3.8 COMMERCIAL AND RECREATIONAL FISHING

The proposed Project is located within the area offshore of Huntington Beach within the Southern California Bight (SCB). The SCB is an area that is utilized by fishers for both recreational and commercial purposes. The Project site is located just outside of the Port of Los Angeles (POLA) and the Port of Long Beach (POLB); which supports a diversity of commercial and recreational fishing. Information regarding the existing commercial and recreational fishing opportunity and use within the Project area are included below. Baseline information and potential for impacts to commercial and recreational fisheries have also been provided in Appendix E (Fisheries Management Plan). For detail regarding potential impacts to commercial and recreational fish species, please refer to Section 3.3 (Marine Biological Resources).

Additionally, both Section 3.5 (Recreation) and 3.7 (Transportation) provide a detailed summary and potential impact assessment of existing offshore commercial/recreational vessel activity.

3.8.1 Affected Environment

Ports within the vicinity of the Project which support both commercial and recreational fishing activities include the following (Table 3.8-1):

Table 3.8-1. Ports Nearby the Project Area

Port	Approximate Distance to Platform Elly and Ellen (miles)	Approximate Distance to Platform Eureka (miles)
Shore	8	8
Long Beach Marina (includes Alamitos Bay Marina, Downtown Long Beach Shoreline Marina, and Rainbow Harbor / Rainbow Marina)	10	12
Anaheim Bay/Huntington Harbor	10	11
POLA/POLB	12	14
Newport Harbor	15	15
Avalon Harbor	20	19
Two Harbors	22	22

Nearshore areas off the Huntington Beach area are considered popular recreational and commercial fishing locations. Due to the location of Platforms Elly, Ellen, and Eureka, recreational fishers commonly access and transit within the vicinity of the Project area.

3.8.1.1 Recreational Fishing

The California Recreational Fisheries Survey (CRFS) collects data on California's marine recreational fisheries, and estimates the catch and effort of anglers fishing for marine finfish in California. The CRFS was first instituted in January 2004, and is a collaborative effort between

the California Department of Fish and Wildlife (CDFW) and the Pacific States Marine Fisheries Commission (PSMFC) with funding from State and Federal sources. In California, the CRFS area is divided into six districts. The Project site falls within the South District, which incorporates the fisheries west of the counties of Los Angeles, Orange, and San Diego.

Survey Results. Table 3.8-2 below provides a summary of the types of fish most commonly caught by recreational anglers in southern California from January through December of 2015 (most recent data available). As indicated, rockfish and scorpionfish are the most commonly caught fish in southern California at nearly twice the amounts of the next most common catch, tunas and mackerels. Sand and kelp bass rank as the third largest harvest; with approximately 118,000 fish caught by recreational anglers in 2015.

Rockfish are targeted by recreational fishers at the heads of submarine canyons in approximately 300 to 600 feet of water west of the Beta Unit. The Bolsa Chica and Huntington Beach artificial reefs made of a multitude of deposited substrate such as armor rock and telephone poles are located approximately five to six miles north of the Project site in approximately 60 feet of water is also a popular spot.

A number of small boat facilities and charter boat operations are located at Huntington Harbor, Anaheim and Alamitos Bay, and within the POLA/POLB. Nearshore areas off Huntington Beach and rocky areas around Santa Catalina Island are considered popular recreational fishing locations. Due to the relatively close distance of the Beta Unit facilities offshore, recreational users commonly access and transit over the Project area.

