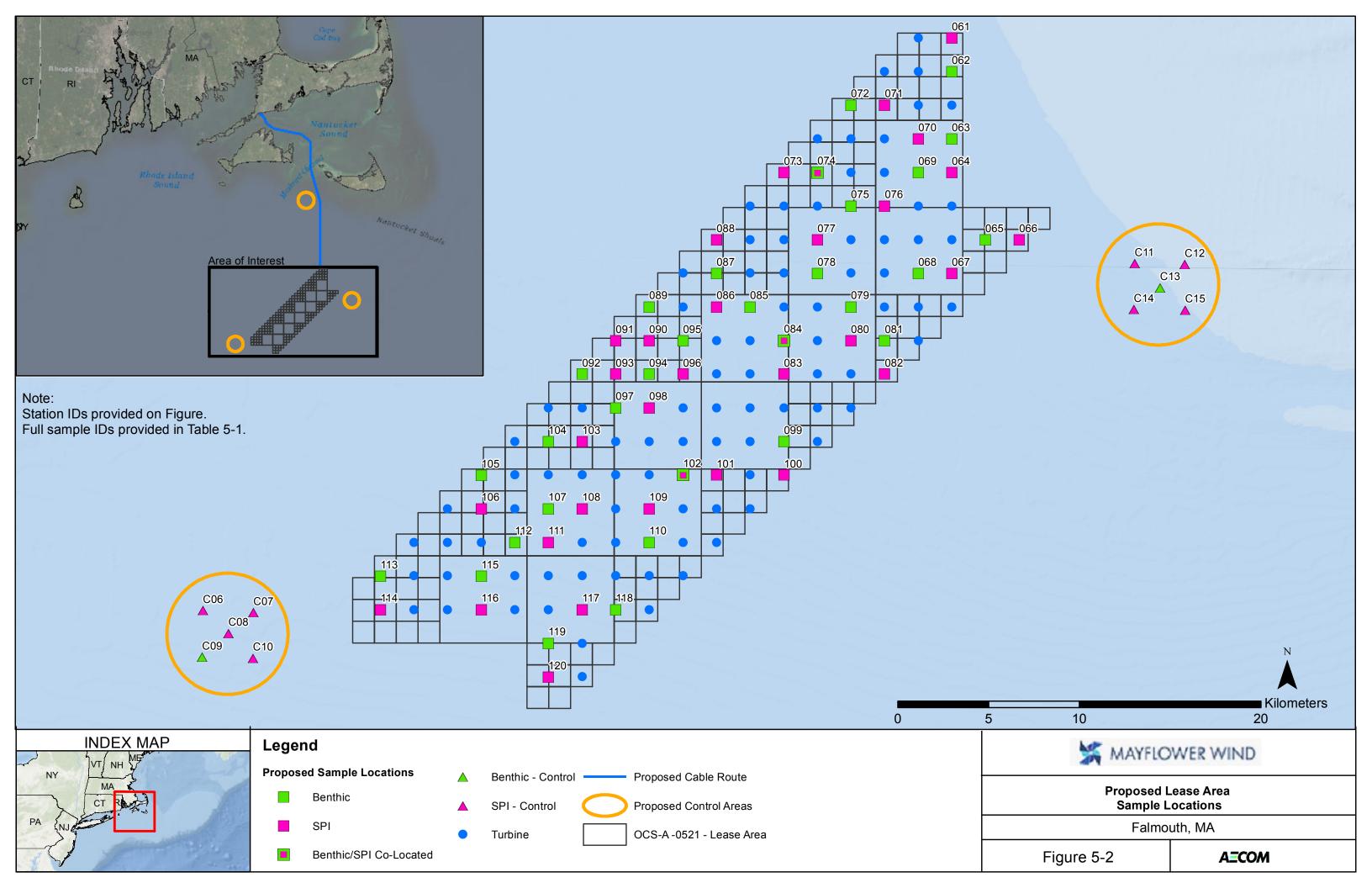
Station ID	Sample ID	UTM Zone / EPSG 32619	X coordinate (m)	Y coordinate (m)	Longitude	Latitude	Depth (m)	NOAA Chart Reference
096	20SP-MW0521-096-SPI	UTM Zone 19 N / WGS 84	378990	4512404	40.7537	-70.43351	-51	12300
097	20SP-MW0521-097-BG	UTM Zone 19 N / WGS 84	375286	4510552	40.73647	-70.47701	-53	12300
098	20SP-MW0521-098-SPI	UTM Zone 19 N / WGS 84	377138	4510552	40.73674	-70.45508	-53	12300
099	20SP-MW0521-099-BG	UTM Zone 19 N / WGS 84	384546	4508700	40.72114	-70.36703	-48	12300
100	20SP-MW0521-100-SPI	UTM Zone 19 N / WGS 84	384546	4506848	40.70446	-70.36669	-50	12300
101	20SP-MW0521-101-SPI	UTM Zone 19 N / WGS 84	380842	4506848	40.70393	-70.41052	-53	12300
102	20SP-MW0521-102-BG	UTM Zone 19 N / WGS 84	378990	4506848	40.70366	-70.43244	-53	12300
102	20SP-MW0521-102-SPI	OTIVI Zone 19 N / WGS 64	376990	4300040	40.70300	-70.43244	-55	12300
103	20SP-MW0521-103-SPI	UTM Zone 19 N / WGS 84	373434	4508700	40.7195	-70.49856	-53	12300
104	20SP-MW0521-104-BG	UTM Zone 19 N / WGS 84	371582	4508700	40.71922	-70.52048	-53	12300
105	20SP-MW0521-105-BG	UTM Zone 19 N / WGS 84	267070	4506848	40.70195	-70.56393	-57	12300
105	20SP-MW0521-105-BG-DUP	OTIVI Zone 19 N / WGS 64	367878	4506646	40.70195	-70.56393	-5/	12300
106	20SP-MW0521-106-SPI	UTM Zone 19 N / WGS 84	367878	4504996	40.68528	-70.56354	-57	12300
107	20SP-MW0521-107-BG	UTM Zone 19 N / WGS 84	371582	4504996	40.68586	-70.51972	-57	12300
108	20SP-MW0521-108-SPI	UTM Zone 19 N / WGS 84	373434	4504996	40.68615	-70.49781	-56	12300
109	20SP-MW0521-109-SPI	UTM Zone 19 N / WGS 84	377138	4504996	40.68671	-70.45399	-53	12300
110	20SP-MW0521-110-BG	UTM Zone 19 N / WGS 84	377138	4503144	40.67003	-70.45363	-55	12300
111	20SP-MW0521-111-SPI	UTM Zone 19 N / WGS 84	371582	4503144	40.66918	-70.51934	-57	12300
112	20SP-MW0521-112-BG	UTM Zone 19 N / WGS 84	369730	4503144	40.66889	-70.54125	-57	12300
113	20SP-MW0521-113-BG	UTM Zone 19 N / WGS 84	362322	4501292	40.65101	-70.62845	-60	12200
113	20SP-MW0521-113-BG-DUP	OTIVI Zone 19 N/ WGS 64	302322	4301292	40.03101	-70.02043	-00	12300
114	20SP-MW0521-114-SPI	UTM Zone 19 N / WGS 84	362322	4499440	40.63433	-70.62805	-60	12300
115	20SP-MW0521-115-BG	UTM Zone 19 N / WGS 84	367878	4501292	40.65192	-70.56276	-60	12300
116	20SP-MW0521-116-SPI	UTM Zone 19 N / WGS 84	367878	4499440	40.63524	-70.56237	-60	12300
117	20SP-MW0521-117-SPI	UTM Zone 19 N / WGS 84	373434	4499440	40.63611	-70.49669	-60	12300
118	20SP-MW0521-118-BG	UTM Zone 19 N / WGS 84	375286	4499440	40.63639	-70.4748	-58	12300
119	20SP-MW0521-119-BG	UTM Zone 19 N / WGS 84	371582	4497588	40.61915	-70.51821	-60	12300
120	20SP-MW0521-120-SPI	UTM Zone 19 N / WGS 84	371582	4495736	40.60247	-70.51783	-62	12300

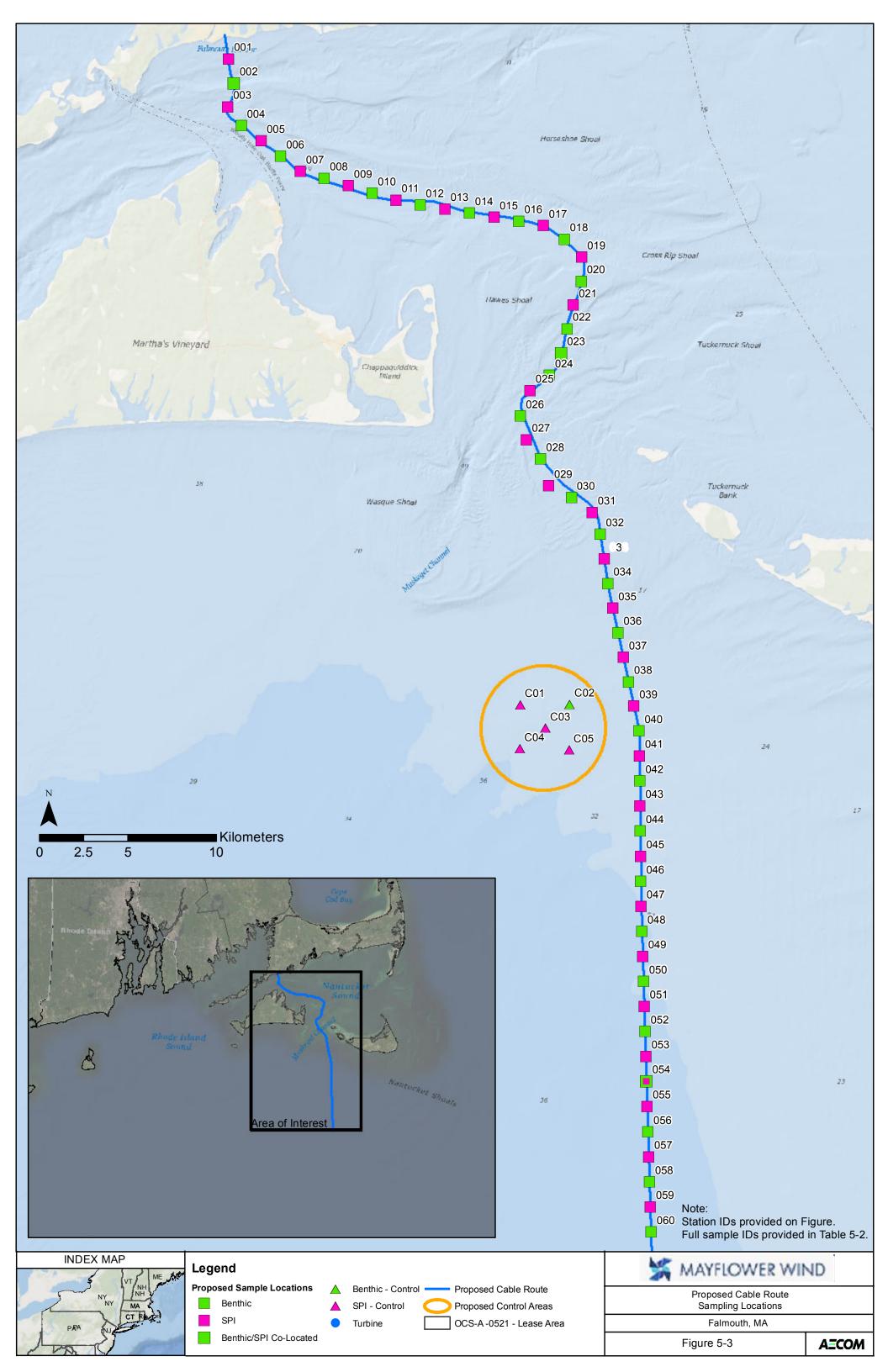
Table 5 2. Benthic Sampling Stations and Sample IDs along Mayflower Wind Export Cable Route (REVISED)

Station ID	Sample ID	UTM Zone / EPSG 32619	X coordinate (m)	Y coordinate (m)	Longitude	Latitude	Depth (m)	NOAA Chart Reference
001	20SP-MW0521-001-SPI	UTM Zone 19 N / WGS 84	367209	4599241	41.53381	-70.59182	-8	13237
	20SP-MW0521-002-BG							
002	20SP-MW0521-002-BG-DUP	UTM Zone 19 N / WGS 84	367522	4597863	41.52145	-70.58777	-12	13237
	20SP-MW0521-002-SPI							
003	20SP-MW0521-003-SPI	UTM Zone 19 N / WGS 84	367166	4596516	41.50926	-70.59174	-14	13237
004	20SP-MW0521-004-BG	UTM Zone 19 N / WGS 84	367941	4595469	41.50028	-70.58195	-23	13237
005	20SP-MW0521-005-SPI	UTM Zone 19 N / WGS 84	369061	4594603	41.49183	-70.56919	-23	13237
006	20SP-MW0521-006-BG	UTM Zone 19 N / WGS 84	370175	4593742	41.4851	-70.55479	-16	13237
007	20SP-MW0521-007-SPI	UTM Zone 19 N / WGS 84	371298	4592880	41.4772	-70.54147	-24	13237
800	20SP-MW0521-008-BG	UTM Zone 19 N / WGS 84	372647	4592476	41.47266	-70.52566	-15	13237
009	20SP-MW0521-009-SPI	UTM Zone 19 N / WGS 84	374005	4592057	41.4692	-70.5093	-21	13237
010	20SP-MW0521-010-BG	UTM Zone 19 N / WGS 84	375363	4591639	41.46521	-70.49315	-16	13237
011	20SP-MW0521-011-SPI	UTM Zone 19 N / WGS 84	376706	4591237	41.46325	-70.47638	-13	13237
012	20SP-MW0521-012-BG	UTM Zone 19 N / WGS 84	378082	4590975	41.46336	-70.45938	-15	13237
012	20SP-MW0521-012-BG-DUP	01W 20He 19 N7 W 93 84	370002	4090970	41.40330	-70.43930	-13	13237
013	20SP-MW0521-013-SPI	UTM Zone 19 N / WGS 84	379466	4590748	41.46165	-70.44268	-15	13237
014	20SP-MW0521-014-BG	UTM Zone 19 N / WGS 84	380862	4590519	41.4583	-70.42634	-18	13237
015	20SP-MW0521-015-SPI	UTM Zone 19 N / WGS 84	382263	4590288	41.45651	-70.40951	-20	13237
016	20SP-MW0521-016-BG	UTM Zone 19 N / WGS 84	383662	4590058	41.4546	-70.39271	-18	13237
017	20SP-MW0521-017-SPI	UTM Zone 19 N / WGS 84	385050	4589801	41.45157	-70.37622	-21	13237
018	20SP-MW0521-018-BG	UTM Zone 19 N / WGS 84	386232	4589032	41.44481	-70.36193	-13	13237
019	20SP-MW0521-019-SPI	UTM Zone 19 N / WGS 84	387221	4588021	41.43584	-70.34991	-17	13237
020	20SP-MW0521-020-BG	UTM Zone 19 N / WGS 84	387213	4586650	41.4235	-70.34975	-7	13237
021	20SP-MW0521-021-SPI	UTM Zone 19 N / WGS 84	386744	4585312	41.41138	-70.3551	-12	13237
022	20SP-MW0521-022-BG	UTM Zone 19 N / WGS 84	386406	4583944	41.39909	-70.35967	-14	13237
022	20SP-MW0521-022-SPI	01W 20He 19 N7 W 93 84	300400	4303344	41.55505	-70.55907	-14	13237
023	20SP-MW0521-023-SPI	UTM Zone 19 N / WGS 84	386055	4582566	41.38655	-70.36282	-8	13237
024	20SP-MW0521-024-BG	UTM Zone 19 N / WGS 84	385402	4581332	41.37535	-70.3704	-13	13237
025	20SP-MW0521-025-SPI	UTM Zone 19 N / WGS 84	384288	4580452	41.36727	-70.38356	-7	13237
026	20SP-MW0521-026-BG	UTM Zone 19 N / WGS 84	383740	4579020	41.35627	-70.38863	-12	13237
027	20SP-MW0521-027-SPI	UTM Zone 19 N / WGS 84	384085	4577660	41.34442	-70.38226	-11	13237
028	20SP-MW0521-028-BG	UTM Zone 19 N / WGS 84	384886	4576596	41.33263	-70.37568	-12	13237
029	20SP-MW0521-029-SPI	UTM Zone 19 N / WGS 84	385350	4575050	41.31928	-70.35938	-5	13237
030	20SP-MW0521-030-BG	UTM Zone 19 N / WGS 84	386650	4574385	41.31517	-70.35121	-6	13237
031	20SP-MW0521-031-SPI	UTM Zone 19 N / WGS 84	387827	4573559	41.30701	-70.33827	-7	13237
032	20SP-MW0521-032-BG	UTM Zone 19 N / WGS 84	388274	4572323	41.29463	-70.33441	-7	13237
033	20SP-MW0521-033-SPI	UTM Zone 19 N / WGS 84	388494	4570921	41.28203	-70.33152	-10	13237
034	20SP-MW0521-034-BG	UTM Zone 19 N / WGS 84	388719	4569519	41.26943	-70.32858	-15	13237
035	20SP-MW0521-035-SPI	UTM Zone 19 N / WGS 84	388983	4568124	41.25691	-70.32518	-20	13237
036	20SP-MW0521-036-BG	UTM Zone 19 N / WGS 84	389279	4566735	41.24444	-70.3214	-25	13237
037	20SP-MW0521-037-SPI	UTM Zone 19 N / WGS 84	389575	4565346	41.23198	-70.31761	-27	13237
038	20SP-MW0521-038-BG	UTM Zone 19 N / WGS 84	389871	4563957	41.21951	-70.31383	-26	13237
039	20SP-MW0521-039-SPI	UTM Zone 19 N / WGS 84	390167	4562568	41.20704	-70.31005	-28	13237
040	20SP-MW0521-040-BG	UTM Zone 19 N / WGS 84	390463	4561180	41.19458	-70.30628	-27	13237
041	20SP-MW0521-041-SPI	UTM Zone 19 N / WGS 84	390492	4559761	41.18181	-70.30567	-29	13237
042	20SP-MW0521-042-BG	UTM Zone 19 N / WGS 84	390508	4558341	41.16902	-70.30523	-29	13237
043	20SP-MW0521-043-SPI	UTM Zone 19 N / WGS 84	390523	4556921	41.15624	-70.30479	-32	13237
044	20SP-MW0521-044-BG	UTM Zone 19 N / WGS 84	390539	4555501	41.14345	-70.30435	-35	13200
045	20SP-MW0521-045-SPI	UTM Zone 19 N / WGS 84	390555	4554082	41.13067	-70.30391	-33	13200
046	20SP-MW0521-046-BG	UTM Zone 19 N / WGS 84	390570	4552662	41.11788	-70.30347	-33	13200

Table 5 2. Benthic Sampling Stations and Sample IDs along Mayflower Wind Export Cable Route (REVISED)

Station ID	Sample ID	UTM Zone / EPSG 32619	X coordinate (m)	Y coordinate (m)	Longitude	Latitude	Depth (m)	NOAA Chart Reference
047	20SP-MW0521-047-SPI	UTM Zone 19 N / WGS 84	390592	4551242	41.1051	-70.30296	-33	13200
048	20SP-MW0521-048-BG	UTM Zone 19 N / WGS 84	390635	4549823	41.09232	-70.3022	-33	13200
049	20SP-MW0521-049-SPI	UTM Zone 19 N / WGS 84	390678	4548403	41.07954	-70.30143	-33	13200
050	20SP-MW0521-050-BG	UTM Zone 19 N / WGS 84	390721	4546984	41.06677	-70.30067	-33	13200
051	20SP-MW0521-051-SPI	UTM Zone 19 N / WGS 84	390764	4545564	41.05399	-70.2999	-33	13200
052	20SP-MW0521-052-BG	UTM Zone 19 N / WGS 84	390807	4544145	41.04121	-70.29914	-35	13200
053	20SP-MW0521-053-SPI	UTM Zone 19 N / WGS 84	390850	4542726	41.02844	-70.29838	-40	13200
	20SP-MW0521-054-BG							
054	20SP-MW0521-054-BG-DUP	UTM Zone 19 N / WGS 84	390893	4541306	41.01566	-70.29761	-40	13200
	20SP-MW0521-054-SPI							
055	20SP-MW0521-055-SPI	UTM Zone 19 N / WGS 84	390936	4539887	41.00288	-70.29685	-42	13200
056	20SP-MW0521-056-BG	UTM Zone 19 N / WGS 84	390979	4538468	40.99011	-70.29609	-40	13200
057	20SP-MW0521-057-SPI	UTM Zone 19 N / WGS 84	391022	4537048	40.97733	-70.29533	-44	13200
058	20SP-MW0521-058-BG	UTM Zone 19 N / WGS 84	391066	4535629	40.96455	-70.29456	-38	13200
059	20SP-MW0521-059-SPI	UTM Zone 19 N / WGS 84	391109	4534210	40.95178	-70.2938	-38	13200
060	20SP-MW0521-060-BG	UTM Zone 19 N / WGS 84	391152	4532790	40.939	-70.29304	-40	13200







Attachment 2 – Table of Tower Coordinates

Mayflower Wind Optional Benthic Grab and/or SPI/PV Sampling Locations for Lease Area

Location Type	X Coordinate	Y Coordinate	Longitude	Latitude
Optional Location	393806		40.88918118	
Optional Location	393806		40.83914235	
Optional Location	393806		40.82246264	
Do Not Sample - Suspected Hard Bottom	393806		40.78910307	-70.25866958
Do Not Sample - Suspected Hard Bottom	391954	4514256		
Do Not Sample - Suspected Hard Bottom	391954	4516108	40.78886157	-70.28061532
Optional Location	391954	4519812	40.82222086	
Optional Location	391954	4521664	40.83890043	
Optional Location	391954	4527220	40.88893884	-70.28254309
Optional Location	391954	4529072	40.9056182	
Optional Location	391954	4530924	40.92229752	-70.28318784
Optional Location	390102	4529072	40.90537152	
Optional Location	390102	4525368	40.87201303	
Optional Location	390102	4523516	40.8553337	-70.30386689
Do Not Sample - Suspected Hard Bottom	390102	4519812	40.8219749	
Do Not Sample - Suspected Hard Bottom	390102	4517960	40.80529543	
Do Not Sample - Suspected Hard Bottom	390102	4516108	40.7886159	
Optional Location	388250	4510552	40.73832761	-70.32351285
Optional Location	388250	4512404	40.75500714	
Optional Location	388250	4517960	40.80504544	-70.3248376
Optional Location	388250	4519812	40.82172477	-70.32516948
Optional Location	388250	4523516	40.85508327	-70.32583408
Optional Location	388250	4525368	40.87176245	
Optional Location	386398	4525368	40.87150769	-70.34813921
Optional Location	386398	4521664	40.83814958	-70.34746304
Optional Location	386398	4516108	40.78811204	-70.34645092
Optional Location	386398	4514256	40.77143276	-70.34611411
Optional Location	386398	4512404	40.75475342	-70.34577758
Optional Location	386398	4510552	40.73807404	-70.34544133
Optional Location	386398	4508700	40.72139461	-70.34510536
Optional Location	384546	4510552	40.7378163	-70.36736953
Optional Location	384546	4516108	40.78785385	-70.36839556
Optional Location	384546	4517960	40.80453293	-70.36873814
Optional Location	384546	4519812	40.82121196	-70.36908101
Optional Location	384546	4521664	40.83789094	-70.36942417
Optional Location	382694	4521664	40.83762812	-70.391385
Optional Location	382694	4519812	40.82094929	-70.39103635
Optional Location	382694	4517960	40.80427042	-70.39068798
Optional Location	382694	4514256	40.77091251	-70.38999213
Optional Location	382694	4512404	40.75423348	-70.38964464
Optional Location	382694	4510552	40.7375544	
Optional Location	382694		40.72087527	-70.38895053
Optional Location	382694	4506848	40.70419609	-70.38860391
Optional Location	382694	4504996	40.68751686	
Optional Location	380842	4503144	40.67057214	-70.40981731
-				

Mayflower Wind Optional Benthic Grab and/or SPI/PV Sampling Locations for Lease Area

Location Type	X Coordinate	Y Coordinate	Longitude	Latitude
Optional Location	380842	4508700	40.72060937	-70.41087268
Optional Location	380842	4510552	40.73728834	-70.41122506
Optional Location	380842	4512404	40.75396726	-70.41157774
Optional Location	380842	4514256	40.77064614	-70.41193071
Optional Location	378990	4517960	40.80373287	-70.43458679
Optional Location	378990	4516108	40.78705426	-70.43422774
Optional Location	378990	4510552	40.73701811	-70.43315239
Optional Location	378990	4508700	40.72033929	-70.43279454
Optional Location	378990	4504996	40.68698151	-70.43207974
Optional Location	378990	4503144	40.67030254	-70.43172278
Optional Location	378990	4501292	40.65362352	-70.43136613
Optional Location	377138	4499440	40.63667101	-70.45290405
Optional Location	377138	4501292	40.65334993	-70.45326585
Optional Location	377138	4506848	40.70338635	-70.45435308
Optional Location	377138	4508700	40.72006506	-70.45471609
Optional Location	375286	4508700	40.71978667	-70.47663735
Optional Location	375286	4506848	40.70310812	-70.47626886
Optional Location	375286	4504996	40.68642953	-70.47590069
Optional Location	375286	4503144	40.66975088	-70.47553283
Optional Location	375286	4501292	40.65307218	-70.47516527
Optional Location	373434	4495736	40.60275438	-70.49594722
Optional Location	373434	4497588	40.61943307	-70.4963193
Optional Location	373434	4501292	40.65279029	-70.49706438
Optional Location	373434	4503144	40.66946882	-70.49743739
Optional Location	373434	4506848	40.70282573	-70.49818434
Optional Location	373434	4510552	40.73618244	-70.49893255
Optional Location	371582	4510552	40.73589556	-70.52085865
Optional Location	371582	4506848	40.70253919	-70.52009951
Optional Location	371582	4501292	40.65250424	-70.51896318
Optional Location	371582	4499440	40.63582583	-70.51858503
Optional Location	369730	4499440	40.6355358	-70.54047807
Optional Location	369730	4501292	40.65221405	-70.54086166
Optional Location	369730	4504996	40.68557039	-70.5416298
Optional Location	369730	4506848	40.70224848	-70.54201436
Optional Location	369730	4508700	40.71892652	-70.54239923
Optional Location	367878	4503144	40.66859772	-70.56314918
Optional Location	366026	4499440	40.6349433	-70.58426317
Optional Location	366026	4501292	40.6516212	-70.58465765
Optional Location	366026	4503144	40.66829905	-70.58505246
Optional Location	366026	4504996	40.68497685	-70.58544761
Optional Location	364174	4503144	40.66799622	-70.60695542
Optional Location	364174	4501292	40.65131855	-70.60655516
Optional Location	364174	4499440	40.63464083	-70.60615523

See Figure in Attachment 2 of FSP/QAPP Addendum #1 dated 5/11/20



Attachment 3 – Addendum to QAPP Appendix B.3

Alpha Analytical Standard Operating Procedure: Total Organic Carbon and Soot in Soil, Sediment using EPA Region 2, Lloyd Kahn "Determination of Total Organic Carbon in Sediment". July 27, 1988.

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Total Organic Carbon and Soot in Soil, Sediment

References: USEPA, Region II, Lloyd Kahn, "<u>Determination of Total Organic Carbon in Sediment"</u>, July 27, 1988.

Perkin Elmer, "PE 2400 Series II CHNS/O Analyzer User's Manual," The Perkin-Elmer Corporation, April 1998.

USEPA, "Method 9060A Total Organic Carbon," in <u>Test Methods for Evaluating Solid Waste</u>, SW846, Revision 1 November 2004.

"Quantification of the Dilute Sedimentary Soot Phase: Implications for PAH Speciation and Bioavailability" published in <u>Environmental Science and Technology</u>, Vol. 31, No. 1, 1997 by Gustafsson, Haghseta, Chan, McFarlane and Gschwend.

"Reinterpreting Literature Sorption Data Considering Both Absorption into Organic Carbon and Adsorption onto Black Carbon" published in Environmental Science and Technology, Vol. 37, No. 1, 2003 by Accardi-Dey and Gschwend

1. Scope and Application

Matrices: This method is applicable for solid samples (soils, sediments, sludges).

Definitions: Refer to Alpha Analytical Quality Manual.

The organic carbon in a sample consists of a variety of organic compounds in various oxidation states. Some of these compounds may be oxidized by biological or chemical processes and can be measured by the Biochemical Oxygen Demand or Chemical Oxygen Demand tests. To measure the amount of organically bound carbon, the organic carbon molecules are broken down into single carbon units, and converted into a form that can be measured quantitatively.

The PE 2400 Series II CHNS/O Analyzer can simultaneously determine carbon (C), hydrogen (H), nitrogen (N), sulfur (S), and oxygen (O) in organic material. In the CHN mode, the PE 2400 Series II CHNS/O Analyzer uses a combustion method to convert the sample elements to simple gases (CO₂, H_2O , and N_2). The resulting gases are homogenized and controlled to exact conditions of pressure, temperature, and volume. The homogenized gases are allowed to de-pressurize through a column where they are separated in a stepwise steady-state manner and detected as a function of their thermal conductivity and reported as a percentage for solid samples. Treated with hydrochloric acid prior to analysis, the Total Organic Carbon (TOC) content is determined by the amount of CO_2 in the sample. If the sample is analyzed without pretreatment, the Total Carbon (TC) content is determined. Total Inorganic Carbon can be determined by subtraction of the TOC from the TC values.

This method is applicable to the measurement of TOC and Soot in solid samples \geq 100mg/Kg or \geq 0.01%, dry weight. According to the instrument manufacturer, a sample of up to 70% carbon can be analyzed without dilution.

The data report packages present the documentation of any method modification related to the samples tested. Depending upon the nature of the modification and the extent of intended use, the laboratory may be required to demonstrate that the modifications will produce equivalent results for

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the matrix. Approval of all method modifications is by one or more of the following laboratory personnel before performing the modification: Area Supervisor, Department Supervisor, Laboratory Director, or Quality Assurance Officer.

This method is restricted to use by or under the supervision of analysts experienced in the operation of the TOC Analyzer and in the interpretation of the data. Each analyst must demonstrate the ability to generate acceptable results with this method by performing an initial demonstration of capability.

2. Summary of Method

An aliquot of solid sample is dried, homogenized, weighed into a tin capsule, pre-treated with hydrochloric acid and heated to 75° C to convert the inorganic carbon (*i.e.*, carbonate and bicarbonate in the form of CO₂) prior to analysis.

Organic carbon is measured using combustion and a carbon analyzer. The sample, of approximately 5-10 (masses less than 5 mg must be avoided since balance is not calibrated below 5 mg)mg corrected sample weight (a larger aliquot may be used for heterogeneous, or low- carbon samples to improve reproducibility), is oxidized in a pure oxygen environment, introduced into a furnace by a 60-slot Autosampler, then combusted. A greater mass may be weighed if the sample observations indicate low carbon content. As much as 20-25mg may be utilized. The carrier gas (O_2) is combined with the carbon content of the combusted sample to form CO_2 . Elements, such as halogens and sulfur, are removed by scrubbing reagents in the combustion zone. A thermal conductivity detector then measures the CO_2 . The amount of CO_2 derived from a sample is directly proportional to the concentration of organic carbon material in the sample.

For Soot, the sample will be transferred to an aluminum tin. The tins will be placed in an oven or muffle furnace for 24 hours at 375°C. After sample is in the muffle furnace for 24hrs sample is reduced to a powder with a mortar and pestle, weighed into a tin capsule, then treated with acid then re-dried and analyzed on the TOC Analyzer.

Method Modifications from Reference

Samples are analyzed using 2 replicates unless otherwise specified by the Client. Hydrochloric acid is substituted for phosphoric acid. The use of this acid has been validated and documented by the laboratory.

3. Reporting Limits

The Practical Quantitation Limit (PQL) or Reporting Limit (RL) is 0.05% (or 500mg/Kg) for solid samples.

4. Interferences

- **4.1** To determine the TOC/Soot content, the inorganic fractions (carbonate and bicarbonate) must be removed prior to analysis by lowering the pH of the sample to ≤ 2 . When removing the inorganic carbon, care must be taken in sample pretreatment to minimize the potential of loss of volatile organic carbon present in the sample.
- **4.2** Maintaining the samples at 4±2°C, and analyzing within the specified holding time minimizes bacterial decomposition and volatilization of the organic material.

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4.3 Elements, such as halogens and sulfur, are removed by scrubbing reagents in the combustion zone. Large and/or complex organic molecules such as tannins, lignins, or humic acids may be oxidized slowly. If these compounds are suspected to be present, it is advisable to check the efficiency of the oxidation procedure with a selected representative sample, and adjust the analysis (sample size) as needed.

- **4.4** Oils from skin, or contact with any organic material, such as plastic containers and rubber tubing, can contaminate samples. Handle the weighing tins with tweezers.
- **4.5** Sample heterogeneity can be a major source of imprecision in TOC/Soot results. Recommend to clients to perform a client-specific duplicate, to evaluate precision and representativeness of the TOC/Soot results to the site.

5. Health and Safety

The toxicity or carcinogenicity of each reagent and standard used in this method is not fully established; however, each chemical compound must be treated as a potential health hazard. From this viewpoint, exposure to these chemicals must be reduced to the lowest possible level by whatever means available. A reference file of material data handling sheets is available to all personnel involved in the chemical analysis. Additional references to laboratory safety are available in the Chemical Hygiene Plan.

All personnel handling environmental samples known to contain or to have been in contact with municipal waste must follow safety practices for handling known disease causative agents.

The use of laboratory equipment and chemicals exposes the analyst to several potential hazards. Good laboratory techniques and safety practices shall be followed at all times. All relevant Material Safety Data Sheets (MSDSs) are kept on file.

Approved PPE, which includes Safety Glasses, Gloves and Lab Coats, must be worn at *all* times when handling samples, reagents, chemicals, or when in the vicinity of others handling these items, so that dermal contact is avoided. All standards, reagents and solvents shall be handled using the proper PPE. All flammable solvents must be kept in the flammable storage cabinet, and returned to the cabinet immediately after use. When transporting chemicals, use a secure transporting device and/or secondary outer container. Chemical storage is properly segregated and adequately ventilated to reduce the possibility of hazardous reactions. Chemical storage in work areas shall be kept to a minimum. Storage on bench tops or other work surfaces, except temporary, is not permitted.

All standards and reagents shall be prepared in a hood while using the proper PPE.

Analytical instrumentation poses the unique possibility of exposure to high voltages. Other than the *routine* instrument maintenance, as listed in the front of every Instrument Maintenance Logbook, at no time shall an instrument operator attempt to maintenance an instrument alone, or without the proper training, supervision or instruction. Caution must always be used in the presence of moving parts (autosamplers) and hot surfaces (injection ports).

All additional company safety practices shall be followed at all times as written in the *Chemical Hygiene Plan*.

All TOC standard solutions must be handled with caution. See pages 5-3 through 5-5 of the PE 2400 Series II CHNS/O Analyzer User's Manual for additional and specific Warnings and

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Precautions.

6. Sample Collection, Preservation, Shipping and Handling

6.1 Sample Collection

A minimum of 5 grams of sample must be collected in a glass jar.

6.2 Sample Preservation

Soil samples must be refrigerated and maintained at 4°±2°C until drying and analysis.

Sediment samples are either processed within 28 days(where citing 9060 hold time reference) (or 14 days for Lloyd Kahn) or can be frozen (for programs with an EPA approved holding time extension for frozen storage) at -15C to -20C until processing.

6.3 Sample Shipping

The Sample Receipt & Login SOP (1559) describes how samples are normally shipped or obtained by the laboratory, precautions to be used in opening sample shipments, and sample storage conditions.

6.4 Sample Handling

Soil samples must be refrigerated and maintained at 4°±2°C until drying and analysis.

Sediment samples are either processed within 28 days (or 14 days for Lloyd Kahn) or can be frozen at -15C to -20C until processing (for programs with an EPA approved holding time extension for frozen storage)

All solid samples (<u>NOT</u> requiring the *Lloyd Kahn* Calibration method) must be analyzed within 28 days from the date of collection unless extended hold times are provided in client specific QAPP. <u>Note:</u> If samples require the *Lloyd Kahn* Calibration method, the hold time is 14 days unless otherwise indicated by client.

The Sample Receipt & Login SOP (1559) describes the responsibilities of sample custody including all proper documentation, verification, and tracking procedures, following Chain of Custody (COC) protocols and sample receipt procedures using the Sample Receipt Checklist, which includes the check for proper sample preservation and cooler temperature verification.

Internal COC procedures for sample tracking include the use of sample tracking logbooks. These procedures are also described in the Sample Receipt & Login SOP (1559).

7. Equipment and Supplies

7.1 Instrument: Perkin Elmer 2400 Series II CHNS/O Analyzer with computer and PE software

7.2 **Detector:** Thermal Conductivity

7.3 Mortar and pestle

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7.4 Oven: 75 +/- 2 °C

7.5 Muffle Furnace: Capable of maintaining temperature of 375°C

- 7.6 Dessicator
- 7.7 Volumetric Flasks: Class-A, various volumes
- **7.8 Microbalance:** Perkin-Elmer, Model AD-6. See the Manufacturer User's Manual, Section 1.2, pages 3-4, for Microbalance and weighing instructions. The Microbalance calibration is verified every day using 5.0mg 200mg weights, in the range of daily use, and be accurate within +/1%. If the balance needs to be re-calibrated, see the Manufacturer User's Manual SOP, Section 1.1, page 3, for details.
- 7.9 Tweezers: Anti-Magnetic
- 7.10 Tin Boats: 5 X 8 mm.
- 7.11 Polypropylene beakers: 50 mL, for weighing wet samples.
- **7.12 Glass Beads:** Filter Aid 400, High-density; from Perkin Elmer or 3M. Used as the CCB/Method Blank media. Beads must be muffled at 375°C prior to use to remove any trace carbon.
- 7.13 Gas-tight syringes: Various measuring sizes, including 10µL for direct sample spiking
- 7.14 Transfer pipets and/or Eppendorf pipettor for delivering HCI: Polypropylene.
- 7.15 Printer: OKIDATA Microline 320 Turbo-9 Pin or equivalent

<u>Note:</u> All maintenance records including routine upkeep and outside service visits are maintained in the instrument maintenance logbooks. See the Manufacturers User's Manual for detailed troubleshooting instructions and routine maintenance, as needed.

8. Reagents and Standards

Use reagent grade chemicals for all reagents. All reagents and standards are stored at room temperature and expire 6 months from preparation, unless otherwise indicated below.

- **8.1 Deionized (DI) water:** All references to DI water refer to ASTM Type II reagent grade water which has been boiled, cooled and capped to eliminate CO₂. Water must be replaced weekly.
- **8.2 10% Hydrochloric Acid solution:** Add 300mL of concentrated HCI (34-37%) to 700mL of DI water. Mix thoroughly and cool to room temperature before use. Store in a glass bottle and keep at room temperature. This solution is stable for 6 months.

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8.3 Potassium Hydrogen Phthalate (KHP), CCV or K-Factor for TOC:

CCV- 10,000mg/L equivalent to 10,000mg/Kg Carbon, or 1.0 % TOC:

Dry potassium hydrogen phthalate (KHP) (primary standard grade) at 110°C for 1 hour. Cool to room temperature in a dessicator. Dissolve 2.128g of KHP (primary standard grade) in ASTM DI water, and dilute to 100mL in a volumetric flask. This standard is good for 6 months, stored at room temperature. Discard solution if discoloration or any signs of bacterial growth are observed.

Calibration Standards-

Dry KHP (primary standard grade) at 110°C for 1 hour. Cool to room temperature in a dessicator.

- 0.1% (1000mg/Kg) Add 10 mL of the 1.0% calibration solution (see below) to a 100 mL volumetric flask. Dilute to 100 mL using ASTM DI water.
- 0.5% (5000 mg/Kg) Dissolve 1.064g of KHP (primary standard grade) in ASTM DI water, and dilute to 100mL in a volumetric flask. This standard is good for 6 months, stored at room temperature. Discard solution if discoloration or any signs of bacterial growth are observed.
- 1.0% (10000mg/Kg) Dissolve 2.128g of KHP (primary standard grade) in ASTM DI water, and dilute to 100mL in a volumetric flask. This standard is good for 6 months, stored at room temperature. Discard solution if discoloration or any signs of bacterial growth are observed.
- 2.0% (20000mg/Kg) Dissolve 4.256g of KHP (primary standard grade) in ASTM DI water, and dilute to 100mL in a volumetric flask. This standard is good for 6 months, stored at room temperature. Discard solution if discoloration or any signs of bacterial growth are observed.
- 4.0% (40000mg/Kg) Dissolve 8.512g of KHP (primary standard grade) in ASTM DI water, and dilute to 100mL in a volumetric flask. This standard is good for 6 months, stored at room temperature. Discard solution if discoloration or any signs of bacterial growth are observed.
- **8.4** Potassium Hydrogen Phthalate (KHP) Spiking Solution/MS/ICV: 10,000mg/L equivalent to 10,000mg/Kg Carbon, or 1.0 % TOC. From a separate source than the solution in Section 8.3, Sigma Aldrich or equivalent.

Dry KHP (primary standard grade) at 110°C for 1 hour. Cool to room temperature in a dessicator. Dissolve 2.128g of KHP (primary standard grade) in ASTM DI water, and dilute to 100mL in a volumetric flask. Use a separate source or different lot of KHP from that used to prepare the calibration standards.

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This stock may be stored up to six months at room temperature. Discard solution if discoloration or any signs of bacterial growth are observed. Use at 1.0 % TOC concentration for solid samples, and at 10,000mg/L for aqueous samples.

8.5 Solid Standard Reference Materials: Standard Reference Material (SRM) NIST 1944, a separate source from the calibration standard that is certified at the concentration of 4.4% TOC for solid samples. SRM 1650b for Soot, this material has no certified value, however has a reference value of 78% soot carbon. ("Quantification of the Dilute Sedimentary Soot Phase: Implications for PAH Speciation and Bioavailability" published in <u>Environmental Science and Technology</u>, Vol. 31, No. 1, 1997 by Gustafsson, Haghseta, Chan, McFarlane and Gschwend.)

9. Quality Control

The laboratory must maintain records to document the quality of data that is generated. Ongoing data quality checks are compared with established performance criteria to determine if the results of analyses meet the performance characteristics of the method.

9.1 Blank(s)

9.1.1 Method Blank: A method blank must be analyzed once per every 20 samples or per TOC/Soot batch, whichever is more frequent. The Blank consists of 30-50mg of Filter Aid acidified with HCl and dried. (Section 7.11).

TOC must not be detectable in the method blank at a concentration greater than the reporting limit for the given matrix (Section 3).

Corrective Action: Analysis of the method blank and all associated samples must be performed until the blank is in control. Samples cannot be analyzed until an acceptable method blank analysis is obtained. Exceptions may be made with approval of the Department Manager, if the samples associated with the out of control method blank are non-detect for TOC/Soot, or if sample TOC/Soot concentrations are greater than 10X the blank levels. In such cases, the sample results are accepted without corrective action for the high method blank and the client is notified in a project narrative associated with the sample results.

9.1.2 Continuing Calibration Blank: A CCB must be analyzed immediately after every CCV. The CCB is 30-50mg of Filter Aid acidified with HCl and dried. (Section 7.10).

The CCB concentration must not be greater than the reporting limit for the given matrix (Section 3).

Corrective Action: Repeat analysis once to see if an analytical error occurred. If the CCB still exceeds the control limits, re-calibrate and/or re-analyze a fresh blank. All samples associated with the out of control CCB must be re-analyzed (since the last acceptable CCB). Exceptions may be made with approval of the Department Manager if the samples associated with the out of control method blank are non-detect for TOC/Soot or if sample TOC/Soot concentrations are greater than 10X the blank levels. In such cases, the sample results are accepted without corrective action for the high CCB and the client is notified in a project narrative associated with the sample results.

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> 9.1.3 Instrument Blank: An Instrument Blank must be analyzed during Calibration.run2. The Instrument Blank consists of 30-50mg of Filter Aid acidified with HCI and dried at 75°C. (Section 7.10).

9.2 Laboratory Control Sample (LCS)

Laboratory control sample (LCS) must be from a second source or lot number to verify the accuracy of the standard curve. The LCS is analyzed along with the samples. A LCS must be analyzed once per every 20 samples or per TOC batch, whichever is more frequent. For solid samples, the LCS is the NIST SRM at 4.4% TOC. The LCS is treated identically as samples with HCI and dried at 75°C.

LCS consists of approximately 5.0mg of SRM 1944 with a true value of 4.4% TOC (Section 8.6). This SRM is NOT evaluated for Soot since no certified concentration for Soot is published.

The acceptable recovery QC range is 75%-125% for the LCS.

Corrective Action: Repeat analysis once to see if an analytical error has occurred. If the LCS recovery is still out of control, re-calibrate and re-analyze the LCS and all associated samples. Samples cannot be analyzed until an acceptable LCS is obtained.