Table 3.8-2. Types of Fish Commonly Caught by Recreational Anglers in Southern California (January through December 2015)

Rank Based on Estimated Number of Fish Harvested	Southern California	
	Type of Fish	Estimated Number of Fish Harvested
1	Rockfish and Scorpionfish	760,000
2	Tunas and Mackerels	388,000
3	Sand and Kelp Bass	118,000
4	Flatfishes (sanddab, sole, and halibut)	100,000
5	Surfperch	49,000
6	Croaker (i.e. corvina, corbina, white sea bass, white croaker, queenfish)	36,000
7	Sardine	26,000
8	Wrasses (sheephead)	20,000
9	Silversides (Silverside family, topsmelt, jacksmelt)	19,000
10	Sea Chub (halfmoon, opaleye)	17,000

Source: CRFS data extracted from RecFin database at http://www.recfin.org/data/estimates/tabulate-recent-estimates-2004-current/

3.8.1.2 Commercial Fishing

The proposed Project region is defined by the marine waters encompassed within two CDFW "fish blocks" (FBs) identified as FB 739 and 740 as shown in Figure 3.8-1. A FB typically encloses approximately 110-square miles of ocean water (approximately 10 nautical miles on a side). However, the irregular shoreline in proximity to the Project area results in one smaller FB closer to shore as compared to those in the open ocean. The FB 739 shares a border with the California coast, thereby slightly minimizing the total area. The proposed survey site is located within portions of FBs 739 and 740 as shown in Figure 3.8-1.

These two FBs (739 and 740) encompass approximately 220 square miles of rocky and sedimentary seafloor habitats, and include water depths that range from zero feet at the shoreline to over 2,900 feet below mean lower low water (MLLW). The inshore portion (water depths of 300 feet or less) of FB 739 is a portion of the Huntington Flats, a gently-sloping and sedimentary seafloor area. Offshore to the west and to the south, steeper slopes and isolated areas of rocky substrate are present. The wide range of water depths and the steeper slopes away from the shoreline are due to the presence of the San Gabriel submarine canyon to the west and south of Platform Eureka. Commercial catch data for FB 739 and 740 is provided below.

FB 739. Commercial catch data from FB 739 for the years 2011 through 2015 (CDFW, unpublished) indicate that pelagic species such as market squid, Pacific sardine, Pacific mackerel (*Scomber japonicus*), northern anchovy, and white seabass (*Atractoscion nobilisare*) are most heavily targeted as they contributed the largest percentage of the reported commercial catch. As detailed within Table 3.8-3 of the approximate 53 million pounds of commercial catch reported from FB 739 during those five years, those five taxa contributed over 99 percent of the total.

Table 3.8-3. The Five Most Abundant Taxa for 2011 through 2015 Commercial Fishing Catch (Fish Block 739)

Taxa	Gear Type(s)	Total Caught (pounds)
Market squid	Drum Seine / Purse Seine	34,200,735
Pacific sardine	Drum Seine / Purse Seine	17,017,089
Pacific mackerel	Drum Seine / Purse Seine	766,063
Northern anchovy	Drum Seine / Purse Seine	595,259
White seabass	Drift Gill Net / Set Gill Net	110,523

Commercial catch data made available to the public no longer included the reported gear types that were utilized to land these species. However, due to the fact FB 739 is partially within State waters, CDFW commercial fishing regulations apply. The most common gear utilized to land these pelagic species include purse seines and drum seines. Both drift gill net and set gill net are the most common gear utilized to land white seabass. Additionally, both spot prawn (*Pandalus platyceros*) and California spiny lobster are caught utilizing traps specific to the targeted species.

Figure 3.8-1. CDFW Fish Blocks Within Proposed Project Area

Table 3.8-4 lists the five most valuable species reported in 2011 through 2015 commercial catch for FB 739. Combined, these five taxa accounted for over 93 percent of the total reported commercial value caught for that five-year period.

Table 3.8-4. The Five Most Valuable Taxa for 2011 through 2015 Commercial Fishing Catch (Fish Block 739)

Taxa	Gear Type(s)	Total Value (in dollars)
Market squid	Drum Seine / Purse Seine	9,924,220
Pacific sardine	Drum Seine / Purse Seine	1,191,900
White seabass	Drift Gill Net / Set Gill Net	303,741
Spot prawn	Trap	247,799
California spiny lobster	Trap	140,500