9.3 Initial Calibration Verification (ICV)

Second source analyzed at the beginning of the run. Sample matrix of ICV is a 1.0% carbon solution of KHP.

The acceptable recovery QC range for the ICV is 80-120%.

The ICV is prepared by adding 10μL of Spiking Solution (Section 8.4), (with a 1% TOC true value). The weight recorded is the Calibration Solution only. (10µL of solution should weigh approximately 10mg).

Corrective Action: Repeat analysis once to see if an analytical error occurred. If the ICV still exceeds the control limits, re-calibrate and re-analyze all samples since last acceptable ICV.

9.4 Continuing Calibration Verification (CCV)

A CCV must be analyzed at a minimum of every 10 burns and at the close of an analytical sequence. This standard monitors instrument performance throughout the duration of the analytical run. Sample matrix of CCV is a 1.0% carbon solution of KHP.

The CCV is prepared by adding 10μL of Calibration Solution (Section 8.3), (with a 1% TOC true value). The weight recorded is the Calibration Solution only. (10 uL of solution should weigh approximately 10mg).

The acceptable recovery QC range for the CCV is 80-120%.

Corrective Action: Repeat analysis once to see if an analytical error occurred. If the CCV still exceeds the control limits, re-calibrate and re-analyze all samples since last acceptable CCV.

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9.5 Matrix Spike

A matrix spike must be performed once per 20 samples (5% frequency). When project specifications dictate, a Matrix Spike Duplicate (MSD) may also need to be performed at the same frequency as the MS. Prepare the MS according to Section 8.4 for the given matrix.

A Matrix Spike sample is spiked with 10μL of Spiking Solution (Section 8.4), at a 1.0 % TOC true value. The weight recorded is the sample weight prior to spiking.

The acceptable recovery QC range is 75%-125% for the MS/MSD. Calculate the %RPD as in Section 9.6 when analyzing a MS/MSD pair. The acceptable %RPD is < 25% for solid samples.

Corrective Action: If sample concentration exceeds 4X the spike amount, narrate. Repeat analysis once to see if an analytical error has occurred. If the % recovery or %RPD still exceeds the criteria and the LCS is compliant; include a project narrative with the results to the client noting that there may be potential matrix effects on the accuracy or precision of the TOC/Soot results as evidenced by matrix spike recovery or %RPD outside of QC limits.

9.6 Laboratory Duplicate

Duplicate analyses (matrix duplicate) must be performed once per 20 samples (5% frequency).

Acceptable relative percent difference (RPD) of duplicates is ≤ 20%. Acceptance criterion is not applicable to sample concentrations less than 5X the reporting limit. Calculate RPD as follows:

where:

R1 = highest result R2 = lower result

Corrective Action: Repeat analysis once to see if an analytical error has occurred. If the % RPD still exceeds the control limits; include a project narrative with the results to the client noting that there may be potential matrix effects on the precision of the TOC/Soot results as evidenced by the matrix duplicate RPD exceedance.

9.7 Method-specific Quality Control Samples

High level Initial Calibration Verification (HLICV - linearity check):

This sample consists of 4% carbon solution (high calibration point).

Aliquot 50 µL using a syringe into a tin boat, record weight and analyze. (Equivalent to a 5 mg sample containing 40% TOC).

The acceptable recovery QC range for the HLICV is 80-120%.

Corrective Action: Repeat analysis once to see if an analytical error occurred. If the HLICV still exceeds the control limits, re-calibrate. If any sample exceeds the high level ICV the sample is

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re-injected with a smaller sample weight that renders a measurement within range. Alternate high level ICV may be used to test the higher levels of quantification when needed as typically found in soot analysis.

9.8 Method Sequence

- Calibration Curve generation
- ICV
- ICB
- HLICV
- Method Blank
- LCS
- Laboratory Duplicate
- Matrix Spike
- Samples 1 8
- CCV
- CCB
- Samples 9 18
- CCV
- CCB

10. Procedure

10.1 Equipment Set-up

Samples are prioritized by the Department Manager for analysis based on hold time and client due date. Section 15.5 outlines the steps for final TOC reporting that will contain the sample analysis final results.

The analyst initials, date, sample ID #'s, sample weights (solids), or volumes (aqueous), of all Standards, QC samples and field samples, are entered into the TOC logbook. Include the standard, LCS and MS IDs and concentrations. Use TOC weight spreadsheet to record all information.

10.1.1 Pretreatment for Total Organic Carbon:

This procedure is used to remove the inorganic compounds in the sample prior to the determination of Total Organic Carbon. If Total Carbon is to be determined, addition of the acid solution is omitted.

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- **10.1.1.1** Aliquot 10-15g of wet solid sample into a weighing vessel. Remove shells, rocks and other large non-representative materials with tweezers. Record weight of vessel and vessel + wet sample.
- Heat for 4 hours at 75 +/- 2 °C. Return sample to oven if additional drying time is required(in ½ hour increments) Record time in and out of oven. Cool sample to room temperature in dessicator. Record weight of vessel + dry sample.
- Add 10% HCI (Section 8.2) dropwise to dry sample to induce effervescence (removal of inorganic carbon). Do not use excessive acid.. Only add enough acid to exhaust the effervescence. In lieu of additional acid, use DI water to wet the sample in order to form a slurry if necessary, to distribute the acid throughout the sample. Record the volume of HCI used for each sample.
- 10.1.1.4 Return the sample to the oven. Heat for 4 hours at 75 +/- 2 °C. Return sample to oven if additional drying time is required(in ½ hour increments) Record time in and out of oven. Cool to room temperature in dessicator. Record final weight of dry sample + vessel. The change in weight of dry sample after acidification is used to adjust the weight of the aliquots used for analysis.
- **10.1.1.5** Take a sub-aliquot of approximately 2-3 g of dry sample and perform moisture content using SM2540D. The corrected sample weight (CSW, see Section 11.4) is corrected using this result (see Section 11.4 for calculations)
- **10.1.1.6** Grind sample with mortar and pestle to homogenize. Place ground sample into a 4 mL vial.
 - **10.1.1.6.1** If Soot analysis is required, take a portion of the dried sample aliquot(prior to acidification), approximately 5-10 gm, and place into a muffle furnace at 375°C for 24 hours. Once the sample aliquot is cooled to room temperature, proceed to the acid addition step, Section 10.1.1.3. Samples for Soot are read analytically in the same way as Routine TOC.
- 10.1.1.7 Weigh (and record weight of) each replicate into a tin capsule (see Section 10.3 for appropriate weight range). Record the weight and use the TOC weight spreadsheet to calculate the corrected sample weight (CSW) which is entered into the analyzer.

10.2 Initial Calibration

On the accompanying computer, or "PC", Perkin Elmer software has been loaded to collect and save sample and standard analysis data. Create a file to store the data from each day's analytical sequence by clicking on the PE 2400 icon, go to "new" and "save" the file "as" the name of the date of the analysis (*i.e.*, 060503.chn). Data from each standard or sample analysis will be automatically stored in this file for future reference

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10.2.1 Follow the instrument Manufacturers User's Manual for instrument set up and see Sections below for an outline of the initial, daily calibration procedure.

See the Manufacturers User's Manual, page 5-69, for the default instrument conditions when in the CHN operating mode.

10.2.2 <u>Lloyd Kahn Calibration Method</u>: <u>Note:</u> The *Routine* instrument calibration procedure (Section 10.2.2) must be established before the Linear Regression method is used, otherwise, the raw data will not reflect results that approximate the results from the curve..

Prepare a curve for *Lloyd Kahn* calibration as outlined below. Additionally, see page 5-82 and 5-83 of the Manufacturers User's Manual for proper set-up of this calibration method.

Analyze each point of the calibration curve following Section 10.3. On an Excel spreadsheet, plot *Carbon (mg)* vs. *Instrument Response*, using five standards and a blank covering the analytical range of interest. See Section 8.3 for Calibration Standard preparation. Standards are solutions of KHP.

Blank = 10 ul of DI water from Barnstead

Point 1 = 0.1% (1,000mg/Kg) Standard

Point 2 = 0.5% (5,000mg/Kg) Standard Point 3 = 1.0% (10,000mg/Kg) Standard Point 4 = 2.0% (20,000mg/Kg) Standard

Point 5 = 4.0% (40,000 mg/Kg) Standard

This is the calibration curve for Linear Regression analysis. The corrected response (Y-axis) is calculated by subtracting the nitrogen response from the carbon response. This is plotted against concentration.

The correlation coefficient (r) of the initial calibration curve must be ≥ 0.995 . The slope of the line must be $\pm 10\%$ of the last acceptable slope on the instrument.

For Lloyd Kahn analysis, one sample per 20 (or per batch) must be analyzed in quadruplicate.

<u>Corrective Action:</u> If the correlation coefficient or slope QC criteria are not met, the standard curve must be re-prepared and re-analyzed until the correlation coefficient and/or slope are acceptable.

10.3 Equipment Operation and Sample Processing

Prepare a Calibration Curve per Section 10.2.

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An ICV/ICV and LCS/Method Blank are analyzed immediately following the third K-Factor of the Routine Calibration, provided the instrument is "in tolerance". The LCS and method blank must be run with the same number of replicates that are required for the samples in the run.

Remove all pretreated samples from the oven, and allow to cool in a dessicator.

Weigh approximately 5-10mg (to an accuracy of 0.01 mg) (masses less than 5 mg must be avoided since balance is not calibrated below 5 mg) of sample into a tin boat using the Perkin-Elmer Microbalance, Model AD-6, which is linked to the instrument. Samples that are known to be high in TOC may use a lesser sample aliquot. Samples where it is observed that the TOC may be low, weight as much as 20-25mg. Record the weights in the TOC/Soot logbook. Matrix Duplicate and Matrix Spike samples are weighed as separate samples, with their own replicates. As noted in Section 10.1.1.6, use the TOC weight spreadsheet to correct the sample weights for all replicates and re-analyses. Any observations regarding the sample composition must be noted in the TOC/Soot logbook such as: sandy, contains shells or rocks, contains grass or roots, is light/white in coloration, etc.

Analyze a CCV/CCB (Section 9.4 and 9.1.3) after every 10 "burns", and at the end of the analytical sequence.

If following the *Lloyd Kahn* Calibration method, analyze the first set of batch QC samples, the ICV/LCS and Method Blank, followed by field samples with a CCV/CCB analyzed every 10 "burns", and at the end of the analytical sequence.

10.3.1 Multiple Sample Instrument Loading:

- Each tin boat is carefully folded with anti-magnetic tweezers, and placed into its respective holding tray position. (See the Manufacturer User's Manual SOP, Section 1.2, page 4, for tin boat folding details.) Weights, sample tray position and Autosampler location are recorded in the TOC/Soot logbook. The analyst must be very careful when transferring samples. Documentation of sample consistency is very important. See Figure 1 for an example logbook page.
- 10.3.1.2 Adjust the Autosampler tray to begin sampling at auto-slot #1 and carefully transfer the folded tins containing the samples to the correct auto-slot, using tweezers. All Instrument Calibration Standards (Blanks, K-Factors and/or *Lloyd Kahn* Calibration Standards) are loaded first. Immediately following will be the first batch QC samples, the ICV/LCS and Method Blank for the run, followed by field samples. Rotate the Autosampler in a *counter clockwise* manner.
- **10.3.1.3** A maximum of 60 tins can be held on the Autosampler at one time. The instrument only allows for 100 total samples (including calibration/blank samples) to be programmed for any given run.

10.3.2 Sample Analysis

10.3.2.1 Select the *Auto Run* option on the keypad on the instrument. The following menu appears:

AUTO RUN NO. 1

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1B 2K 3S where: B = Blank K = K-Factor S = Sample

Assuming the *Instrument Standardization* occupies auto-slots 1-6, Enter "3" for Sample, then select "Enter". Enter the weight of the "Primer" Standard (position 1) and select "Enter".

- **10.3.2.2** You will be prompted for AUTO RUN NO. 2 as in Section 10.3.3.1, except now there is a function "4NP" which allows the analyst to stop/erase everything by selecting this feature.
 - Enter "1" for the Blank. The weight will not be asked for.
 - Enter "2" for the first K-Factor, then select "Enter". Enter the weight of your K-Factor (the standard weight should be ~ 10mg). Select "Enter".
 - Enter "1" for the second Blank, then "Enter".
 - Enter "2" for the second K-Factor, then "Enter". Enter the weight, then "Enter".
 - Enter "2" for the third K-Factor, then "Enter". Enter the weight, then "Enter".
- **10.3.2.3** All remaining sample weights are added by entering "3" for Sample, and then by entering the sample weight. Continue adding all information to the run sequence, using the keypad. When entering sample identifications, and letters are necessary, refer to the Manufacturer's User's Manual, page 3-4, for instructions for converting numbers to letters.
- **10.3.2.4** When all sequence information is entered and complete, select "Start". The analyses will begin. The computer will continue to display the "AUTO RUN" menu during sample analysis.
- The Standard and Sample data prints out as it is collected on the line printer, and is also collected on the linked computer using the PE 2400 software. The data on the computer is saved in a file named as the date of the analysis (*i.e.*, 060503.chn) for future reference, as noted in 10.2.
- **10.3.2.6** When all analyses are complete, refer to the Manufacturers User's Manual SOP, Section 3.1, page 7, for instructions to "Shut Down" the instrument.
- **10.3.2.7** Evaluate all batch QC samples first, to confirm or exclude the need for reanalyses. The ICV/LCS/HLICV, Method Blank, CCB/CCV samples must meet the acceptance criteria in Section 9. Follow the corrective action for any QC failures.
- **10.3.2.8** Evaluate the field samples, LCS/SRM, and MS/Duplicates next. If replicate "burns" vary by more than 30%, re-weigh two additional aliquots similar to the initial weights used, and re-analyze the sample. For a 2-replicate analysis, this provides a total of four burns/samples. If the second set of replicates also has

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RPD > 30%, report the first set. If the re-analysis has an RPD which passes, report the re-analysis. Three and four replicate analysis may be requested, and the average of the multiple burns is reported, unless otherwise indicated by the client. Analysts should use judgement in cases where there may have been an error with the autosampler or other factor (incorrect loading, etc.) which may have led to RPD failure. The Lloyd Kahn method requires that quadruplicate analysis be performed on one sample per batch of up to 20 samples and that the RSD must meet precision criteria of 3 times the standard deviation of laboratory generated sample data. One sample per batch of up to 20 must be analyzed in quadruplicate. RSD criteria is 40%. This value was generated using 30 data points of quadruplicate analysis of various concentrations and multiple instruments. The RSD was calculated for each sample in quadruplicate, and the RSD limit is based on 3 times the average standard deviation. Failure to meet this criteria requires that the entire batch be re-analyzed.

10.4 Continuing Calibration

A CCV must be analyzed as outlined in Section 10.3.3 at a minimum of every 10 burns and at the close of an analytical sequence.

10.5 Preventive Maintenance

The reduction column is changed after every 100-200 runs. The combustion column is replaced as needed.

11. Data Evaluation, Calculations and Reporting

- **11.1** Procedures for data and record management for TOC/Soot analysis must adhere to the Quality Systems Manual, other subordinate documents covering record keeping, and the *Document Control* SOP, 08-01. All records are stored in such a manner as to be safe and accessible for at least 10 years.
- **11.2** The relevant TOC/Soot laboratory notebooks must follow the specifications in the *Laboratory Notebook Usage* Work Instruction 1556, and all record keeping and document control practices.
- 11.3 Sample results for TOC/Soot are directly reported from the instrument printout.
- **11.4 Calculations:** The following calculations are applied by the instrument when determining the percentage of Total Organic Carbon or Soot: Note: sample weights are corrected for sample mass changes due to acidification prior to analysis and entered into the instrument software as the corrected weights, therefore, no correction is required after analysis.

<u>Corrected Sample Weight(CSW)</u>: Weight that is entered at the instrument, corrected for sample mass change after acidification.

CSW = <u>aliquot wt (mg) * total sample dry wt (g) (prior to acidification) * dry wt.@ (75°C)</u>
Total sample dry wt (g) (post acidification) *dry wt.@(105°C)

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<u>Carbon Blank (CB):</u> Used to make all other determinations, namely, K-Factor and weight percent calculations. When run alternately with samples, the instrument averages the blank values.

Carbon Blank (CB) = Carbon Read - Nitrogen Read

<u>Carbon K-Factor (C KF):</u> K-Factor, or detector calibration factor, is determined when a known standard is analyzed to calibrate the analyzer in terms of micrograms of carbon. This calibration factor is then used to determine unknowns.

C KF = $((CR - NR) - CB \times 100) / (CSW \times C Theory Wt. \%)$

where: CR = Carbon Read

NR = Nitrogen Read CB = Carbon Blank

CSW= Corrected Sample Weight (mg) (using corrected weight recorded in

Section 10.3)

C Theory Wt % = 1% (based on the concentration of the K-Factor standard)

Carbon (mg/Kg):

Carbon $(mg/Kg) = (((CR - NR) - CB) \times 1000) / (SW \times CKF)$

where: CR = Carbon Read

NR = Nitrogen Read CB = Carbon Blank

CSW = Corrected Sample Weight (mg)

C KF = Carbon K-Factor

To convert to % C divide result in mg/Kg by 10000

<u>Example Calculation</u> of Percent TOC/Soot from the instrument, converted to mg of TOC/Soot:

If the result from the instrument is 1.083% and the sample weight is 10.76mg:

 $1.083\% = 100 \times [X / 10.76mg]$ (to solve for **X**, divide each side by 100) 0.01083 = X / 10.76mg (multiply each side by 10.76mg) 0.116mg = X

11.5 Reporting Results

The following procedures must be followed for reporting of TOC/Soot results:

Go to the next page in the bound TOC/Soot logbook.

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Retain all computer printouts for the standard and sample analyses of this sequence.

Print the sequence from the computer and review it to make sure that no weight or sample ID transcription errors were made.

Calculate the recoveries for the QC samples (IVC/LCS, CCV, MS and RPD between the duplicate samples) and ensure the Method Blank and CCB meet the criteria. Remember any "QC Failures" require corrective action. See Section 9.0 or 12.0.

After reviewing the final logbook entries, make a copy of the logbook page for secondary review.

Go to the LIMS and "batch" and "associate" the set of QC samples and field samples that were just analyzed.

Enter the Final Results into the LIMS report sheet and check for transcription errors.

Transfer all associated sample paperwork to the Department Manager for the second level review and approval.

All TOC/Soot results are reportable without qualification if analytical holding times are met, preservation (including pH and cooler temperatures) are met, all QC criteria defined in the table below are met, and matrix interference was not suspected during analysis of the TOC/Soot samples. If any of the below QC parameters are not met, all associated samples must be evaluated for re-analysis.

QC Parameter	Acceptance Criteria				
Initial Calibration Curve, Lloyd Kahn	r ≥ 0.995 and slope ± 10% the historical curves				
Initial Calibration Verification	80-120% of True Value				
Linearity check (high level ICV)	80-120% of True Value				
Method Blank	< reporting limit for matrix				
Laboratory Control Sample	75-125% R				
Matrix Duplicate	25%RPD for results <5x reporting limit				
Replicate burns (each sample)	30% RPD				
Quadruplicate analysis(1 per batch)	< 40 % RSD				
Matrix Spike	75-125% R				
Matrix Spike Duplicate if requested	75-125%R/25%RPD				
Continuing Calibration Verification	80-120% of True Value				
Continuing Calibration Blank	< reporting limit for matrix				

12. Contingencies for Handling Out-of-Control Data or Unacceptable Data

Section 9 outlines sample batch QC acceptance criteria. If non-compliant TOC/Soot results are to be reported, the Department Manager and/or the Laboratory Director, and the QA Manager must approve the reporting of these results. The laboratory Project Manager is notified, and may chose to relay the non-compliance to the client, for approval, or other corrective action, such as re-sampling and re-analysis. The analyst or Department Manager performing the secondary review initiates the project narrative, and the narrative must clearly document the non-compliance and provide a reason for acceptance of these results.

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13. **Method Performance**

13.1 Method Detection Limit Study (MDL) / Limit of Detection Study (LOD) / Limit of Quantitation (LOQ)

The laboratory follows the procedure to determine the MDL, LOD, and/or LOQ as outlined in Alpha SOP/1732. These studies performed by the laboratory are maintained on file for review.

13.2 **Demonstration of Capability Studies**

Refer to Alpha SOP/1739 for further information regarding IDC/DOC Generation.

13.2.1 Initial (IDC)

The analyst must make an initial, one-time, demonstration of the ability to generate acceptable accuracy and precision with this method, prior to the processing of any samples.

13.2.2 Continuing (DOC)

The analyst must make a continuing, annual, demonstration of the ability to generate acceptable accuracy and precision with this method.

14. **Pollution Prevention and Waste Management**

The Hazardous Waste and Sample Disposal SOP (1797) must be referenced for disposal of used standards, solvents, acids, reagents or other chemicals.

Once satisfactory TOC results have been generated, the sample containers must be scanned back into LIMS and returned to the appropriate sample refrigerator and held for 30 days.

All waste generated must be transferred to the waste disposal area. Dispose all solid samples in solid waste container. Aqueous samples must be poured into a 55-gallon drum marked acidic/nonchlorinated waste.

Refer to the Chemical Hygiene Plan and the Hazardous Waste & Sample Disposal SOP (1797) for further pollution prevention and waste management information.

15. **Referenced Documents**

Chemical Hygiene Plan

PE 2400 Series II CHNS/O Analyzer User's Manual

Sample Receipt & Login SOP (1559)

Perkin-Elmer, Model AD-6 Manufacturer User's Manual

Document Control SOP 1729

Laboratory Notebook Usage Work Instruction (WI 1556)

SOP/1732 MDL Generation

SOP/1739 IDC Generation

Hazardous Waste & Sample Disposal SOP (1797)

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16. Attachments

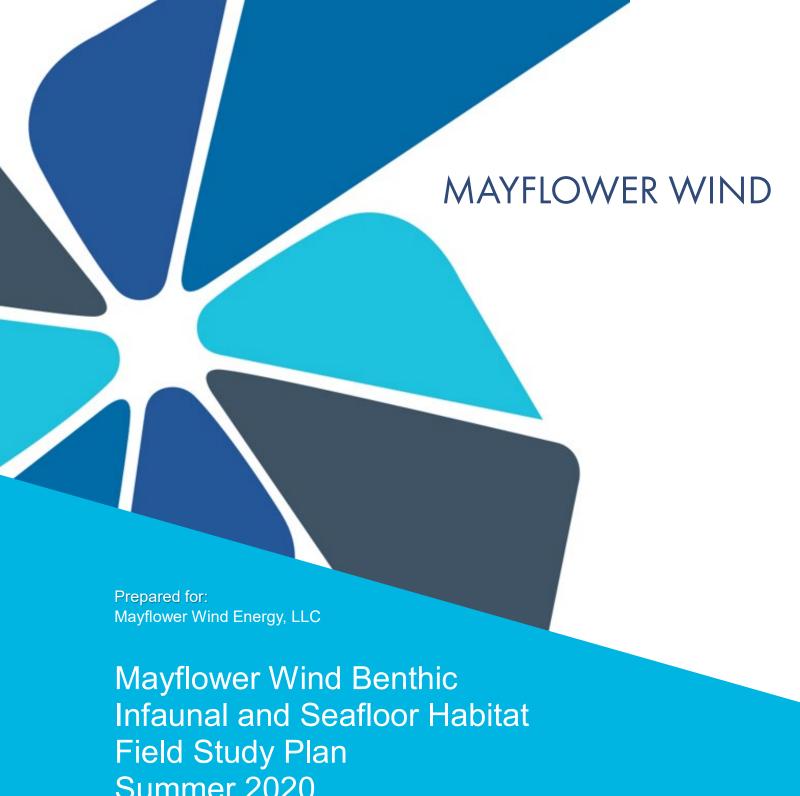
None.

Document Type: SOP-Technical

Pre-Qualtrax Document ID: W-028

ATTACHMENT 3 – Mayflower Wind Benthic Infaunal and Seafloor Habitat Field Study Plan, Summer 2020

Prepared for: Mayflower Wind, LLC



Summer 2020

Prepared by:

AECOM 9 Jonathan Bourne Drive Pocasset, MA 02559

August 18, 2020



Quality information

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Revision History

Revision	Revision date	Details	Authorized	Name	Position

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Attachment 1. Memorandum: Proposed Sampling Approach for the Mayflower Wind Benthic Infaunal and Seafloor Habitat Field Study, Summer 2020

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Project Description

Mayflower Wind Energy, LLC (Mayflower Wind) proposes a 1,200-megawatt (MW) offshore wind renewable energy generation project located in federal waters off the southern coast of Massachusetts approximately 26 nautical miles (48 kilometers [km]) south of the island of Martha's Vineyard and 20 nautical miles (37 km) south of Nantucket within federal Lease Area Outer Continental Shelf (OCS) OCS-A 0521 (Project). The federal lease area where the offshore wind turbine generators (WTGs) will be placed is approximately 127,388 acres (515 square km [km²]). The export cable route will extend approximately 55 miles (90 km) from the Lease Area to a landing point in Falmouth, Massachusetts (Figure 1-1).

The Project will provide Massachusetts with clean, renewable wind energy in accordance with the Commonwealth of Massachusetts' Section 83C II of the Green Communities Act and Mayflower Wind's winning bid selected by the Electric Distribution Companies (EDCs) that serve Massachusetts customers. That bid was provided by Mayflower Wind in response to the 2019 Offshore Wind Energy Generation request for proposals ("Section 83C II RFP") and has now been memorialized in executed Power Purchase Agreements with the EDCs that have been submitted to the Massachusetts Department of Public Utilities for approval.

Mayflower Wind Infaunal and Seafloor Habitat Field Study Plan Summer 2020 Mayflower Wind

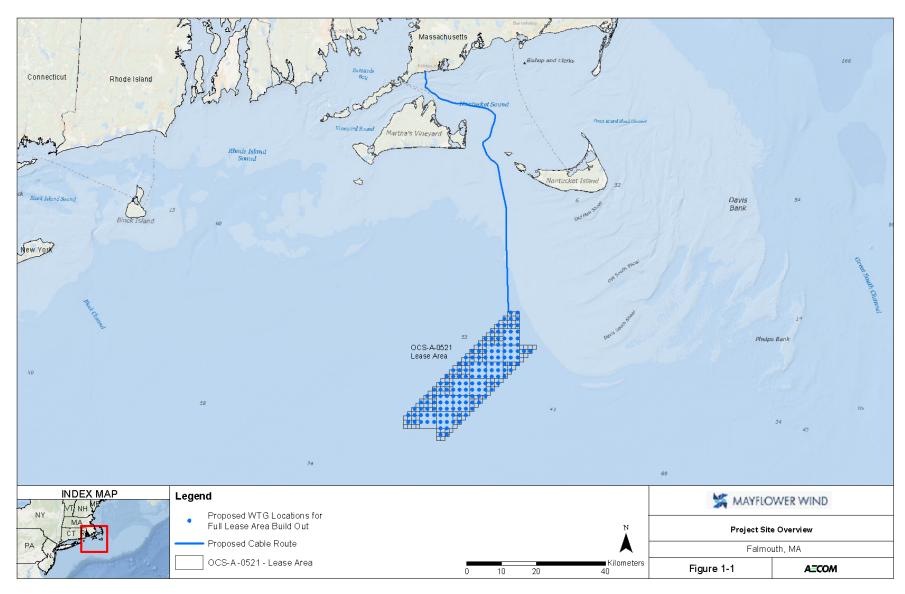


Figure 1-1. Location of Mayflower Wind Lease Area and Proposed Export Cable Route

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Benthic Field Program Description

A benthic seafloor habitat and seafloor characterization assessment will be conducted in the Mayflower Wind Lease Area and along the proposed export cable corridor(s) (Project Area). The objectives of this benthic assessment are to document benthic seafloor habitat and sediment characteristics that will contribute toward understanding of essential fish habitat (EFH) as required by Bureau of Ocean Energy Management (BOEM) 2019 and National Marine Fisheries Service (NMFS) 2020 guidelines.

This baseline seafloor survey will be performed to characterize benthic habitat within the Project Area possibly affected by the proposed construction and operations of the Project. These data will inform siting decisions with the goal of avoiding or minimizing potential impacts to sensitive biological communities and EFH. Data used to support the following benthic habitat assessment objectives will incorporate multiple lines of evidence including existing literature on marine biological communities in the region and the collection of field data (e.g., grab samples for analysis of physical parameters and benthic infaunal community analysis) and sediment profile image (SPI) and plan view (PV) imagery. This document specifically addresses the BOEM recommended benthic habitat field studies as defined within 30 CFR Subpart F §585.625 and the aforementioned BOEM 2019 and NMFS 2020 guidelines. Consistent with BOEM guidance, the objectives of this benthic habitat survey are to:

- Identify and confirm dominant benthic macrofaunal and macrofloral communities and substrate in the Lease Area and export cables from the Lease Area to landfall(s) in Falmouth, Massachusetts associated with development of the Project;
- Establish a pre-construction baseline in the Lease Area that will inform the pre-construction monitoring plan and may be used to assess whether detectable changes occurred in postconstruction benthic habitat associated with proposed operations;
- Collect information aimed at supporting spatial planning decisions;
- Collect information aimed at reducing uncertainty associated with baseline conditions and/or to inform the interpretation of survey results;
- Inform development of an approach to quantify substantial changes in the benthic community composition associated with the proposed Project activities; and
- Provide data to inform the EFH assessment.

Roles and Responsibilities

Fugro has primary responsibility for the execution of the field program for this Summer survey, and as such has prepared a Project Execution Plan (PEP) – Ops plan (Fugro, 2020a) to guide the execution of the benthic field program. Additionally, Fugro has prepared the Emergency Response Plan (ERP), Health Safety Security and Environment (HSSE) Plan and Quality Plan (QP) governing work execution on the vessel (Fugro, 2020b, c and d).

Field sample collection activities (benthic grab sampling, SPI/PV imagery) will be performed by Fugro and subcontractor Integral Consulting under separate contract to Mayflower Wind in conjunction with the HRGS being undertaken by Fugro. In addition to sample collection, Fugro will deliver SPI/PV imagery and interpretation results/report to Mayflower Wind, to be forwarded to AECOM for inclusion in the benthic seafloor habitat assessment report.

AECOM is responsible for subcontracting the analytical laboratory for total organic carbon (TOC) and grain size, and conducting benthic laboratory analysis, including enumeration, identification and benthic community structure analysis. Details related to the field and laboratory methodologies employed are presented herein, and in the Quality Assurance Project Plan (QAPP) (AECOM, 2020).

The team organization for the Program is presented in the QAPP (AECOM, 2020) including descriptions of the responsibilities for key roles involved in sample collection and analysis.

4.0 Program Schedule and Approach

To satisfy the above BOEM and NMFS objectives, a series of seasonal benthic surveys (surveys) will be conducted over the Lease Area, along the export cable route, and at control areas. Sampling surveys are currently proposed to be conducted during four seasons for two years consistent with BOEM 2019 benthic guidelines, however the sample years are not required to be continuous. For the purposes of this sampling program, the following breakdown will define seasonality for sampling. As indicated above, these seasons will each be sampled twice, but the eight events may not be continuous. The definition of the seasons for purposes of sampling are:

- Spring March 1 through May 31;
- Summer June 1 through August 31;
- Fall September 1 through November 30; and
- Winter December 1 through February 28.

Each survey will be completed, to the extent possible, within the predefined seasonal period. Actual timing within the period for a given survey will be dictated by weather conditions, other ongoing survey operations, and vessel/crew/equipment availability.

Each survey will characterize the surficial sediment quality through a series of tasks including the collection of:

- Sediment for laboratory analysis of benthic community structure and physical parameters (e.g., grain size and TOC);
- SPI/PV imaging data to determine the physical characteristics of the surficial sediment and presence
 of epifauna and other surface-dwelling organisms (e.g., macroalgae); and
- Real time video used to support and inform reporting according to the Coastal and Marine Ecological Classification Standard (CMECS) format as required by BOEM guidelines.

These combined techniques for assessing seafloor habitat together with high-resolution acoustic data (e.g., multibeam bathymetry, side-scan sonar and backscatter) collected during the concurrent geophysical survey, will allow Mayflower Wind to determine the baseline seafloor habitat conditions.

Results from the Lease Area and cable route study will be summarized in a brief report that will be attached as an appendix to the BOEM required Construction and Operations Plan (COP).

The following sections detail the elements of the Summer 2020 benthic surveys. This document will be updated to outline the approach for each distinct seasonal survey.

5.0 Summer 2020 Benthic Survey

5.1 Biological Sampling Program Overview

The Summer 2020 will serve as an important baseline to inform and support subsequent characterization of post-construction impacts and documentation of post-construction recovery. The results of the Summer 2020 survey together with the concurrent geophysical survey results will assist in refining the sampling scheme

(number and location of samples) for subsequent surveys. This Field Study Plan (FSP) addresses details related to the Summer 2020 Survey only; a separate FSP will be prepared for subsequent surveys.

5.1.1 Sample Locations and Frequency

Figure 5-1 provides an overview of sampling locations. The Summer 2020 Survey will be comprised of:

- 18 benthic grab stations and 32 SPI/PV stations within the Lease Area; 4 are co-located grab and SPI/PV.
- 11 benthic grab stations and 17 SPI/PV stations (2 are co-located grab and SPI/PV), and one (1) SPI/PV transect in the southern export cable route, and
- 11 benthic grab stations, 23 SPI/PV stations (3 are co-located grab and SPI/PV), and 4 SPI/PV transects along the northern export cable route (Figures 5-2 and 5-3a-c; Tables 5-1 and 5-2).
- 15 SPI/PV stations, 3 with co-located benthic grabs, are located within three designated control
 areas.

These sample locations include co-located benthic grab and SPI/PV at 12 locations total; four (4) in the lease area, one (1) in the southern export cable route, three (3) in the northern export cable route, and three (3) in the control areas.

Five (5) transects are proposed along the export cable route. The transects consist of up to eight (8) single SPI/PV camera drops along the transect, approximately 4 on each side of the central sampling location. The target transects are 1000 m long; 500 m to each side.

Grab and SPI/PV stations are spaced approximately 1-2 km along the export cable route with additional transects at 5 locations. Sample location density in the lease area is slightly lower than the BOEM-recommended density of one sample per 1-2 km² within the area of potential adverse effect due to the homogeneity of the lease area. Sampling locations were determined using the results of the Spring 2020 survey including imagery from SPI/PV and grab camera video, the laboratory analysis of the benthic grab samples (infauna and chemistry), and preliminary geophysical data being collected and processed by Fugro. The strategy for the Summer 2020 sampling plan was documented in a memorandum (Attachment 1) and further discussed with BOEM and NMFS in July 2020. The sampling strategy presented in this document incorporates modifications presented in the memo and discussed during the July 2020 meeting.

Preliminary results from the Spring 2020 survey identified areas of complex, heterogeneous habitat in the northern portion of the export cable route, and homogeneous habitat in the southern export cable route and lease area. This is consistent with expectations in the lease area where the majority of the 2019 reconnaissance level geophysical data from TerraSond (2020) indicated a homogenous bottom, with two notable exceptions: (1) an area with a channel and ridge was noted in the central northern edge of the Lease Area and (2) an area of potential hard bottom was noted in the central southern portion of the Lease Area. These areas are indicated in Figure 13 and Chart 4 of the TerraSond (2020) document, respectively. To account for the heterogenous area of channel and ridge, locations were concentrated (e.g., stations 091 – 096). This region was noted to be similar to the majority of the lease area; as such the sampling density in this area has been reduced. The area of potential hard bottom was generally avoided for sampling in the spring deployment, and SPI/PV locations have been added to this potential hardbottom area for Summer 2020.

In an agreement reached among the Massachusetts/Rhode Island Wind Energy Area (MA/RI WEA) Offshore Wind Developers in 2019, WTGs will be installed in a 1 nautical mile (nm) by 1 nm grid layout throughout the MA/RI WEA. With the WTG locations fixed (with some limited potential for micro-siting), the objective of field sampling programs has shifted from those of earlier Wind Energy projects. With known locations for the WTGs, field sampling programs can be focused on the specific locations of anticipated project activities (foundation installations and inter-array cables), rather than more broadly across the entire Lease Area.

The area of potential effect (APE) associated with each WTG that will be installed within the Mayflower Wind Lease Area is 300 meters (m) by 300 m. The maximum APE associated with the full build-out of the

Mayflower Wind Lease Area, including all potential WTGs in the grid layout and associated inter-array cables, is approximately 90 km². Based on this total Lease Area APE and BOEM guidelines, the target sampling frequency in the Lease Area was initially determined to be 60 total samples. The sampling frequency for the Lease Area and export cable route, along with the overall benthic strategy for the Mayflower Wind Project, was presented to BOEM in a Pre-Survey Meeting in January 2020. As noted above, this sampling scheme was further modified following review of the Spring 2020 results with BOEM and NMFS in a meeting held in July 2020. Three control areas outside of, but near to, the Lease Area and export cable route with comparable physical and environmental characteristics will also be sampled to monitor natural environmental shifts that occur unrelated to the Project (Figure 5-4; Table 5-3). Five SPI/PV stations and one co-located benthic grab station will be included with each control area location.

5.1.2 Survey Vessels and Team

The vessel to be used for this survey is the motor vessel (M/V) Berto L. Miller. Specifications are as outlined in the Fugro (2020a) PEP.

The field team includes crew and scientific staff who are experienced with obtaining benthic samples for community analyses, sediment physical parameters, and SPI/PV/seafloor video operations. Details pertaining to the field staff (e.g., training records) are presented in the PEP prepared by Fugro (Fugro, 2020a). Before field execution, a summary of field staff will be included in the PEP (Fugro, 2020a) and updated as necessary during the survey program to reflect changes that may occur during the eight seasons of sampling.

The survey will be performed to accommodate 24-hr operations during the field sampling effort in the Lease Area and along the export cable route. Work will be completed in accordance with the ERP and HSSE Plan prepared by Fugro (2020b,c).

Mayflower Wind Infaunal and Seafloor Habitat Field Study Plan Summer 2020

Table 5-1. Benthic Sampling Stations and Sample IDs in Mayflower Wind OCS-A-0521 Lease Area

Station ID	Sample ID	X coordinate (m)	Y coordinate (m)	Longitude	Latitude	Depth (m)	Depth Reference	Notes for Summer 2020
061	20SU-MW0521-061-SPI	393798	4530927	40.9226	-70.2613	-35	NOAA Chart 13200	
062	20SU-MW0521-062-BG	393800	4529062	40.9058	-70.2610	-37	NOAA Chart 13200	
064	20SU-MW0521-064-SPI	393815	4523507	40.8557	-70.2598	-44	NOAA Chart 13200	
065	20SU-MW0521-065-BG	395658	4519813	40.8227	-70.2373	-40	NOAA Chart 13200	
067	20SU-MW0521-067-SPI	393800	4517967	40.8058	-70.2591	-44	NOAA Chart 13200	
068	20SU-MW0521-068-BG	391968	4517955	40.8055	-70.2808	-44	NOAA Chart 13200	
070	20SU-MW0521-070-SPI	391959	4525379	40.8724	-70.2822	-40	NOAA Chart 13200	
071	20SU-MW0521-071-SPI	390104	4527231	40.8888	-70.3045	-42	NOAA Chart 13200	
072	20SU-MW0521-072-BG	388248	4527218	40.8884	-70.3265	-42	NOAA Chart 13200	
)73	20SU-MW0521-073-SPI	384547	4523523	40.8546	-70.3698	-47	NOAA Chart 13200	
74	20SU-MW0521-074-BG	386395	4523519	40.8549	-70.3478	-46	NOAA Chart 13200	
	20SU-MW0521-074-SPI							
)75	20SU-MW0521-075-BG	388249	4521661	40.8384	-70.3255	-46	NOAA Chart 13200	
)77	20SU-MW0521-077-SPI	386412	4519814	40.8215	-70.3470	-48	NOAA Chart 13200	
)78	20SU-MW0521-078-BG	386393	4517960	40.8048	-70.3468	-48	NOAA Chart 13200	
	20SU-MW0521-078-SPI							
080	20SU-MW0521-080-SPI	388245	4514250	40.7716	-70.3242	-48	NOAA Chart 13200	
081	20SU-MW0521-081-BG	390106	4514271	40.7721	-70.3022	-46	NOAA Chart 13200	
)82	20SU-MW0521-082-SPI	390096	4512401	40.7552	-70.3020	-47	NOAA Chart 13200	
083	20SU-MW0521-083-SPI	384543	4512415	40.7546	-70.3677	-48	NOAA Chart 13200	
)84	20SU-MW0521-084-BG	384542	4514266	40.7713	-70.3681	-49	NOAA Chart 13200	
	20SU-MW0521-084-SPI							
086	20SU-MW0521-086-SPI	380841	4516115	40.7874	-70.4123	-51	NOAA Chart 13200	

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Station ID	Sample ID	X coordinate (m)	Y coordinate (m)	Longitude	Latitude	Depth (m)	Depth Reference	Notes for Summer 2020
087	20SU-MW0521-087-BG	380855	4517969	40.8041	-70.4125	-49	NOAA Chart 13200	
	20SU-MW0521-087-BG-DUP							
088	20SU-MW0521-088-SPI	380842	4519817	40.8207	-70.4130	-48	NOAA Chart 13200	
090	20SU-MW0521-090-SPI	377143	4514261	40.7702	-70.4558	-51	NOAA Chart 13200	
097	20SU-MW0521-097-BG	375293	4510546	40.7364	-70.4769	-53	NOAA Chart 13200	
098	20SU-MW0521-098-SPI	377143	4510565	40.7369	-70.4550	-53	NOAA Chart 13200	
099	20SU-MW0521-099-BG	384537	4508699	40.7211	-70.3671	-48	NOAA Chart 13200	
100	20SU-MW0521-100-SPI	384549	4506863	40.7046	-70.3667	-50	NOAA Chart 13200	
102	20SU-MW0521-102-BG	378986	4506855	40.7037	-70.4325	-53	NOAA Chart 13200	
	20SU-MW0521-102-SPI							
103	20SU-MW0521-103-SPI	373450	4508697	40.7195	-70.4984	-53	NOAA Chart 13200	
105	20SU-MW0521-105-BG	367878	4506831	40.7018	-70.5639	-57	NOAA Chart 13200	
106	20SU-MW0521-106-SPI	367885	4504993	40.6852	-70.5634	-57	NOAA Chart 13200	
107	20SU-MW0521-107-BG	371593	4504999	40.6859	-70.5196	-57	NOAA Chart 13200	
109	20SU-MW0521-109-SPI	377133	4505008	40.6868	-70.4541	-53	NOAA Chart 13200	
111	20SU-MW0521-111-SPI	371588	4503138	40.6691	-70.5193	-57	NOAA Chart 13200	
113	20SU-MW0521-113-BG	362329	4501282	40.6509	-70.6284	-60	NOAA Chart 13200	
	20SU-MW0521-113-BG-DUP							
114	20SU-MW0521-114-SPI	362329	4499443	40.6344	-70.6280	-60	NOAA Chart 13200	
115	20SU-MW0521-115-BG	367883	4501292	40.6519	-70.5627	-60	NOAA Chart 13200	
116	20SU-MW0521-116-SPI	367884	4499443	40.6353	-70.5623	-60	NOAA Chart 13200	
117	20SU-MW0521-117-SPI	373426	4499452	40.6362	-70.4968	-60	NOAA Chart 13200	
118	20SU-MW0521-118-BG	375281	4499444	40.6364	-70.4749	-58	NOAA Chart 13200	
119	20SU-MW0521-119-BG	371580	4497600	40.6193	-70.5182	-60	NOAA Chart 13200	

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Station ID	Sample ID	X coordinate (m)	Y coordinate (m)	Longitude	Latitude	Depth (m)	Depth Reference	Notes for Summer 2020
120	20SU-MW0521-120-SPI	371571	4495742	40.6025	-70.5180	-62	NOAA Chart 13200	
121	20SU-MW0521-121-SPI	380842	4508700	40.7206	-70.4109	-51	NOAA Chart 13200	Add SPI/PV north of 101
122	20SU-MW0521-122-SPI	382694	4510552	40.7376	-70.3893	-51		Add SPI/PV southwest of 083
123	20SU-MW0521-123-SPI	388250	4517960	40.8050	-70.3248	-44	NOAA Chart 13200	Add SPI/PV north of 079
125	20SU-MW0521-125-SPI	386398	4510552	40.7381	-70.3454	-48	NOAA Chart 13200	Add SPI/PV southeast of 083

CRS data: NAD83 / UTM Zone 19N [26919] BG-DUP – Field duplicate for TOC and grain size only

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Mayflower Wind Infaunal and Seafloor Habitat Field Study Plan Summer 2020

Table 5-2. Benthic Sampling Stations and Sample IDs along Mayflower Wind Export Cable Route