FB 740. Commercial catch data from FB 740 for the years 2011 through 2015 (CDFW, unpublished) indicate that pelagic species such as market squid (*Loligo opalescens*), Pacific sardine (*Sardinops sagax caeruleus*), northern anchovy (*Engraulis mordax*), red sea urchin (*Strongylocentrotus franciscanu*), and ridgeback prawn (*Eusicyonia ingentus*) are most heavily targeted as they contributed the largest percentage of the reported commercial catch. As detailed within Table 3.8-5, of the approximate 12.3 million pounds of commercial catch reported from FB 740 during those five years, those five taxa contributed over 98 percent of the total. Additionally, a substantial effort was made targeting giant red sea cucumbers (*Parastichopus californicus*) and California spiny lobster (*Panulirus interruptus*) as further detailed within Tables 3.8-5 and 3.8-6.

Table 3.8-5. The Five Most Abundant Taxa for 2011 through 2015 Commercial Fishing Catch (Fish Block 740)

Taxa	Gear Type(s)	Total Caught (pounds)
Market squid	Drum Seine / Purse Seine	11,164,499
Red sea urchin	Dive	436,655
Pacific sardine	Drum Seine / Purse Seine	216,116
Northern anchovy	Drum Seine / Purse Seine	194,640
Ridgeback prawn	Trap / Trawl	57,759

As with FB 739, commercial catch data made available to the public through the CDFW no longer included the reported gear types that were utilized to land these species. However, because FB 739 is within state waters, CDFW commercial fishing regulations apply. The most common gear utilized to land these pelagic species would include purse seines and drum seines. Table 3.8-6 lists the five most valuable species reported in the 2011 through 2015 commercial catch data for FB 740. Combined, these five taxa accounted for over 92 percent of the total reported commercial value caught for that five-year period. Additional gear types utilized to land these targeted species include traps (lobster and prawn), trawl (sea cucumber and prawn), seine (squid), and dive (sea urchin).

Table 3.8-6. The Five Most Valuable Taxa for 2011 through 2015 Commercial Fishing Catch (Fish Block 740)

Taxa	Gear Type(s)	Total Value (in dollars)
Market squid	Drum Seine / Purse Seine	3,124,700
Red sea urchin	Dive	603,139
California spiny lobster	Trap	236,630
Giant red sea cucumber	Trawl	196,422
Ridgeback prawn	Trap / Trawl	139,981

3.8.1.3 Marine Aquaculture

According to the NOAA Fisheries Office of Aquaculture, in 2016 the privately-owned Catalina Sea Ranch received several government grants to begin offshore mussel farming within Federal waters of the U.S. Currently, the Catalina Sea Ranch has developed approximately 100 acres in the San Pedro Bay for cultivation of Mediterranean mussel (*Mytilus galloprovincialis*). The Catalina Sea Ranch mussel farm is located approximately two miles (3.2 kilometers) north-east from the Project Platforms (Edith and Elly).

3.8.2 Regulatory Setting

3.8.2.1 Federal

Magnuson-Steven Fishery Conservation and Management Act (MSA). The Magnuson-Steven Fishery Conservation and Management Act (MSA) is the primary law governing marine fisheries management in United States (U.S.) Federal waters. The MSA was first enacted in 1976, revised in 1996 (Sustainable Fisheries Act), and revised again in 2007 (Magnuson-Stevens Fishery Conservation and Management Reauthorization Act). Amendments to the 1996 MSA require "the identification of Essential Fish Habitat for Federally-managed species and the implementation of measures to conserve and enhance this habitat". Any project requiring Federal authorization, is required to complete and submit an Essential Fish Habitat Assessment (EFHA) with the application and either show that no significant impacts to the essential habitat of managed species are expected or identify mitigations to reduce those impacts. The 2007 MSA reauthorization featured new requirements to prevent overfishing by establishing annual catch limits and accountability measures among other notable amendments.