Station ID	Sample ID	X coordinate (m)	Y coordinate (m)	Longitude	Latitude	Depth (m)	Depth Reference	Notes for Summer 2020
Northern Exp	ort Cable Route							
001	20SU-MW0521-001-SPI	367209	4599240	41.5338	-70.5918	-8	NOAA Chart 13237	
002	20SU-MW0521-002-SPI	367524	4597860	41.5214	-70.5877	-22	Spring Survey	SPI/PV transect
	20SU-MW0521-002-1-SPI	367012	4597862	41.5214	-70.5939	-18	NOAA Chart 13237	Western limit of transect
	20SU-MW0521-002-i-SPI	368027	4597857	41.5215	-70.5817	-23	NOAA Chart 13237	Eastern limit of transect
003	20SU-MW0521-003-BG	367180	4596521	41.5093	-70.5916	-15	Spring Survey	
	20SU-MW0521-003-SPI							
004	20SU-MW0521-004-SPI	368117	4595465	41.5000	-70.5801	-23	Spring Survey	
005	20SU-MW0521-005-SPI	369060	4594604	41.4924	-70.5686	-25	Spring Survey	SPI/PV transect
	20SU-MW0521-005-1-SPI	368755	4594205	41.4887	-70.5722	-19	NOAA Chart 13237	Western limit of transect
	20SU-MW0521-005-i-SPI	369365	4595002	41.4960	-70.5651	-18	NOAA Chart 13237	Eastern limit of transect
006	20SU-MW0521-006-BG	370177	4593729	41.4847	-70.5551	-21	Spring Survey	
	20SU-MW0521-006-BG-DUP							
007	20SU-MW0521-007-BG	371298	4592892	41.4773	-70.5415	-23	Spring Survey	
	20SU-MW0521-007-SPI							
008	20SU-MW0521-008-BG	372640	4592470	41.4737	-70.5253	-21	Spring Survey	
009	20SU-MW0521-009-SPI	374011	4592068	41.4703	-70.5088	-19	Spring Survey	
010	20SU-MW0521-010-BG	375374	4591645	41.4667	-70.4924	-17	Spring Survey	
011	20SU-MW0521-011-SPI	376696	4591233	41.4632	-70.4765	-16	Spring Survey	
012	20SU-MW0521-012-BG	378066	4590977	41.4611	-70.4601	-17	Spring Survey	
013	20SU-MW0521-013-SPI	379460	4590754	41.4593	-70.4433	-18	Spring Survey	
014	20SU-MW0521-014-BG	380881	4590524	41.4575	-70.4263	-22	Spring Survey	
	20SU-MW0521-014-BG-DUP							

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Station ID	Sample ID	X coordinate (m)	Y coordinate (m)	Longitude	Latitude	Depth (m)	Depth Reference	Notes for Summer 2020
015	20SU-MW0521-015-SPI	382267	4590296	41.4556	-70.4096	-21	Spring Survey	SPI/PV transect
	20SU-MW0521-015-1-SPI	382193	4589802	41.4512	-70.4104	-14	NOAA Chart 13237	Western limit of transect
	20SU-MW0521-015-i-SPI	382341	4590791	41.4601	-70.4088	-18	NOAA Chart 13237	Eastern limit of transect
016	20SU-MW0521-016-BG	383675	4590060	41.4537	-70.3927	-19	Spring Survey	
017	20SU-MW0521-017-SPI	385057	4589790	41.4515	-70.3761	-20	Spring Survey	
018	20SU-MW0521-018-BG	386229	4589016	41.4447	-70.3620	-19	Spring Survey	
019	20SU-MW0521-019-BG	387336	4588503	41.4402	-70.3486	-17	NOAA Chart 13237	
	20SU-MW0521-019-SPI							
020	20SU-MW0521-020-SPI	387985	4586492	41.4222	-70.3405	-8	Spring Survey	
021	20SU-MW0521-021-SPI	387355	4584944	41.4081	-70.3477	-12	NOAA Chart 13237	
022	20SU-MW0521-022-SPI	386718	4583851	41.3982	-70.3551	-16	NOAA Chart 13237	
023	20SU-MW0521-023-SPI	386040	4582562	41.3865	-70.3630	-8	NOAA Chart 13237	
024	20SU-MW0521-024-SPI	385398	4581320	41.3752	-70.3704	-15	Spring Survey	SPI/PV transect
	20SU-MW0521-024-1-SPI	384873	4581378	41.3757	-70.3767	-13	NOAA Chart 13237	Western limit of transect
	20SU-MW0521-024-i-SPI	385896	4581265	41.3748	-70.3645	-8	NOAA Chart 13237	Eastern limit of transect
025	20SU-MW0521-025-SPI	384285	4580462	41.3674	-70.3836	-13	Spring Survey	
026	20SU-MW0521-026-SPI	383728	4579019	41.3543	-70.3900	-6	NOAA Chart 13237	
027	20SU-MW0521-027-SPI	384082	4577660	41.3421	-70.3855	-11	NOAA Chart 13237	
028	20SU-MW0521-028-SPI	384883	4576582	41.3325	-70.3757	-12	NOAA Chart 13237	
029	20SU-MW0521-029-SPI	385338	4575062	41.3189	-70.3700	-5	NOAA Chart 13237	
030	20SU-MW0521-030-BG	386653	4574372	41.3129	-70.3542	-6	NOAA Chart 13237	
CP2	20SU-MW0521-CP2-SPI	385838	4580104	41.3644	-70.3650	-7	NOAA Chart 13237	
Southern Exp	port Cable Route							
031	20SU-MW0521-031-SPI	387824	4573566	41.3058	-70.3400	-6	NOAA Chart 13237	

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Station ID	Sample ID	X coordinate (m)	Y coordinate (m)	Longitude	Latitude	Depth (m)	Depth Reference	Notes for Summer 2020
032	20SU-MW0521-032-BG	388274	4572331	41.2947	-70.3344	-7	NOAA Chart 13237	
033	20SU-MW0521-033-SPI	388495	4570928	41.2821	-70.3315	-9	Spring Survey	
034	20SU-MW0521-034-BG	388721	4569515	41.2694	-70.3286	-14	Spring Survey	
035	20SU-MW0521-035-SPI	388975	4568131	41.2570	-70.3253	-20	Spring Survey	
036	20SU-MW0521-036-BG	389268	4566735	41.2444	-70.3215	-22	Spring Survey	
124	20SU-MW0521-124-BG	389513	4565634	41.2346	-70.3184	-26	Spring Survey	
	20SU-MW0521-124-SPI							SPI/PV transect
	20SU-MW0521-124-1-SPI	389023	4565535	41.2336	-70.3242	-29	NOAA Chart 13237	Western limit of transect
	20SU-MW0521-124-i-SPI	390003	4565734	41.2355	-70.3126	-26	NOAA Chart 13237	Eastern limit of transect
037	20SU-MW0521-037-SPI	389558	4565353	41.2320	-70.3178	-26	Spring Survey	
038	20SU-MW0521-038-BG	389867	4563940	41.2193	-70.3139	-25	Spring Survey	
039	20SU-MW0521-039-SPI	390169	4562579	41.2071	-70.3100	-28	Spring Survey	
040	20SU-MW0521-040-BG	390454	4561182	41.1946	-70.3064	-27	Spring Survey	
	20SU-MW0521-040-BG-DUP							
041	20SU-MW0521-041-SPI	390473	4559761	41.1818	-70.3059	-30	Spring Survey	
043	20SU-MW0521-043-SPI	390510	4556919	41.1562	-70.3050	-30	Spring Survey	
044	20SU-MW0521-044-BG	390544	4555502	41.1435	-70.3043	-31	Spring Survey	
045	20SU-MW0521-045-SPI	390549	4554088	41.1307	-70.3040	-33	NOAA Chart 13200	
046	20SU-MW0521-046-BG	390580	4552652	41.1178	-70.3034	-33	NOAA Chart 13200	
047	20SU-MW0521-047-SPI	390578	4551246	41.1051	-70.3031	-33	NOAA Chart 13200	
049	20SU-MW0521-049-SPI	390666	4548416	41.0797	-70.3016	-33	NOAA Chart 13200	
050	20SU-MW0521-050-BG	390720	4546977	41.0667	-70.3007	-33	NOAA Chart 13200	
051	20SU-MW0521-051-SPI	390752	4545573	41.0541	-70.3001	-33	NOAA Chart 13200	
053	20SU-MW0521-053-SPI	390838	4542711	41.0283	-70.2985	-40	NOAA Chart 13200	

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AECOM

Station ID	Sample ID	X coordinate (m)	Y coordinate (m)	Longitude	Latitude	Depth (m)	Depth Reference	Notes for Summer 2020
054	20SU-MW0521-054-BG	390902	4541296	41.0156	-70.2975	-37	Spring Survey	
	20SU-MW0521-054-SPI							
055	20SU-MW0521-055-SPI	390938	4539876	41.0028	-70.2968	-37	Spring Survey	
057	20SU-MW0521-057-SPI	391009	4537053	40.9774	-70.2955	-38	Spring Survey	
058	20SU-MW0521-058-BG	391061	4535626	40.9645	-70.2946	-38	Spring Survey	
059	20SU-MW0521-059-SPI	391108	4534220	40.9519	-70.2938	-38	Spring Survey	

CRS data: NAD83 / UTM Zone 19N [26919] BG-DUP – Field duplicate for TOC and grain size only

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Table 5-3. Benthic Sampling Stations and Sample IDs within the Control Areas

Station ID	Sample ID	X coordinate (m)	Y coordinate (m)	Longitude	Latitude	Depth (m)	NOAA Chart Reference
Northern Co	ntrol Area						
C01	20SU-MW0521-C01-SPI	383729	4562663	41.2070	-70.3868	-29	13237
000	20SU-MW0521-C02-SPI	000544	4500005	44.0070	70.0500	00	40007
C02	20SU-MW0521-C02-BG	386544	4562685	41.2076	-70.3533	-29	13237
C03	20SU-MW0521-C03-SPI	385154	4561350	41.1954	-70.3696	-31	13237
C04	20SU-MW0521-C04-SPI	383709	4560164	41.1845	-70.3866	-32	13237
C05	20SU-MW0521-C05-SPI	386492	4560091	41.1842	-70.3534	-32	13237
Western Cor	ntrol Area						
C06	20SU-MW0521-C06-SPI	352555	4499406	40.6323	-70.7435	-62	12300
C07	20SU-MW0521-C07-SPI	355340	4499302	40.6319	-70.7105	-62	12300
C08	20SU-MW 0521-C08-SPI	353949	4498138	40.6212	-70.7267	-62	12300
000	20SU-MW 0521-C09-SPI	352520	4496842	40.6092	-70.7433	-66	12300
C09	20SU-MW0521-C09-BG	332320		40.0092	-70.7433		12300
C10	20SU-MW0521-C10-SPI	355309	4496790	40.6093	-70.7103	-64	12300
Eastern Con	trol Area						
C11	20SU-MW0521-C11-SPI	403884	4518515	40.8120	-70.1396	-35	12300
C12	20SU-MW0521-C12-SPI	406638	4518473	40.8120	-70.1070	-35	12300
C13	20SU-MW 0521-C13-SPI	405261	4517168	40.8001	-70.1231	-37	12300
UI3	20SU-MW0521-C13-BG	405201	4017100	40.0001	-70.1231	-31	12300
C14	20SU-MW0521-C14-SPI	403838	4515987	40.7893	-70.1398	-38	12300
C15	20SU-MW0521-C15-SPI	406654	4515945	40.7892	-70.1064	-38	12300

CRS data: NAD83 / UTM Zone 19N [26919]

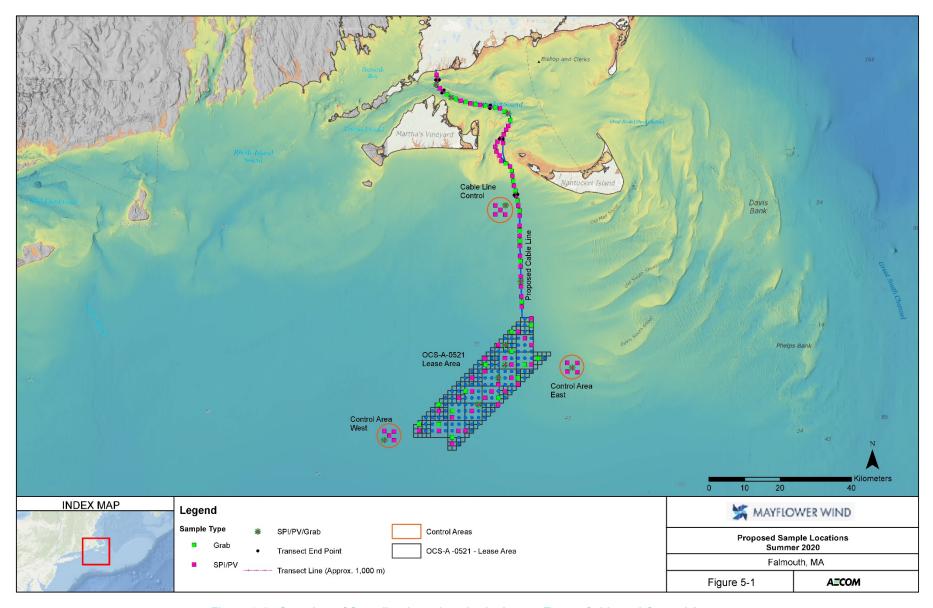


Figure 5-1. Overview of Sampling Locations in the Lease, Export Cable and Control Areas

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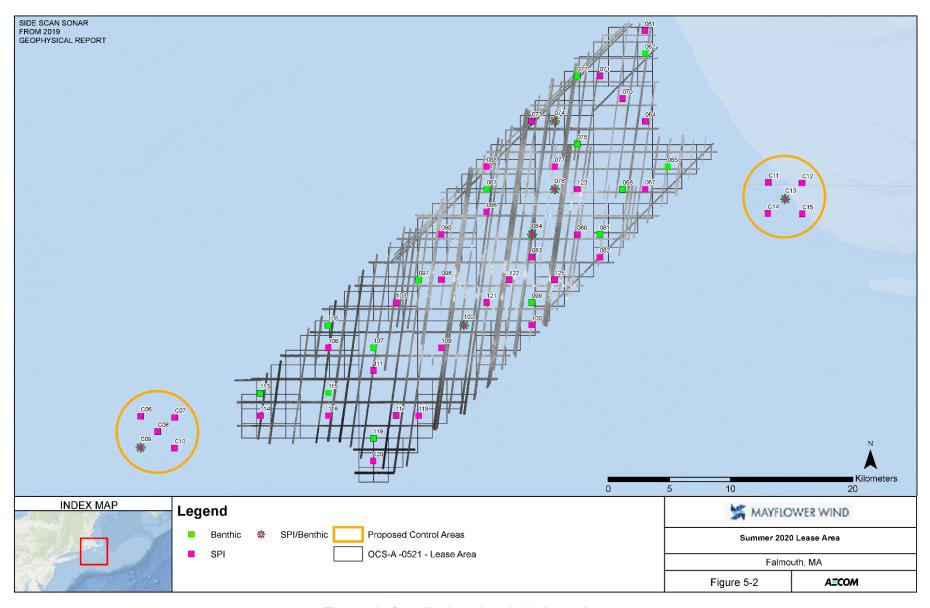


Figure 5-2. Sampling Locations in the Lease Area

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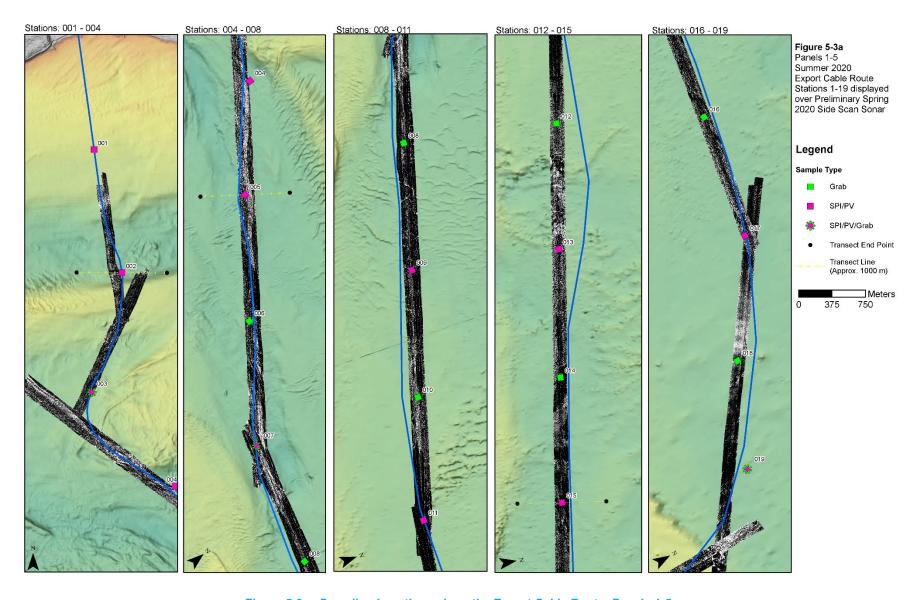


Figure 5-3a. Sampling Locations along the Export Cable Route: Panels 1-5

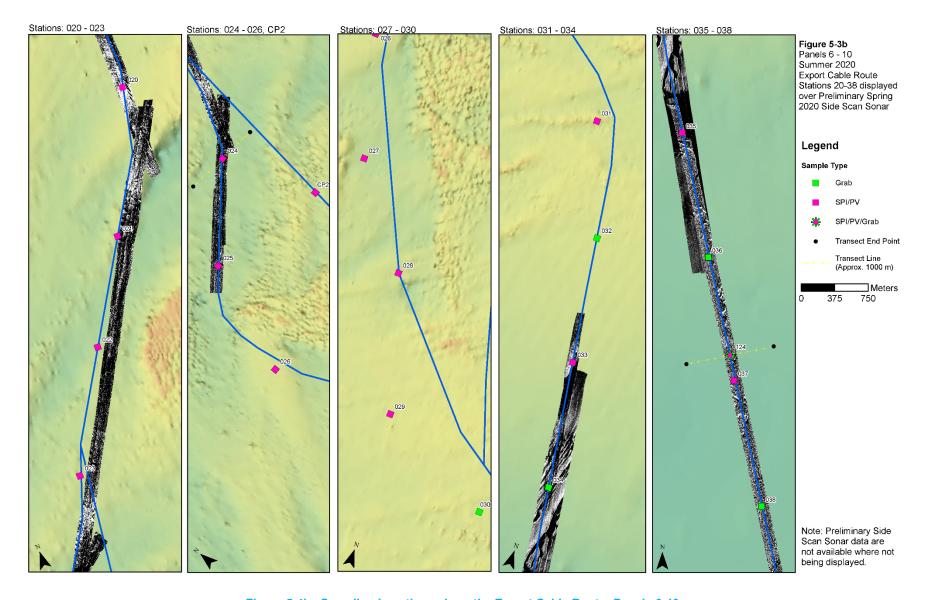


Figure 5-4b. Sampling Locations along the Export Cable Route: Panels 6-10

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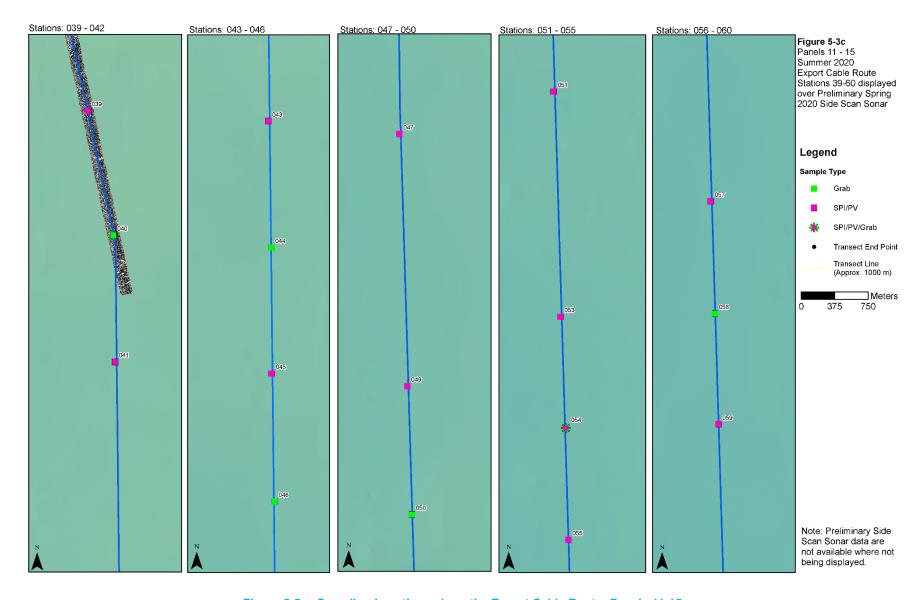


Figure 5-5c. Sampling Locations along the Export Cable Route: Panels 11-15

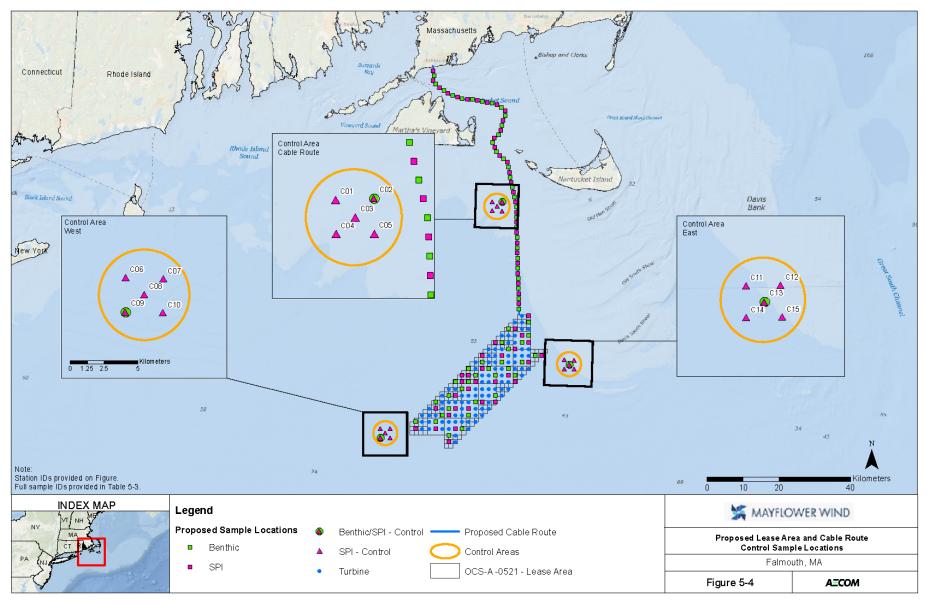


Figure 5-6. Reference Control Sampling Locations

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5.2 Benthic Grab Sampling Methodology

5.2.1 Sample Collection

During the Summer 2020 survey, surficial sediment grab samples will be collected from 19 locations within the Lease Area, 21 locations along the export cable route (11 in the northern cable route and 10 in the southern cable route), and at three control areas for analysis of grain size, TOC, and benthic community structure. Benthic sediment will be collected using a Ted Young-modified double Van Veen grab sampler, with each bucket of the grab sampler having an area of (0.04 square meters [m²]). One of the buckets will be processed in the field for benthic infaunal community assessment. One of the buckets will be selected for analysis of physical parameters (e.g., grain size and TOC). Details related to the modified grab sampler are provided in the PEP (Fugro, 2020a). The grab sampler is also equipped with a real time high definition (HD) video camera, scaling lasers and a light emitting diode (LED) light.

Locations of grab samples will be considered on target if the location of penetration is within 25 m of the target location. Target station locations have been determined as part of the initial field planning effort and with review of existing NOAA chart data and data collected during the Spring 2020 survey. Every effort will be made to collect samples as planned. Station locations may shift based on review of new geophysical data or other survey data obtained, and/or conditions encountered in the field at the time of sampling (e.g., hard bottom or insufficient water depths). In the event that a sample cannot be collected at the proposed target location, a decision to move the station will be made in conjunction with the Mayflower Wind program manager or offshore client representative. Locations will be moved laterally or to either side of the proposed location and when possible within a 500 m radius of the proposed ECR. The coordinates of the new sample location will be recorded, and the deviation noted on the field data sheet. For locations of a failed grab attempt, video feed from the grab camera will be recorded and retained for documentation of conditions.

Conditions may be encountered that may preclude the collection of acceptable benthic infaunal grab samples and/or SPI/PV images at a given location. Such conditions warranting the relocation of sampling stations may include, but are not limited to, underlying geologic and sediment conditions, physical obstructions on the bottom, active fishing gear, water depth.

Where an initial attempt to collect a benthic grab sample or SPI/PV image fails, up to three attempts may be made to collect a benthic grab or SPI/PV images at a given location. However, if evidence is such that repeated attempts will not likely yield a successful outcome, then relocation may occur without repeat attempts to secure a sample/image at the original location.

Where necessary, sampling stations along the planned export cable route may be relocated:

- By reducing the separation distance between stations to locate the sample station to avoid the
 obstructing condition while maintaining approximately the same center line as the existing sampling
 station locations; changes in the separation of sampling locations should be the minimum required to
 avoid the obstructing condition; or
- By shifting off the centerline of the current sampling locations to a nearby location which avoids the
 obstructing condition; the distance of the shift off the center line should be the minimum required to
 avoid the obstructing condition.

Where necessary, sampling stations within the lease area may be relocated to the nearest wind turbine generator (WTG) tower location which does not already have a sampling location. A table of coordinates is attached (Attachment 2) for the WTG tower locations that do not have a sample station per this FSP. WTG towers that are in an area of potential hardbottom/complex habitat previously identified have been excluded.

Where relocation is necessary, the field records should document the obstructing condition encountered, and the coordinates of the new sampling location. Available physical evidence which supports a decision to relocate (e.g., photographs, water depth information, grab cam video or SPI/PV images) should be retained.

Decisions for sampling station relocations will be made in consultation with the client representative onboard the vessel.

Fugro will record the location of the grab using surface positioning In waters too shallow for accurate slant ranges to be established, a position will be taken using the assumption that the grab is directly below the A-frame/sheave. The lowering cable will be observed for significant deviation from vertical in these shallow water stations. Sediment grabs will be examined for acceptability and should meet the following minimum requirements to be considered sufficient for retention:

- 1. Greater than 70 percent full;
- 2. Not over-penetrated where sediment exudes from outside the cover of the grab;
- 3. Small amount of overlying water at the surface of the grab;
- 4. Undisturbed sediment surface; and
- No visible evidence of washout (i.e., jaws of grab are firmly closed).

If the grab does not meet the standards listed above, it will be discarded, and another attempt will be made. A total of three attempts will be made before that station is abandoned and moved an appropriate distance (at the discretion of the onboard lead scientist and client representative).

Upon successful collection, a photograph of the grab surface will be taken, with station label visible in the photo. The following physical features of each grab will be recorded:

- Depth of penetration;
- · Sediment color;
- Visual sediment grain size description;
- Evidence of noticeable odor/sheen; and
- Surface features and presence of conspicuous macrofauna on the surface of the grab sample (description of type). Care should be taken to ensure that features of the sediment surface are visible in the deck photograph.

5.2.2 Subsample Collection for Sediment Characterization

After the initial inspection, one bucket/grab of the grab sampler will be designated for physico-chemical sampling. From that bucket, grain size and TOC samples will be extracted. An 8-ounce (approximate) sediment sample from the designated bucket will be obtained for analysis of sediment texture and a 120-milliliter (mL) or 4-ounce sediment subsample will be obtained for TOC analysis. Grain size/texture samples will be collected from the top 10 cm of the sediment in the bucket; TOC will be collected from the top 2 cm. Epifauna should not be included in sample containers for TOC or grain size.

General requirements for handling of sediment and organisms while in the field, including sample container and storage requirements and shipping details are provided in Table 5-4 and summarized below. Specific details are outlined in the Benthic Habitat Study QAPP (AECOM, 2020).

Table 5-4. Proposed Samples to be Collected

Sample (Naming Code)	Analytes	Sampling Procedure/ Preservation	Storage	Holding Time	Analysis Method	Method Detection Limit (with unit)
Physico- chemical Parameters (P1)	тос	120- mL or 4-ounce glass jar with Teflon lined cap, approximately 80% full	≤6°C	14 days (Lloyd Kahn) or 28 days (9060A)	EPA Region 2 Lloyd Kahn or EPA 9060A	0.01 %

Physico- chemical Parameters (P2)	Grain Size/Texture	8-ounce plastic	Ambient temperature	NA	ASTM ^(a) D6913/ D7928 ^(b)	NA	
	Sediment type						
	aRPD						
	Sediment Oxygen Demand						
Sediment	Sedimentary Methane		Electronically with server back		Desktop Analysis		
Profile Image	Thiophilic Bacteria	NA		NA		NA	
(SPI)	Infaunal Successional Stage Other Biological Features (See Section 2.4.4.7 of the QAPP		ир		ŕ		
Benthic Infauna	Taxonomic classification	1 or 0.5-liter (L) plastic jars (depending on the sample volume)	Ambient temperature	NA	Microscopy	NA	
	Biomass	containing sodium borate; field iomass preserved with 10% buffered formalin			Wet weight	NA	
(a) ASTM = American Society for Testing and Materials(b) Method modified to use Wentworth classification sieve sizes							

Samples for TOC analyses will be placed in the appropriate containers and kept cool in sturdy coolers with ice, or refrigerators, to maintain a holding temperature of ≤6°C. Sediment samples for grain size do not have specific temperature requirements for storage. Samples for benthic infauna community will be preserved with a 10 percent (%) buffered formalin solution and should be kept in a cooler or sturdy box separate from other samples and out of excess sun or heat.

Field duplicate sediment grain size and TOC samples will be obtained at a rate of 10 percent of the total number of samples collected (n=5). Details of locations and sample IDs, including field duplicates, are presented in Tables 5-1 through 5-3. Should sufficient volume not be available in a single grab bucket to obtain duplicate samples for both TOC and grain size, the grain size duplicate will be collected at the next benthic grab station. Sample jar labels will be updated as necessary to reflect the actual location where duplicate samples are collected.

After the survey is completed, the samples will be transported under custody (i.e., by hand or via shipping courier) to the appropriate laboratories for analysis. Samples will be on ice, icepacks (or comparable). in coolers with protective layers of foam or bubble wrap to protect from breakage and at the appropriate temperature during shipping. Temperature loggers and or temperature blanks will be used on board the vessel to verify samples have stayed at specified temperatures during transport.

5.2.3 Benthic Sample Field Processing

Samples for benthic infaunal community analyses will be sieved aboard the vessel using screened (i.e., filtered to remove pelagic organisms) sea water through a clean 500-micron mesh sieve using **gentle water pressure**; organisms are <u>fragile</u>, and the stream of water must be gentle enough to minimize damage to ensure they can be identified to lowest taxonomic level. During sieving, the following should be noted:

1. Samples of coarse sand where majority is retained on the sieve should be packaged in their entirety in 1-gallon sample containers.

2. Should samples include tube-building anemones (e.g., cerianthid), these organisms should be placed in a separate sample jar from the rest of the organisms. Cerianthids burrow into bottom sediments and build thick tubes comprised of mud, sand and mucus. In the bucket without overlying water to suspend the tube, the tube will appear as a dark brown or black gelatinous mound.

After sieving, the sample will be placed in a pre-labeled sample jar (or jars) and preserved using a 10 % buffered formalin solution. Organisms are transferred to the sample jars by gently scooping the sieve residuals into the jars and using a rinse bottle containing seawater to rinse the remaining sieve contents into the jar. Excessive (see below regarding preservation) rinsate water should be decanted back to the sieve, and organisms re-washed into the jar.

The sample containers should not contain more than 50% solids (i.e., benthic organisms and residual sediments that do not pass through the 500-micron sieve). The solution in the final sample should have a **final concentration of preservative of ideally not less than 8-10 percent buffered formalin concentration**. To achieve this, the volume of rinsate must be carefully monitored and minimized, and the ratio of rinsate water to 10% buffered formalin cannot be greater than 1:4. The sample must be **gently inverted several times to fully expose all organisms to the formalin**. Residual sodium borate may be present in the sample jars; careful inversion of the jars will dissolve the majority of the sodium borate; since the preservative solution is pre-buffered, full dissolution is not necessary.

This fixative concentration will ensure the exoskeleton, shell, and other hard parts of the organisms do not disintegrate and that the entire sample is fully preserved with the formalin. Preserved samples will be transported to the laboratory under Chain of Custody as described in the AECOM QAPP (AECOM, 2020).

5.2.4 Benthic Sample Laboratory Processing

The benthic laboratory will log the receipt of samples and Chain of Custody. Samples will be transferred from formalin to ethanol under controlled conditions using safety measures that include protective eyewear, gloves, laboratory coat, and fume hood as described in the Task Hazard Analyses (THAs). Samples of coarse sand will be elutriated prior to sorting.

5.2.4.1 Sorting

Upon receipt at the laboratory, samples will be transferred from formalin to ethanol and stained with rose bengal. Samples will then be sorted to remove benthic organisms from residual debris. For sorting QA/QC, every tenth sample (i.e., 10 percent of sample residues) sorted by an individual sorter will be resorted by a different sorter to determine if organisms were missed. If more than 10 percent of the total number of organisms were not removed from the samples then remaining nine samples will also be resorted.

5.2.4.2 Taxonomy

Organisms will be identified to Lowest Practical Taxonomic Level (LPTL), which balances effort of identification with cost efficiency. A dedicated Project benthic infaunal reference collection will be developed and maintained that includes at least one individual of each type of organism identified and will be holistically developed throughout the multiple seasons of sampling effort. Species recognized as introduced (non-indigenous) will be noted. Macrofloral identifications will be performed from seafloor video and plan-view camera imagery. No macrofloral identifications will be performed from the benthic infaunal samples. Oligochaetes will be identified to Class level only. Meiofauna will not be identified (e.g., Nematoda, Ostracoda, and Harpacticoida). Enumeration and identification procedures are detailed in the Benthic Infaunal and Seafloor Habitat Study QAPP (AECOM, 2020).

Not all organisms may be identified to species level and/or are not known benthic species. Sample sorting will be done according to AECOM SOP MW-B-001, April 2020, Benthic Infauna Sample Processing. Organism clusters such as hydroids and bryozoans will be picked from the sediment in order to provide presence/absence information only, and barnacles and shell-boring animals (epifaunal animals) will be picked from the sample but entered on data sheets as presence only. Prior to analysis of the soft-bottom faunal data, modifications to the dataset will be made. For example, some taxa (e.g., epifaunal, encrusting, or non-benthic

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taxa) will be eliminated from all calculations. Other taxa will be included in calculations of abundance but not diversity; such taxa are usually those infaunal organisms that cannot be identified to at least the genus level. Only those individuals identified to genus or species level will be included in all remaining calculations (e.g., diversity, evenness, number of species, multivariate analyses).

5.2.4.3 Biomass

Once organisms have been identified to LPTL, wet-weight biomass will be performed. Wet-weight measurements preserve organisms intact and allow for the development of a specimen reference collection that can be used in the future to inform post-Project implementation potential impacts.

5.3 High Definition Real Time Video

Real time video will be used in conjunction with sediment grab operations. High Definition, low logistics camera and lighting system that provides real time imagery over the same cable used to raise and lower the grab is proposed for use. Still images may be extracted from the video as appropriate. The video will have position, station name, project info and other relevant information recorded to the video using appropriate data overlay software.

Data from the video supports and informs reporting products according to the Coastal and Marine Ecological Classification Standard (CMECS) format as required by BOEM guidelines. Video data of the seafloor, plus physical sampling the sediment and benthos, uniquely inform three of the four main CMECS components (Geoform, Substrate, and Biotic).

5.4 Sediment Profile Image Collection and Analysis

A SPI/PV survey will be performed at the Lease Area (32 locations), along the export cable route (39 individual locations and at the three control areas (five stations per control area). In addition to the individual sampling location, transect sampling will be conducted at five (5) locations along the export cable route. Transect sampling consists of single SPI/PV image pairs (i.e., rather than triplicate pairs) collected from up to four locations to each side of the main individual location (i.e., the location on the export cable route which is sampled in triplicate). Up to eight single image pairs will be collected from a target transect 1000 m in length. The sequential number sequence is XXX-1 through XXX-i, where XXX is the main individual location, the transect sample XXX-1 is located on the western edge of the transect, and the XXX-i location is the final image pair collection on the eastern edge of the transect. If sampling is initiated on the eastern side of the transect, that number will be XXX-8 and numbers will decrease (XXX-7, XXX-6, etc.) moving west. During transect sampling, the camera will remain deployed (i.e., not brought up to deck) between stations. As such, usable images may not be collected from all transect sampling locations. Images will be collected from locations approximately 125 m apart along the transect, assuming 8 transect samples over 1000 m. The sampling locations on the transect may be offset or moved along or adjacent to the target transect, consistent with other sampling, based on field conditions.

The camera will be within 25 m of the field-determined target location, with images collected, as possible, in an array around the center target location. The SPI/PV imaging will be used to determine the physical characteristics of sediment and to assess benthic colonization/recolonization status of the site and within the reference areas. The analysis of SPI/PV will include CMECS categorization as recommended with the NMFS 2020 guidelines. Details pertaining to the equipment, field methods, and procedures to be used to collect and analyze the SPI and PV images for the Project are presented in the Benthic Infaunal and Seafloor Habitat Study QAPP (AECOM, 2020) and the PEP (Fugro, 2020a). For locations of a failed SPI attempt, PV images will be recorded and retained for documentation of conditions.

6.0 Health Safety Security and Environment (HSSE)

The following briefly summarizes the anticipated HSSE activities and plans required for the execution of the work. Field sampling activities will be addressed in separate Emergency Response Plan and HSSE plan developed by Fugro (2020b,c). This HSSE plan will be augmented by THAs that address on board preservation of benthic samples and laboratory-specific protocols for handling and sorting benthic infauna samples.

6.1 Sample Collection, Handling and Shipping

General requirements for handling of sediment and organisms while in the field, including sample container and storage requirements and shipping details, are provided in Table 5-4. Specific details are outlined in the Benthic Habitat Study QAPP (AECOM, 2020). Specific HSSE details related to shipboard activities including sample collection are outlined in the HSSE Plan (Fugro, 2020c).

Potential hazards associated with sample handling and shipping include:

- Physical hazards of handling heavy containers (e.g., sample coolers);
- Specific chemical hazards related to the preservatives (i.e., formalin solution); and
- Physical hazards associated with glass containers on the vessel.

6.2 Laboratory Sample Analysis

Health and safety considerations for work associated with infaunal sample processing in the laboratory will be addressed in a THA identifying physical, chemical, and biological hazards. The THA will specifically address:

- Physical hazards of handling heavy equipment (sample coolers);
- Specific chemical hazards related to the fixative and preservatives; and
- Physical hazards (ergonomic and eye strain) associated with microscope use.

The laboratory team has the authority to stop work if an unsafe condition is perceived until the conditions are fully remedied to the satisfaction of the laboratory manager.

7.0 Benthic Infaunal Data Interpretation and Presentation

7.1 Data Interpretation

The benthic survey data will be interpreted in the context of the underlying geological resources in the area. Benthic species abundance will be correlated with benthic habitat type, so that patterns of species distribution and abundance will be discerned, and species assemblages identified. Use of multivariate analysis tools such as Bray-Curtis similarity calculation can be helpful with data interpretation and determination of habitat trends. GIS spatial mapping is expected to be used in conjunction with the multivariate analysis and data for

visualization of habitat types. Metrics such as abundance, dominant species, evenness, diversity, and density of organisms will be calculated.

The characterization of benthic resources in the Project Area will include, the following components:

- Sample manifest and description (sample ID, date, time, latitude, longitude, water depth, and sample description);
- Abundance of species (total number of individuals, species richness, percent cover, and sample reference collection);
- Shannon's diversity Index (H'), and Pielou's evenness index (J') per sample;
- · Biomass per unit volume of sediment sieved; and
- Multivariate analyses of benthic community including but not limited to Bray-Curtis analysis, principal component analysis, and non-linear multidimensional scaling.

7.2 Reporting

Final benthic survey results will be provided in a detailed technical report with figures and tabulated results that will be used for the COP document and for local/state permitting. Sampling locations will be included as a GIS file. The report will further discuss potential cumulative impact results anticipated from the proposed Project including an assessment of taxonomic abundance estimates, analysis of the effectiveness of survey techniques, comparison with existing control areas, and identification of survey methods that were considered less than effective. Specific details related to data analysis and reporting are outlined in the Benthic Habitat Study QAPP (AECOM, 2020).

8.0 Quality Assurance and Control

Procedures for quality assurance/quality control (QA/QC), documentation and reporting will be followed as specified in the Benthic Infaunal and Seafloor Habitat Study QAPP (AECOM, 2020) as well as the Fugro Quality Plan (Fugro, 2020d).

9.0 Schedule/Timeframes

Typical, standard turnaround time from sample collection to benthic community sorting and taxonomy is 60 to 90 days, depending on number of samples and abundances of organisms. Analysis of SPI/PV images typically takes 30 to 60 days (or longer depending on the number of images obtained) and is similar to the amount of time necessary to analyze the benthic grabs. SPI/PV interpretative reports can be expected within 90 days after mobilization.

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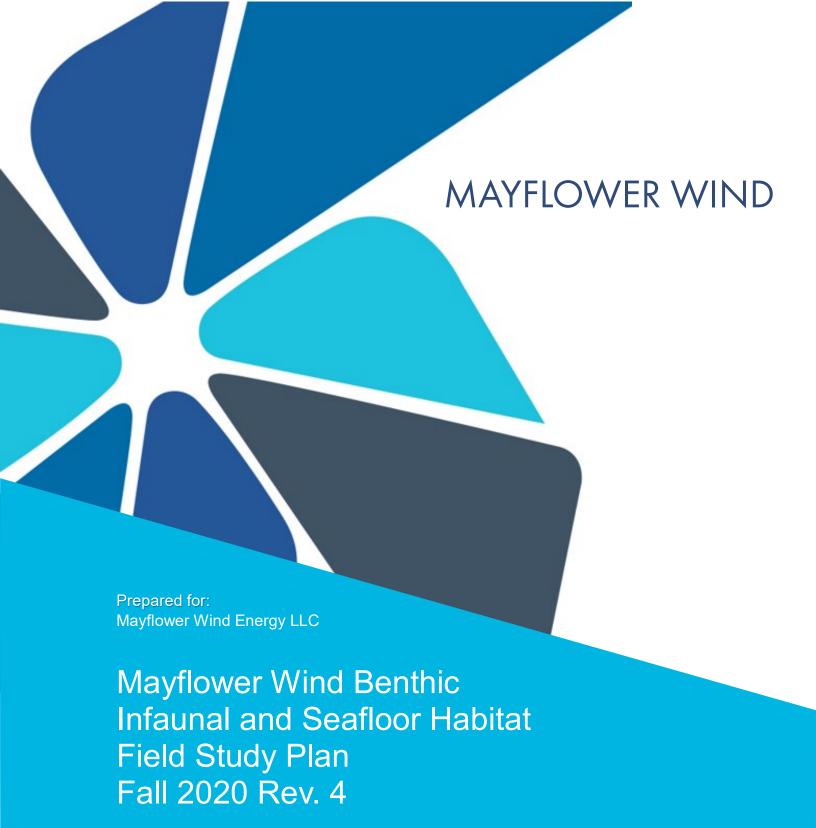
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TerraSond, 2020. Geophysical and Geohazard Report. Mayflower Wind Energy, LLC BOEM Renewable Energy Lease Number OCS-A 0521. March 6, 2020.

Attachment 1. Memorandum: Revised Proposed Sampling Approach for the Mayflower Wind Benthic Infaunal and Seafloor Habitat Field Study, Summer 2020

Attachment 2. Table of Turbine Locations not Occupied by Samples

ATTACHMENT 4 – Mayflower Wind Benthic Infaunal and Seafloor Habitat Field Study Plan, Fall 2020



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November 5, 2020



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Attachment 2. Table of Turbine Locations not Occupied by Samples

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1.0 Project Description

Mayflower Wind Energy LLC (Mayflower Wind) proposes an offshore wind renewable energy generation project (Project) located in federal waters off the southern coast of Massachusetts in the Outer Continental Shelf (OCS) Lease Area OCS-A 0521 (the Lease Area) which will deliver electricity to the regionally administered transmission system via export cables with a landing point in Falmouth, Massachusetts and onshore transmission system extending to the point of interconnection (POI) in Bourne, Massachusetts (the Project). The Project site is shown in Figure 1-1.

The Lease Area is located south of Martha's Vineyard and Nantucket. Wind turbine generators (WTGs) constructed within the Lease Area will deliver power via inter-array cables to the offshore substation platforms (OSPs). The WTGs and the OSPs positions have been established based on a 1 x 1 nautical mile (1.9 x 1.9 kilometer [km]) grid oriented along the cardinal directions to maintain a uniform spacing of WTGs across all the lease areas within the Massachusetts/Rhode Island Wind Energy Area. The OSPs will collect the power and step it up to a higher export voltage. Three offshore submarine electrical export cables will pass through Muskeget Channel and Nantucket Sound to deliver power from the OSPs to the onshore transmission system. The offshore export cable will come ashore at a landing site near Falmouth, Massachusetts.

This Field Study Plan (FSP) is intended for internal distribution only to Mayflower Wind and subcontractors. The Bureau of Ocean Energy Management (BOEM) and National Marine Fisheries Service (NMFS) have been provided with a memorandum (Attachment 1), including the list of stations and figures showing the locations of these stations. Past FSPs for Spring 2020 (AECOM, 2020a) and Summer 2020 (AECOM, 2020b) have been submitted to BOEM and NMFS in their entirety.

Mayflower Wind Infaunal and Seafloor Habitat Field Study Plan Fall 2020 Mayflower Wind

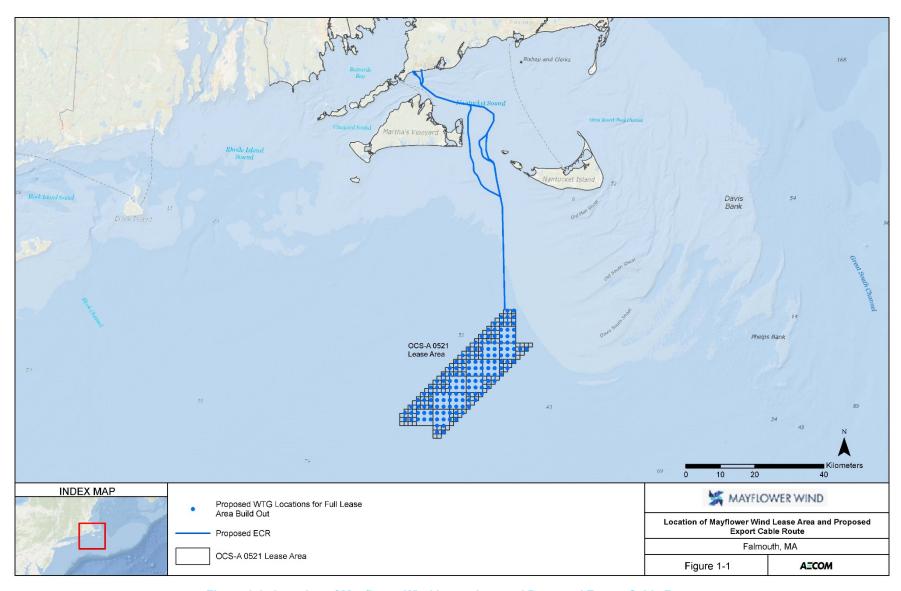


Figure 1-1. Location of Mayflower Wind Lease Area and Proposed Export Cable Route

AECOM Prepared for: Mayflower Wind LLC

2.0 Benthic Field Program Description

A benthic seafloor habitat and seafloor characterization assessment will be conducted in the Mayflower Wind Lease Area and along the proposed export cable corridor(s) (Project Area). The objectives of this benthic assessment are to document benthic seafloor habitat and sediment characteristics that will contribute toward understanding of essential fish habitat (EFH) as required by BOEM 2019 and NMFS 2020 guidelines.

This baseline seafloor survey will be performed to characterize benthic habitat within the Project Area possibly affected by the proposed construction and operations of the Project. These data will inform siting decisions with the goal of avoiding or minimizing potential impacts to sensitive biological communities and EFH. Data used to support the following benthic habitat assessment objectives will incorporate multiple lines of evidence including existing literature on marine biological communities in the region and the collection of field data (e.g., grab samples for analysis of physical parameters and benthic infaunal community analysis) and sediment profile image (SPI) and plan view (PV) imagery. This document specifically addresses the BOEM recommended benthic habitat field studies as defined within 30 CFR Subpart F §585.625 and the aforementioned BOEM 2019 and NMFS 2020 guidelines. Consistent with BOEM guidance, the objectives of this benthic habitat survey are to:

- Identify and confirm dominant benthic macrofaunal and macrofloral communities and substrate in the Lease Area and export cables from the Lease Area to landfall(s) in Falmouth, Massachusetts associated with development of the Project;
- Establish a pre-construction baseline in the Lease Area that will inform the pre-construction
 monitoring plan and may be used to assess whether detectable changes occurred in postconstruction benthic habitat associated with proposed operations;
- Collect information aimed at supporting spatial planning decisions;
- Collect information aimed at reducing uncertainty associated with baseline conditions and/or to inform the interpretation of survey results;
- Inform development of an approach to quantify substantial changes in the benthic community composition associated with the proposed Project activities; and
- Provide data to inform the EFH assessment.

3.0 Roles and Responsibilities

Fugro has primary responsibility for the execution of the field program for this Summer survey, and as such has prepared a Project Execution Plan (PEP) – Ops plan (Fugro, 2020a) to guide the execution of the benthic field program. Additionally, Fugro has prepared the Emergency Response Plan (ERP), Health Safety Security and Environment (HSSE) Plan and Quality Plan (QP) governing work execution on the vessel (Fugro, 2020b, c and d).

Field sample collection activities (benthic grab sampling, SPI/PV imagery) will be performed by Fugro and subcontractor Integral Consulting under separate contract to Mayflower Wind in conjunction with the HRGS being undertaken by Fugro. In addition to sample collection, Fugro will deliver SPI/PV imagery and interpretation results/report to Mayflower Wind, to be forwarded to AECOM for inclusion in the benthic seafloor habitat assessment report.

AECOM is responsible for subcontracting the analytical laboratory for total organic carbon (TOC) and grain size, and conducting benthic laboratory analysis, including enumeration, identification and benthic community structure analysis. Details related to the field and laboratory methodologies employed are presented herein, and in the Quality Assurance Project Plan (QAPP) (AECOM, 2020c).

The team organization for the Program is presented in the QAPP (AECOM, 2020c) including descriptions of the responsibilities for key roles involved in sample collection and analysis.

4.0 Program Schedule and Approach

To satisfy the above BOEM and NMFS objectives, a series of seasonal benthic surveys (surveys) will be conducted over the Lease Area, along the export cable route, and at control areas. Sampling surveys are currently proposed to be conducted during four seasons for two years consistent with BOEM 2019 benthic guidelines, however the sample years are not required to be continuous. For the purposes of this sampling program, the following breakdown will define seasonality for sampling. As indicated above, these seasons will each be sampled twice, but the eight events may not be continuous. The definition of the seasons for purposes of sampling are:

- Spring March 1 through May 31;
- Summer June 1 through August 31;
- Fall September 1 through November 30; and
- Winter December 1 through February 28.

Each survey will be completed, to the extent possible, within the predefined seasonal period. Actual timing within the period for a given survey will be dictated by weather conditions, other ongoing survey operations, and vessel/crew/equipment availability.

Each survey will characterize the surficial sediment quality through a series of tasks including the collection of:

- Sediment for laboratory analysis of benthic community structure and physical parameters (e.g., grain size and TOC);
- SPI/PV imaging data to determine the physical characteristics of the surficial sediment and presence of epifauna and other surface-dwelling organisms (e.g., macroalgae); and
- Real time video used to support and inform reporting according to the Coastal and Marine Ecological Classification Standard (CMECS) format as required by BOEM guidelines.

These combined techniques for assessing seafloor habitat together with high-resolution acoustic data (e.g., multibeam bathymetry, side-scan sonar and backscatter) collected during the concurrent geophysical survey, will allow Mayflower Wind to determine the baseline seafloor habitat conditions.

Results from the Lease Area and cable route study will be summarized in a brief report that will be attached as an appendix to the BOEM required Construction and Operations Plan (COP).

The following sections detail the elements of the Summer 2020 benthic surveys. This document will be updated to outline the approach for each distinct seasonal survey.

5.0 Fall 2020 Benthic Survey

5.1 Biological Sampling Program Overview

The Fall 2020 will serve as an important baseline to inform and support subsequent characterization of post-construction impacts and documentation of post-construction recovery. The results of the Fall 2020 survey together with the concurrent geophysical survey results will assist in refining the sampling scheme (number and location of samples) for subsequent surveys. This Field Study Plan (FSP) addresses details related to the Fall 2020 Survey only; a separate FSP will be prepared for subsequent surveys.

5.1.1 Sample Locations and Frequency

Figure 5-1 provides an overview of sampling locations. The Fall 2020 Survey will be comprised of:

- 19 benthic grab stations and 20 SPI/PV stations within the Lease Area; four are co-located grab and SPI/PV (Figure 5-2; Table 5-1),
- 10 benthic grab stations, 23 SPI/PV stations (three are co-located grab and SPI/PV), and four SPI/PV transects along the northern export cable route (Figure 5-3; Table 5-2);
- Two SPI/PV stations at the Mill Road and Shore Street proposed landing areas;
- One benthic grab station and three SPI/PV stations in the C' Route (one is co-located grab and SPI/PV; grab sample should only be collected if conditions are safe and appropriate to do so) (Figure 5-3; Table 5-2);
- 11 benthic grab stations and seven SPI/PV stations (one is co-located grab and SPI/PV) in the southern export cable route (Figure 5-4; Table 5-2);
- Six benthic grab stations, six SPI/PV stations and four SPI/PV transects along Route A (Figure 5-5; Table 5-3); and,
- 15 SPI/PV stations, three with co-located benthic grabs, are located within three designated control areas (Figure 5-6; Table 5-4).

Eight transects are proposed along the export cable route. The transects consist of up to eight single SPI/PV camera drops along the transect, approximately 4 on each side of the central sampling location; the center sampling locations is collected with triplicate images. The target transects are 1000 m long; 500 m to each side.

Grab and SPI/PV stations are spaced approximately 1-2 km along the export cable route with additional transects at eight locations. Sample location density in the lease area is lower than the BOEM-recommended density of one sample per 1-2 km² within the area of potential adverse effect due to the homogeneity of the lease area. Sampling locations were determined using the results of the Spring 2020 survey including imagery from SPI/PV and grab camera video, the laboratory analysis of the benthic grab samples (infauna and chemistry), and preliminary geophysical data being collected and processed by Fugro. The sampling strategy presented in this document includes increased density of sampling in the export cable route where complex habitats are known or expected to occur, and a decrease in sample density in areas that are homogenous (i.e., Lease Area and southern export cable route).

Locations have been included in the C' export cable route, which is very shallow. Previously, sampling vessels were unable to safely to sample; a different vessel being used in Fall 2020 may permit sampling in the southern part of C' export cable route. Locations have also been added in the A export cable route (Route A). This route has not previously been sampled by Mayflower Wind, but much of Route A was sampled to support the Vineyard Winds COP (Epsilon Associates Inc., 2018). Volume II of the Vineyard Winds COP was used to help determine potential areas of complex habitat.

Preliminary results from the Spring and Summer 2020 survey identified areas of complex, heterogeneous habitat in the northern portion of the export cable route, and homogeneous habitat in the southern export cable route and lease area. This is consistent with expectations in the lease area where the majority of the 2019 reconnaissance level geophysical data from TerraSond (2020) indicated a homogeneous bottom, with two notable exceptions: (1) an area with a channel and ridge was noted in the central northern edge of the Lease Area and (2) an area of potential hard bottom was noted in the central southern portion of the Lease Area. These areas are indicated in Figure 13 and Chart 4 of the TerraSond (2020) document, respectively. SPI/PV locations were added to the potential hard bottom area for Summer 2020 and will be resampled in Fall 2020.

In an agreement reached among the Massachusetts/Rhode Island Wind Energy Area (MA/RI WEA) Offshore Wind Developers in 2019, WTGs will be installed in a 1 nautical mile (nm) by 1 nm grid layout throughout the MA/RI WEA. With the WTG locations fixed (with some limited potential for micro-siting), the objective of field

sampling programs has shifted from those of earlier Wind Energy projects. With known locations for the WTGs, field sampling programs can be focused on the specific locations of anticipated project activities (foundation installations and inter-array cables), rather than more broadly across the entire Lease Area.

The area of potential effect (APE) associated with each WTG that will be installed within the Mayflower Wind Lease Area is 300 meters (m) by 300 m. The maximum APE associated with the full build-out of the Mayflower Wind Lease Area, including all potential WTGs in the grid layout and associated inter-array cables, is approximately 90 km². Based on this total Lease Area APE and BOEM guidelines, the target sampling frequency in the Lease Area was initially determined to be 60 total samples. The sampling frequency for the Lease Area and export cable route, along with the overall benthic strategy for the Mayflower Wind Project, was presented to BOEM in a Pre-Survey Meeting in January 2020. As noted above, this sampling scheme was further modified following review of the Spring 2020 results with BOEM and NMFS in a meeting held in July 2020.

Three control areas outside of, but near to, the Lease Area and export cable route with comparable physical and environmental characteristics will also be sampled to monitor natural environmental shifts that occur unrelated to the Project (Figure 5-6; Table 5-4). Five SPI/PV stations and one co-located benthic grab station will be included with each control area location.

5.1.2 Survey Vessels and Team

Two vessels will be used for this survey: the motor vessel (*M/V*) *GO Pursuit* and the ultra-shallow water vessel *M/V Westerly.* Specifications are as outlined in the Fugro (2020a) PEP.

The field team includes crew and scientific staff who are experienced with obtaining benthic samples for community analyses, sediment physical parameters, and SPI/PV/seafloor video operations. Details pertaining to the field staff (e.g., training records) are presented in the PEP prepared by Fugro (Fugro, 2020a). Before field execution, a summary of field staff will be included in the PEP (Fugro, 2020a) and updated as necessary during the survey program to reflect changes that may occur during the eight seasons of sampling.

The survey will be performed to accommodate 24-hr operations during the field sampling effort in the Lease Area and along the export cable route. Work will be completed in accordance with the ERP and HSSE Plan prepared by Fugro (2020b,c).

Table 5-1. Benthic Sampling Stations and Sample IDs in Mayflower Wind OCS-A0521 Lease Area

Station ID	Sample ID	X coordinate (m)	Y coordinate (m)	Longitude	Latitude	Depth (m)	Depth Reference
Lease Area							
062	20FA-MW0521-062-BG	393800	4529062	40.9058	-70.2610	-37	NOAA Chart 13200
064	20FA-MW0521-064-SPI	393815	4523507	40.8557	-70.2598	-44	NOAA Chart 13200
066	20FA-MW0521-066-BG	397454	4519807	40.8229	-70.2160	-44	NOAA Chart 13200
067	20FA-MW0521-067-SPI	393800	4517967	40.8058	-70.2591	-44	NOAA Chart 13200
068	20FA-MW0521-068-BG	391968	4517955	40.8055	-70.2808	-44	NOAA Chart 13200
071	20FA-MW0521-071-SPI	390104	4527231	40.8888	-70.3045	-42	NOAA Chart 13200
072	20FA-MW0521-072-BG	388248	4527218	40.8884	-70.3265	-42	NOAA Chart 13200
074	20FA-MW0521-074-BG	386395	4523519	40.8549	-70.3478	-46	NOAA Chart 13200
	20FA-MW0521-074-SPI						
075	20FA-MW0521-075-BG	388249	4521661	40.8384	-70.3255	-46	NOAA Chart 13200
077	20FA-MW0521-077-SPI	386412	4519814	40.8215	-70.3470	-48	NOAA Chart 13200
078	20FA-MW0521-078-BG	386393	4517960	40.8048	-70.3468	-48	NOAA Chart 13200
	20FA-MW0521-078-SPI						
081	20FA-MW0521-081-BG	390106	4514271	40.7721	-70.3022	-46	NOAA Chart 13200
084	20FA-MW0521-084-BG	384542	4514266	40.7713	-70.3681	-49	NOAA Chart 13200
	20FA-MW0521-084-SPI						
087	20FA-MW0521-087-BG	380855	4517969	40.8041	-70.4125	-49	NOAA Chart 13200
088	20FA-MW0521-088-SPI	380842	4519817	40.8207	-70.4130	-48	NOAA Chart 13200
090	20FA-MW0521-090-SPI	377143	4514261	40.7702	-70.4558	-51	NOAA Chart 13200
097	20FA-MW0521-097-BG	375293	4510546	40.7364	-70.4769	-53	NOAA Chart 13200
098	20FA-MW0521-098-SPI	377143	4510565	40.7369	-70.4550	-53	NOAA Chart 13200
099	20FA-MW0521-099-BG	384537	4508699	40.7211	-70.3671	-48	NOAA Chart 13200

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Station ID	Sample ID	X coordinate (m)	Y coordinate (m)	Longitude	Latitude	Depth (m)	Depth Reference
100	20FA-MW0521-100-SPI	384549	4506863	40.7046	-70.3667	-50	NOAA Chart 13200
102	20FA-MW0521-102-SPI	378986	4506855	40.7037	-70.4325	-53	NOAA Chart 13200
103	20FA-MW0521-103-SPI	373450	4508697	40.7195	-70.4984	-53	NOAA Chart 13200
105	20FA-MW0521-105-BG	367878	4506831	40.7018	-70.5639	-57	NOAA Chart 13200
107	20FA-MW0521-107-BG	371593	4504999	40.6859	-70.5196	-57	NOAA Chart 13200
113	20FA-MW0521-113-BG	362329	4501282	40.6509	-70.6284	-60	NOAA Chart 13200
114	20FA-MW0521-114-SPI	362329	4499443	40.6344	-70.6280	-60	NOAA Chart 13200
115	20FA-MW0521-115-BG	367883	4501292	40.6519	-70.5627	-60	NOAA Chart 13200
118	20FA-MW0521-118-BG	375281	4499444	40.6364	-70.4749	-58	NOAA Chart 13200
119	20FA-MW0521-119-BG	371580	4497600	40.6193	-70.5182	-60	NOAA Chart 13200
120	20FA-MW0521-120-SPI	371571	4495742	40.6025	-70.5180	-62	NOAA Chart 13200
121	20FA-MW0521-121-BG	380842	4508700	40.7206	-70.4109	-51	NOAA Chart 12300
	20FA-MW0521-121-SPI						
122	20FA-MW0521-122-SPI	382694	4510552	40.7376	-70.3893	-51	NOAA Chart 12300
123	20FA-MW0521-123-SPI	388250	4517960	40.8050	-70.3248	-44	NOAA Chart 12300
125	20FA-MW0521-125-SPI	386398	4510552	40.7381	-70.3454	-48	NOAA Chart 12300
127	20FA-MW0521-127-SPI	373434	4501281	40.6526	-70.4970	-58	NOAA Chart 12300

CRS data: NAD83 / UTM Zone 19N [26919] BG-DUP – Field duplicate for TOC and grain size only

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Table 5-2. Benthic Sampling Stations and Sample IDs along Mayflower Wind Export Cable Route

Station ID	Sample ID	X coordinate (m)	Y coordinate (m)	Longitude	Latitude	Depth (m)	Depth Reference	Notes for Fall 2020
Northern Ex	xport Cable Route							
001	20FA-MW0521-001-SPI	367209	4599240	41.5338	-70.5918	-8	NOAA Chart 13237	
002	20FA-MW0521-002-SPI	367522	4597863	41.5215	-70.5878	-22	Spring Survey	SPI/PV transect midpoint
	20FA-MW0521-002-1-SPI	367012	4597862	41.5214	-70.5939	-21	NOAA Chart 13237	western edge of transect
	20FA-MW0521-002-i-SPI	368027	4597857	41.5215	-70.5817	-21	NOAA Chart 13237	eastern edge of transect
003	20FA-MW0521-003-BG	367176	4596515	41.5093	-70.5916	-15	Spring Survey	Additional volume for USCS sieves
	20FA-MW0521-003-BG-DUP							Additional volume for USCS sieves
	20FA-MW0521-003-SPI							
004	20FA-MW0521-004-SPI	367935	4595474	41.5000	-70.5823	-23	Spring Survey	
005	20FA-MW0521-005-SPI	369186	4594507	41.4915	-70.5671	-25	Spring Survey	SPI/PV transect midpoint
	20FA-MW0521-005-1-SPI	368854	4594129	41.4881	-70.5710	-23	NOAA Chart 13237	western edge of transect
	20FA-MW0521-005-i-SPI	369466	4594922	41.4953	-70.5638	-19	NOAA Chart 13237	eastern edge of transect
006	20FA-MW0521-006-BG	370171	4593745	41.4848	-70.5551	-21	Spring Survey	Additional volume for USCS sieves
007	20FA-MW0521-007-BG	371303	4592891	41.4773	-70.5414	-23	Spring Survey	Additional volume for USCS sieves
	20FA-MW0521-007-SPI							SPI/PV transect midpoint
	20FA-MW0521-007-1-SPI	371004	4592485	41.4736	-70.5449	-7	NOAA Chart 13237	western edge of transect
	20FA-MW0521-007-i-SPI	371610	4593274	41.4808	-70.5378	-12	NOAA Chart 13237	eastern edge of transect
800	20FA-MW0521-008-BG	372652	4592474	41.4738	-70.5252	-21	Spring Survey	Additional volume for USCS sieves
	20FA-MW0521-008-BG-DUP							Additional volume for USCS sieves
	20FA-MW0521-008-SPI							SPI/PV transect midpoint
	20FA-MW0521-008-1-SPI	372494	4592004	41.4695	-70.5270	-13	NOAA Chart 13237	western edge of transect
	20FA-MW0521-008-i-SPI	372783	4592956	41.4781	-70.5237	-20	NOAA Chart 13237	eastern edge of transect
009	20FA-MW0521-009-SPI	374008	4592057	41.4702	-70.5089	-19	Spring Survey	

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Station ID	Sample ID	X coordinate (m)	Y coordinate (m)	Longitude	Latitude	Depth (m)	Depth Reference	Notes for Fall 2020
010	20FA-MW0521-010-BG	375366	4591638	41.4667	-70.4925	-17	Spring Survey	Additional volume for USCS sieves
011	20FA-MW0521-011-SPI	376700	4591226	41.4632	-70.4764	-16	Spring Survey	
012	20FA-MW0521-012-BG	378085	4590977	41.4611	-70.4598	-17	Spring Survey	Additional volume for USCS sieves
013	20FA-MW0521-013-SPI	379496	4590748	41.4593	-70.4429	-18	Spring Survey	
014	20FA-MW0521-014-BG	380863	4590526	41.4575	-70.4265	-22	Spring Survey	Additional volume for USCS sieves
	20FA-MW0521-014-BG-DUP							Additional volume for USCS sieves
015	20FA-MW0521-015-SPI	382260	4590298	41.4556	-70.4097	-21	Spring Survey	
016	20FA-MW0521-016-BG	383659	4590071	41.4538	-70.3929	-19	Spring Survey	Additional volume for USCS sieves
017	20FA-MW0521-017-SPI	385050	4589801	41.4516	-70.3762	-20	Spring Survey	
018	20FA-MW0521-018-BG	386118	4589109	41.4455	-70.3633	-19	Spring Survey	Additional volume for USCS sieves
	20FA-MW0521-018-BG-DUP							Additional volume for USCS sieves
019	20FA-MW0521-019-SPI	387369	4588220	41.4377	-70.3482	-17	Spring Survey	
020	20FA-MW0521-020-SPI	387949	4586935	41.4262	-70.3410	-8	Spring Survey	
021	20FA-MW0521-021-SPI	387770	4585464	41.4129	-70.3429	-12	NOAA Chart 13237	
022	20FA-MW0521-022-SPI	386874	4583797	41.3978	-70.3533	-16	NOAA Chart 13237	
023	20FA-MW0521-023-SPI	386190	4582525	41.3862	-70.3612	-8	NOAA Chart 13237	
024	20FA-MW0521-024-SPI	385367	4581351	41.3755	-70.3708	-15	Spring Survey	
025	20FA-MW0521-025-SPI	384288	4580452	41.3673	-70.3836	-13	Spring Survey	
026	20FA-MW0521-026-SPI	383803	4579344	41.3572	-70.3891	-6	NOAA Chart 13237	
027	20FA-MW0521-027-SPI	384270	4577932	41.3446	-70.3833	-11	NOAA Chart 13237	
028	20FA-MW0521-028-SPI	384546	4576478	41.3315	-70.3797	-12	NOAA Chart 13237	
029	20FA-MW0521-029-SPI	385414	4575061	41.3189	-70.3691	-5	NOAA Chart 13237	
030	20FA-MW0521-030-BG	386815	4574476	41.3138	-70.3522	-6	NOAA Chart 13237	Additional volume for USCS sieves

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Station ID	Sample ID	X coordinate (m)	Y coordinate (m)	Longitude	Latitude	Depth (m)	Depth Reference	Notes for Fall 2020
Mill Road a	nd Shore Street Landing Area	as						
ALT01	20SP-MW0521-ALT01-SPI	365742	4598989	41.5313	-70.6094	-8	NOAA Chart 13237	
ALT02	20SP-MW0521-ALT02-SPI	366720	4597744	41.5202	-70.5974	-11	NOAA Chart 13237	
C' Cable Ro	oute							
CP2	20FA-MW0521-CP2-SPI	385852	4580106	41.3644	-70.3648	-7	Spring Survey	
CP3	20FA-MW0521-CP3-BG	385770	4578280	41.3479	-70.3654	-5	Spring Survey	Obtain if field conditions indicate practical and safe to do so. Additional volume for USCS sieves
	20FA-MW0521-CP3-SPI							
CP4	20FA-MW0521-CP4-SPI	386025	4576510	41.3320	-70.3621	-5	Spring Survey	
Southern E	xport Cable Route							
031	20FA-MW0521-031-SPI	387972	4573704	41.3070	-70.3383	-6	NOAA Chart 13237	
032	20FA-MW0521-032-BG	388278	4572325	41.2946	-70.3344	-7	NOAA Chart 13237	Additional volume for USCS sieves
034	20FA-MW0521-034-BG	388721	4569520	41.2694	-70.3286	-14	Spring Survey	Additional volume for USCS sieves
035	20FA-MW0521-035-SPI	388983	4568126	41.2569	-70.3252	-20	Spring Survey	
036	20FA-MW0521-036-BG	389279	4566736	41.2445	-70.3214	-22	Spring Survey	Additional volume for USCS sieves
124	20FA-MW0521-124-BG	389514	4565635	41.2346	-70.3184	-26	Spring Survey	
037	20FA-MW0521-037-SPI	389575	4565346	41.2320	-70.3176	-27	Spring Survey	
038	20FA-MW0521-038-BG	389871	4563957	41.2195	-70.3138	-25	Spring Survey	
040	20FA-MW0521-040-BG	390463	4561180	41.1946	-70.3063	-27	Spring Survey	
041	20FA-MW0521-041-SPI	390520	4559761	41.1818	-70.3053	-30	Spring Survey	
044	20FA-MW0521-044-BG	390623	4555511	41.1435	-70.3034	-31	Spring Survey	
046	20FA-MW0521-046-BG	390691	4552662	41.1179	-70.3020	-33	NOAA Chart 13200	
050	20FA-MW0521-050-BG	390823	4547002	41.0669	-70.2995	-33	NOAA Chart 13200	
051	20FA-MW0521-051-SPI	390857	4545564	41.0540	-70.2988	-33	NOAA Chart 13200	

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Station ID	Sample ID	X coordinate (m)	Y coordinate (m)	Longitude	Latitude	Depth (m)	Depth Reference	Notes for Fall 2020
054	20FA-MW0521-054-BG	390960	4541315	41.0158	-70.2968	-37	Spring Survey	
	20FA-MW0521-054-SPI							
057	20FA-MW0521-057-SPI	391063	4537044	40.9773	-70.2948	-38	Spring Survey	
058	20FA-MW0521-058-BG	391092	4535638	40.9646	-70.2942	-38	Spring Survey	

CRS data: NAD83 / UTM Zone 19N [26919]
BG-DUP – Field duplicate for TOC and grain size only
"Additional volume for USCS sieves" – sample located in Massachusetts state waters. Grain size analysis to be conducted using standard (Wentworth) sieves and USCS sieves to ensure a #200 fines fraction is obtained.

Table 5-3. Benthic Sampling Stations and Sample IDs within Export Cable Route A

Station ID	Sample ID	X coordinate (m)	Y coordinate (m)	Longitude	Latitude	Depth (m)	Depth Reference	Notes for Fall 2020
Export Cabl	e Route A							
A01	20FA-MW0521-A01-SPI	381348	4589281	41.4463	-70.4204	-8	NOAA Chart 13237	SPI/PV transect midpoint
	20FA-MW0521-A01-1-SPI	380846	4589370	41.4471	-70.4265	-10	NOAA Chart 13237	western edge of transect
	20FA-MW0521-A01-i-SPI	381850	4589237	41.4460	-70.4144	-7	NOAA Chart 13237	eastern edge of transect
A02	20FA-MW0521-A02-SPI	380805	4588081	41.4355	-70.4267	-5	NOAA Chart 13237	
A03	20FA-MW0521-A03-BG	380597	4586679	41.4228	-70.4289	-3	NOAA Chart 13237	Additional volume for USCS sieves
A04	20FA-MW0521-A04-SPI	380594	4585300	41.4104	-70.4287	-6	NOAA Chart 13237	
A05	20FA-MW0521-A05-BG	380595	4583884	41.3976	-70.4284	-5	NOAA Chart 13237	Additional volume for USCS sieves
	20FA-MW0521-A05-BG-DUP							Additional volume for USCS sieves
A06	20FA-MW0521-A06-SPI	380567	4582511	41.3853	-70.4284	-4	NOAA Chart 13237	SPI/PV transect midpoint
	20FA-MW0521-A06-1-SPI	380062	4582511	41.3852	-70.4345	-7	NOAA Chart 13237	western edge of transect
	20FA-MW0521-A06-i-SPI	381067	4582506	41.3853	-70.4225	-10	NOAA Chart 13237	eastern edge of transect
A07	20FA-MW0521-A07-SPI	380754	4581100	41.3726	-70.4259	-11	NOAA Chart 13237	SPI/PV transect midpoint
	20FA-MW0521-A07-1-SPI	380254	4581090	41.3724	-70.4319	-7	NOAA Chart 13237	western edge of transect
	20FA-MW0521-A07-i-SPI	381271	4581099	41.3727	-70.4197	-12	NOAA Chart 13237	eastern edge of transect
A08	20FA-MW0521-A08-BG	380967	4579695	41.3600	-70.4231	-7	NOAA Chart 13237	Additional volume for USCS sieves
A09	20FA-MW0521-A09-SPI	381079	4578301	41.3474	-70.4215	-14	NOAA Chart 13237	SPI/PV transect midpoint
	20FA-MW0521-A09-1-SPI	380585	4578271	41.3471	-70.4274	-14	NOAA Chart 13237	western edge of transect
	20FA-MW0521-A09-i-SPI	381584	4578316	41.3476	-70.4155	-7	NOAA Chart 13237	eastern edge of transect
A10	20FA-MW0521-A10-SPI	381287	4575519	41.3224	-70.4185	-12	NOAA Chart 13237	
A11	20FA-MW0521-A11-SPI	382130	4572960	41.2995	-70.4079	-7	NOAA Chart 13237	
A12	20FA-MW0521-A12-BG	382193	4571605	41.2873	-70.4069	-7	NOAA Chart 13237	Additional volume for USCS sieves

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Station ID	Sample ID	X coordinate (m)	Y coordinate (m)	Longitude	Latitude	Depth (m)	Depth Reference	Notes for Fall 2020
A13	20FA-MW0521-A13-SPI	383106	4570129	41.2741	-70.3957	-13	NOAA Chart 13237	
A14	20FA-MW0521-A14-BG	384279	4567674	41.2522	-70.3812	-26	NOAA Chart 13237	Additional volume for USCS sieves
A15	20FA-MW0521-A15-SPI	385160	4566593	41.2426	-70.3705	-27	NOAA Chart 13237	
A16	20FA-MW0521-A16-BG	387541	4565132	41.2298	-70.3418	-29	NOAA Chart 13237	Additional volume for USCS sieves

CRS data: NAD83 / UTM Zone 19N [26919]
BG-DUP – Field duplicate for TOC and grain size only
"Additional volume for USCS sample located in Massachusetts state waters. Grain size analysis to be conducted using standard (Wentworth) sieves and USCS sieves to ensure a #200 fines fraction is obtained.

Table 5-4. Benthic Sampling Stations and Sample IDs within the Control Areas

Station ID	Sample ID	X coordinate (m)	Y coordinate (m)	Longitude	Latitude	Depth (m)	NOAA Chart Reference
Northern Co	ntrol Area						
C01	20SU-MW0521-C01-SPI	383729	4562663	41.2070	-70.3868	-29	13237
C02	20SU-MW0521-C02-SPI	386544	4562685	41.2076	-70.3533	-29	13237
C02	20SU-MW0521-C02-BG	300344	4502005	41.2076	-70.3333	-29	13237
C03	20SU-MW 0521-C03-SPI	385154	4561350	41.1954	-70.3696	-31	13237
C04	20SU-MW0521-C04-SPI	383709	4560164	41.1845	-70.3866	-32	13237
C05	20SU-MW0521-C05-SPI	386492	4560091	41.1842	-70.3534	-32	13237
Western Co	ntrol Area						
C06	20SU-MW0521-C06-SPI	352555	4499406	40.6323	-70.7435	-62	12300
C07	20SU-MW0521-C07-SPI	355340	4499302	40.6319	-70.7105	-62	12300
C08	20SU-MW0521-C08-SPI	353949	4498138	40.6212	-70.7267	-62	12300
C09	20SU-MW0521-C09-SPI	352520	4496842	40.6092	-70.7433	-66	12300
	20SU-MW0521-C09-BG	332320	4490642	40.0092	-70.7433	-00	12300
C10	20SU-MW0521-C10-SPI	355309	4496790	40.6093	-70.7103	-64	12300
Eastern Con	trol Area						
C11	20SU-MW0521-C11-SPI	403884	4518515	40.8120	-70.1396	-35	12300
C12	20SU-MW0521-C12-SPI	406638	4518473	40.8120	-70.1070	-35	12300
C13	20SU-MW0521-C13-SPI	405261	4517168	40.8001	-70.1231	-37	12300
	20SU-MW0521-C13-BG	400201	4517100	40.0001	-70.1231	-31	12300
C14	20SU-MW0521-C14-SPI	403838	4515987	40.7893	-70.1398	-38	12300
C15	20SU-MW0521-C15-SPI	406654	4515945	40.7892	-70.1064	-38	12300

CRS data: NAD83 / UTM Zone 19N [26919]

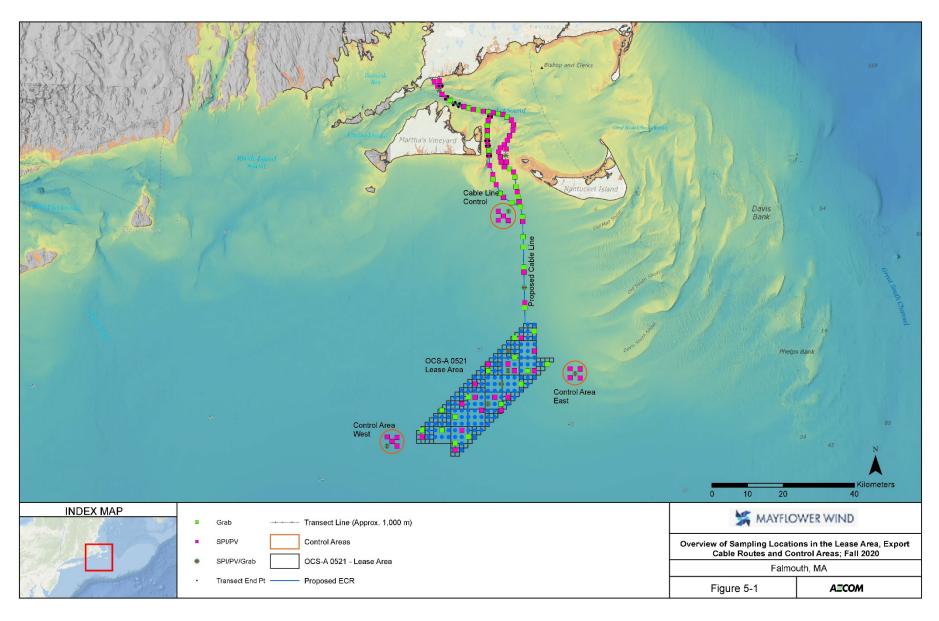


Figure 5-1. Overview of Sampling Locations in the Lease Area, Export Cable Routes and Control Areas: Fall 2020

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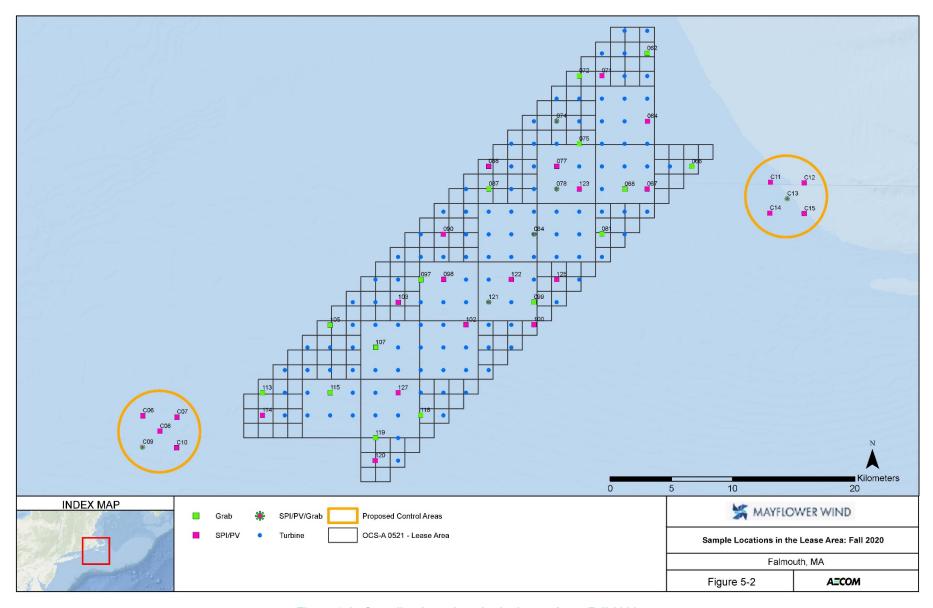


Figure 5-2. Sampling Locations in the Lease Area: Fall 2020

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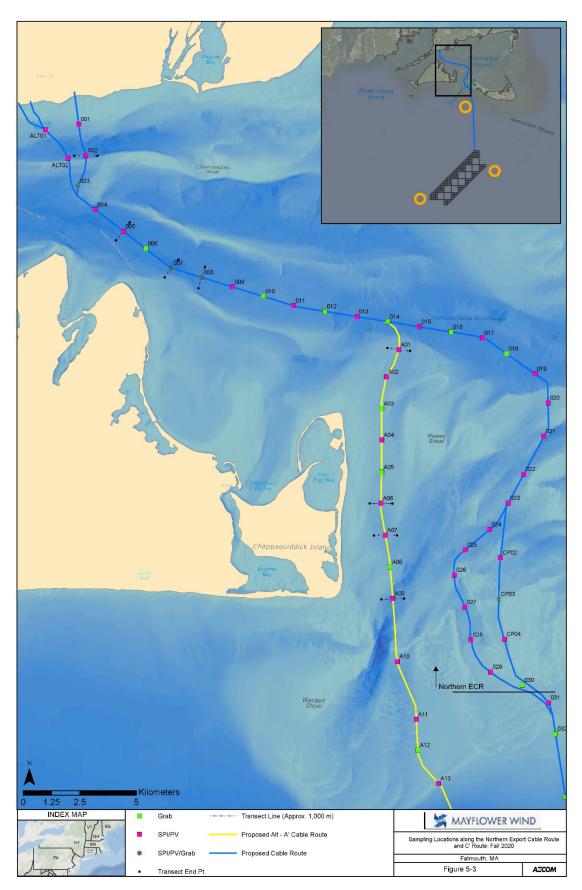


Figure 5-3. Sampling Locations along the Northern Export Cable Route and C' Route: Fall 2020 BUSINESS PROPRIETARY COMPANY CONFIDENTIAL

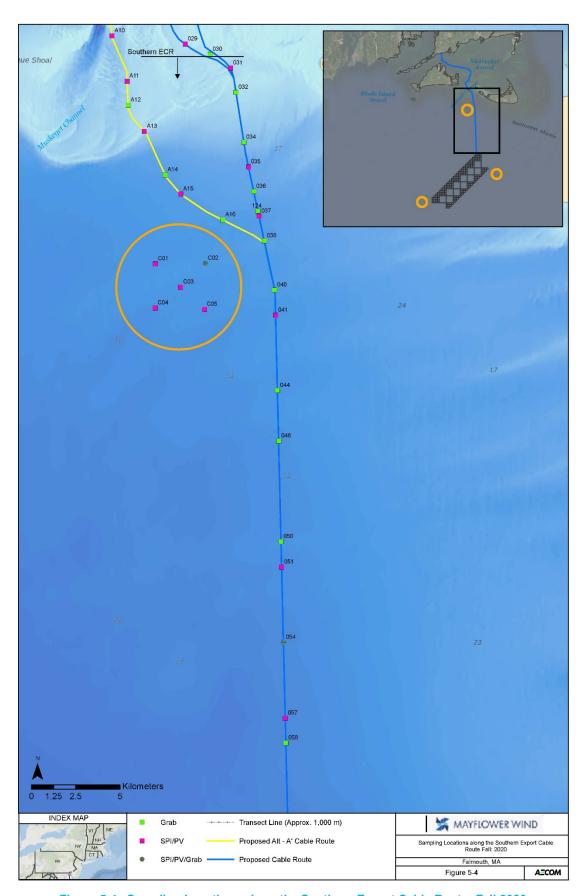


Figure 5-4. Sampling Locations along the Southern Export Cable Route: Fall 2020

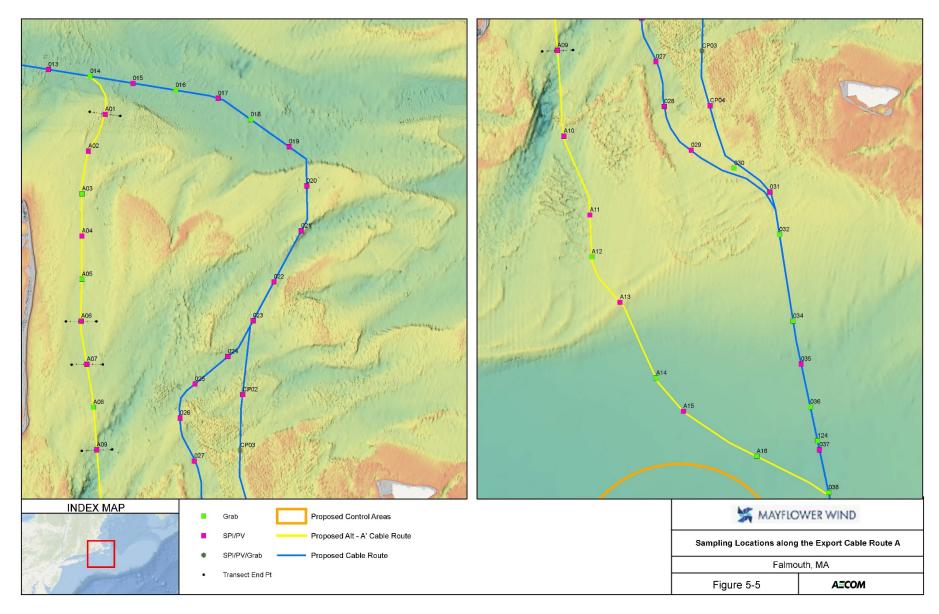


Figure 5-5. Sampling Locations along the Export Cable Route A

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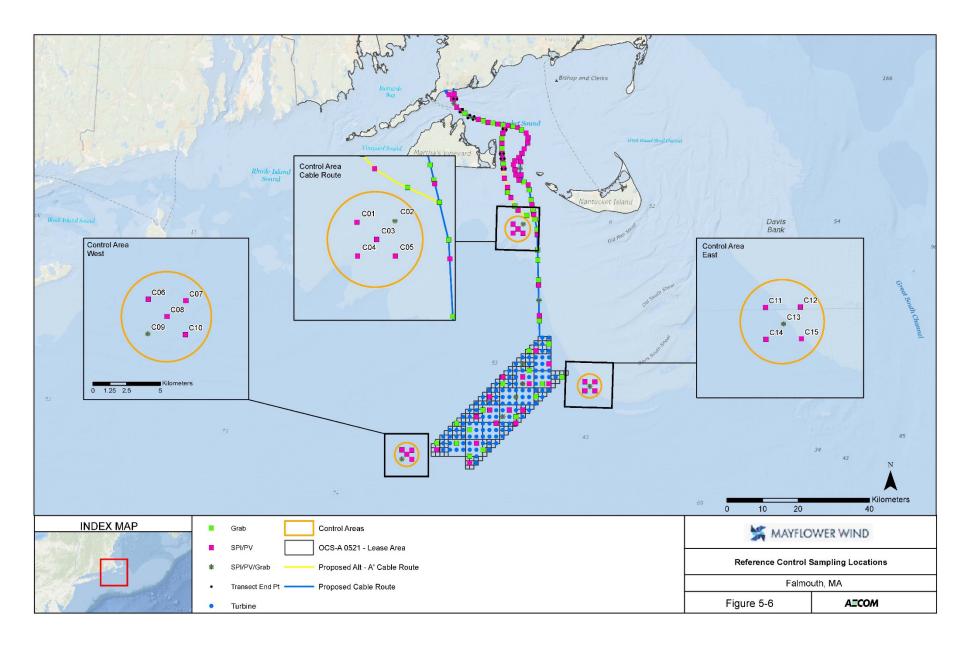


Figure 5-6. Reference Control Sampling Locations

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5.2 Benthic Grab Sampling Methodology

5.2.1 Sample Collection

During the Fall 2020 survey, surficial sediment grab samples will be collected from 19 locations within the Lease Area, 28 locations along the export cable route (10 in the northern cable route and 11 in the southern cable route, one along C' route and six along Route A), and at three control areas for analysis of grain size, TOC, and benthic community structure. Benthic sediment will be collected using a Ted Young-modified double Van Veen grab sampler, with each bucket of the grab sampler having an area of (0.04 square meters [m²]). One of the buckets will be processed in the field for benthic infaunal community assessment. One of the buckets will be selected for analysis of physical parameters (e.g., grain size and TOC). Details related to the modified grab sampler are provided in the PEP (Fugro, 2020a). The grab sampler is also equipped with a real time high definition (HD) video camera, scaling lasers and a light emitting diode (LED) light.