U.S. Coast Guard (USCG). Primary responsibility for the enforcement of the U.S. maritime laws and regulations falls upon the USCG. The USCG's responsibilities for regulating activities on the Outer Continental Shelf (OCS), the continental shelf, and in ports and harbors, as applicable to the proposed action, are presented in Title 33 Code of Federal Regulations (CFR), Chapters I, II, and IV, Title 43 U.S. Code (USC) Chapter 36; and Title 46 USC Subtitle IV. The USCG is responsible for managing and regulating provisions for safe navigation of vessels in U.S. waters, as well as the enforcement of environmental and pollution prevention regulations.

The Outer Continental Shelf Lands Act (OCSLA). Under the OCSLA, the Department of Interior (DOI) is required to:

- Manage the orderly leasing, exploration, development, and production of oil and gas resources on the Federal Outer Continental Shelf (OCS);
- Ensure the protection of the human, marine, and coastal environments;
- Ensure that the public receives a fair and equitable return for these resources; and
- Ensure that free-market competition is maintained.

Within the DOI, the Bureau of Ocean Energy Management (BOEM) is charged with the responsibility of managing and regulating the development of the OCS oil and gas resources in accordance with the provisions of the OCSLA. The BOEM operating regulations are presented in CFR Title 30, Volume 2.

The USCG also requires a Safety Zone around all Platforms Edith, Elly, Ellen, and Eureka within CFR Title 33 (Navigation and Navigable Waters), Part 147 (Safety Zones).

§ 147.1108. Platform EDITH safety zone: (a) Description: The area within a line 500 meters [1,640 feet] from each point on the structure's outer edge. The position of the center of the structure is 33°-35'-45" N. 118°-08'-27" W. (b) Regulations: No vessel may enter or remain in this safety zone except for the following: (1) An attending vessel, (2) a vessel under 100 feet [30.5 meters] in length overall not engaged in towing, or (3) a vessel authorized by the Commander, Eleventh Coast Guard District.

§ 147.1104. Platform ELLEN & ELLY safety zone: (a) Description: The areas within a line 500 meters [1,640 feet] from each point on the outer edge of each structure. The structures are approximately 120 meters [394 feet] apart. The position of the center of each structure is: Platform Ellen, 33°-34'-57" N, 118°-07'-42" W; and Platform Elly, 33°-35'-00" N, 118°-07'-40" W. (b) Regulations: No vessel may enter or remain in this safety zone except the following: (1) An attending vessel serving either structure, (2) a vessel under 100 feet [30.5 meters] in length overall not engaged in towing, or (3) a vessel authorized by the Commander, Eleventh Coast Guard District.

§ 147.1111. Platform EUREKA safety zone: (a) Description: The area within a line 500 meters [1,640 feet] from each point on the structure's outer edge. The position of the center of the structure is 33-33-50 N, 118-07-00 W. (b) Regulations: No vessel may enter or remain in this safety zone except the following: (1) An attending vessel, (2) a vessel under 100 feet [30.5 meters] in length overall not engaged in towing or (3) a vessel authorized by the Commander, Eleventh Coast Guard District.

3.8.2.2 State

California Department of Fish and Wildlife. Recreational fishing is regulated by the CDFW and subject to the California Code of Regulations (CCR) Title 14 Division 1, as adopted by the CDFW Commission. Similar to commercial fishing regulations, catch limits can prohibit catch of one or more species after the state catch limit has been reached. The open season for each species is dependent on the stock assessments as determined by the CDFW.

3.8.2.3 Local

POLA and POLB General Plans. Land and water uses in the POLA/POLB are subjected to provisions of the Port Master Plans for each port. Both master plans were developed in conformance with the California Coast Act (CCA) and other Federal, State, and City land use policies, and serve as the Local Coastal Plan for the ports.

3.8.3 Impact Discussion

Commercial and recreational fishing operations are expected to be limited within the Project site as proposed activities will occur within an area that currently supports existing pipelines and platforms. Existing platform Safety Zones extend for 500 meters (1,640 feet) from the outer edges of Platforms Elly, Ellen, and Eureka and USCG regulations for those areas preclude vessels from entering or remaining within those platform Safety Zones in except for the following: (1) an attending vessel, (2) a vessel under 100 feet (30.5 meters) in length overall not engaged in towing, or (3) a vessel authorized by the Commander, Eleventh Coast Guard District. Impacts to commercial and recreational fishing are discussed further based on the activity type of the proposed Project.