Locations of grab samples will be considered on target if the location of penetration is within 25 m of the target location. Target station locations have been determined as part of the initial field planning effort and with review of existing NOAA chart data and data collected during the Spring 2020 survey. Every effort will be made to collect samples as planned. Station locations may shift based on review of new geophysical data or other survey data obtained, and/or conditions encountered in the field at the time of sampling (e.g., hard bottom or insufficient water depths). In the event that a sample cannot be collected at the proposed target location, a decision to move the station will be made in conjunction with the Mayflower Wind program manager or offshore client representative. Locations will be moved laterally or to either side of the proposed location and when possible within a 500 m radius of the proposed ECR. The coordinates of the new sample location will be recorded, and the deviation noted on the field data sheet. For locations of a failed grab attempt, video feed from the grab camera will be recorded and retained for documentation of conditions.

Conditions may be encountered that may preclude the collection of acceptable benthic infaunal grab samples and/or SPI/PV images at a given location. Such conditions warranting the relocation of sampling stations may include, but are not limited to, underlying geologic and sediment conditions, physical obstructions on the bottom, active fishing gear, water depth.

Where an initial attempt to collect a benthic grab sample or SPI/PV image fails, up to three attempts may be made to collect a benthic grab or SPI/PV images at a given location. However, if evidence is such that repeated attempts will not likely yield a successful outcome, then relocation may occur without repeat attempts to secure a sample/image at the original location.

Where necessary, sampling stations along the planned export cable route may be relocated:

- By reducing the separation distance between stations to locate the sample station to avoid the
 obstructing condition while maintaining approximately the same center line as the existing sampling
 station locations; changes in the separation of sampling locations should be the minimum required to
 avoid the obstructing condition; or
- By shifting off the centerline of the current sampling locations to a nearby location which avoids the
 obstructing condition; the distance of the shift off the center line should be the minimum required to
 avoid the obstructing condition.

Where necessary, sampling stations within the lease area may be relocated to the nearest wind turbine generator (WTG) tower location which does not already have a sampling location. A table of coordinates is attached (Attachment 2) for the WTG tower locations that do not have a sample station per this FSP. WTG towers that are in an area of potential hardbottom/complex habitat previously identified have been excluded.

Where relocation is necessary, the field records should document the obstructing condition encountered, and the coordinates of the new sampling location. Available physical evidence which supports a decision to relocate (e.g., photographs, water depth information, grab cam video or SPI/PV images) should be retained.

Decisions for sampling station relocations will be made in consultation with the client representative onboard the vessel.

Fugro will record the location of the grab using surface positioning In waters too shallow for accurate slant ranges to be established, a position will be taken using the assumption that the grab is directly below the A-frame/sheave. The lowering cable will be observed for significant deviation from vertical in these shallow water stations. Sediment grabs will be examined for acceptability and should meet the following minimum requirements to be considered sufficient for retention:

- 1. Greater than 70 percent full;
- 2. Not over-penetrated where sediment exudes from outside the cover of the grab;
- 3. Small amount of overlying water at the surface of the grab;
- 4. Undisturbed sediment surface; and
- No visible evidence of washout (i.e., jaws of grab are firmly closed).

If the grab does not meet the standards listed above, it will be discarded, and another attempt will be made. A total of three attempts will be made before that station is abandoned and moved an appropriate distance (at the discretion of the onboard lead scientist and client representative).

Upon successful collection, a photograph of the grab surface will be taken, with station label visible in the photo. The following physical features of each grab will be recorded:

- Depth of penetration;
- · Sediment color;
- Visual sediment grain size description;
- Evidence of noticeable odor/sheen; and
- Surface features and presence of conspicuous macrofauna on the surface of the grab sample (description of type). Care should be taken to ensure that features of the sediment surface are visible in the deck photograph.

5.2.2 Subsample Collection for Sediment Characterization

After the initial inspection, one bucket/grab of the grab sampler will be designated for physico-chemical sampling. From that bucket, grain size and TOC samples will be extracted. An 8-ounce (approximate) sediment sample from the designated bucket will be obtained for analysis of sediment texture and a 120-milliliter (mL) or 4-ounce sediment subsample will be obtained for TOC analysis. Grain size/texture samples will be collected from the top 10 cm of the sediment in the bucket; TOC will be collected from the top 2 cm. Epifauna should not be included in sample containers for TOC or grain size.

The Wentworth sieve sizes will be used for all samples for analysis of grain size distribution. Stations within Massachusetts state waters will be analyzed for grain size using two sieve sizes. Sieves for Wentworth classification and for USCS classification with both be used. The USCS data will provide information on the percent of sediment that is "fines" using a #200 sieve, per MADEP discussion. If possible, two containers will be filled at these locations to ensure adequate mass of sediment is available for both analyses. The stations subject to these analyses are:

- 003
- **•** 006
- 007
- 008
- **•** 010
- 012

- 014
- 016
- **018**
- 030
- CP3
- **0**32
- 034
- **036**
- A03
- A05
- A08
- A12
- A14
- A16

General requirements for handling of sediment and organisms while in the field, including sample container and storage requirements and shipping details are provided in Table 5-5 and summarized below. Specific details are outlined in the Benthic Habitat Study QAPP (AECOM, 2020c).

Mothod

Table 5-5. Proposed Samples to be Collected

Sample (Naming Code)	Analytes	Sampling Procedure/ Preservation	Storage	Holding Time	Analysis Method	Method Detection Limit (with unit)
Physico- chemical Parameters (P1)	тос	120- mL or 4-ounce glass jar with Teflon lined cap, approximately 80% full	≤6°C	14 days (Lloyd Kahn) or 28 days (9060A)	EPA Region 2 Lloyd Kahn or EPA 9060A	0.01 %
Physico- chemical Parameters (P2)	Grain Size/Texture	8-ounce plastic	Ambient temperature	NA	ASTM ^(a) D6913/ D7928 ^(b)	NA
	Sediment type					
	aRPD					
	Sediment Oxygen Demand					
Sediment	Sedimentary Methane		Electronically		5	
Profile Image	Thiophilic Bacteria	NA	with server back	NA	Desktop Analysis	NA
(SPI)	Infaunal Successional Stage Other Biological Features (See Section 2.4.4.7 of the QAPP		ир			
Benthic Infauna	Taxonomic classification	1 or 0.5-liter (L) plastic jars (depending on the sample volume)	Ambient temperature	NA	Microscopy	NA
	Biomass	containing sodium borate; field preserved with 10% buffered formalin	tетпрегаци е		Wet weight	NA

⁽a) ASTM = American Society for Testing and Materials

Samples for TOC analyses will be placed in the appropriate containers and kept cool in sturdy coolers with ice, or refrigerators, to maintain a holding temperature of ≤6°C. Sediment samples for grain size do not have

⁽b) Method modified to use Wentworth classification sieve sizes

specific temperature requirements for storage. Samples for benthic infauna community will be preserved with a 10 percent (%) buffered formalin solution and should be kept in a cooler or sturdy box separate from other samples and out of excess sun or heat.

Field duplicate sediment grain size and TOC samples will be obtained at a rate of 10 percent of the total number of samples collected (n=5). Details of locations and sample IDs, including field duplicates, are presented in Tables 5-1 through 5-4. Should sufficient volume not be available in a single grab bucket to obtain duplicate samples for both TOC and grain size, the grain size duplicate will be collected at the next benthic grab station. Sample jar labels will be updated as necessary to reflect the actual location where duplicate samples are collected.

After the survey is completed, the samples will be transported under custody (i.e., by hand or via shipping courier) to the appropriate laboratories for analysis. Samples will be on ice, icepacks (or comparable). in coolers with protective layers of foam or bubble wrap to protect from breakage and at the appropriate temperature during shipping. Temperature loggers and or temperature blanks will be used on board the vessel to verify samples have stayed at specified temperatures during transport.

5.2.3 Benthic Sample Field Processing

Samples for benthic infaunal community analyses will be sieved aboard the vessel using screened (i.e., filtered to remove pelagic organisms) sea water through a clean 500-micron mesh sieve using **gentle water pressure**; organisms are <u>fragile</u>, and the stream of water must be gentle enough to minimize damage to ensure they can be identified to lowest taxonomic level. During sieving, the following should be noted:

- 1. Samples of coarse sand where majority is retained on the sieve should be packaged in their entirety in 1-gallon sample containers.
- 2. Should samples include tube-building anemones (e.g., cerianthid), these organisms should be placed in a separate sample jar from the rest of the organisms. Cerianthids burrow into bottom sediments and build thick tubes comprised of mud, sand and mucus. In the bucket without overlying water to suspend the tube, the tube will appear as a dark brown or black gelatinous mound.

After sieving, the sample will be placed in a pre-labeled sample jar (or jars) and preserved using a 10 % buffered formalin solution. Organisms are transferred to the sample jars by gently scooping the sieve residuals into the jars and using a rinse bottle containing seawater to rinse the remaining sieve contents into the jar. Excessive (see below regarding preservation) rinsate water should be decanted back to the sieve, and organisms re-washed into the jar.

The sample containers should not contain more than 50% solids (i.e., benthic organisms and residual sediments that do not pass through the 500-micron sieve). The solution in the final sample should have a **final concentration of preservative of ideally not less than 8-10 percent buffered formalin concentration**. To achieve this, the volume of rinsate must be carefully monitored and minimized, and the ratio of rinsate water to 10% buffered formalin cannot be greater than 1:4. The sample must be **gently inverted several times to fully expose all organisms to the formalin**. Residual sodium borate may be present in the sample jars; careful inversion of the jars will dissolve the majority of the sodium borate; since the preservative solution is pre-buffered, full dissolution is not necessary.

This fixative concentration will ensure the exoskeleton, shell, and other hard parts of the organisms do not disintegrate and that the entire sample is fully preserved with the formalin. Preserved samples will be transported to the laboratory under Chain of Custody as described in the AECOM QAPP (AECOM, 2020c).

5.2.4 Benthic Sample Laboratory Processing

The benthic laboratory will log the receipt of samples and Chain of Custody. Samples will be transferred from formalin to ethanol under controlled conditions using safety measures that include protective eyewear, gloves, laboratory coat, and fume hood as described in the Task Hazard Analyses (THAs). Samples of coarse sand will be elutriated prior to sorting.

5.2.4.1 Sorting

Upon receipt at the laboratory, samples will be transferred from formalin to ethanol and stained with rose bengal. Samples will then be sorted to remove benthic organisms from residual debris. For sorting QA/QC, every tenth sample (i.e., 10 percent of sample residues) sorted by an individual sorter will be resorted by a different sorter to determine if organisms were missed. If more than 10 percent of the total number of organisms were not removed from the samples then remaining nine samples will also be resorted.

5.2.4.2 Taxonomy

Organisms will be identified to Lowest Practical Taxonomic Level (LPTL), which balances effort of identification with cost efficiency. A dedicated Project benthic infaunal reference collection will be developed and maintained that includes at least one individual of each type of organism identified and will be holistically developed throughout the multiple seasons of sampling effort. Species recognized as introduced (non-indigenous) will be noted. Macrofloral identifications will be performed from seafloor video and plan-view camera imagery. No macrofloral identifications will be performed from the benthic infaunal samples. Oligochaetes will be identified to Class level only. Meiofauna will not be identified (e.g., Nematoda, Ostracoda, and Harpacticoida). Enumeration and identification procedures are detailed in the Benthic Infaunal and Seafloor Habitat Study QAPP (AECOM, 2020c).

Not all organisms may be identified to species level and/or are not known benthic species. Sample sorting will be done according to AECOM SOP MW-B-001, April 2020, Benthic Infauna Sample Processing. Organism clusters such as hydroids and bryozoans will be picked from the sediment in order to provide presence/absence information only, and barnacles and shell-boring animals (epifaunal animals) will be picked from the sample but entered on data sheets as presence only. Prior to analysis of the soft-bottom faunal data, modifications to the dataset will be made. For example, some taxa (e.g., epifaunal, encrusting, or non-benthic taxa) will be eliminated from all calculations. Other taxa will be included in calculations of abundance but not diversity; such taxa are usually those infaunal organisms that cannot be identified to at least the genus level. Only those individuals identified to genus or species level will be included in all remaining calculations (e.g., diversity, evenness, number of species, multivariate analyses).

5.2.4.3 Biomass

Once organisms have been identified to LPTL, wet-weight biomass will be performed. Wet-weight measurements preserve organisms intact and allow for the development of a specimen reference collection that can be used in the future to inform post-Project implementation potential impacts.

5.3 High Definition Real Time Video

Real time video will be used in conjunction with sediment grab operations. High Definition, low logistics camera and lighting system that provides real time imagery over the same cable used to raise and lower the grab is proposed for use. Still images may be extracted from the video as appropriate. The video will have position, station name, project info and other relevant information recorded to the video using appropriate data overlay software.

Data from the video supports and informs reporting products according to the Coastal and Marine Ecological Classification Standard (CMECS) format as required by BOEM guidelines. Video data of the seafloor, plus physical sampling the sediment and benthos, uniquely inform three of the four main CMECS components (Geoform, Substrate, and Biotic). Submerged aquatic vegetation (SAV) including macroalgae will be noted and abundance qualified. Eelgrass, if seen, will be documented using the terminology provided in Figure 5-7.

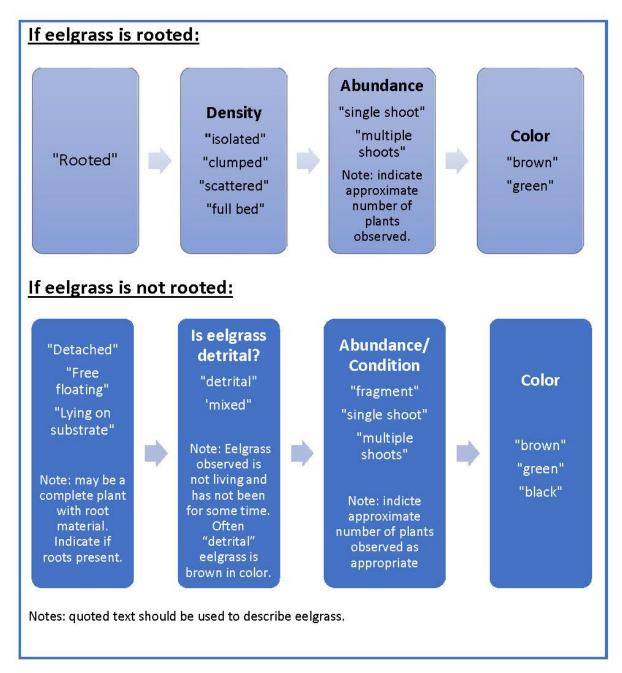


Figure 5--7. Eelgrass Characterization Terminology

5.4 Sediment Profile Image Collection and Analysis

A SPI/PV survey will be performed at the Lease Area (20 locations), along the export cable routes (32 individual locations) and at the three control areas (five stations per control area). In addition to the individual sampling location, transect sampling will be conducted at five (5) locations along the northern export cable route, one (1) location along the southern export cable route, and four (4) locations in the Route A export cable route. Transect sampling consists of single SPI/PV image pairs (i.e., rather than triplicate pairs) collected from up to four locations to each side of the main individual location (i.e., the location on the export cable route which is sampled in triplicate). Up to eight single image pairs will be collected from a target transect 1000 m in length. The sequential number sequence is XXX-1 through XXX-i, where XXX is the main individual location, the transect sample XXX-1 is located on the western edge of the transect, and the XXX-i

location is the final image pair collection on the eastern edge of the transect. If sampling is initiated on the eastern side of the transect, that number will be XXX-8 and numbers will decrease (XXX-7, XXX-6, etc.) moving west. During transect sampling, the camera will remain deployed (i.e., not brought up to deck) between stations. As such, usable images may not be collected from all transect sampling locations. Images will be collected from locations approximately 125 m apart along the transect, assuming 8 transect samples over 1000 m. The sampling locations on the transect may be offset or moved along or adjacent to the target transect, consistent with other sampling, based on field conditions.

The camera will be within 25 m of the field-determined target location, with images collected, as possible, in an array around the center target location. The SPI/PV imaging will be used to determine the physical characteristics of sediment and to assess benthic colonization/recolonization status of the site and within the reference areas. The analysis of SPI/PV will include CMECS categorization as recommended with the NMFS 2020 guidelines. Details pertaining to the equipment, field methods, and procedures to be used to collect and analyze the SPI and PV images for the Project are presented in the Benthic Infaunal and Seafloor Habitat Study QAPP (AECOM, 2020c) and the PEP (Fugro, 2020a). For locations of a failed SPI attempt, PV images will be recorded and retained for documentation of conditions. Submerged aquatic vegetation (SAV) including macroalgae will be noted and abundance qualified. Eelgrass, if seen, will be documented using the terminology provided in Figure 5-7.

6.0 Health Safety Security and Environment (HSSE)

The following briefly summarizes the anticipated HSSE activities and plans required for the execution of the work. Field sampling activities will be addressed in separate Emergency Response Plan and HSSE plan developed by Fugro (2020b,c). This HSSE plan will be augmented by THAs that address on board preservation of benthic samples and laboratory-specific protocols for handling and sorting benthic infauna samples.

6.1 Sample Collection, Handling and Shipping

General requirements for handling of sediment and organisms while in the field, including sample container and storage requirements and shipping details, are provided in Table 5-4. Specific details are outlined in the Benthic Habitat Study QAPP (AECOM, 2020c). Specific HSSE details related to shipboard activities including sample collection are outlined in the HSSE Plan (Fugro, 2020c).

Potential hazards associated with sample handling and shipping include:

- Physical hazards of handling heavy containers (e.g., sample coolers);
- Specific chemical hazards related to the preservatives (i.e., formalin solution); and
- Physical hazards associated with glass containers on the vessel.

6.2 Laboratory Sample Analysis

Health and safety considerations for work associated with infaunal sample processing in the laboratory will be addressed in a THA identifying physical, chemical, and biological hazards. The THA will specifically address:

- Physical hazards of handling heavy equipment (sample coolers);
- Specific chemical hazards related to the fixative and preservatives; and
- Physical hazards (ergonomic and eye strain) associated with microscope use.

The laboratory team has the authority to stop work if an unsafe condition is perceived until the conditions are fully remedied to the satisfaction of the laboratory manager.

7.0 Benthic Infaunal Data Interpretation and Presentation

7.1 Data Interpretation

The benthic survey data will be interpreted in the context of the underlying geological resources in the area. Benthic species abundance will be correlated with benthic habitat type, so that patterns of species distribution and abundance will be discerned, and species assemblages identified. Use of multivariate analysis tools such as Bray-Curtis similarity calculation can be helpful with data interpretation and determination of habitat trends. GIS spatial mapping is expected to be used in conjunction with the multivariate analysis and data for visualization of habitat types. Metrics such as abundance, dominant species, evenness, diversity, and density of organisms will be calculated.

The characterization of benthic resources in the Project Area will include, the following components:

- Sample manifest and description (sample ID, date, time, latitude, longitude, water depth, and sample description);
- Abundance of species (total number of individuals, species richness, percent cover, and sample reference collection);
- Shannon's diversity Index (H'), and Pielou's evenness index (J') per sample;
- Biomass per unit volume of sediment sieved; and
- Multivariate analyses of benthic community including but not limited to Bray-Curtis analysis, principal component analysis, and non-linear multidimensional scaling.

7.2 Reporting

Final benthic survey results will be provided in a detailed technical report with figures and tabulated results that will be used for local/state permitting. It is anticipated that the data from Fall 2020 will not be included in the COP. Sampling locations will be included as a GIS file. The report will further discuss potential cumulative impact results anticipated from the proposed Project including an assessment of taxonomic abundance estimates, analysis of the effectiveness of survey techniques, comparison with existing control areas, and identification of survey methods that were considered less than effective. Specific details related to data analysis and reporting are outlined in the Benthic Habitat Study QAPP (AECOM, 2020c).

8.0 Quality Assurance and Control

Procedures for quality assurance/quality control (QA/QC), documentation and reporting will be followed as specified in the Benthic Infaunal and Seafloor Habitat Study QAPP (AECOM, 2020c) as well as the Fugro Quality Plan (Fugro, 2020d).

9.0 Schedule/Timeframes

Typical, standard turnaround time from sample collection to benthic community sorting and taxonomy is 60 to 90 days, depending on number of samples and abundances of organisms. Analysis of SPI/PV images typically takes 30 to 60 days (or longer depending on the number of images obtained) and is similar to the

amount of time necessary to analyze the benthic grabs. SPI/PV interpretative reports can be expected within 90 days after mobilization.

10.0 References Cited

AECOM, 2020a. Mayflower Wind Benthic Infaunal and Seafloor Habitat Field Study Plan Spring 2020. May 5, 2020 and subsequent addendum

AECOM, 2020b. Mayflower Wind Benthic Infaunal and Seafloor Habitat Field Study Plan Summer 2020. August 18, 2020.

AECOM, 2020c. Benthic Infaunal and Seafloor Habitat Study Quality Assurance Project Plan [Revision 1] 5 August 2020 or current version.

BOEM, 2019. Guidelines for Providing Benthic Habitat Survey Information for Renewable Energy Development on the Atlantic Outer Continental Shelf Pursuant to 30 CFR Part 585. United States Department of the Interior, Bureau of Ocean Energy Management Office of Renewable Energy Programs, June 2019.

Fugro, 2020a. Mayflower Wind 2020 Offshore Windfarm High Resolution Geophysical Survey Project Execution Plan – Ops Plan | Atlantic Ocean, Offshore Massachusetts: 02.20030002-PEP-Ops-Plan [00] | 10 March 2020 or current version.

Fugro, 2020b. Mayflower Wind 2020 Offshore Windfarm High Resolution Geophysical Survey Project Execution Plan – Emergency Response Plan | Atlantic Ocean, Offshore Massachusetts: 02.20030002-PEP-ERP [01] | 20 March 2020 or current version.

Fugro, 2020c. Mayflower Wind 2020 Offshore Windfarm High Resolution Geophysical Survey Project Execution Plan – HSSE Plan | Atlantic Ocean, Offshore Massachusetts: 02.20030002-PEP-HSSE Plan [00] | 17 March 2020 or current version.

Fugro, 2020d. Mayflower Wind 2020 Offshore Windfarm High Resolution Geophysical Survey Project Execution Plan – Quality Plan | Atlantic Ocean, Offshore Massachusetts: 02.20030002-PEP-QUAL Plan [00] | 17 March 2020 or current version.

NMFS, 2020. Recommendations for Mapping Fish Habitat. National Oceanic and Atmospheric Administration, National Marine Fisheries Service GARFO Habitat Conservation and Ecosystem Services Division, January 2020.

TerraSond, 2020. Geophysical and Geohazard Report. Mayflower Wind Energy, LLC BOEM Renewable Energy Lease Number OCS-A 0521. March 6, 2020.

Attachment 1. Memorandum: BOEM and NMFS Notification of Fall 2020 Survey



MEMORANDUM

Subject:

Proposed Sampling Approach for the Mayflower Wind Benthic Infaunal and Seafloor Habitat Field Study, Fall 2020

Date:

11/05/2020

Project Number:

60620428

Prepared for: Jennifer Flood, Mayflower Wind **Energy LLC**

Prepared by:

AECOM

Project Name:

Mayflower Wind OCS-A 0521

A benthic habitat and seafloor characterization assessment is underway in the Mayflower Wind Lease Area OCS-A 0521 and along the proposed export cable route corridor. The benthic sampling team has completed two surveys, Spring and Summer, 2020. A summary of the samples collected in these surveys is provided in **Table 1**. This memorandum provides an overview of the adjustments that have been made to the sampling design since the first survey and the proposed approach for the Fall 2020 campaign.

Summary of Surveys to Date

NMFS provided comments on the Spring 2020 FSP May 28, 2020 and a follow-up call occurred June 10, 2020. NMFS indicated in their comments that:

- Muskeget Channel is known to support rocky complex habitats, and indicated that samples should be targeted for this area;
- Sampling should target all areas of potential hardbottom;
- Replicate, habitat specific sampling should be considered; and
- Video transects could be considered.

A preliminary review of the benthic sampling data from the Spring 2020 benthic survey was completed to assess habitat conditions in the Lease Area OCS-A 0521 and along the proposed export cable route and presented those preliminary findings to NMFS and BOEM on July 28, 2020. Specifically, this assessment included preliminary review of:

- Sediment grab samples
- Benthic infaunal community data
- Grain size
- Sediment profile imagery/plan view (SPI/PV) images
- Substrate (i.e., surficial grain size)
- General habitat type
- Epifauna/macroalgae presence
- Video imagery from benthic grab collection.

With the goal of selection of sampling locations that allow for identification of the best route to minimize impacts on sensitive habitat, NMFS suggested the following refinements to the proposed plan for Summer 2020:

Review of available acoustic (i.e., backscatter and side scan sonar) data to identify unique locations in the Lease Area and along the export cable route where sampling has not occurred;

- Addition of samples to the Lease Area in the area previously not sampled due to potential "hard bottom" habitat, identified using the 2019 acoustic survey;
- Further characterization of heterogeneous habitat in the northern export cable route, with emphasis on areas noted with epifauna and macroalgae presence and areas with pebbles/coarse material (e.g., Atlantic Cod habitat);
- Focus the characterization on the epifauna (i.e., SPI/PV and other imaging tools) rather than infauna (i.e., benthic grab samples); and,
- Characterization of the full export cable route corridor (1000 m in state waters) to better define adjacent habitat.

AECOM revised the proposed Summer 2020 field campaign based on input received from NMFS, and further review of available preliminary acoustic data. A summary of the adjustments made to the Summer 2020 survey are provided in **Table 1**.

Technical Approach - Fall 2020 Survey

Due to the complex, heterogeneous habitat noted in the northern portion of the proposed export cable route, AECOM has designed the Fall 2020 campaign to target sampling in this region (including the Muskeget Channel) to further assess seafloor conditions. In addition to the assessment of the Spring 2020, data, preliminary data from Summer 2020 survey were reviewed, including grab sample grain size analysis and PV images provided by Fugro. Emphasis was placed on areas noted with epifauna and macroalgae presence and areas with pebbles/coarse material (e.g., Atlantic Cod habitat). The focus of the characterization was shifted to epifauna (i.e., SPI/PV and other imaging tools) rather than infauna (i.e., benthic grab samples). Additional SPI/PV transects were included to better define adjacent habitat. Sampling in areas of homogeneous habitat has been reduced. Two additional areas are being included in the Fall 2020 Survey: Route A and two additional proposed landing areas for the offshore export cable (Mill Road and Shore Street).

Adjustments that are planned for the current survey are summarized in Table 1.

Figures 1 through **4** illustrate the sampling scheme proposed for the Lease Area, northern export cable route, southern export cable route, and export cable Route A, respectively, in Fall 2020. Control locations will remain the same for the Fall 2020 survey. A complete list of sampling locations proposed for Fall 2020 is provided in **Tables 2** through **4**, appended to this memo. Review of acoustic data and the Summer and Fall benthic survey results will be used to modify the sampling design in the Lease Area, export cable routes, and control locations in the future, as necessary.

Table 1. Summary of surveys and adjustments to the benthic campaign based on NMFS comments and new information

Spring 2020 Plan									
Number of samples collected: Adjustments:									
Lease Area	Field decision: two SPI/PV locations added on C' export cable route								
• 30 SPI/PV									
33 benthic grabs									
Export cable route									
30 SPI/PV									
33 benthic grabs									
<u> </u>									
Route C'									
2 SPI/PV Controls									
Controls									
• 15 SPI/PV									
3 benthic grabs									
	Summer 2020 Plan and Adjustments								
Number of samples collected:	Adjustments:								
<u>Lease Area</u>	Added 4 SPI/PV locations to the Lease Area in areas of potential "hard bottom" habitat								
• 34 SPI/PV	Removed 18 locations from the Lease Area in areas of homogeneous habitat								
19 benthic grabs	Field decision: Moved two SPI/PV locations in the Lease Area due to high fishing activity								
Export cable route	Added 4 SPI/PV transects to the northern ECR where epifauna and/or complex habitat were								
• 28 SPI/PV	noted present in Spring 2020 data to better define adjacent habitats. The transects consist								
 5 with transects 	of up to eight (8) single SPI/PV camera drops along the transect, approximately four (4) on each side of the central sampling location. The target transects were 1000 m long; 500 m to								
21 benthic grabs	each side.								
Route C'	Added a SPI/PV transect location on southern ECR to assess potential complex habitat								
1 SPI/PV	preliminarily identified during processing of acoustic data.								
Controls	Removed 5 locations from the southern ECR in areas of homogeneous habitat								
• 15 SPI/PV									
3 benthic grabs									
	Fall 2020 Plan and Adjustments								
Number of samples planned:	Adjustments:								
Lease Area	Resample 066 (not sampled in Summer) with adjustment to the west, within the area of								
• 20 SPI/PV	potential effect due to presence of feature noted in the preliminary evaluation of the								
19 benthic grabs	acoustic data.								
Export cable route	Relocate 14 SPI/PV locations from the Lease Area and 5 SPI/PV locations from the southern								
• 27 SPI/PV	ECR in areas of homogeneous habitat to areas of more complex habitat or areas not yet investigated								
- 4 with transects	Addition of two SPI/PV transects along the northern ECR in areas where epifauna and/or								
21 benthic grabs	complex habitat was observed based on Spring and Summer 2020 data. Three of the								
Route C'	transects from Summer not resampled in Fall (center SPI/PV location will be collected).								
• 3 SPI/PV	Two additional SPI/PV and one benthic grab sample added to the C' route which will be								
1 benthic grab	sampled if the vessel specifications and conditions allow.								
Route A	Add SPI/PV samples, SPI/PV transects, and benthic grab samples along alternate Route A								
• 10 SPI/PV	Added SPI/PV samples in the two proposed landing areas at Mill Road and Shore Street.								
- 4 with transects									
6 benthic grabs Controls									
Controls 15 SDI/DV									
• 15 SPI/PV									
3 benthic grabs									

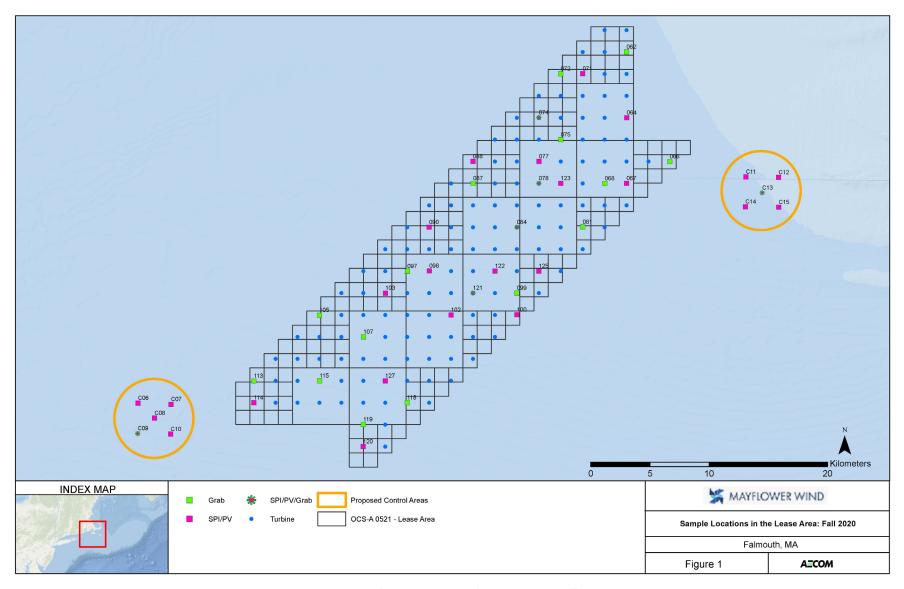
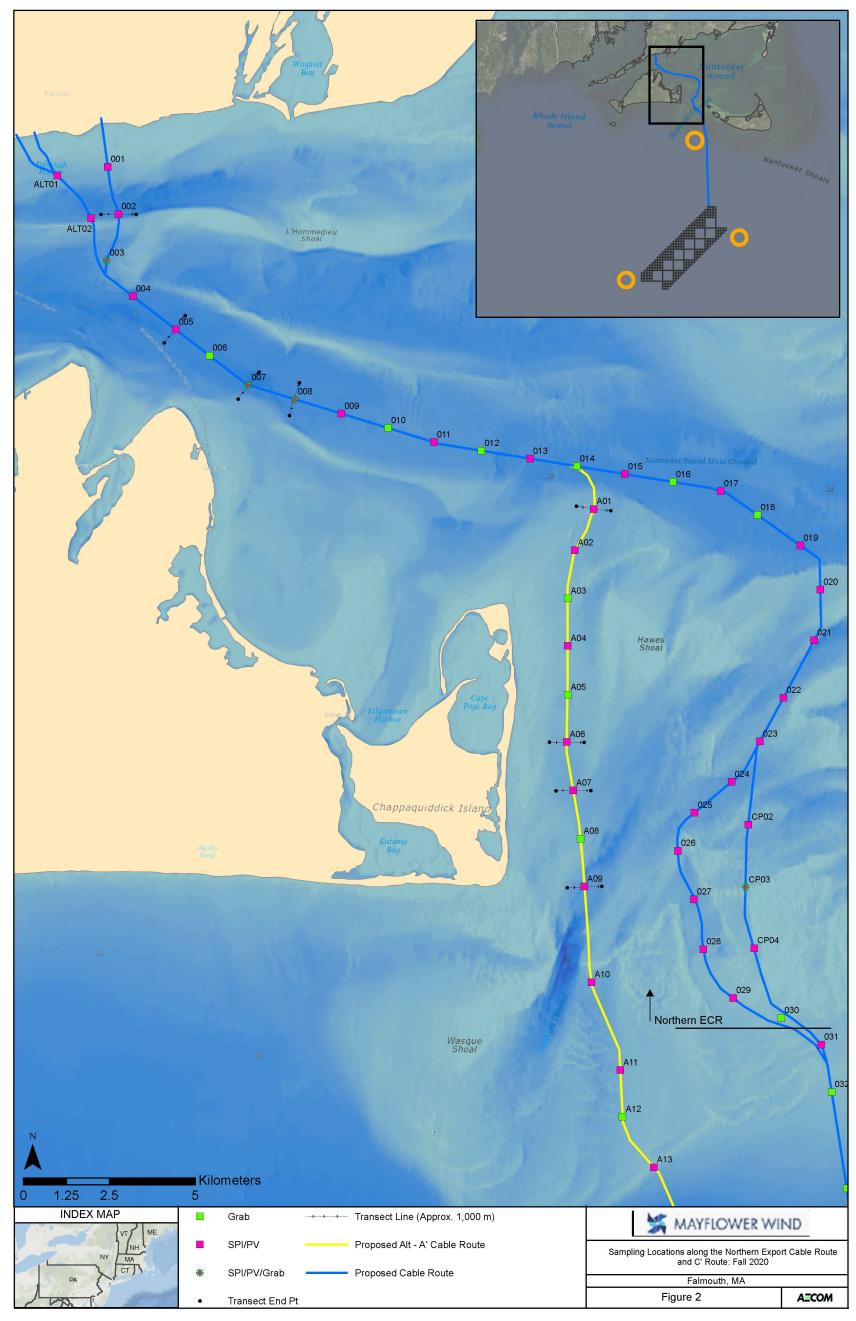


Figure 1. Sampling Locations in the Lease Area: Fall 2020



 $Figure\ 2.\ Sampling\ Locations\ along\ the\ Northern\ Export\ Cable\ Route\ and\ C'\ Route:\ Fall\ 2020$

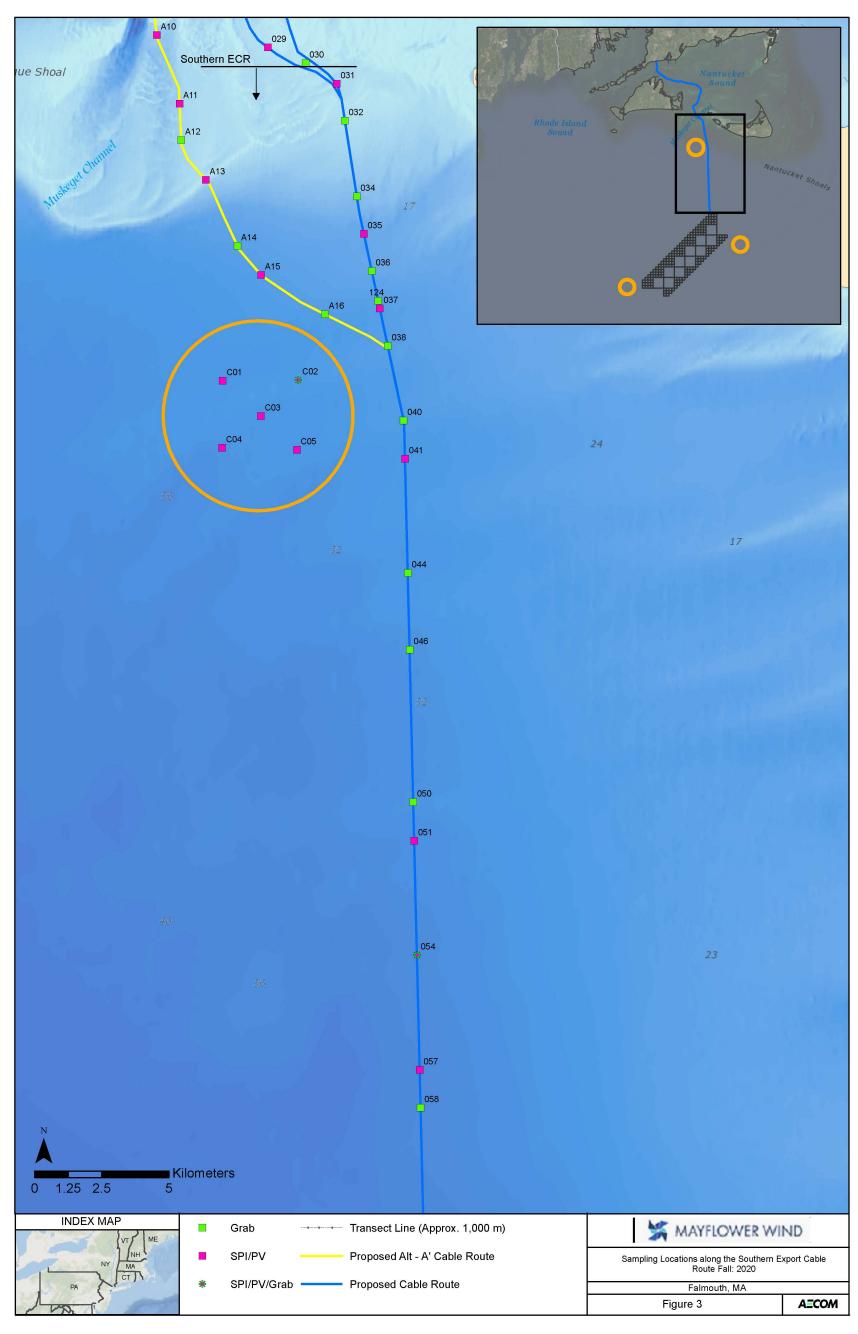


Figure 3. Sampling Locations along the Southern Export Cable Route: Fall 2020 $\,$

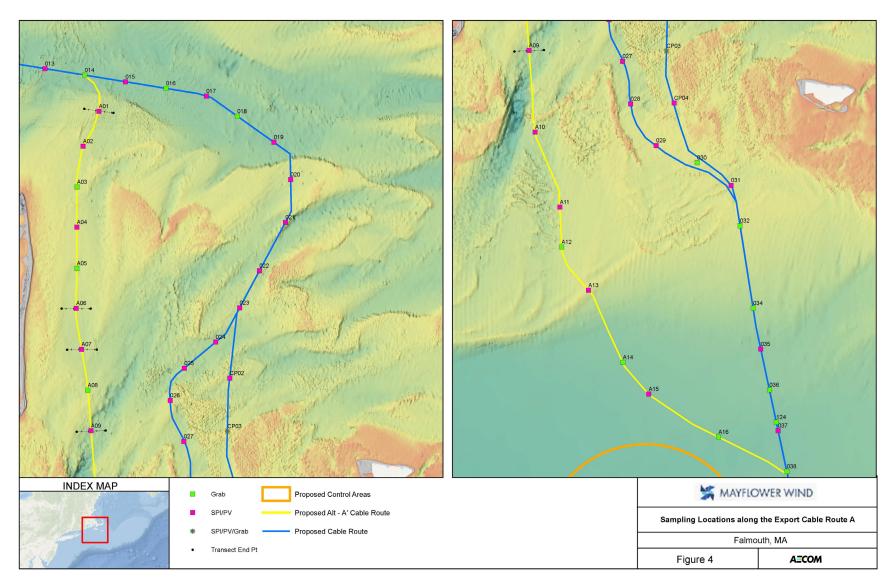


Figure 4. Sampling Locations along the Export Cable Route A

Table 2. Benthic Sampling Stations and Sample IDs in Mayflower Wind OCS-A-0521 Lease Area

Station ID	Sample ID	X coordinate (m)	Y coordinate (m)	Longitude	Latitude	Depth (m)	Depth Reference
Lease Area							
062	20FA-MW0521-062-BG	393800	4529062	40.9058	-70.2610	-37	NOAA Chart 13200
064	20FA-MW0521-064-SPI	393815	4523507	40.8557	-70.2598	-44	NOAA Chart 13200
066	20FA-MW0521-066-BG	397454	4519807	40.8229	-70.2160	-44	NOAA Chart 13200
067	20FA-MW0521-067-SPI	393800	4517967	40.8058	-70.2591	-44	NOAA Chart 13200
068	20FA-MW0521-068-BG	391968	4517955	40.8055	-70.2808	-44	NOAA Chart 13200
071	20FA-MW0521-071-SPI	390104	4527231	40.8888	-70.3045	-42	NOAA Chart 13200
072	20FA-MW0521-072-BG	388248	4527218	40.8884	-70.3265	-42	NOAA Chart 13200
074	20FA-MW0521-074-BG	386395	4523519	40.8549	-70.3478	-46	NOAA Chart 13200
	20FA-MW0521-074-SPI						
075	20FA-MW0521-075-BG	388249	4521661	40.8384	-70.3255	-46	NOAA Chart 13200
077	20FA-MW0521-077-SPI	386412	4519814	40.8215	-70.3470	-48	NOAA Chart 13200
078	20FA-MW0521-078-BG	386393	4517960	40.8048	-70.3468	-48	NOAA Chart 13200
	20FA-MW0521-078-SPI						
081	20FA-MW0521-081-BG	390106	4514271	40.7721	-70.3022	-46	NOAA Chart 13200
084	20FA-MW0521-084-BG	384542	4514266	40.7713	-70.3681	-49	NOAA Chart 13200
	20FA-MW0521-084-SPI						
087	20FA-MW0521-087-BG	380855	4517969	40.8041	-70.4125	-49	NOAA Chart 13200
088	20FA-MW0521-088-SPI	380842	4519817	40.8207	-70.4130	-48	NOAA Chart 13200
090	20FA-MW0521-090-SPI	377143	4514261	40.7702	-70.4558	-51	NOAA Chart 13200
097	20FA-MW0521-097-BG	375293	4510546	40.7364	-70.4769	-53	NOAA Chart 13200
098	20FA-MW0521-098-SPI	377143	4510565	40.7369	-70.4550	-53	NOAA Chart 13200

Station ID	Sample ID	X coordinate (m)	Y coordinate (m)	Longitude	Latitude	Depth (m)	Depth Reference
099	20FA-MW0521-099-BG	384537	4508699	40.7211	-70.3671	-48	NOAA Chart 13200
100	20FA-MW0521-100-SPI	384549	4506863	40.7046	-70.3667	-50	NOAA Chart 13200
102	20FA-MW0521-102-SPI	378986	4506855	40.7037	-70.4325	-53	NOAA Chart 13200
103	20FA-MW0521-103-SPI	373450	4508697	40.7195	-70.4984	-53	NOAA Chart 13200
105	20FA-MW0521-105-BG	367878	4506831	40.7018	-70.5639	-57	NOAA Chart 13200
107	20FA-MW0521-107-BG	371593	4504999	40.6859	-70.5196	-57	NOAA Chart 13200
113	20FA-MW0521-113-BG	362329	4501282	40.6509	-70.6284	-60	NOAA Chart 13200
114	20FA-MW0521-114-SPI	362329	4499443	40.6344	-70.6280	-60	NOAA Chart 13200
115	20FA-MW0521-115-BG	367883	4501292	40.6519	-70.5627	-60	NOAA Chart 13200
118	20FA-MW0521-118-BG	375281	4499444	40.6364	-70.4749	-58	NOAA Chart 13200
119	20FA-MW0521-119-BG	371580	4497600	40.6193	-70.5182	-60	NOAA Chart 13200
120	20FA-MW0521-120-SPI	371571	4495742	40.6025	-70.5180	-62	NOAA Chart 13200
121	20FA-MW0521-121-BG	380842	4508700	40.7206	-70.4109	-51	NOAA Chart 12300
	20FA-MW0521-121-SPI						
122	20FA-MW0521-122-SPI	382694	4510552	40.7376	-70.3893	-51	NOAA Chart 12300
123	20FA-MW0521-123-SPI	388250	4517960	40.8050	-70.3248	-44	NOAA Chart 12300
125	20FA-MW0521-125-SPI	386398	4510552	40.7381	-70.3454	-48	NOAA Chart 12300
127	20FA-MW0521-127-SPI	373434	4501281	40.6526	-70.4970	-58	NOAA Chart 12300

CRS data: NAD83 / UTM Zone 19N [26919]

BG-DUP – Field duplicate for TOC and grain size only

Table 3. Benthic Sampling Stations and Sample IDs along Mayflower Wind Export Cable Route

Station ID	Sample ID	X coordinate (m)	Y coordinate (m)	Longitude	Latitude	Depth (m)	Depth Reference	Notes for Fall 2020
Northern Ex	port Cable Route							
001	20FA-MW0521-001-SPI	367209	4599240	41.5338	-70.5918	-8	NOAA Chart 13237	
002	20FA-MW0521-002-SPI	367522	4597863	41.5215	-70.5878	-22	Spring Survey	SPI/PV transect midpoint
	20FA-MW0521-002-1-SPI	367012	4597862	41.5214	-70.5939	-21	NOAA Chart 13237	western edge of transect
	20FA-MW0521-002-i-SPI	368027	4597857	41.5215	-70.5817	-21	NOAA Chart 13237	eastern edge of transect
003	20FA-MW0521-003-BG	367176	4596515	41.5093	-70.5916	-15	Spring Survey	Additional volume for USCS sieves
	20FA-MW0521-003-BG-DUP							Additional volume for USCS sieves
	20FA-MW0521-003-SPI							
004	20FA-MW0521-004-SPI	367935	4595474	41.5000	-70.5823	-23	Spring Survey	
005	20FA-MW0521-005-SPI	369186	4594507	41.4915	-70.5671	-25	Spring Survey	SPI/PV transect midpoint
	20FA-MW0521-005-1-SPI	368854	4594129	41.4881	-70.5710	-23	NOAA Chart 13237	western edge of transect
	20FA-MW0521-005-i-SPI	369466	4594922	41.4953	-70.5638	-19	NOAA Chart 13237	eastern edge of transect
006	20FA-MW0521-006-BG	370171	4593745	41.4848	-70.5551	-21	Spring Survey	Additional volume for USCS sieve
007	20FA-MW0521-007-BG	371303	4592891	41.4773	-70.5414	-23	Spring Survey	Additional volume for USCS sieve
	20FA-MW0521-007-SPI							SPI/PV transect midpoint
	20FA-MW0521-007-1-SPI	371004	4592485	41.4736	-70.5449	-7	NOAA Chart 13237	western edge of transect
	20FA-MW0521-007-i-SPI	371610	4593274	41.4808	-70.5378	-12	NOAA Chart 13237	eastern edge of transect
008	20FA-MW0521-008-BG	372652	4592474	41.4738	-70.5252	-21	Spring Survey	Additional volume for USCS sieves
	20FA-MW0521-008-BG-DUP							Additional volume for USCS sieves
	20FA-MW0521-008-SPI							SPI/PV transect midpoint
	20FA-MW0521-008-1-SPI	372494	4592004	41.4695	-70.5270	-13	NOAA Chart 13237	western edge of transect
	20FA-MW0521-008-i-SPI	372783	4592956	41.4781	-70.5237	-20	NOAA Chart 13237	eastern edge of transect

Station ID	Sample ID	X coordinate (m)	Y coordinate (m)	Longitude	Latitude	Depth (m)	Depth Reference	Notes for Fall 2020
009	20FA-MW0521-009-SPI	374008	4592057	41.4702	-70.5089	-19	Spring Survey	
010	20FA-MW0521-010-BG	375366	4591638	41.4667	-70.4925	-17	Spring Survey	Additional volume for USCS sieves
011	20FA-MW0521-011-SPI	376700	4591226	41.4632	-70.4764	-16	Spring Survey	
012	20FA-MW0521-012-BG	378085	4590977	41.4611	-70.4598	-17	Spring Survey	Additional volume for USCS sieves
013	20FA-MW0521-013-SPI	379496	4590748	41.4593	-70.4429	-18	Spring Survey	
014	20FA-MW0521-014-BG	380863	4590526	41.4575	-70.4265	-22	Spring Survey	Additional volume for USCS sieves
	20FA-MW0521-014-BG-DUP							Additional volume for USCS sieves
015	20FA-MW0521-015-SPI	382260	4590298	41.4556	-70.4097	-21	Spring Survey	
016	20FA-MW0521-016-BG	383659	4590071	41.4538	-70.3929	-19	Spring Survey	Additional volume for USCS sieve
017	20FA-MW0521-017-SPI	385050	4589801	41.4516	-70.3762	-20	Spring Survey	
018	20FA-MW0521-018-BG	386118	4589109	41.4455	-70.3633	-19	Spring Survey	Additional volume for USCS sieves
	20FA-MW0521-018-BG-DUP							Additional volume for USCS sieves
019	20FA-MW0521-019-SPI	387369	4588220	41.4377	-70.3482	-17	Spring Survey	
020	20FA-MW0521-020-SPI	387949	4586935	41.4262	-70.3410	-8	Spring Survey	
021	20FA-MW0521-021-SPI	387770	4585464	41.4129	-70.3429	-12	NOAA Chart 13237	
022	20FA-MW0521-022-SPI	386874	4583797	41.3978	-70.3533	-16	NOAA Chart 13237	
023	20FA-MW0521-023-SPI	386190	4582525	41.3862	-70.3612	-8	NOAA Chart 13237	
024	20FA-MW0521-024-SPI	385367	4581351	41.3755	-70.3708	-15	Spring Survey	
025	20FA-MW0521-025-SPI	384288	4580452	41.3673	-70.3836	-13	Spring Survey	
026	20FA-MW0521-026-SPI	383803	4579344	41.3572	-70.3891	-6	NOAA Chart 13237	
027	20FA-MW0521-027-SPI	384270	4577932	41.3446	-70.3833	-11	NOAA Chart 13237	
028	20FA-MW0521-028-SPI	384546	4576478	41.3315	-70.3797	-12	NOAA Chart 13237	

Station ID	Sample ID	X coordinate (m)	Y coordinate (m)	Longitude	Latitude	Depth (m)	Depth Reference	Notes for Fall 2020
029	20FA-MW0521-029-SPI	385414	4575061	41.3189	-70.3691	-5	NOAA Chart 13237	
030	20FA-MW0521-030-BG	386815	4574476	41.3138	-70.3522	-6	NOAA Chart 13237	Additional volume for USCS sieve
Mill Road a	nd Shore Street Landing Areas	5						
ALT01	20SP-MW0521-ALT01-SPI	365742	4598989	41.5313	-70.6094	-8	NOAA Chart 13237	
ALT02	20SP-MW0521-ALT02-SPI	366720	4597744	41.5202	-70.5974	-11	NOAA Chart 13237	
C' Cable Ro	oute							
CP2	20FA-MW0521-CP2-SPI	385852	4580106	41.3644	-70.3648	-7	Spring Survey	
CP3	20FA-MW0521-CP3-BG	385770	4578280	41.3479	-70.3654	-5	Spring Survey	Obtain if field conditions indicate practical and safe to do so. Additional volume for USCS sieves
	20FA-MW0521-CP3-SPI							
CP4	20FA-MW0521-CP4-SPI	386025	4576510	41.3320	-70.3621	-5	Spring Survey	
Southern E	xport Cable Route							
031	20FA-MW0521-031-SPI	387972	4573704	41.3070	-70.3383	-6	NOAA Chart 13237	
032	20FA-MW0521-032-BG	388278	4572325	41.2946	-70.3344	-7	NOAA Chart 13237	Additional volume for USCS sieve
034	20FA-MW0521-034-BG	388721	4569520	41.2694	-70.3286	-14	Spring Survey	Additional volume for USCS sieve
035	20FA-MW0521-035-SPI	388983	4568126	41.2569	-70.3252	-20	Spring Survey	
036	20FA-MW0521-036-BG	389279	4566736	41.2445	-70.3214	-22	Spring Survey	Additional volume for USCS sieve
124	20FA-MW0521-124-BG	389514	4565635	41.2346	-70.3184	-26	Spring Survey	
037	20FA-MW0521-037-SPI	389575	4565346	41.2320	-70.3176	-27	Spring Survey	
038	20FA-MW0521-038-BG	389871	4563957	41.2195	-70.3138	-25	Spring Survey	
040	20FA-MW0521-040-BG	390463	4561180	41.1946	-70.3063	-27	Spring Survey	
041	20FA-MW0521-041-SPI	390520	4559761	41.1818	-70.3053	-30	Spring Survey	

Station ID	Sample ID	X coordinate (m)	Y coordinate (m)	Longitude	Latitude	Depth (m)	Depth Reference	Notes for Fall 2020
044	20FA-MW0521-044-BG	390623	4555511	41.1435	-70.3034	-31	Spring Survey	
046	20FA-MW0521-046-BG	390691	4552662	41.1179	-70.3020	-33	NOAA Chart 13200	
050	20FA-MW0521-050-BG	390823	4547002	41.0669	-70.2995	-33	NOAA Chart 13200	
051	20FA-MW0521-051-SPI	390857	4545564	41.0540	-70.2988	-33	NOAA Chart 13200	
054	20FA-MW0521-054-BG	390960	4541315	41.0158	-70.2968	-37	Spring Survey	
	20FA-MW0521-054-SPI							
057	20FA-MW0521-057-SPI	391063	4537044	40.9773	-70.2948	-38	Spring Survey	
058	20FA-MW0521-058-BG	391092	4535638	40.9646	-70.2942	-38	Spring Survey	

CRS data: NAD83 / UTM Zone 19N [26919]

BG-DUP – Field duplicate for TOC and grain size only

[&]quot;Additional volume for USCS sieves" – sample located in Massachusetts state waters. Grain size analysis to be conducted using standard (Wentworth) sieves and USCS sieves to ensure a #200 fines fraction is obtained.



Table 4. Benthic Sampling Stations and Sample IDs within Export Cable Route A

Station ID	Sample ID	X coordinate (m)	Y coordinate (m)	Longitude	Latitude	Depth (m)	Depth Reference	Notes for Fall 2020	
Export Cable Route A									
A01	20FA-MW0521-A01-SPI	381348	4589281	41.4463	-70.4204	-8	NOAA Chart 13237	SPI/PV transect midpoint	
	20FA-MW0521-A01-1-SPI	380846	4589370	41.4471	-70.4265	-10	NOAA Chart 13237	western edge of transect	
	20FA-MW0521-A01-i-SPI	381850	4589237	41.4460	-70.4144	-7	NOAA Chart 13237	eastern edge of transect	
A02	20FA-MW0521-A02-SPI	380805	4588081	41.4355	-70.4267	-5	NOAA Chart 13237		
A03	20FA-MW0521-A03-BG	380597	4586679	41.4228	-70.4289	-3	NOAA Chart 13237	Additional volume for USCS sieves	
A04	20FA-MW0521-A04-SPI	380594	4585300	41.4104	-70.4287	-6	NOAA Chart 13237		
A05	20FA-MW0521-A05-BG	380595	4583884	41.3976	-70.4284	-5	NOAA Chart 13237	Additional volume for USCS sieves	
	20FA-MW0521-A05-BG-DUP							Additional volume for USCS sieves	
A06	20FA-MW0521-A06-SPI	380567	4582511	41.3853	-70.4284	-4	NOAA Chart 13237	SPI/PV transect midpoint	
	20FA-MW0521-A06-1-SPI	380062	4582511	41.3852	-70.4345	-7	NOAA Chart 13237	western edge of transect	
	20FA-MW0521-A06-i-SPI	381067	4582506	41.3853	-70.4225	-10	NOAA Chart 13237	eastern edge of transect	
A07	20FA-MW0521-A07-SPI	380754	4581100	41.3726	-70.4259	-11	NOAA Chart 13237	SPI/PV transect midpoint	
	20FA-MW0521-A07-1-SPI	380254	4581090	41.3724	-70.4319	-7	NOAA Chart 13237	western edge of transect	
	20FA-MW0521-A07-i-SPI	381271	4581099	41.3727	-70.4197	-12	NOAA Chart 13237	eastern edge of transect	
A08	20FA-MW0521-A08-BG	380967	4579695	41.3600	-70.4231	-7	NOAA Chart 13237	Additional volume for USCS sieves	
A09	20FA-MW0521-A09-SPI	381079	4578301	41.3474	-70.4215	-14	NOAA Chart 13237	SPI/PV transect midpoint	
	20FA-MW0521-A09-1-SPI	380585	4578271	41.3471	-70.4274	-14	NOAA Chart 13237	western edge of transect	
	20FA-MW0521-A09-i-SPI	381584	4578316	41.3476	-70.4155	-7	NOAA Chart 13237	eastern edge of transect	
A10	20FA-MW0521-A10-SPI	381287	4575519	41.3224	-70.4185	-12	NOAA Chart 13237		
A11	20FA-MW0521-A11-SPI	382130	4572960	41.2995	-70.4079	-7	NOAA Chart 13237		



Station ID	Sample ID	X coordinate (m)	Y coordinate (m)	Longitude	Latitude	Depth (m)	Depth Reference	Notes for Fall 2020
A12	20FA-MW0521-A12-BG	382193	4571605	41.2873	-70.4069	-7	NOAA Chart 13237	Additional volume for USCS sieves
A13	20FA-MW0521-A13-SPI	383106	4570129	41.2741	-70.3957	-13	NOAA Chart 13237	
A14	20FA-MW0521-A14-BG	384279	4567674	41.2522	-70.3812	-26	NOAA Chart 13237	Additional volume for USCS sieves
A15	20FA-MW0521-A15-SPI	385160	4566593	41.2426	-70.3705	-27	NOAA Chart 13237	
A16	20FA-MW0521-A16-BG	387541	4565132	41.2298	-70.3418	-29	NOAA Chart 13237	Additional volume for USCS sieves

CRS data: NAD83 / UTM Zone 19N [26919]

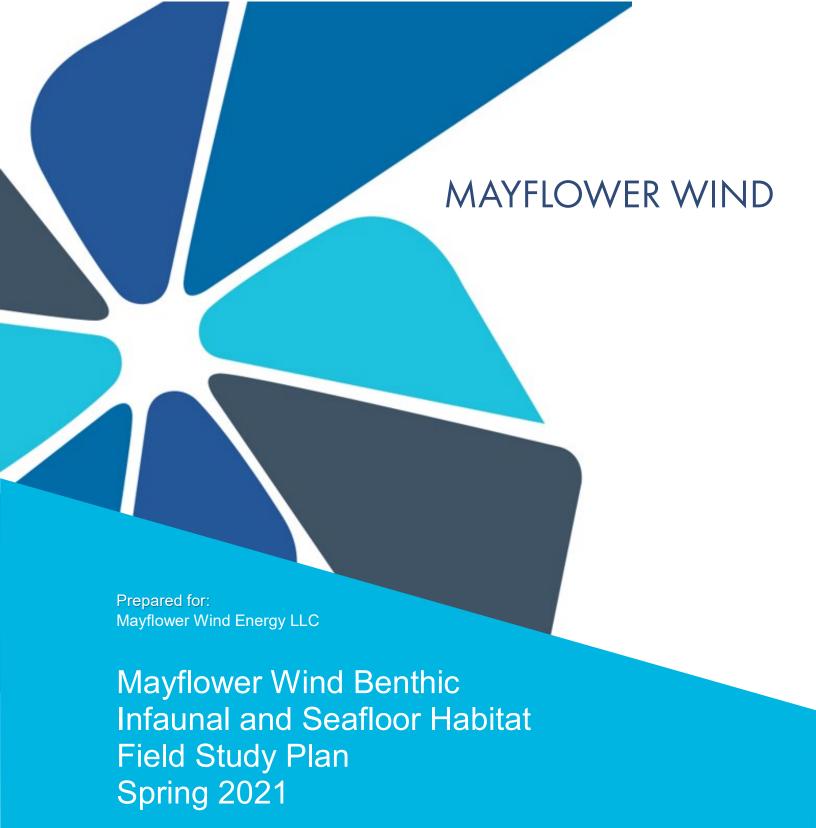
BG-DUP – Field duplicate for TOC and grain size only

[&]quot;Additional volume for USCS sieves" – sample located in Massachusetts state waters. Grain size analysis to be conducted using standard (Wentworth) sieves and USCS sieves to ensure a #200 fines fraction is obtained.

Attachment 2. Table of Turbine Locations not Occupied by Samples

ATTACHMENT 5 – Mayflower Wind Benthic Infaunal and Seafloor Habitat Field Study Plan, Spring 2021

Prepared for: Mayflower Wind, LLC



Prepared by:

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April 16, 2021



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1.0 Project Description

Mayflower Wind Energy LLC (Mayflower Wind) proposes an offshore wind renewable energy generation project (Project) located in federal waters off the southern coast of Massachusetts in the Outer Continental Shelf (OCS) Lease Area OCS-A 0521 (the Lease Area) which will deliver electricity to the regionally administered transmission system via export cables with a landing point in Falmouth, Massachusetts and onshore transmission system extending to the point of interconnection (POI) in Bourne, Massachusetts (the Project). The Project site is shown in Figure 1-1.

The Lease Area is located south of Martha's Vineyard and Nantucket. Wind turbine generators (WTGs) constructed within the Lease Area will deliver power via inter-array cables to the offshore substation platforms (OSPs). The WTGs and the OSPs positions have been established based on a 1 x 1 nautical mile (1.9 x 1.9 kilometer [km]) grid oriented along the cardinal directions to maintain a uniform spacing of WTGs across all the lease areas within the Massachusetts/Rhode Island Wind Energy Area. The OSPs will collect the power and step it up to a higher export voltage. Up to five offshore submarine electrical or communication export cables will pass through Muskeget Channel and Nantucket Sound to deliver power from the OSPs to the onshore transmission system. The offshore export cable will come ashore at a landing site near Falmouth, Massachusetts.

This Field Study Plan (FSP) is intended for internal distribution only to Mayflower Wind and subcontractors. The Bureau of Ocean Energy Management (BOEM) and National Marine Fisheries Service (NMFS) have been provided with a memorandum, including the list of stations and figures showing the locations of these stations. Past FSPs for Spring 2020 (AECOM, 2020a) and Summer 2020 (AECOM, 2020b) have been submitted to BOEM and NMFS in their entirety.

Benthic Field Program Description

A benthic seafloor habitat and seafloor characterization assessment will be conducted in the Mayflower Wind Lease Area and along the proposed export cable corridor(s) (ECC) (Project Area). The objectives of this benthic assessment are to document benthic seafloor habitat and sediment characteristics that will contribute toward understanding of essential fish habitat (EFH) as required by BOEM 2019 and NMFS 2020 guidelines.

This baseline seafloor survey will be performed to characterize benthic habitat within the Project Area possibly affected by the proposed construction and operations of the Project. These data will inform siting decisions with the goal of avoiding or minimizing potential impacts to sensitive biological communities and EFH. Data used to support the following benthic habitat assessment objectives will incorporate multiple lines of evidence including existing literature on marine biological communities in the region and the collection of field data (e.g., grab samples for analysis of physical parameters and benthic infaunal community analysis) and sediment profile image (SPI) and plan view (PV) imagery. This document specifically addresses the BOEM recommended benthic habitat field studies as defined within 30 CFR Subpart F §585.625 and the aforementioned BOEM 2019 and NMFS 2020 guidelines. Consistent with BOEM guidance, the objectives of this benthic habitat survey are to:

- Identify and confirm dominant benthic macrofaunal and macrofloral communities and substrate in the Lease Area and export cables from the Lease Area to landfall(s) in Falmouth, Massachusetts associated with development of the Project;
- Establish a pre-construction baseline in the Lease Area that will inform the post-construction monitoring plan and may be used to assess whether detectable changes occurred in postconstruction benthic habitat associated with proposed operations;
- Collect information aimed at supporting spatial planning decisions;
- Collect information aimed at reducing uncertainty associated with baseline conditions and/or to inform the interpretation of survey results;
- Inform development of an approach to quantify substantial changes in the benthic community composition associated with the proposed Project activities; and
- Provide data to supplement the EFH assessment.

Roles and Responsibilities

Fugro has primary responsibility for the execution of the field program for this Spring survey, and as such has prepared a Project Execution Plan (PEP) - Ops plan (Fugro, 2021a) to guide the execution of the benthic field program. Additionally, Fugro has prepared the Emergency Response Plan (ERP), Health Safety Security and Environment (HSSE) Plan and Quality Plan (QP) governing work execution on the vessel (Fugro, 2021b, c and Fugro 2020).

Field sample collection activities (benthic grab sampling, SPI/PV imagery) will be performed by Fugro and subcontractor Integral Consulting under separate contract to Mayflower Wind in conjunction with the HRGS being undertaken by Fugro. In addition to sample collection, Fugro will deliver SPI/PV imagery and interpretation results/report to Mayflower Wind, to be forwarded to AECOM for inclusion in the benthic seafloor habitat assessment report.

AECOM is responsible for subcontracting the analytical laboratory for total organic carbon (TOC) and grain size analyses, and for conducting benthic laboratory analysis, including enumeration, identification and benthic community structure analysis. Details related to the field and laboratory methodologies employed are presented herein, and in the Quality Assurance Project Plan (QAPP) (AECOM, 2020c).

The team organization for the Program is presented in the QAPP (AECOM, 2020c) including descriptions of the responsibilities for key roles involved in sample collection and analysis.

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4.0 Program Schedule and Approach

To satisfy the above BOEM and NMFS objectives, a series of seasonal benthic surveys (surveys) will be conducted over the Lease Area, along the ECC, and at control areas. Sampling surveys are currently proposed to be conducted during three seasons for two years. For safety and due to the nature of the weather in the area, winter sampling is not proposed. For the purposes of this sampling program, the following breakdown will define seasonality for sampling. These seasons will each be sampled twice, but the six events may not be continuous. The definition of the seasons for purposes of sampling are:

- Spring March 1 through May 31;
- Summer June 1 through August 31; and
- Fall September 1 through November 30.

Each survey will be completed, to the extent possible, within the predefined seasonal period. Actual timing within the period for a given survey will be dictated by weather conditions, other ongoing survey operations, and vessel/crew/equipment availability.

Each survey will characterize the surficial sediment quality through a series of tasks including the collection of:

- Sediment for laboratory analysis of benthic community structure and physical parameters (e.g., grain size and TOC);
- SPI/PV imaging data to determine the physical characteristics of the surficial sediment and presence
 of epifauna and other surface-dwelling organisms (e.g., macroalgae); and
- Real time video used to support and inform reporting according to the Coastal and Marine Ecological Classification Standard (CMECS) format as required by BOEM guidelines.

These combined techniques for assessing seafloor habitat together with high-resolution acoustic data (e.g., multibeam bathymetry, side-scan sonar, and backscatter) collected during geophysical surveys, will allow Mayflower Wind to determine the baseline seafloor habitat conditions.

Results from the Lease Area and ECC surveys from Spring and Summer 2020 were summarized in a report that was attached as appendix M to the BOEM required Construction and Operations Plan (COP) (AECOM 2021). Results from the Fall 2020 survey were summarized in a lab report. All prior results helped to develop this sampling plan.

The following sections detail the elements of the Spring 2021 benthic survey. This document will be updated to outline the approach for each distinct seasonal survey.

5.0 Spring 2021 Benthic Survey

5.1 Biological Sampling Program Overview

The Spring 2021 survey will serve as an important source for continuing to provide the baseline information required to inform and support subsequent characterization of post-construction impacts and documentation of post-construction recovery.

5.1.1 Sample Locations and Frequency

The Spring 2021 Survey will be comprised of:

- 19 benthic grab stations, 15 SPI/PV stations, and 1 SPI/PV transect within the Lease Area; one is a co-located grab and SPI/PV (Figure 5-1; Table 5-1),
- Six benthic grab stations, three SPI/PV stations, 12 SPI/PV transects, and three video transects along the northern ECC (Figures 5-2 and 5-3; Table 5-2);
- 11 benthic grab stations and five SPI/PV stations in the southern ECC (Figures 5-3 and 5-4; Table 5-2);
- 10 benthic grab stations, eight SPI/PV stations, all with co-located grabs, are located within two designated control areas (Figure 5-5; Table 5-3).

Thirteen SPI/PV transects are proposed along the ECC. The transects consist of up to nine single SPI/PV camera drops along the transect perpendicular to the centerline, approximately four on each side of the central sampling location; the center sampling location is collected with triplicate images. The target transects are 1000 m long; 500 m to each side.

Video transects will be obtained at three locations along the northern ECC to provide near-continuous video coverage over the habitats, organisms, and bedforms present in this area previously identified as heterogenous benthic habitat.

Grab and SPI/PV stations are placed to achieve the BOEM-recommended density of one sample per 1-2 km along the ECC (linear area of disturbance), with additional SPI/PV transects at 12 locations. Sample locations in the lease area have been placed to ultimately achieve the BOEM-recommended density of one sample per 1-2 km² within the area of potential adverse effect. The sampling strategy presented in this document includes focused sampling along the ECC where previous data has not been collected to meet BOEM requirements, and a decrease in sample density in areas that are homogenous (i.e., Lease Area and southern ECC).

Locations have been included in the Western Option of the ECC, which is very shallow. A shallow-draft vessel used in Fall 2020 allowed for limited sampling in the shallow areas of the ECC. A similar vessel will be used in Spring 2021 to access shallow areas.

Preliminary results from the Spring, Summer, and Fall 2020 surveys identified areas of complex, heterogeneous habitat in the northern portion of the ECC, and homogeneous habitat in the southern ECC and Lease Area. This is consistent with the Marine Site Investigation Report (MSIR) which was included as Appendix E to the Construction and Operations Plan.

In an agreement reached among the Massachusetts/Rhode Island Wind Energy Area (MA/RI WEA) Offshore Wind Developers in 2019, WTGs will be installed in a 1 nautical mile (nm) by 1 nm grid layout throughout the MA/RI WEA. With the WTG locations fixed (with some limited potential for micro-siting), the objective of field sampling programs has shifted from those of earlier Wind Energy projects. With known locations for the WTGs, field sampling programs can be focused on the specific locations of anticipated project activities (foundation installations and inter-array cables), rather than more broadly across the entire Lease Area.

The area of potential effect (APE) associated with each WTG that will be installed within the Mayflower Wind Lease Area is 300 meters (m) by 300 m. The maximum APE associated with the full build-out of the Mayflower Wind Lease Area, including all potential WTGs in the grid layout and associated inter-array cables, is approximately 90 km². Based on this total Lease Area APE and BOEM guidelines, the target sampling frequency in the Lease Area was initially determined to be 60 total samples. This has been refined to focus on areas not previously sampled.

Three control areas outside of, but near to, the Lease Area and ECC with comparable physical and environmental characteristics were also previously sampled to monitor natural environmental shifts that occur unrelated to the Project. A review of the substrate in the Control Areas indicates that the Northern control is not as good a match to the Lease Area and SECC as the Western and Eastern Control Areas. The Northern Control Area showed fine rippled sands, whereas the Western and Eastern Control Areas showed a finer, flatter substrate consistent with the Lease Area. In order to provide the statistical robustness needed for

future impact assessments five benthic grab stations will be collected from each of the two remaining control area locations, with co-located SPI/PV from four locations within each control area.

5.1.2 Survey Vessels and Team

Two vessels will be used for this survey: the motor vessel (M/V) GO Liberty and the ultra-shallow water vessel M/V Westerly. Specifications are as outlined in the Fugro (2021a) PEP.

The field team includes crew and scientific staff who are experienced with obtaining benthic samples for community analyses, sediment physical parameters, and SPI/PV/seafloor video operations. Details pertaining to the field staff (e.g., training records) are presented in the PEP prepared by Fugro (Fugro, 2021a).

The survey will be performed to accommodate 24-hr operations during the field sampling effort in the Lease Area and along the ECC. Work will be completed in accordance with the ERP and HSSE Plan prepared by Fugro (2021b,c).

Mayflower Wind Infaunal and Seafloor Habitat Field Study Plan Spring 2021

Table 5-1. Benthic Sampling Stations and Sample IDs within Mayflower Wind OCS-A0521 Lease Area Proposed for the Spring 2021 Survey

Station ID	Sample ID	X coordinate (m)	Y coordinate (m)	Longitude	Latitude	Depth (m)	Depth Reference
Lease Area							
214	21SP-MW0521-214-SPI	393806	4527220	-70.26056	40.88918	40.0	Mayflower Survey
215	21SP-MW0521-215-BG	393806	4519812	-70.25930	40.82246	43.0	Mayflower Survey
216	21SP-MW0521-216-SPI	391954	4516108	-70.28062	40.78886	44.0	Mayflower Survey
217	21SP-MW0521-217-SPI	391954	4519812	-70.28126	40.82222	44.0	Mayflower Survey
218	21SP-MW0521-218-BG	391954	4521664	-70.28158	40.83890	44.0	Mayflower Survey
240	21SP-MW0521-219-BG	204054	4507000	70.00054	40.00004	44.5	Marflares Comme
219	21SP-MW0521-219-BG-DUP	391954	4527220	-70.28254	40.88894	41.5	Mayflower Survey
220	21SP-MW0521-220-BG	391954	4529072	-70.28287	40.90562	40.5	Mayflower Survey
221	21SP-MW0521-221-BG	390102	4525368	-70.30419	40.87201	44.0	Mayflower Survey
222	21SP-MW0521-222-SPI	390102	4523516	-70.30387	40.85533	44.2	Mayflower Survey
222-E	21SP-MW0521-222-i-SPI	390463	4523877	-70.29965	40.85863	44.6	Mayflower Survey
222-W	21SP-MW0521-222-1-SPI	389752	4523166	-70.30795	40.85214	44.8	Mayflower Survey
223	21SP-MW0521-223-BG	390102	4521664	-70.30354	40.83865	44.4	Mayflower Survey
224	21SP-MW0521-224-SPI	390102	4519812	-70.30321	40.82197	46.0	Mayflower Survey
225	21SP-MW0521-225-SPI	390102	4516108	-70.30256	40.78862	44.5	Mayflower Survey
226	21SP-MW0521-226-SPI	388250	4512404	-70.32384	40.75501	47.5	Mayflower Survey
227	21SP-MW0521-227-BG	388250	4519812	-70.32517	40.82172	47.0	Mayflower Survey
228	21SP-MW0521-228-SPI	388250	4523516	-70.32583	40.85508	45.5	Mayflower Survey
000	21SP-MW0521-229-BG	000000	4505000	70.04044	40.07454	45.5	Marifican
229	21SP-MW0521-229-BG-DUP	386398	4525368	-70.34814	40.87151	45.5	Mayflower Survey
230	21SP-MW0521-230-BG	386398	4521664	-70.34746	40.83815	48.0	Mayflower Survey
231	21SP-MW0521-231-BG	386398	4514256	-70.34611	40.77143	48.7	Mayflower Survey

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Station ID	Sample ID	X coordinate (m)	Y coordinate (m)	Longitude	Latitude	Depth (m)	Depth Reference
232	21SP-MW0521-232-SPI	384546	4510552	-70.36737	40.73782	48.7	Mayflower Survey
233	21SP-MW0521-233-SPI	384546	4519812	-70.36908	40.82121	48.0	Mayflower Survey
234	21SP-MW0521-234-SPI	382694	4521664	-70.39139	40.83763	49.4	Mayflower Survey
235	21SP-MW0521-235-BG	382694	4517960	-70.39069	40.80427	49.5	Mayflower Survey
237	21SP-MW0521-237-SPI	382694	4512404	-70.38964	40.75423	50.0	Mayflower Survey
239	21SP-MW0521-239-BG	382694	4504996	-70.38826	40.68752	51.7	Mayflower Survey
241	21SP-MW0521-241-SPI	378990	4510552	-70.43315	40.73702	51.2	Mayflower Survey
242	21SP-MW0521-242-SPI	378990	4503144	-70.43172	40.67030	54.5	Mayflower Survey
244	21SP-MW0521-244-BG	377138	4501292	-70.45327	40.65335	57.8	Mayflower Survey
245	21SP-MW0521-245-SPI	377138	4508700	-70.45472	40.72007	52.4	Mayflower Survey
246	21SP-MW0521-246-BG	375286	4506848	-70.47627	40.70311	54.0	Mayflower Survey
248	21SP-MW0521-248-SPI	371582	4501292	-70.51896	40.65250	59.0	Mayflower Survey
249	21SP-MW0521-249-BG	369730	4499440	-70.54048	40.63554	61.0	Mayflower Survey
251	21SP-MW0521-251-BG	366026	4503144	-70.58505	40.66830	60.0	Mayflower Survey
252	21SP-MW0521-252-BG	366026	4499440	-70.58426	40.63494	60.5	Mayflower Survey
253	21SP-MW0521-253-BG	364174	4501292	-70.60656	40.65132	60.3	Mayflower Survey

CRS data: NAD83 / UTM Zone 19N [26919] BG-DUP – Field duplicate for TOC and grain size only

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Mayflower Wind Infaunal and Seafloor Habitat Field Study Plan Spring 2021

Table 5-2. Benthic Sampling Stations and Sample IDs along Mayflower Wind Export Cable Corridor Proposed for the Spring 2021 Survey

Station ID	Sample ID	X coordinate (m)	Y coordinate (m)	Longitude	Latitude	Depth (m)	Depth Reference	Notes for Spring 2021
Northern Ex	xport Cable Corridor							
201	21SP-MW0521-201-SPI	367356.65	4598358.85	-70.58986	41.52589	12.3	Mayflower Survey	SPI/PV transect midpoint
201-E	21SP-MW0521-201- i-SPI	367846.42	4598459.48	-70.58401	41.52688	9.7	NOAA Chart 13237	eastern edge of transect
201-W	21SP-MW0521-202-1-SPI	366866.88	4598258.21	-70.59571	41.52490	18.9	NOAA Chart 13237	western edge of transect
202	21SP-MW0521-202- SPI	367463.56	4597181.16	-70.58832	41.51530	11.7	Mayflower Survey	SPI/PV transect midpoint
202-E	21SP-MW0521-202- i-SPI	367975.00	4597181.41	-70.58219	41.51539	8.0	NOAA Chart 13237	eastern edge of transect
202-W	21SP-MW0521-202-1-SPI	366924.93	4597180.90	-70.59477	41.51521	7.0	NOAA Chart 13237	western edge of transect
254	21SP-MW0521-254-BG	366949.44	4596442.69	-70.59432	41.50857	13.7	NOAA Chart 13237	Additional volume for USCS sieves
V001	21SP-MW0521-V001-SPI	367469.42	4595833.83	-70.58795	41.50317	14.6	Mayflower Survey	Video transect midpoint
V001-E	21SP-MW0521-V001-i-SPI	367823.78	4596190.57	-70.58379	41.50645	5.8	NOAA Chart 13237	eastern edge of transect
V001-W	21SP-MW0521-V001-1-SPI	367112.68	4595474.70	-70.59215	41.49988	16.2	NOAA Chart 13237	western edge of transect
255	21SP-MW0521-255-BG	369778.05	4594405.95	-70.55999	41.49070	21.3	NOAA Chart 13237	Additional volume for USCS sieves
256	21SP-MW0521-256-SPI	370373.44	4593588.79	-70.55269	41.48343	21.3	Mayflower Survey	SPI/PV transect midpoint
256-E	21SP-MW0521-256-i-SPI	370061.51	4593197.93	-70.55634	41.47987	20.8	Mayflower Survey	eastern edge of transect
256-W	21SP-MW0521-256-1-SPI	370685.36	4593979.64	-70.54904	41.48700	19.8	Mayflower Survey	western edge of transect
203	21SP-MW0521-203-SPI	372100.36	4592644.31	-70.53181	41.47521	21.7	Mayflower Survey	SPI/PV transect midpoint
203-E	21SP-MW0521-203-i-SPI	372248.50	4593121.86	-70.53014	41.47953	18.3	NOAA Chart 13237	eastern edge of transect
203-W	21SP-MW0521-203-1-SPI	371952.36	4592167.20	-70.53348	41.47089	9.7	NOAA Chart 13237	western edge of transect
V008	21SP-MW0521-V008-SPI	372640.24	4592470.22	-70.52531	41.47373	21.5	Mayflower Survey	Video transect midpoint
V008-E	21SP-MW0521-V008-i-SPI	372783.25	4592955.99	-70.52370	41.47812	19.8	NOAA Chart 13237	eastern edge of transect
V008-W	21SP-MW0521-V008-1-SPI	372494.02	4592004.22	-70.52696	41.46951	13.0	NOAA Chart 13237	western edge of transect
257	21SP-MW0521-257-BG	373431.64	4591938.01	-70.51572	41.46906	12.8	NOAA Chart 13237	Additional volume for USCS sieves
204	21SP-MW0521-204-SPI	374621.73	4591867.24	-70.50146	41.46861	17.4	Mayflower Survey	SPI/PV transect midpoint

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Station ID	Sample ID	X coordinate (m)	Y coordinate (m)	Longitude	Latitude	Depth (m)	Depth Reference	Notes for Spring 2021
204-E	21SP-MW0521-204-i-SPI	374780.46	4592341.52	-70.49966	41.47290	18.6	NOAA Chart 13237	eastern edge of transect
204-W	21SP-MW0521-204-1-SPI	374463.54	4591394.95	-70.50326	41.46433	15.5	NOAA Chart 13237	western edge of transect
V002	21SP-MW0521- V002-SPI	376048.39	4591426.41	-70.48429	41.46486	14.6	Mayflower Survey	Video transect midpoint
V002-E	21SP-MW0521- V002-i-SPI	376201.97	4591902.86	-70.48255	41.46918	12.1	NOAA Chart 13237	eastern edge of transect
V002-W	21SP-MW0521-V002-1-SPI	375898.51	4590956.19	-70.48599	41.46060	15.5	NOAA Chart 13237	western edge of transect
205	21SP-MW0521-205-SPI	377429.22	4591084.12	-70.46769	41.46199	17.7	Mayflower Survey	SPI/PV transect midpoint
205-E	21SP-MW0521-205-i-SPI	377507.86	4591578.50	-70.46685	41.46645	15.2	NOAA Chart 13237	eastern edge of transect
205-W	21SP-MW0521-205-1-SPI	377350.39	4590590.37	-70.46853	41.45753	11.0	NOAA Chart 13237	western edge of transect
206	21SP-MW0521-206-SPI	378769.44	4590866.49	-70.45160	41.46024	21.9	Mayflower Survey	
A020	21SP-MW0521-A020-BG	379740.64	4590201.39	-70.43985	41.45439	9.1	NOAA Chart 13237	Additional volume for USCS sieves
	21SP-MW0521-A020-BG-DUP							
A021	21SP-MW0521-A021-BG	379901.70	4589159.27	-70.43771	41.44503	9.0	NOAA Chart 13237	Additional volume for USCS sieves
4000	21SP-MW0521-A022-BG	000000 44	4500007.04	70.40500	44 40540	F 4	NOAA Ob ast 40007	A 14% and a 14000 at a 14000 at a 14000
A022	21SP-MW0521-A022-BG-DUP	-380033.44	4588087.21	-70.43592	41.43540	5.4	NOAA Chart 13237	Additional volume for USCS sieves
A023	21SP-MW0521-A023-SPI	380251.02	4586152.26	-70.43293	41.41801	5.7	NOAA Chart 13237	
A024	21SP-MW0521-A024-SPI	380321.45	4584626.11	-70.43179	41.40428	6.7	NOAA Chart 13237	SPI/PV transect midpoint
A024-E	21SP-MW0521-A024-i-SPI	380821.48	4584626.09	-70.42581	41.40435	6.7	NOAA Chart 13237	eastern edge of transect
A024-W	21SP-MW0521-A024-1-SPI	379821.43	4584626.10	-70.43777	41.40420	4.2	NOAA Chart 13237	western edge of transect
A025	21SP-MW0521-A025-SPI	380307.94	4583369.52	-70.43170	41.39296	8.0	NOAA Chart 13237	SPI/PV transect midpoint
A025-E	21SP-MW0521-A025-i-SPI	380807.97	4583369.50	-70.42572	41.39303	6.0	NOAA Chart 13237	eastern edge of transect
A025-W	21SP-MW0521-A025-1-SPI	379807.91	4583369.50	-70.43768	41.39288	5.0	NOAA Chart 13237	western edge of transect
A026	21SP-MW0521-A026-SPI	380218.69	4581809.00	-70.43246	41.37889	8.5	NOAA Chart 13237	SPI/PV transect midpoint
A026-E	21SP-MW0521-A026-i-SPI	380719.17	4581808.67	-70.42648	41.37896	10.3	NOAA Chart 13237	eastern edge of transect
A026-W	21SP-MW0521-A026-1-SPI	379718.22	4581809.41	-70.43845	41.37882	8.5	NOAA Chart 13237	western edge of transect

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Station ID	Sample ID	X coordinate (m)	Y coordinate (m)	Longitude	Latitude	Depth (m)	Depth Reference	Notes for Spring 2021
A027	21SP-MW0521-A027-SPI	380536.64	4580369.86	-70.42838	41.36598	8.2	NOAA Chart 13237	SPI/PV transect midpoint
A027-E	20SP-MW0521-A027-i-SPI	380957.35	4580642.49	-70.42340	41.36850	10.6	NOAA Chart 13237	eastern edge of transect
A027-W	20SP-MW0521-A027-1-SPI	380115.90	4580097.27	-70.43335	41.36346	7.0	NOAA Chart 13237	western edge of transect
A028	21SP-MW0521-A028-SPI	381352.77	4579183.64	-70.41839	41.35542	15.5	NOAA Chart 13237	SPI/PV transect midpoint
A028-E	21SP-MW0521-A028-i-SPI	381794.91	4579417.12	-70.41315	41.35759	15.2	NOAA Chart 13237	eastern edge of transect
A028-W	21SP-MW0521-A028-1-SPI	380910.99	4578950.35	-70.42362	41.35325	14.6	NOAA Chart 13237	western edge of transect
A029	21SP-MW0521-A029-SPI	382120.39	4576652.11	-70.40872	41.33274	5.5	NOAA Chart 13237	
A030	21SP-MW0521-A030-SPI	382568.26	4573898.46	-70.40284	41.30800	6.4	NOAA Chart 13237	SPI/PV transect midpoint
A030-E	21SP-MW0521-A030-i-SPI	383024.10	4574103.92	-70.39744	41.30992	5.5	NOAA Chart 13237	eastern edge of transect
A030-W	21SP-MW0521-A030-1-SPI	382112.51	4573692.79	-70.40824	41.30609	7.3	NOAA Chart 13237	western edge of transect
Southern Ex	cport Cable Corridor							
A031	21SP-MW0521-A031-BG	383103.71	4572946.89	-70.39626	41.29951	6.0	NOAA Chart 13237	Additional volume for USCS sieves
A032	21SP-MW0521-A032-SPI	383642.61	4572046.63	-70.38966	41.29148	6.7	NOAA Chart 13237	
A022	21SP-MW0521-A033-BG	204240.00	4571200.00	70 20144	44 20405	7.6	NOAA Chart 12227	Additional values for LICCC signer
A033	21SP-MW0521-A033-BG-DUP	—384318.98	4571298.99	-70.38144	41.28485	7.6	NOAA Chart 13237	Additional volume for USCS sieves
A034	21SP-MW0521-A034-SPI	384835.92	4570367.85	-70.37509	41.27654	13.4	NOAA Chart 13237	
A035	21SP-MW0521-A035-BG	385304.93	4569454.2	-70.36932	41.26838	17.1	NOAA Chart 13237	Additional volume for USCS sieves
A036	21SP-MW0521-A036-BG	385841.76	4568587.25	-70.36275	41.26065	23.5	NOAA Chart 13237	
A037	21SP-MW0521-A037-SPI	386410.07	4567669.44	-70.3558	41.25246	23.7	NOAA Chart 13237	
A038	21SP-MW0521-A038-BG	387000.94	4566775.92	-70.34858	41.24450	26.0	NOAA Chart 13237	
A039	21SP-MW0521-A039-BG	387632.94	4565892.73	-70.34088	41.23663	25.0	NOAA Chart 13237	
A040	21SP-MW0521-A040-SPI	388411.95	4565110.80	-70.33144	41.22970	28.6	NOAA Chart 13237	
A041	21SP-MW0521-A041-BG	389234.88	4564284.78	-70.32148	41.22237	26.2	NOAA Chart 13237	
208	21SP-MW0521-208-BG	390082.07	4562965.26	-70.31113	41.21060	27.2	Mayflower Survey	

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Station ID	Sample ID	X coordinate (m)	Y coordinate (m)	Longitude	Latitude	Depth (m)	Depth Reference	Notes for Spring 2021
209	21SP-MW0521-209-BG	390525.96	4559091.07	-70.30515	41.17578	30.0	Mayflower Survey	
210	21SP-MW0521-210-BG	390722.22	4550969.92	-70.30136	41.10267	33.8	Mayflower Survey	
211	21SP-MW0521-211-SPI	390765.92	4549161.91	-70.30052	41.08639	34.5	Mayflower Survey	SPI/PV transect midpoint
211-E	21SP-MW0521-211-i-SPI	391161.91	4549162.11	-70.29581	41.08644	34.5	Mayflower Survey	eastern edge of transect
211-W	21SP-MW0521-211-1-SPI	390369.95	4549161.70	-70.30523	41.08633	34.5	Mayflower Survey	western edge of transect
212	21SP-MW0521-212-SPI	391039.83	4537827.74	-70.29526	40.98435	38.4	Mayflower Survey	
213	21SP-MW0521-213-BG	391108.67	4534979.12	-70.29394	40.95871	37.8	Mayflower Survey	

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CRS data: NAD83 / UTM Zone 19N [26919]
BG-DUP – Field duplicate for TOC and grain size only
"Additional volume for USCS sieves" – sample located in Massachusetts state waters. Grain size analysis to be conducted using standard (Wentworth) sieves and USCS sieves to ensure a #200 fines fraction is obtained.