3.8.3.1 Autonomous Node Deployment and Recovery

Deployment and recovery of the autonomous nodes would be completed when sea state and weather conditions are conducive to safe operations and would be via “live boat” (no anchoring is proposed). During this phase of the Project, mobility of the Project vessel would likely not interfere with any fishing opportunity (recreational or commercial). The Project vessel would require unimpeded use of isolated areas for a very short duration at each deployment point). Please refer to Figure 1-9 within Section 1.0 (Project Description) for a detailed view of the anticipated node placement grid.

FB 739. Deployment and recovery of the nodes is expected to take approximately 14 days. Due to the mobility of the Project vessel during this phase, it is expected that impacts to commercial and recreational fishing opportunity would be minimal. More specifically, the Project vessel would require unimpeded use of isolated areas within FB 739 at each of the proposed deployment points. As shown in Table 3.8-4, the five most valuable fisheries from years 2011 through 2015 are as follows: market squid, pacific sardine, white seabass, spot prawn, and California spiny lobster. Gear types utilized to land these species would likely not interfere with the deployment and recovery of the nodes.

FB 740. Deployment and recovery of the nodes is expected to take approximately 14 days. Due to the mobility of the Project vessel during this phase, it is expected that impacts to commercial and recreational fishing opportunity would be minimal. More specifically, the Project vessel would require unimpeded use of isolated areas within FB 740 for approximately 30 minutes at each of the proposed deployment points. It should be noted that less than five percent of the total area in FB 740 would be utilized while installing and recovering the nodes. As shown in Table 3.8-6, the five most valuable fisheries from years 2011 through 2015 are as follows: market squid, sea urchin, ridgeback prawn, giant red sea cucumber, and California spiny lobster. Gear

types utilized to land these species would likely not interfere with the deployment and recovery of the nodes.

3.8.3.2 Offshore Survey Operations

FB 739. During the offshore survey operations, the M/V *Silver Arrow* will tow the source array along predetermined survey transects, as detailed in Section 1.5.3 (Offshore Survey Operations). When the M/V *Silver Arrow* is towing the source array, the vessel would "fly" the appropriate USCG-approved day shapes (mast head signals used to communicate with other vessels) and display the appropriate lighting to designate the vessel has limited maneuverability and equipment under tow. The turning radius is limited to three degrees per minute (2.5 kilometers [1.5 miles]). As such, preclusion of fishing (both recreational and commercial) may be necessary throughout the survey, as the Project vessel will have limited mobility while engaged in active survey operations. As shown in Figure 3.8-1, the proposed survey area "racetrack" would include an area of approximately 35 percent of the total area within FB 739.

While offshore survey operations occur within FB 739, certain fisheries may be affected more than others. More specifically, as shown in Table 3.8-4, the five most valuable fisheries from years 2011 through 2015 are as follows: market squid, pacific sardine, white seabass, spot prawn, and California spiny lobster. Although preclusion of some commercial and recreational fishing may be necessary while towing the array in FB 739, impacts are expected to be minimal due to the lack of expected commercial fishing in the area during the relatively short period of construction (approximately 42 days). Additionally, similar fishing habitat and depths exist closer to shore.

FB 740. During the offshore survey operations, the M/V *Silver Arrow* will tow the source array along predetermined survey transects, as detailed in Section 1.5.2 (Offshore Survey Operations). When the M/V *Silver Arrow* is towing the source array, the vessel would "fly" the appropriate USCG-approved day shapes (mast head signals used to communicate with other vessels) and display the appropriate lighting to designate the vessel has limited maneuverability and equipment under tow. The turning radius is limited to three degrees per minute (2.5 kilometers [1.5 miles]). As such, preclusion of fishing (both recreational and commercial) may be necessary throughout the survey, as the Project vessel will have limited mobility while engaged in active survey operations. As shown in Figure 3.8-1, the proposed survey area "racetrack" would include an area of approximately three percent of the total area of within FB 740.

While offshore survey operations occur within FB 740, certain fisheries may be affected more than others. More specifically, as shown in Table 3.8-6, the five most valuable fisheries from years 2011 through 2015 are as follows: market squid, sea urchin, ridgeback prawn, giant red sea cucumber, and California spiny lobster. Although preclusion of some commercial and recreational fishing may be necessary while towing the array in FB 740, impacts are expected to be minimal due to the lack of expected commercial fishing in the area during the relatively short period of construction (approximately 42 days). Additionally, similar fishing habitat and depths exist closer to shore.

Marine Aquaculture. The M/V *Clean Ocean*, or similar vessel, will be used to deploy and retrieve the ocean bottom nodes. The M/V *Clean Ocean* is a dynamically positioned vessel suitable for working near fixed structures, however presence of the Catalina Sea Ranch aquaculture development located within the north-eastern corner of the survey area would preclude nodal placement or survey activities within this 100-acre area. As such, the source array will not be towed within or near the Catalina Sea Ranch marine aquaculture facilities. In addition, prior to the start of Project survey operations, Beta will initiate communications with Catalina Sea Ranch to coordinate any potential areas of avoidance. Avoidance of the marine aquaculture area will reduce the potential impact of entanglement with buoys or gear to less than significant. No impacts to marine aquaculture would result.

Irrespective of the significance of the potential impacts, the following procedures will be instituted to reduce the possibility of negative effects on the commercial fishing industry and recreational fishing opportunity.

Project Incorporated Measures to Reduce Potential Impacts:

- **Notice to Mariners.** At least 15 days prior to in-water activities, Beta's contractor will submit a Local Notice to Mariners (NTM) to the 11th District, U.S. Coast Guard and, as required, to the Captain of the Port. This notification will specify vessel and personnel contact information, scope of the proposed actions, location, and the anticipated duration of the activities.
- **Posting of Notices.** A document that shows and describes the proposed activities will be posted at the Harbor Master's office at the Port of Los Angeles (POLA), Port of Long Beach (POLB), Long Beach Marina area, Anaheim Bay/Huntington Harbor, and Newport Bay. That document will provide information on the proposed activities, contact information for all Project vessels and personnel, and will have a map depicting the ocean area affected.
- **Voluntary Traffic Lanes To/From the Project Platforms.** Where feasible, vessel traffic will follow currently used direct pathways from the POLA/POLB to the Platforms.
- **Mandatory Vessel Traffic and Coastwise Shipping Lanes.** Where feasible, Project vessels will operate within the established vessel traffic lanes.
- **Navigational Safety.** At all times, Project vessels will operate using the highest level of navigational safety and in accordance with International and USCG regulations and guidelines.
- **USCG-Approved Day Shapes**. In accordance with USCG requirements and to alert nearby vessels, the work vessel will "fly" the appropriate "day shapes" that specifies that the vessel is engaged in Project activities and that it has limited maneuverability.
- **Communication with Catalina Sea Ranch and Noticing Prior to Survey Operations.** Prior to the start of Project survey operations, Beta will initiate communications with Catalina Sea Ranch to coordinate any potential areas of avoidance and notification procedures.

3.8.4 References

RecFIN. Tabulate Recent Estimates. Accessed online at RecFin database at http://www.recfin.org/data/estimates/tabulate-recent-estimates-2004-current/

California Department of Fish and Wildlife (CDFW). 2017. Unpublished data for Fish Block catch data: e-mailed December 1, 2016 and May 4, 2017 to Patrick Crooks by Charlene Calac of CDFW Los Alamitos, California

National Oceanic and Atmospheric Association (NOAA), Fisheries Office of Aquaculture. FY16 Successful SK Grant Applicants. Accessed online 11/16/2017 at http://www.nmfs.noaa.gov/mb/financial_services/fy16_sk_grants_successful_applicants.htm

Intentionally blank page