Mayflower Wind Infaunal and Seafloor Habitat Field Study Plan Spring 2021

Table 5-3. Benthic Sampling Stations and Sample IDs within the Control Areas Proposed for the Spring 2021 Survey

Station ID	Sample ID	X coordinate (m)	Y coordinate (m)	Longitude	Latitude	Depth (m)	NOAA Chart Reference
			Western Control	Area			
C06	21SP-MW0521-C06-BG	352554.92	4499405.58	-70.74349	40.63234	-62.0	13200
C07 -	21SP-MW0521-C07-SPI	— 355340.11	4499301.98	-70.71054	40.63190	-62.0	13200
C07 -	21SP-MW0521-C07-BG						
C08 -	21SP-MW0521-C08-SPI	- 353948.96	4498137.67	-70.72671	40.62117	-62.0	13200
	21SP-MW0521-C08-BG	333940.90					
C09	21SP-MW0521-C09-SPI	352519.61	4496842.19	-70.74330	40.60925	-66.0	13200
	21SP-MW0521-C09-BG						
C10 -	21SP-MW0521-C10-SPI	- 355308.51	4496789.60	-70.71034	40.60927	-64.0	13200
010	21SP-MW0521-C10-BG	333300.31					
			Eastern Control	Area			
C11 -	21SP-MW0521-C11-SPI	- 403884.33	4518514.80	-70.13961	40.81202	-35.0	13200
	21SP-MW0521-C11-BG						
C12 -	21SP-MW0521-C12-SPI	- 406638.30	4518473.35	-70.10696	40.81197	-35.0	13200
	21SP-MW0521-C12-BG						
C13	21SP-MW0521-C13-SPI	405261.19	4517168.46	-70.12308	40.80006	-37.0	13200
	21SP-MW0521-C13-BG						
C14 -	21SP-MW0521-C14-SPI	- 403837.78	4515987.49	-70.13977	40.78925	-38.0	13200
	21SP-MW0521-C14-BG						
C15	21SP-MW0521-C15-BG	406654.05	4515944.80	-70.10639	40.78919	-38.0	13200

CRS data: NAD83 / UTM Zone 19N [26919]

Prepared for: Mayflower Wind LLC AECOM Mayflower Wind Infaunal and Seafloor Habitat Field Study Plan Spring 2021

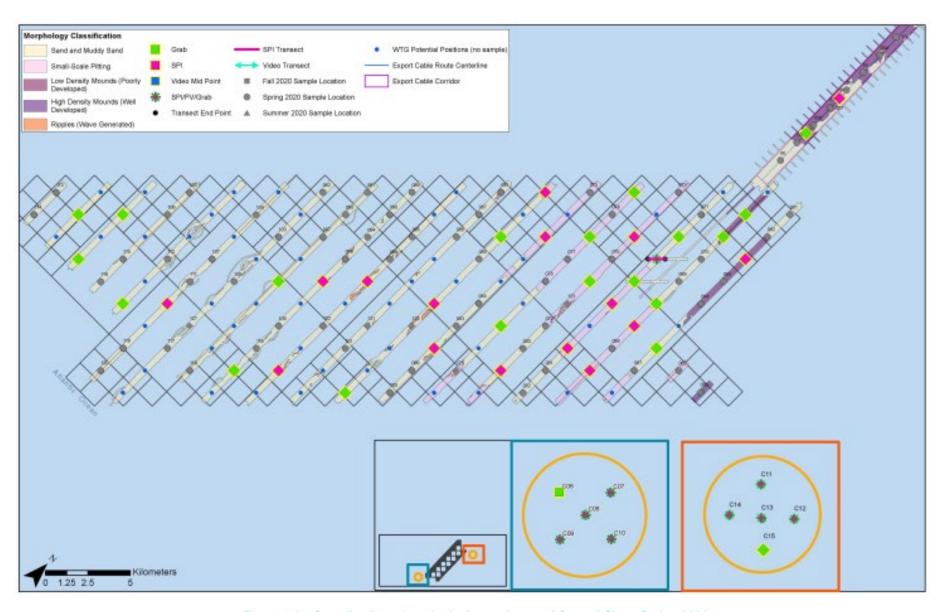


Figure 5-1. Sampling Locations in the Lease Area and Control Sites: Spring 2021

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Mayflower Wind

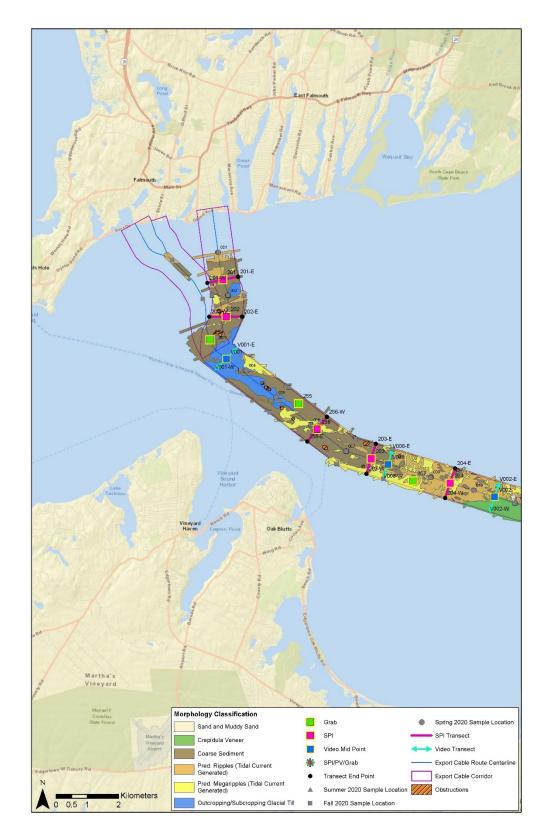


Figure 5-2. Sampling Locations along the Northern Export Cable Corridor: Spring 2021

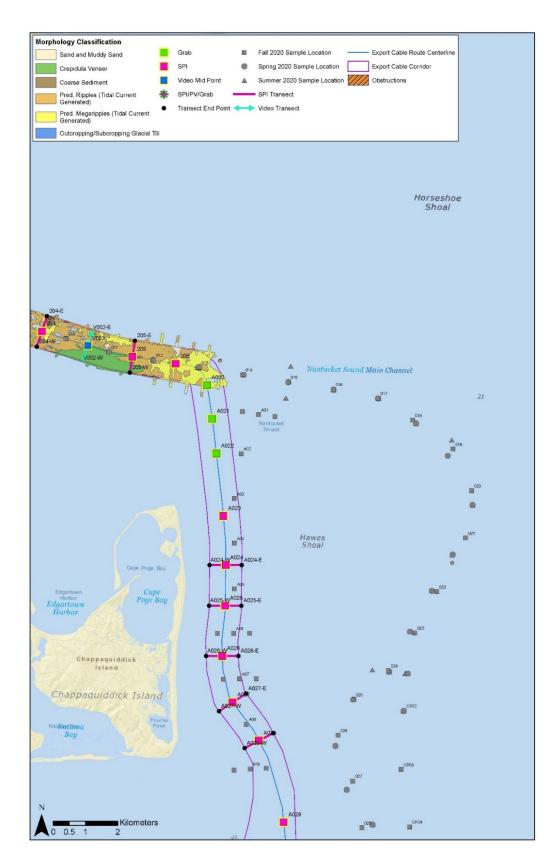


Figure 5-3. Sampling Locations along the Northern Export Cable Corridor

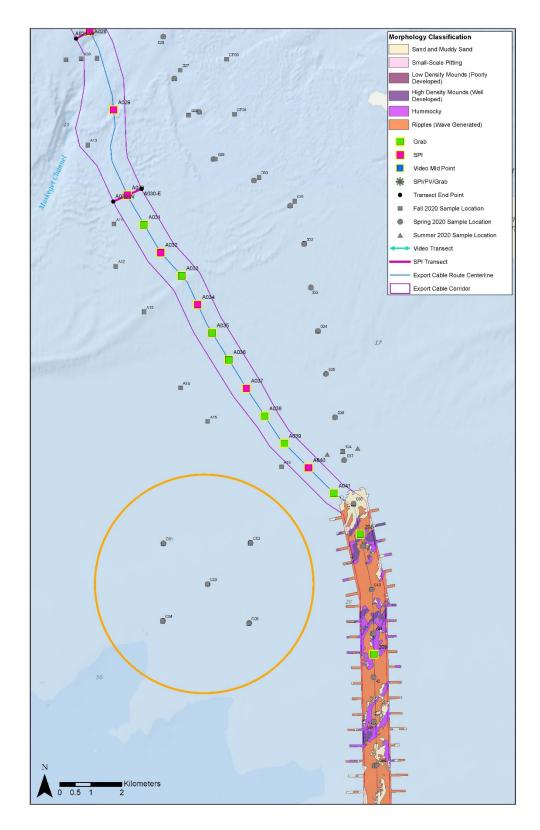


Figure 5-4. Sampling Locations along the Northern and Southern Export Cable Corridor

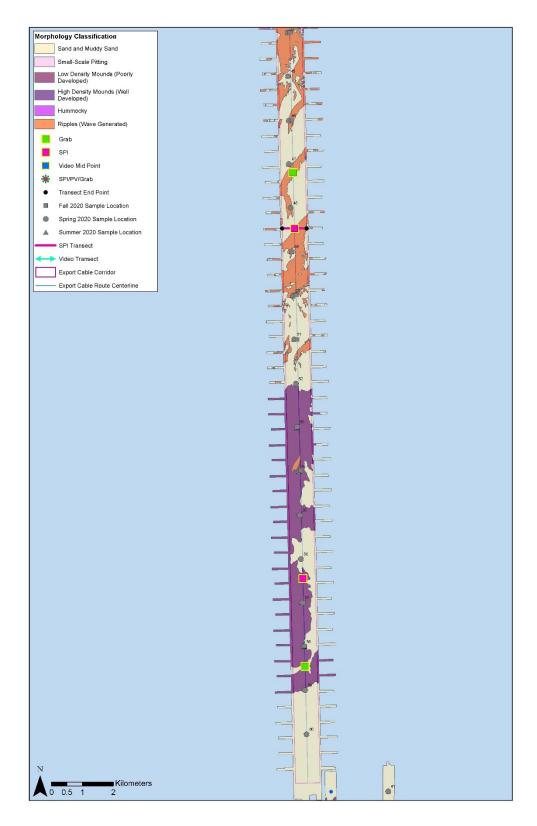


Figure 5-5. Sampling Locations along the Southern Export Cable Corridor: Spring 2021

5.2 Benthic Grab Sampling Methodology

5.2.1 Sample Collection

During the Spring 2021 survey, surficial sediment grab samples will be collected from 19 locations within the Lease Area, 17 locations along the ECC (six in the NECC and 11 in the SECC), and at 10 control stations for analysis of grain size, TOC, and benthic community structure. Benthic sediment will be collected using a Ted Young-modified double Van Veen grab sampler, with each bucket of the grab sampler having an area of (0.04 square meters [m²]). One of the buckets will be processed in the field for benthic infaunal community assessment. One of the buckets will be selected for analysis of physical parameters (e.g., grain size and TOC). Details related to the modified grab sampler are provided in the PEP (Fugro, 2021a). The grab sampler is also equipped with a real time high definition (HD) video camera, scaling lasers and a light emitting diode (LED) light.

Locations of grab samples will be considered on target if the location of penetration is within 25 m of the target location. Target station locations have been determined as part of the initial field planning effort and with review of existing NOAA chart data and data collected during previous surveys. Every effort will be made to collect samples as planned. Station locations may shift based on review of new geophysical data or other survey data obtained, and/or conditions encountered in the field at the time of sampling (e.g., hard bottom or insufficient water depths). In the event that a sample cannot be collected at the proposed target location, a decision to move the station will be made in conjunction with the Mayflower Wind program manager or offshore client representative. Locations will be moved laterally or to either side of the proposed location and when possible within a 500 m radius of the proposed ECC. The coordinates of the new sample location will be recorded, and the deviation noted on the field data sheet. For locations of a failed grab attempt, video feed from the grab camera will be recorded and retained for documentation of conditions.

Conditions may be encountered that may preclude the collection of acceptable benthic infaunal grab samples and/or SPI/PV images at a given location. Such conditions warranting the relocation of sampling stations may include, but are not limited to, underlying geologic and sediment conditions, physical obstructions on the bottom, active fishing gear, and water depth.

Where an initial attempt to collect a benthic grab sample or SPI/PV image fails, up to three attempts may be made to collect a benthic grab or SPI/PV images at any given location. However, if evidence is such that repeated attempts will not likely yield a successful outcome, then relocation may occur without repeat attempts to secure a sample/image at the original location.

Where necessary, sampling stations along the planned ECC may be relocated:

- By reducing the separation distance between stations to locate the sample station to avoid the
 obstructing condition while maintaining approximately the same center line as the existing sampling
 station locations; changes in the separation of sampling locations should be the minimum required to
 avoid the obstructing condition; or
- By shifting off the centerline of the current sampling locations to a nearby location which avoids the
 obstructing condition; the distance of the shift off the center line should be the minimum required to
 avoid the obstructing condition.

Where necessary, sampling stations within the Lease Area may be relocated to the nearest wind turbine generator (WTG) tower location which does not already have a sampling location. Any stations moved within the Lease Area will be done in consultation with Mayflower Wind. Where relocation is necessary, the field records should document the obstructing condition encountered, and the coordinates of the new sampling location. Available physical evidence which supports a decision to relocate (e.g., photographs, water depth information, grab cam video or SPI/PV images) should be retained.

Fugro will record the location of the grab using surface positioning. In waters too shallow for accurate slant ranges to be established, a position will be taken using the assumption that the grab is directly below the A-frame/sheave. The lowering cable will be observed for significant deviation from vertical in these shallow water stations. Sediment grabs will be examined for acceptability and should meet the following minimum requirements to be considered sufficient for retention:

- 1. Greater than 70 percent full;
- 2. Not over-penetrated where sediment exudes from outside the cover of the grab;
- 3. Small amount of overlying water at the surface of the grab;
- 4. Undisturbed sediment surface; and
- 5. No visible evidence of washout (i.e., jaws of grab are firmly closed).

If the grab does not meet the standards listed above, it will be discarded, and another attempt will be made. A total of three attempts will be made before that station is abandoned and moved an appropriate distance (at the discretion of the onboard lead scientist and client representative).

Upon successful collection, a photograph of the grab surface will be taken, with station label visible in the photo. The following physical features of each grab will be recorded:

- Depth of penetration;
- Sediment color;
- Visual sediment grain size description;
- Evidence of noticeable odor/sheen; and
- Surface features and presence of conspicuous macrofauna on the surface of the grab sample (description of type). Care should be taken to ensure that features of the sediment surface are visible in the deck photograph.

5.2.2 Subsample Collection for Sediment Characterization

After the initial inspection, one bucket/grab of the grab sampler will be designated for physico-chemical sampling. From that bucket, grain size and TOC samples will be extracted. An 8-ounce (approximate) sediment sample from the designated bucket will be obtained for analysis of sediment texture and a 120-milliliter (mL) or 4-ounce sediment subsample will be obtained for TOC analysis. Two jars will be collected for grainsize analysis from locations in state waters (See Table 5-2, and below). Grain size/texture samples will be collected from the top 10 cm of the sediment in the bucket; TOC will be collected from the top 2 cm. Epifauna should not be included in sample containers for TOC or grain size.

The Wentworth sieve sizes will be used for all samples for analysis of grain size distribution. Stations within Massachusetts state waters will be analyzed for grain size using two sieve sizes. Sieves for Wentworth classification and for USCS classification with both be used. The USCS data will provide information on the percent of sediment that is "fines" using a #200 sieve, per MADEP discussion. The stations subject to these analyses are:

- **254**
- 255
- 257
- A020
- A021
- A022
- A031
- A033
- A035

General requirements for handling of sediment and organisms while in the field, including sample container and storage requirements and shipping details are provided in Table 5-4 and summarized below. Specific details are outlined in the Benthic Habitat Study QAPP (AECOM, 2020c).

Table 5-4. Proposed Samples to be Collected

Sample	Analyses	Sample Container/ Preservation	Storage	Holding Time	Analysis Method	Method Detection Limit (with unit)
Physico- chemical Parameters (P1)	тос	120- mL or 4-ounce glass jar with Teflon lined cap, approximately 80% full	≤6°C	14 days (Lloyd Kahn) or 28 days (9060A)	EPA Region 2 Lloyd Kahn or EPA 9060A	0.01 %
Physico- chemical Parameters (P2)	Grain Size/Texture	8-ounce plastic	Ambient temperature	NA	ASTM ^(a) D6913/ D7928 ^(b)	NA
	Sediment type			NA	Desktop Analysis	NA
	aRPD		Electronically with server back			
	Sediment Oxygen Demand					
Sediment	Sedimentary Methane					
Profile Image	Thiophilic Bacteria	NA				
(SPI)	Infaunal Successional Stage Other Biological Features (See Section 2.4.4.7 of the QAPP		ир		,	
Benthic Infauna	Taxonomic classification	1 or 0.5-liter (L) plastic jars (depending on the sample volume); field preserved with 10%	Ambient temperature	NA	Microscopy	NA
	Biomass	buffered formalin			Wet weight	NA

Samples for TOC analyses will be placed in the appropriate containers and kept cool in sturdy coolers with ice, or refrigerators, to maintain a holding temperature of ≤6°C. Sediment samples for grain size do not have specific temperature requirements for storage. Samples for benthic infauna community will be preserved with a 10 percent (%) buffered formalin solution and should be kept in a cooler or sturdy box separate from other samples and out of excess sun or heat.

Field duplicate sediment grain size and TOC samples will be obtained at a rate of 10 percent of the total number of samples collected (n=5). Details of locations and sample IDs, including field duplicates, are presented in Tables 5-1 through 5-3. Should sufficient volume not be available in a single grab bucket to obtain duplicate samples for both TOC and grain size, the grain size duplicate will be collected at the next benthic grab station. Sample jar labels will be updated as necessary to reflect the actual location where duplicate samples are collected.

After the survey is completed, the samples will be transported under custody (i.e., by hand or via shipping courier) to the appropriate laboratories for analysis. Samples will be on ice, icepacks (or comparable) in coolers with protective layers of foam or bubble wrap to protect from breakage and at the appropriate

temperature during shipping. Temperature loggers and or temperature blanks will be used on board the vessel to verify samples have stayed at specified temperatures during transport.

5.2.3 Benthic Sample Field Processing

Samples for benthic infaunal community analyses will be sieved aboard the vessel using filtered (to remove pelagic organisms) sea water through a clean 500-micron mesh sieve using **gentle water pressure**; organisms are <u>fragile</u>, and the stream of water must be gentle enough to minimize damage to ensure they can be identified to lowest taxonomic level. During sieving, the following should be noted:

- 1. Samples of coarse sand where majority is retained on the sieve should be packaged in their entirety in 1-gallon sample containers.
- 2. Should samples include tube-building anemones (e.g., cerianthid), these organisms should be placed in a separate sample jar from the rest of the organisms. Cerianthids burrow into bottom sediments and build thick tubes comprised of mud, sand and mucus. In the bucket without overlying water to suspend the tube, the tube will appear as a dark brown or black gelatinous mound.

After sieving, the sample (debris and organisms retained on the sieve) will be placed in a pre-labeled sample jar (or jars) and preserved using a 10% buffered formalin solution. Organisms are transferred to the sample jars by gently scooping the sieve residuals into the jars and using a rinse bottle containing seawater to rinse the remaining sieve contents into the jar. Excessive (see below regarding preservation) rinsate water should be decanted back to the sieve, and organisms re-washed into the jar.

The sample containers should not contain more than 50% solids (i.e., benthic organisms and residual sediments that do not pass through the 500-micron sieve). The solution in the final sample should have a <u>final concentration of preservative of ideally not less than 8-10 percent buffered formalin concentration</u>. To achieve this, the volume of rinsate must be carefully monitored and minimized, and the ratio of rinsate water to 10% buffered formalin cannot be greater than 1:4. The closed sample jar must be gently inverted several times to fully expose all organisms to the formalin.

This fixative concentration will ensure the exoskeleton, shell, and other hard parts of the organisms do not disintegrate and that the entire sample is fully preserved with the formalin. Preserved samples will be transported to the laboratory under Chain of Custody as described in the AECOM QAPP (AECOM, 2020c).

5.2.4 Benthic Sample Laboratory Processing

The benthic laboratory will log the receipt of samples under Chain of Custody. Samples will be transferred from formalin to ethanol under controlled conditions using safety measures that include protective eyewear, gloves, laboratory coat, and fume hood as described in the Task Hazard Analyses (THAs). Samples of coarse sand will be elutriated prior to sorting.

5.2.4.1 Sorting

Upon receipt at the laboratory, samples will be transferred from formalin to ethanol and stained with rose bengal. Samples will then be sorted to remove benthic organisms from residual debris. For sorting QA/QC, every tenth sample (i.e., 10 percent of sample residues) sorted by an individual sorter will be resorted by a different sorter to determine if organisms were missed. If more than 10 percent of the total number of organisms were not removed from the samples then the remaining nine samples will also be resorted.

5.2.4.2 Taxonomy

Organisms will be identified to Lowest Practical Taxonomic Level (LPTL), which balances effort of identification with cost efficiency. A dedicated Project benthic infaunal reference collection will be developed and maintained that includes at least one individual of each type of organism identified and will be holistically developed throughout the multiple seasons of sampling effort. Species recognized as introduced (non-indigenous) will be noted. Macrofloral identifications will be performed from seafloor video and plan-view

camera imagery. No macrofloral identifications will be performed from the benthic infaunal samples. Oligochaetes will be identified to Class level only. Meiofauna will not be identified (e.g., Nematoda, Ostracoda, and Harpacticoida). Enumeration and identification procedures are detailed in the Benthic Infaunal and Seafloor Habitat Study QAPP (AECOM, 2020c).

Not all organisms may be identified to species level and/or are not known benthic species. Sample sorting will be done according to AECOM SOP MW-B-001, April 2020, Benthic Infauna Sample Processing. Organism clusters such as encrusting tunicates, hydroids and bryozoans will be picked from the sediment in order to provide presence/absence information only, and barnacles and shell-boring animals (epifaunal animals) will be picked from the sample but entered on data sheets as presence only. Prior to analysis of the soft-bottom faunal data, modifications to the dataset will be made. For example, some taxa (e.g., epifaunal, encrusting, or non-benthic taxa) will be eliminated from all calculations. Other taxa will be included in calculations of abundance but not diversity; such taxa are usually those infaunal organisms that cannot be identified to at least the genus level. Only those individuals identified to genus or species level will be included in all remaining calculations (e.g., diversity, evenness, number of species, multivariate analyses).

5.2.4.3 **Biomass**

Once organisms have been identified to LPTL, wet-weight biomass will be performed. Wet-weight measurements preserve organisms intact and allow for the development of a specimen reference collection that can be used in the future to inform post-Project implementation potential impacts.

5.3 High Definition Real Time Video

Real time video will be used in conjunction with sediment grab operations. The grab is equipped with a real time video camera capable of taking high resolution digital stills and high-density video transects. Still images may be extracted from the video as appropriate. The resulting videos will have position, station name, project info and other relevant information recorded to the video using appropriate data overlay software.

The real time video used for the grab sample documentation will also be used to collect video transects at three locations along the northern ECC. Transect V001 has been placed to record the occurrence of rock outcrops, glacial till, and similar hard bottom habitats. At this location, the camera altitude will be set sufficiently above the seafloor to avoid contact with the hard and rugose substrate likely present. At transects V002 and V008, the interpreted habitats contain Crepidula reefs and veneers. The camera will fly at sufficiently low altitude to maximize resolution of the organisms present. The flight path of the camera will be as stable as possible, and at a consistent altitude as conditions allow. Speed of the vessel and camera over ground should not exceed 0.5 knots in order to reduce effects of motion blur on the video data. Environmental factors, such as surface winds, waves, subsurface currents, etc., will require consideration in setting up the starting points and the vessel path along the planned transect. Environmental conditions may be such that adherence to the target maximum speed proves to be impractical. Should this be the case, it is recommended that the vessel move to other nearby work and return to the transect location when environmental conditions abate.

Video segments will be collected from a target transect 1000 m in length. During video transect operations, video file sizes may grow rapidly. If needed, break the transect up into multiple discreet segments of 100 m each (noting start and stop positions) along each of the three planned transects. The sequential number sequence is VXXX-1 through VXXX-i, where VXXX is the location (e.g., V001), the video segment VXXX-1 is located on the western edge of the transect, and the VXXX-i segment is the final video segment on the eastern edge of the transect. If sampling is initiated on the eastern side of the transect, that number will be VXXX-20 and numbers will decrease (VXXX-19, VXXX-18, etc.) moving west.

Data from the video supports and informs reporting according to the Coastal and Marine Ecological Classification Standard (CMECS) format as required by BOEM guidelines. Video data of the seafloor, plus physical sampling of the sediment and benthos, uniquely inform three of the four main CMECS components (Geoform, Substrate, and Biotic). Submerged aquatic vegetation (SAV) including macroalgae will be noted and abundance qualified. Eelgrass, if seen, will be documented using the terminology provided in Figure 5-6.

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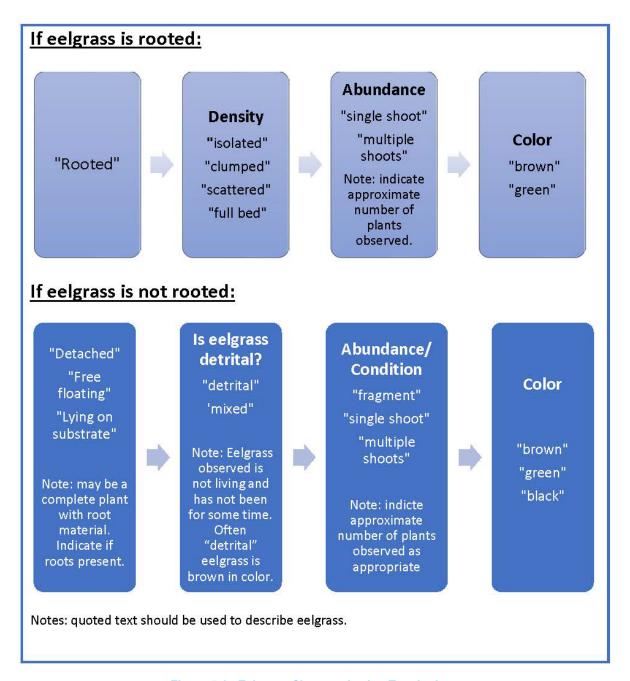


Figure 5-6. Eelgrass Characterization Terminology

5.4 Sediment Profile Image Collection and Analysis

A SPI/PV survey will be performed at the Lease Area (15 locations), along the ECC (eight (8) individual locations) and at the two control areas (four (4) stations per control area). In addition to the individual sampling location, transect SPI/PV sampling will be conducted at 12 locations along the NECC, one (1) location along the SECC, and one (1) location in the Lease Area. Transect sampling consists of single SPI/PV image pairs (i.e., rather than triplicate pairs) collected from up to four locations to each side of the main individual location (i.e., the location on the ECC which is sampled in triplicate). Up to eight single image pairs will be collected from a target transect 1000 m in length. The sequential number sequence is XXX-1 through XXX-i, where XXX is the main individual location, the transect sample XXX-1 is located on the western edge of the transect, and the XXX-i location is the final image pair collection on the eastern edge of the transect. If

sampling is initiated on the eastern side of the transect, that number will be XXX-8 and numbers will decrease (XXX-7, XXX-6, etc.) moving west. During transect sampling, the camera will remain deployed (i.e., not brought up to deck) between stations as conditions allow. As such, usable images may not be collected from all transect sampling locations. Images will be collected from locations approximately 125 m apart along the transect, assuming 8 transect samples over 1000 m. The sampling locations on the transect may be offset or moved along or adjacent to the target transect, consistent with other sampling, based on field conditions.

The camera will be within 25 m of the target location, with images collected, as possible, in an array around the center target location. The SPI/PV imaging will be used to determine the physical characteristics of sediment and to assess benthic colonization/recolonization status of the site and within the reference areas. The analysis of SPI/PV will include CMECS categorization as recommended with the NMFS 2020 guidelines. Details pertaining to the equipment, field methods, and procedures to be used to collect and analyze the SPI and PV images for the Project are presented in the Benthic Infaunal and Seafloor Habitat Study QAPP (AECOM, 2020c) and the PEP (Fugro, 2021a). For locations of a failed SPI attempt, PV images will be recorded and retained for documentation of conditions. Submerged aquatic vegetation (SAV) including macroalgae will be noted and abundance qualified. Eelgrass, if seen, will be documented using the terminology provided in Figure 5-6.

6.0 Health Safety Security and Environment (HSSE)

The following briefly summarizes the anticipated HSSE activities and plans required for the execution of the work. Field sampling activities will be addressed in separate Emergency Response Plan and HSSE plan developed by Fugro (2021b,c). This HSSE plan will be augmented by THAs that address on board preservation of benthic samples and laboratory-specific protocols for handling and sorting benthic infauna samples.

6.1 Sample Collection, Handling and Shipping

General requirements for handling of sediment and organisms while in the field, including sample container and storage requirements and shipping details, are provided in Table 5-4. Specific details are outlined in the Benthic Habitat Study QAPP (AECOM, 2020c). Specific HSSE details related to shipboard activities including sample collection are outlined in the HSSE Plan (Fugro, 2021c).

Potential hazards associated with sample handling and shipping include:

- Physical hazards of handling heavy containers (e.g., sample coolers);
- Specific chemical hazards related to the preservatives (i.e., formalin solution); and
- Physical hazards associated with glass containers on the vessel.

6.2 Laboratory Sample Analysis

Health and safety considerations for work associated with infaunal sample processing in the laboratory are addressed in a THA identifying physical, chemical, and biological hazards. The THA specifically addresses:

- Physical hazards of handling heavy equipment (sample coolers);
- Specific chemical hazards related to the fixative and preservatives; and
- Physical hazards (ergonomic and eye strain) associated with microscope use.

The laboratory team has the authority to stop work if an unsafe condition is perceived until the conditions are fully remedied to the satisfaction of the laboratory manager.

7.0 Benthic Infaunal Data Interpretation and Presentation

7.1 Data Interpretation

The benthic survey data will be interpreted in the context of the underlying geological resources in the area. Benthic species abundance will be correlated with benthic habitat type, so that patterns of species distribution and abundance will be discerned, and species assemblages identified. Use of multivariate analysis tools such as Bray-Curtis similarity calculation can be helpful with data interpretation and determination of habitat trends. GIS spatial mapping will be used in conjunction with the multivariate analysis and data for visualization of habitat types. Metrics such as abundance, dominant species, evenness, diversity, and density of organisms will be calculated.

The characterization of benthic resources in the Project Area will include, the following components:

- Sample manifest and description (sample ID, date, time, latitude, longitude, water depth, and sample description);
- Abundance of species (total number of individuals or percent cover, and species richness);
- Shannon's diversity Index (H'), and Pielou's evenness index (J') per sample;
- Biomass per unit volume of sediment sieved; and
- Multivariate analyses of benthic community including but not limited to Bray-Curtis analysis, principal component analysis, and non-linear multidimensional scaling.

7.2 Reporting

Final benthic survey results will be provided in a detailed technical report with figures and tabulated results that will be used for local/state permitting. It is anticipated that the data from Spring 2021 will be included along with the results from the Fall 2020 survey in a supplemental filing to the COP (November 2021). Sampling locations will be included as a GIS file. The report will further discuss potential cumulative impact results anticipated from the proposed Project including an assessment of taxonomic abundance estimates, comparison with existing control areas, and identification of survey methods that were considered less than effective. Specific details related to data analysis and reporting are outlined in the Benthic Habitat Study QAPP (AECOM, 2020c).

8.0 Quality Assurance and Control

Procedures for quality assurance/quality control (QA/QC), documentation and reporting will be followed as specified in the Benthic Infaunal and Seafloor Habitat Study QAPP (AECOM, 2020c) as well as the Fugro Quality Plan (Fugro, 2020).

9.0 Schedule/Timeframes

Typical, standard turnaround time from sample collection to benthic community sorting and taxonomy is 60 to 90 days, depending on number of samples and abundances of organisms. Analysis of SPI/PV images typically takes 30 to 60 days (or longer depending on the number of images obtained) and is similar to the

amount of time necessary to analyze the benthic grabs. SPI/PV interpretative reports can be expected within 90 days after mobilization.

10.0 References Cited

AECOM, 2020a. Mayflower Wind Benthic Infaunal and Seafloor Habitat Field Study Plan Spring 2020. May 5, 2020 and subsequent addendum

AECOM, 2020b. Mayflower Wind Benthic Infaunal and Seafloor Habitat Field Study Plan Summer 2020. August 18, 2020.

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AECOM, 2021. Final Benthic and Shellfish Resources Characterization Report. February 2021.

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Fugro, 2021a. Mayflower Wind Offshore Benthic Survey-Spring 2021 | Project Execution Plan – Operations Plan | Atlantic Ocean, Offshore Massachusetts: 169684-PEP-Ops-Plan_Spring 21 | 13 April 2021 or current version.

Fugro, 2021b. Mayflower Wind Offshore Benthic Survey-Spring 2021 | Project Execution Plan – Emergency Response Plan | Atlantic Ocean, Offshore Massachusetts: 02.21030005-PEP-ERP-Mayflower Wind 2021 Benthic Survey | 9 April 2021 or current version.

Fugro, 2021c. Mayflower Wind Offshore Benthic Survey-Spring 2021 | Project Execution Plan – HSSE Plan | Atlantic Ocean, Offshore Massachusetts: 02.21030005-PEP-HSSE Plan-Mayflower Wind 2021 Benthic Survey [00] | 9 April 2021 or current version.

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ATTACHMENT 6 – Summer 2021 Benthic Survey Planning

Prepared for: Mayflower Wind, LLC

Memorandum



To: Alison Verkade, National Marine

Fisheries Service

From: Erin Healy
Date: July 12, 2021

Subject: Summer 2021 Benthic Survey

Mayflower Wind Energy LLC (Mayflower Wind) conducted four seasonal benthic surveys in 2020 and 2021 within Lease Area OCS-A 0521 and the planned export cable corridor from the Lease Area through Muskeget Channel to a landing at Falmouth, MA. Recently, an additional export cable route to a landing at Brayton Point, Somerset, MA has been added to the Mayflower Wind Project. The Brayton Point export cable corridor runs from the Lease Area, west through Rhode Island Sound to the Sakonnet River, then north up the river to Mount Hope Bay.

Mayflower Wind is mobilizing for a benthic survey along the Brayton Point export cable corridor, with benthic sampling planned from July 12 to 30, 2021. Approach, methods, maps, and a table listing all planned sample stations with the rationale/objective for each sample station are provided in the attached memorandum from Mayflower Wind's contractor, Fugro. Mayflower Wind is concurrently collecting geophysical data which will be integrated with benthic survey data for the benthic habitat assessment.

Mayflower Wind appreciates the continued engagements with NMFS and BOEM regarding the Mayflower Wind Project overall benthic survey strategy.

Copy w/attachments to:

Jeff Browning, BOEM



Summer 2021 Benthic Survey Planning

To: Erin Healy, Heather Cousson, Kim Faulk

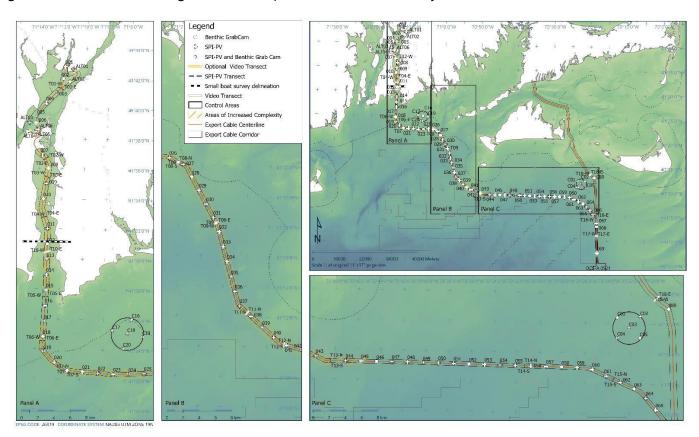
From: Daniel Doolittle

Date: July 2, 2021

Ref no.: EC66

Subject: Summer 2021 Benthic Survey Planning

Attached is the Mayflower Wind Summer 2021 Benthic Sampling Plan, which includes a series of maps and a table listing rationale and sampling method for each survey station. This survey will examine the benthic resources along an export cable corridor (ECC) running from Lease Area OCS-A 0521, through federal and Rhode Island state waters, and then north through the Sakonnet River, into Mt. Hope Bay and landfall at Brayton Point, MA. The estimated length of the ECC is ~150 km. Mayflower Wind has recently added this Brayton Point ECC to the Project, which also includes the Lease Area and an ECC to Falmouth, MA. Several stations from previously sampled areas of the Falmouth ECC will also be included to further confirm previous results; these are shown on the accompanying maps. The figure below shows the general location and arrangement of the planned route and survey stations.





The following approach was used to develop the benthic sampling program:

- Sample stations were spaced at approximately 1.9 km to meet requirements in BOEM benthic survey guidelines (2019).
- Multiple sampling methodologies are included to provide information for infauna (SPI and grab samples) and epifauna (PV and video). The grab sampler is also equipped with a real time HD video camera to provide additional footage and images. NMFS (2021) EFH mapping recommendations were considered during the planning process.
- To support selection of sampling methods and locations, available information was reviewed to identify areas with high potential for moraine, hard-bottom, and sensitive habitat these are identified as areas of interpreted increased complexity on the attached maps.
- Benthic grab samples will be analyzed for benthic community taxonomic classification, grain size, and total organic carbon

Mayflower Wind is collecting geophysical data from the Brayton Point ECC area of interest during the Summer 2021. Benthic survey results will be overlain on interpreted geophysical data to map substrate, habitat, and biotic communities.

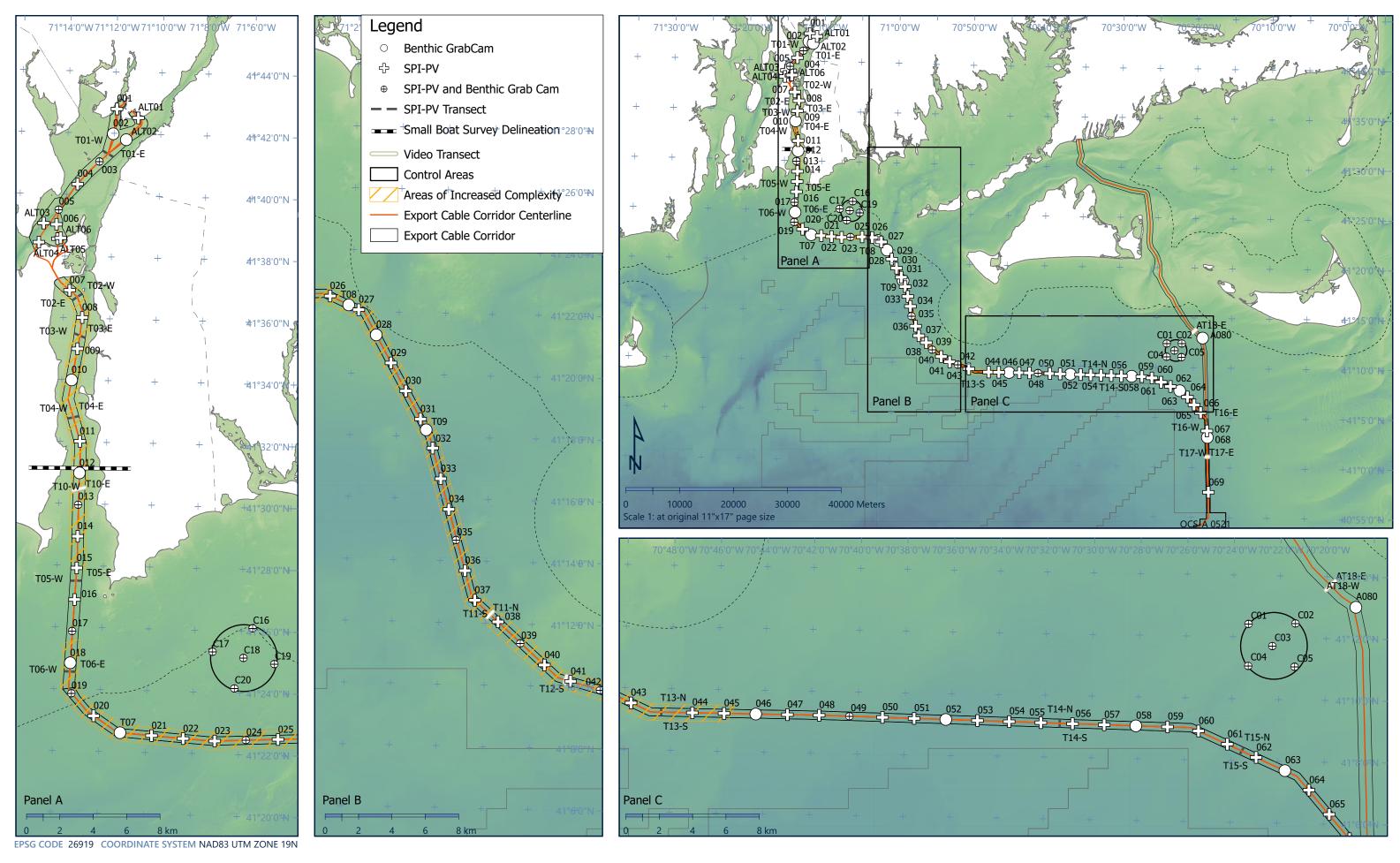
The Summer 2021 Benthic Survey is scheduled for mid-July and the following 107 sampling stations along the ~150 km ECC are planned:

- 54 SPI-PV stations along the ECC;
- 15 Benthic Grab stations along the ECC;
- 10 co-located SPI-PV and Benthic Grab stations along the ECC,
- 10 co-located SPI-PV and Benthic Grab stations at two control sites (each control site has 5 co-located stations);
- 10 SPI-PV transects across the ECC (using the "pogo" approach with 1 drop of the SPI-PV camera along approximately regular intervals along the transect)
- 8 Video transects across the ECC (including 1 transect within the Falmouth ECC)

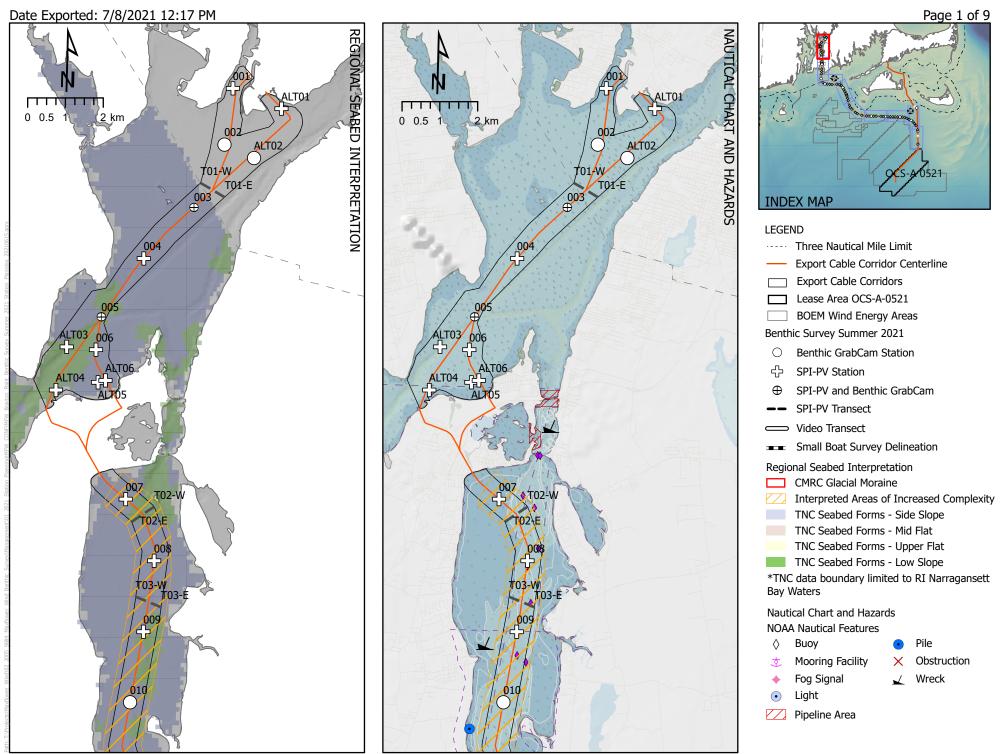
The Mayflower Wind Benthic Quality Assurance Project Plan, used for the four previous benthic surveys within the Lease Area and the Falmouth ECC, will be followed for the Summer 2021 Benthic Survey.

Daniel Doolittle

Regional Environmental Manager, Americas

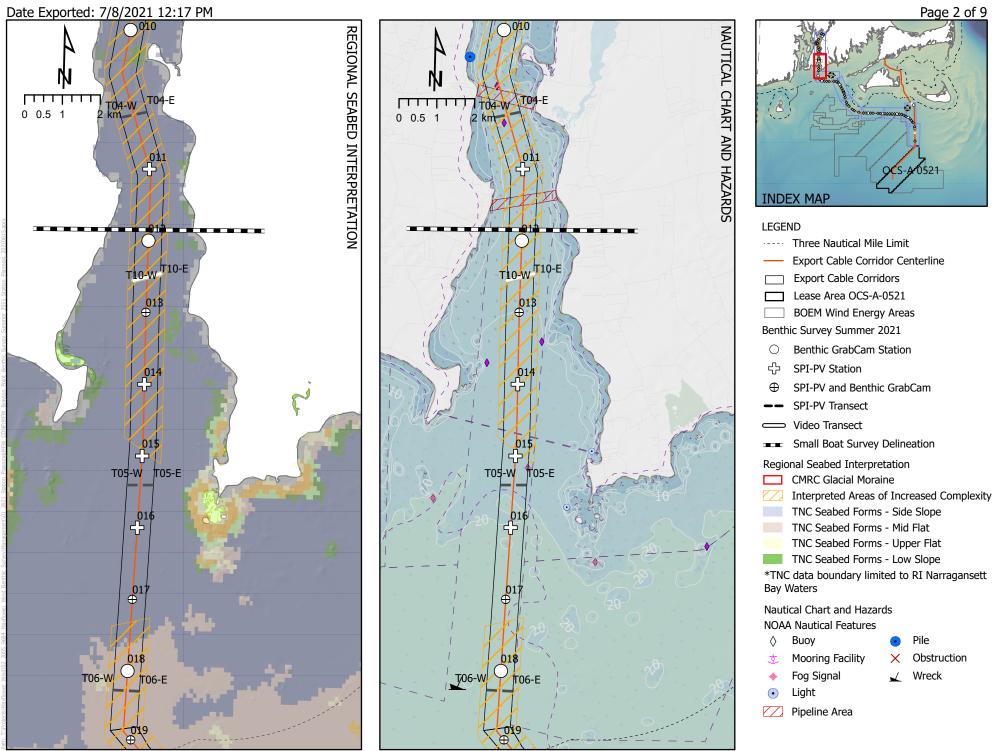






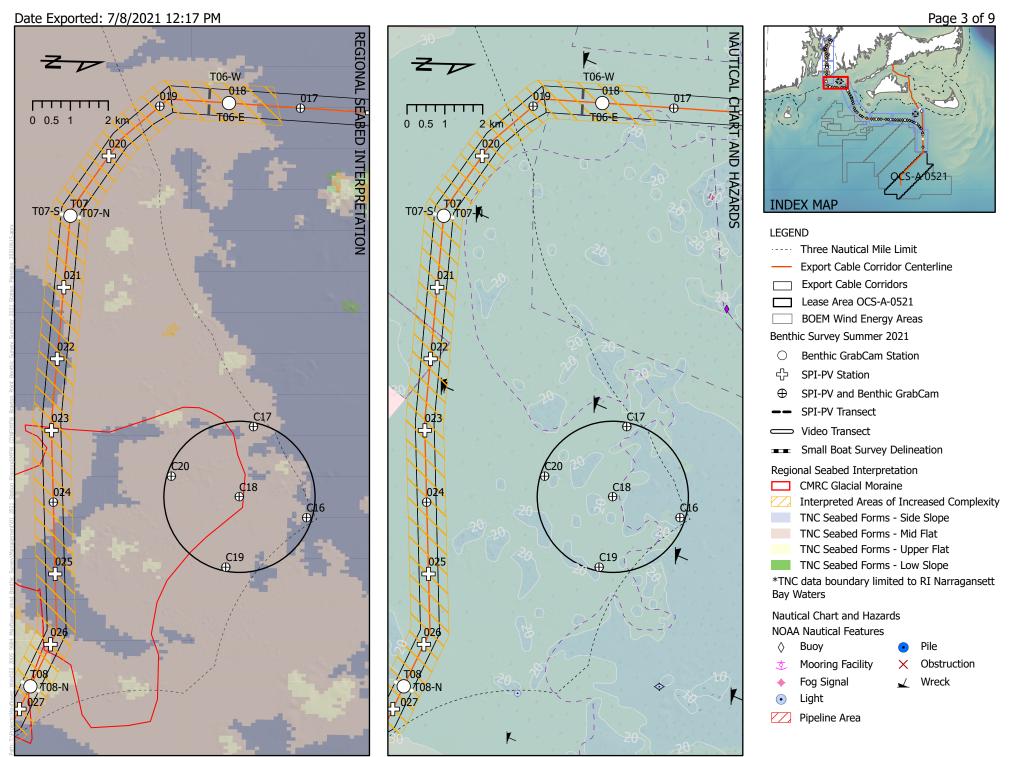






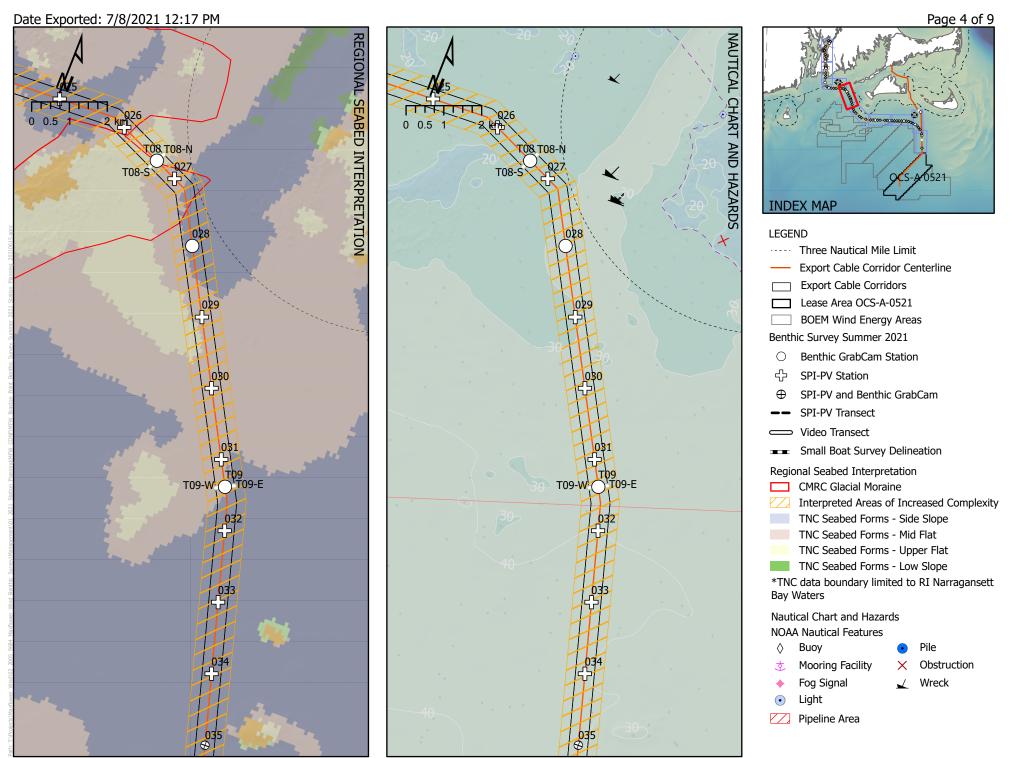






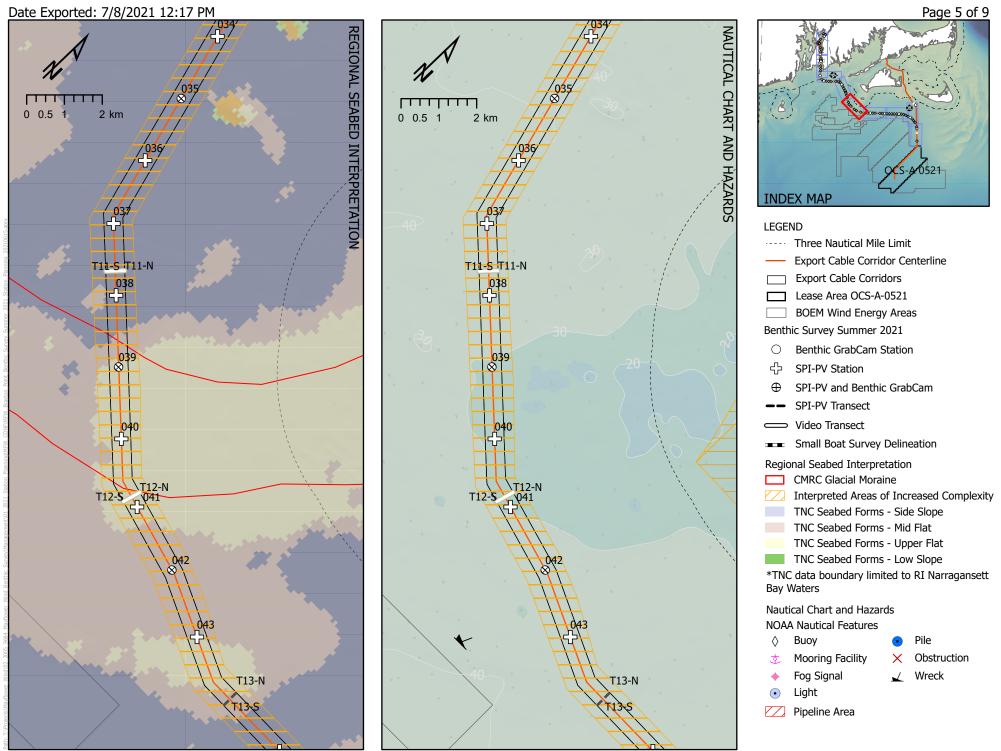






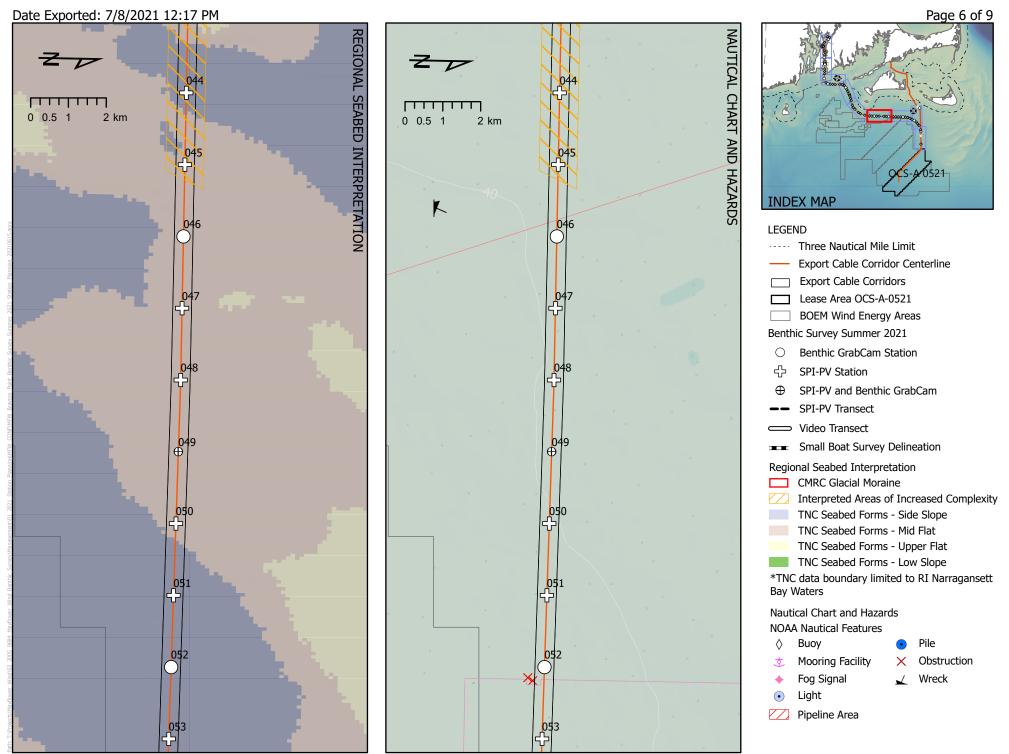






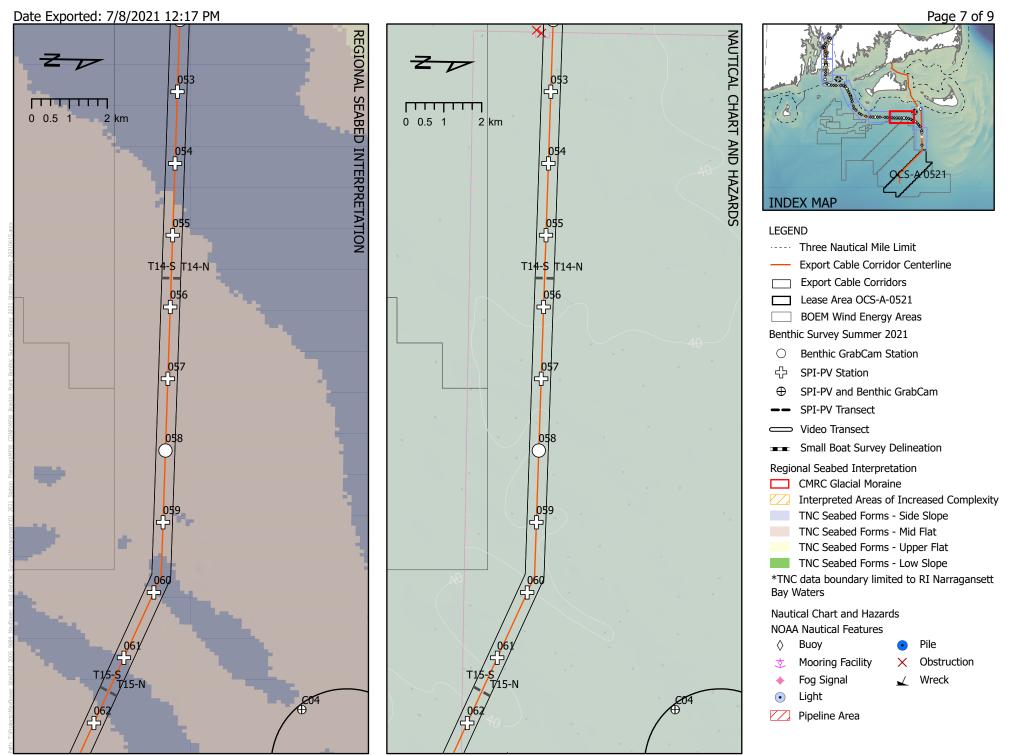


TUGRO



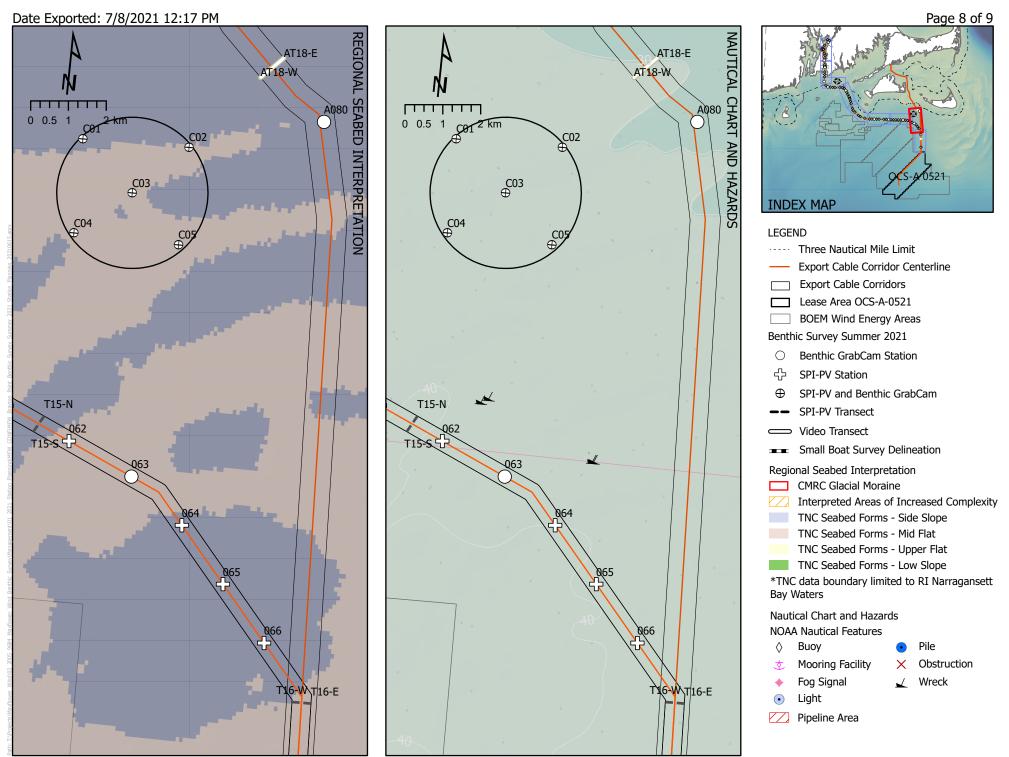






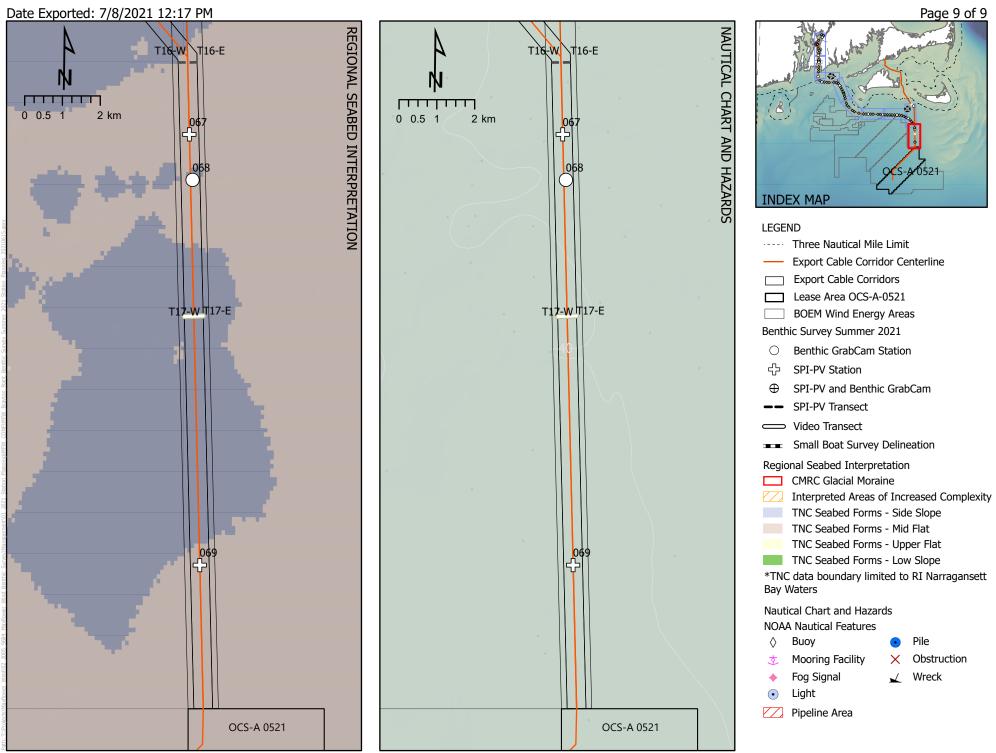






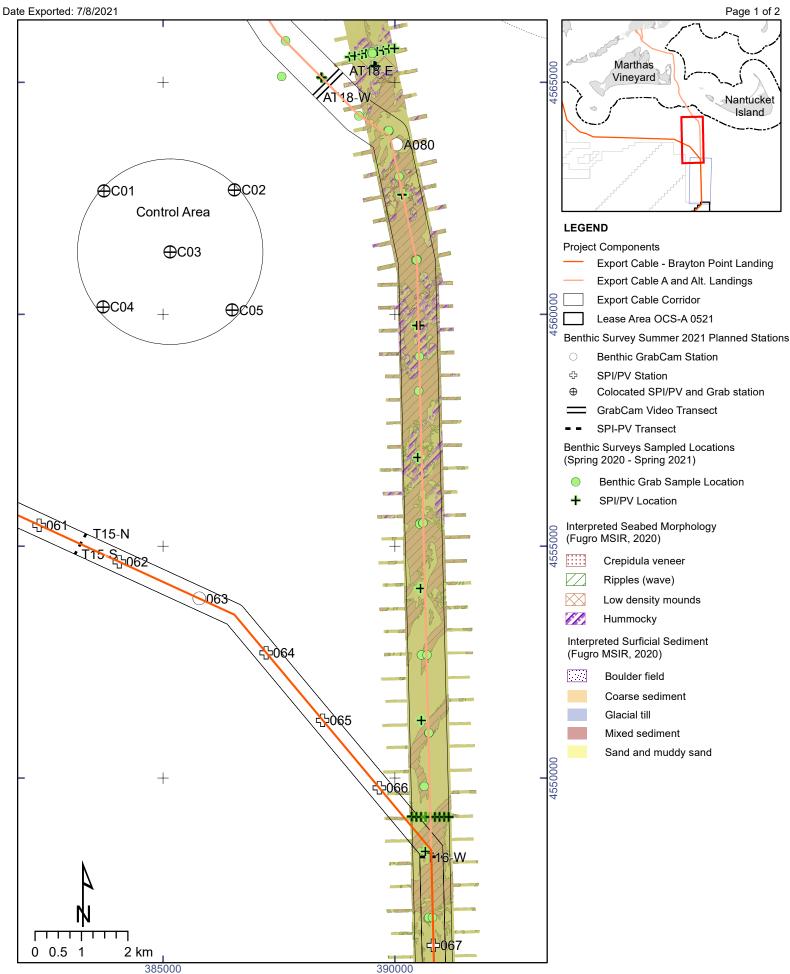






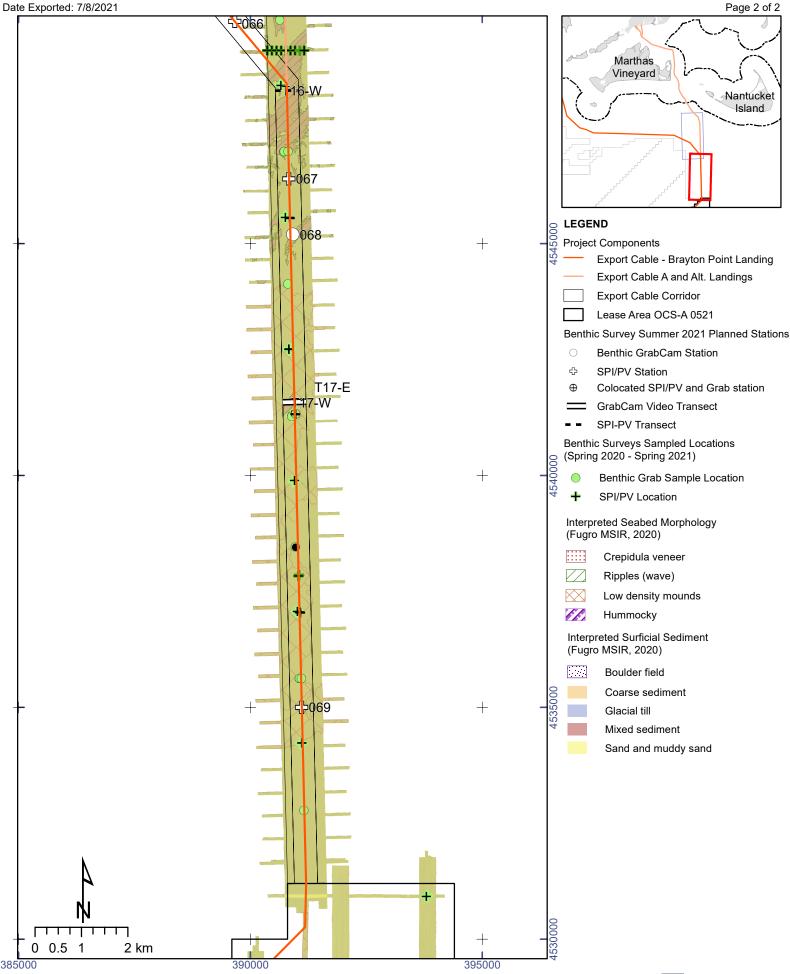
















						Total	
	Short				Water	Transect	
Station ID	Name	Sample Type	Northing (m)	Easting (m)	Depth (m)		n) Rationale
21SU-MW0521-BP001	001	SPI-PV	4620265.72			<u> </u>	0 Confirm absence of SAV
21SU-MW0521-BP002	001	Benthic GrabCam	4620203.72				0 Suspected soft bottom habitat
2130-101000321-01002	002	SPI-PV and Benthic	4018777.23	310871.33	-5		o suspected soft bottom nabitat
21SU-MW0521-BP003	003	GrabCam	4617123.29	316066.69	-5		0 Suspected soft bottom habitat
21SU-MW0521-BP004	003	SPI-PV	4615764.22				Suspected soft bottom habitat
2130-101000321-6F004	004	SPI-PV and Benthic	4013704.22	314/3/.32	-/		o suspected soft bottom nabitat
21SU-MW0521-BP005	005	GrabCam	4614218.65	313615.51	-13		0 Suspected soft bottom habitat
	006	SPI-PV					0 Confirm absence of SAV
21SU-MW0521-BP006			4613351.91				
21SU-MW0521-BP007	007	SPI-PV	4609396.88				0 Confirm absence of SAV
21SU-MW0521-BP008	800	SPI-PV	4607767.27		-5 -		0 Suspected soft bottom habitat
21SU-MW0521-BP009	009	SPI-PV	4605889.19				0 Suspected soft bottom habitat
21SU-MW0521-BP010	010	Benthic GrabCam	4604022.1				0 Suspected soft bottom habitat
21SU-MW0521-BP011	011	SPI-PV	4600341.1				0 Suspected soft bottom habitat (sand)
21SU-MW0521-BP012	012	Benthic GrabCam	4598447.69	314846.81	-7	'	0 Suspected soft bottom habitat (sand)
		SPI-PV and Benthic					
21SU-MW0521-BP013	013	GrabCam	4596548.88	314780.05	-9		0 Suspected soft bottom habitat (sand)
21SU-MW0521-BP014	014	SPI-PV	4594649.33	314738.91	-13		0 Suspected soft bottom habitat (sand)
21SU-MW0521-BP015	015	SPI-PV	4592750.57	314679.93	-16		0 Suspected heterogenous complex habitat with benthic features
21SU-MW0521-BP016	016	SPI-PV	4590854.95	314551.1	-19		0 Suspected soft bottom habitat with benthic features
		SPI-PV and Benthic					
21SU-MW0521-BP017	017	GrabCam	4588959.32	314422.28	-21		0 Suspected soft bottom habitat with benthic features
21SU-MW0521-BP018	018	Benthic GrabCam	4587063.69	314293.45	-22		O Suspected heterogenous complex habitat with benthic features
		SPI-PV and Benthic					Suspected large grained and heterogenous complex habitat with benthic
21SU-MW0521-BP019	019	GrabCam	4585237.39	314376.1	-25		0 features
21SU-MW0521-BP020	020	SPI-PV	4583885.86	315693.56	-25		0 Suspected soft bottom habitat with benthic features
21SU-MW0521-BP021	021	SPI-PV	4582694.42	319168.01	-25		0 Suspected large grained complex habitat
21SU-MW0521-BP022	022	SPI-PV	4582519.96	321059.98	-27		0 Suspected heterogenous complex habitat
21SU-MW0521-BP023	023	SPI-PV	4582369.74	322952.77	-25		0 Suspected large grained complex habitat
		SPI-PV and Benthic					
21SU-MW0521-BP024	024	GrabCam	4582417.72	324852.16	-24		0 Suspected large grained complex habitat
21SU-MW0521-BP025	025	SPI-PV	4582465.71				0 Suspected large grained complex habitat
21SU-MW0521-BP026	026	SPI-PV	4582342.79		-23		0 Suspected large grained complex habitat
21SU-MW0521-BP027	027	SPI-PV	4581521.11		-25		0 Suspected large grained complex habitat
21SU-MW0521-BP028	028	Benthic GrabCam	4580011.31				Suspected large grained heterogenous complex habitat
21SU-MW0521-BP029	029	SPI-PV	4578329.68				Suspected large grained complex habitat
21SU-MW0521-BP030	030	SPI-PV	4576648.06		-30		Suspected large grames complex habitat
21SU-MW0521-BP031	031	SPI-PV	4574966.43				Suspected heterogenous complex habitat
21SU-MW0521-BP032	032	SPI-PV	4573224.9		-37		Suspected heterogenous complex habitat
21SU-MW0521-BP032	032	SPI-PV	4571387.54		-37		Suspected heterogenous complex habitat
21SU-MW0521-BP033	034	SPI-PV	45/1387.54		-39		Suspected heterogenous complex habitat
213U-IVIVVU321-DPU34	034		4505550.19	333726.03	-38		o Suspected Heterogenious complex Habitat
24611 NAMOE24 DD025	025	SPI-PV and Benthic	45.07742.00	226242.52	27		O Suspected hotorogonous complex habitat
21SU-MW0521-BP035	035	GrabCam	4567712.83	336212.52	-37		0 Suspected heterogenous complex habitat

						Total
	Short				Water	Transect
Station ID	Name	Sample Type	Northing (m)		Depth (m)	Length (km) Rationale
21SU-MW0521-BP036	036	SPI-PV	4565875.48		-35	
						Suspected large grained and heterogenous complex habitat with benthic
21SU-MW0521-BP037	037	SPI-PV	4564100.57	337285.19	-34	
21SU-MW0521-BP038	038	SPI-PV	4562806.64	338676.5	-32	O Suspected large grained complex habitat with benthic features
		SPI-PV and Benthic				
21SU-MW0521-BP039	039	GrabCam	4561512.71	340067.81	-27	O Suspected large grained complex habitat with benthic features
21SU-MW0521-BP040	040	SPI-PV	4560218.78	341459.12	-26	O Suspected large grained complex habitat with benthic features
21SU-MW0521-BP041	041	SPI-PV	4559240.26	343028.41	-27	O Suspected large grained complex habitat with benthic features
		SPI-PV and Benthic				
21SU-MW0521-BP042	042	GrabCam	4558718.29	344855.3	-29	O Suspected heterogenous complex habitat with benthic features
21SU-MW0521-BP043	043	SPI-PV	4557927.72	346581.46	-29	O Suspected heterogenous complex habitat with benthic features
21SU-MW0521-BP044	044	SPI-PV	4557337.15	350260.23	-36	0 Suspected heterogenous complex habitat with benthic features
21SU-MW0521-BP045	045	SPI-PV	4557299.72	352159.87	-35	O Suspected heterogenous complex habitat with benthic features
21SU-MW0521-BP046	046	Benthic GrabCam	4557262.29	354059.5	-36	O Suspected heterogenous complex habitat with benthic features
21SU-MW0521-BP047	047	SPI-PV	4557224.86	355959.13	-36	O Suspected heterogenous complex habitat with benthic features
21SU-MW0521-BP048	048	SPI-PV	4557187.43	357858.76	-36	O Suspected heterogenous complex habitat with benthic features
		SPI-PV and Benthic				
21SU-MW0521-BP049	049	GrabCam	4557126.59	359757.77	-36	O Suspected heterogenous complex habitat with benthic features
21SU-MW0521-BP050	050	SPI-PV	4557062.98	361656.7	-38	O Suspected heterogenous complex habitat with benthic features
21SU-MW0521-BP051	051	SPI-PV	4556999.38	363555.64	-40	O Suspected heterogenous complex habitat with benthic features
21SU-MW0521-BP052	052	Benthic GrabCam	4556935.78	365454.57	-40	O Suspected heterogenous complex habitat with benthic features
21SU-MW0521-BP053	053	SPI-PV	4556872.18	367353.51	-39	O Suspected heterogenous complex habitat with benthic features
21SU-MW0521-BP054	054	SPI-PV	4556808.58	369252.44	-39	O Suspected heterogenous complex habitat with benthic features
21SU-MW0521-BP055	055	SPI-PV	4556744.98	371151.38	-38	0 Suspected heterogenous complex habitat with benthic features
21SU-MW0521-BP056	056	SPI-PV	4556681.38	373050.31	-37	O Suspected heterogenous complex habitat with benthic features
21SU-MW0521-BP057	057	SPI-PV	4556617.78	374949.25	-35	O Suspected heterogenous complex habitat with benthic features
21SU-MW0521-BP058	058	Benthic GrabCam	4556554.18	376848.19	-36	O Suspected heterogenous complex habitat with benthic features
21SU-MW0521-BP059	059	SPI-PV	4556490.58	378747.12	-36	O Suspected heterogenous complex habitat with benthic features
21SU-MW0521-BP060	060	SPI-PV	4556247.3	380603.61	-36	O Suspected heterogenous complex habitat with benthic features
21SU-MW0521-BP061	061	SPI-PV	4555454.5	382330.31	-37	O Suspected heterogenous complex habitat with benthic features
21SU-MW0521-BP062	062	SPI-PV	4554661.7	384057	-35	0 Suspected heterogenous complex habitat with benthic features
21SU-MW0521-BP063	063	Benthic GrabCam	4553868.9	385783.69	-35	O Suspected heterogenous complex habitat with benthic features
21SU-MW0521-BP064	064	SPI-PV	4552702.54		-36	<u> </u>
21SU-MW0521-BP065	065	SPI-PV	4551245.49	388444.55	-36	O Suspected heterogenous complex habitat with benthic features
21SU-MW0521-BP066	066	SPI-PV	4549788.45	389663.99	-35	O Suspected heterogenous habitat with benthic features
21SU-MW0521-BP067	067	SPI-PV	4546395.56	390832.77	-34	0 Suspected heterogenous complex habitat
21SU-MW0521-BP069	069	SPI-PV	4534998.89		-38	
21SU-MW0521-BP068	068	Benthic GrabCam	4545191.76	390917.33	-35	
						Suspected soft bottom habitat and benthic features (mounds) in A Route
21SU-MW0521-A080	A080	Benthic GrabCam	4563662.83			
21SU-MW0521-BPALT01	ALT01	SPI-PV	4619728.5			
21SU-MW0521-BPALT02	ALT02	Benthic GrabCam	4618422.74	317653.7	-4	0 Suspected soft bottom habitat

						Total
	Short				Water	Transect
Station ID	Name	Sample Type	Northing (m)	Easting (m)	Depth (m)	Length (km) Rationale
21SU-MW0521-BPALT03	ALT03	SPI-PV	4613426.74	<u> </u>	-1 ()	
21SU-MW0521-BPALT04	ALT03	SPI-PV	4612284.21			-4 0 Suspected soft bottom habitat, Confirm absence of SAV
21SU-MW0521-BPALT05	ALT05	SPI-PV	4612487.98			-4 0 Suspected soft bottom habitat, Confirm absence of SAV
21SU-MW0521-BPALT06	ALT05	SPI-PV	4612538.92			-4 0 Suspected soft bottom habitat, Confirm absence of SAV
ZI3U-IVIVVU3ZI-BPALIUU	ALIOU	SPI-PV and Benthic	4012336.92	313723.21		Eastern ECR Control Site Establish baseline prior to construction ;
21SU-MW0521-C01	C01	GrabCam	4562662.96	383728.82	-3	·
2130-101000521-C01	COI	SPI-PV and Benthic	4502002.90	303/20.02	-3	Eastern ECR Control Site Establish baseline prior to construction;
21SU-MW0521-C02	C02	GrabCam	4562685.1	386543.59	-2	•
2150-101000521-C02	CUZ	SPI-PV and Benthic	4502085.1	380543.59	-2	28 U Suspected soft bottom habitat
24611 1414/0524 602	CO2		4564250.26	205452.00	2	O Fostown FCD Control Site Fetablish baseling prior to construction
21SU-MW0521-C03	C03	GrabCam	4561350.36	385153.99	-3	0 Eastern ECR Control Site Establish baseline prior to construction
24011 2 2110 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	604	SPI-PV and Benthic	4560460 64	202702.40		
21SU-MW0521-C04	C04	GrabCam	4560163.61	383709.18	-3:	·
		SPI-PV and Benthic				Eastern ECR Control Site Establish baseline prior to construction;
21SU-MW0521-C05	C05	GrabCam	4560090.51	386491.62	-3	31 0 Suspected soft bottom habitat
		SPI-PV and Benthic				
21SU-MW0521-C16	C16	GrabCam	4589122.86	325258.79	-1	18 0 Western ECR Control Site Establish baseline prior to construction
		SPI-PV and Benthic				
21SU-MW0521-C17	C17	GrabCam	4587715.09	322856.5	-2	0 Western ECR Control Site Establish baseline prior to construction
		SPI-PV and Benthic				Western ECR Control Site Establish baseline prior to construction
21SU-MW0521-C18	C18	GrabCam	4587341.97	324711.65	-2	20 0 ;Suspected large grained and heterogenous complex habitat
		SPI-PV and Benthic				
21SU-MW0521-C19	C19	GrabCam	4586984.88	326566.11	-2	0 Western ECR Control Site Establish baseline prior to construction
		SPI-PV and Benthic				Western ECR Control Site Establish baseline prior to construction
21SU-MW0521-C20	C20	GrabCam	4585539.84	324166.36	-2	22 0 ;Suspected large grained and heterogenous complex habitat
21SU-MW0521-BPT01-E	T01-E	SPI-PV Transect	4617385.55	316878.15	-	-6 0.741272 Suspected soft bottom habitat with boulders
21SU-MW0521-BPT01-W	T01-W	SPI-PV Transect	4617763.75	316240.62	-!	-5 0.741272 Suspected soft bottom habitat with boulders
21SU-MW0521-BPT02-E	T02-E	SPI-PV Transect	4608798.16	314417.16	-:	-3 0.712204 Suspected heterogenous complex habitat
21SU-MW0521-BPT02-W	T02-W	SPI-PV Transect	4609193.4	315009.57		-4 0.712204 Suspected heterogenous complex habitat
21SU-MW0521-BPT03-E	T03-E	SPI-PV Transect	4606537.42	315193.89	-	-5 0.723026 Suspected heterogenous complex habitat
21SU-MW0521-BPT03-W	T03-W	SPI-PV Transect	4606812.64	314525.35		-4 0.723026 Suspected heterogenous complex habitat
21SU-MW0521-BPT04-E	T04-E	SPI-PV Transect	4601852.46	314809.09		-7 0.701554 Suspected heterogenous complex habitat
21SU-MW0521-BPT04-W	T04-W	SPI-PV Transect	4601707.38	314122.7	-1	-6 0.701554 Suspected heterogenous complex habitat
21SU-MW0521-BPT05-E	T05-E	SPI-PV Transect	4591982.83			
21SU-MW0521-BPT05-W	T05-W	SPI-PV Transect	4591983.33			7
					_	Suspected large grained heterogenous complex habitat with benthic
21SU-MW0521-BPT06-E	T06-E	SPI-PV Transect	4586525.37	314607.67	-2	
2130 11110321 21 100 2	.00 _	o	1300323.37	311007.07		Suspected large grained heterogenous complex habitat with benthic
21SU-MW0521-BPT06-W	T06-W	SPI-PV Transect	4586560.45	313908.44	-2	
21SU-MW0521-BPT07	T07	Benthic GrabCam	4582868.87			
21SU-MW0521-BPT07 21SU-MW0521-BPT07-N	T07-N	Video Transect	4582868.87			, , ,
21SU-MW0521-BPT07-N	T07-N	Video Transect	4583115.56			
	T08	Benthic GrabCam				1 0 0 1
21SU-MW0521-BPT08	108	benunic Grabcam	4581809.66	329725.87	-2	0 Suspected large grained and heterogenous complex habitat

						Total
	Short				Water	Transect
Station ID	Name	Sample Type	Northing (m)	Easting (m)	Depth (m)	Length (km) Rationale
21SU-MW0521-BPT08-N	T08-N	Video Transect	4582030.18	329844.2	-22	0.500512 Suspected large grained and heterogenous complex habitat
21SU-MW0521-BPT08-S	T08-S	Video Transect	4581589.15	329607.55	-22	0.500512 Suspected large grained and heterogenous complex habitat
						Suspected large grained and heterogenous complex habitat, validate and
21SU-MW0521-BPT09	T09	Benthic GrabCam	4574319.01	334371.2	-33	0 improve existing public data
						Suspected large grained and heterogenous complex habitat, validate and
21SU-MW0521-BPT09-E	T09-E	Video Transect	4574431.26	334594.54	-34	0.500085 improve existing public data
						Suspected large grained and heterogenous complex habitat, validate and
21SU-MW0521-BPT09-W	T09-W	Video Transect	4574206.69	334147.71	34	0.500085 improve existing public data
21SU-MW0521-BPT10-E	T10-E	Video Transect	4597574.5	315165.19	-8	
21SU-MW0521-BPT10-W	T10-W	Video Transect	4597396.01	314458.22		0.729159 Suspected large grained and heterogenous complex habitat
						Suspected large grained heterogenous complex habitat with benthic
21SU-MW0521-BPT11-N	T11-N	Video Transect	4563427.23	338376.31	-32	0.50108 features
						Suspected large grained heterogenous complex habitat with benthic
21SU-MW0521-BPT11-S	T11-S	Video Transect	4563062.74	338032.46	-33	0.50108 features
						Suspected large grained heterogenous complex habitat with benthic
21SU-MW0521-BPT12-N	T12-N	Video Transect	4559563.21	342806.35	-27	0.498283 features
						Suspected large grained heterogenous complex habitat with benthic
21SU-MW0521-BPT12-S	T12-S	Video Transect	4559083.29	342672.29	-28	3 0.498283 features
						Suspected large grained heterogenous complex habitat with benthic
21SU-MW0521-BPT13-N	T13-N	SPI-PV Transect	4557624.7	348357.3	-3:	. 0.480525 features
						Suspected large grained heterogenous complex habitat with benthic
21SU-MW0521-BPT13-S	T13-S	SPI-PV Transect	4557144.72	348359.54	-33	0.480525 features
21SU-MW0521-BPT14-N	T14-N	SPI-PV Transect	4556956.89	372292.75	-37	0.500033 Suspected heterogenous complex habitat
21SU-MW0521-BPT14-S	T14-S	SPI-PV Transect	4556456.98	372281.79	-37	0.500033 Suspected heterogenous complex habitat
21SU-MW0521-BPT15-N	T15-N	SPI-PV Transect	4555265.05	383342.06	-3	0.50155 Suspected heterogenous complex habitat
21SU-MW0521-BPT15-S	T15-S	SPI-PV Transect	4554827.1	383097.62	-37	0.50155 Suspected heterogenous complex habitat
21SU-MW0521-BPT16-E	T16-E	SPI-PV Transect	4548301.46	391038.98	-34	0.502763 Suspected soft bottom habitat with benthic features
21SU-MW0521-BPT16-W	T16-W	SPI-PV Transect	4548297.44	390536.23	-3!	0.502763 Suspected soft bottom habitat with benthic features
21SU-MW0521-BPT17-E	T17-E	Video Transect	4541590.79	391200.26	-37	0.501626 Suspected soft bottom habitat with benthic features
21SU-MW0521-BPT17-W	T17-W	Video Transect	4541574.61	390698.9	-38	
						Suspected soft bottom habitat and benthic features (mounds) in A Route
21SU-MW0521-AT18-E	AT18-E	Video Transect	4565251.07	388836.84	-28	3 0.8 v07
						Suspected soft bottom habitat and benthic features (mounds) in A Route
21SU-MW0521-AT18-W	AT18-W	Video Transect	4564686.44	388270.1	29	0.8 v07