

Commercial and Research Wind Lease Issuance and Site Assessment Activities on the Atlantic Outer Continental Shelf of the New York Bight

Biological Assessment

August 2021 (Updated)

For the U.S. Fish and Wildlife Service

U.S. Department of the Interior
Bureau of Ocean Energy Management (BOEM)
Office of Renewable Energy Programs

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List of Acronyms and Abbreviations

Area ID	Area Identification
BA	biological assessment
BOEM	Bureau of Ocean Energy Management
COP	construction operations plan
EA	environmental assessment
ESA	Endangered Species Act
FWS	United States Fish and Wildlife Service
ha	hectares
km	kilometers
NEPA	National Environmental Policy Act
NTS	notice to stakeholders
NY	New York
OCS	Outer Continental Shelf
SAP	site assessment plan
SOCs	standard operating conditions
US	United States
WEA	Wind Energy Area

1. Introduction

Pursuant to Section 7(a)(2) of the Endangered Species Act (ESA) of 1973, the Bureau of Ocean Energy Management (BOEM) requests informal consultation with the United States Fish and Wildlife Service (FWS) regarding the species and critical habitat that may be affected by issuance of a lease and approval of a site assessment plan (SAP), if required, within the wind energy areas (WEAs) off the coast of New York (NY) on the Outer Continental Shelf (OCS), known as the NY Bight (Figure 1). On August 10, 2021, BOEM published an environmental assessment (EA) for commercial wind leasing and site assessment activities offshore in the NY Bight, defined as an offshore area extending generally northeast from Cape May in New Jersey to Montauk Point on the eastern tip of Long Island (BOEM 2021). The activities considered in this biological assessment (BA) include:

1. issuing leases, grants...;
2. associated site characterization activities that a lessee may undertake on the lease (e.g., geophysical, geotechnical, archaeological, and biological surveys); and
3. installation, operation, and decommissioning of up to 20 meteorological buoys.

The purpose of BOEM's issuance of a lease is to ensure that survey activities carried out in support of an SAP and construction and plan (COP) are conducted in a safe and environmentally responsible manner. BOEM's approval of an SAP, if applicable, is needed to adequately assess wind and environmental resources of the WEAs to determine if some or all areas within the WEAs are suitable for, and could support, commercial-scale wind energy production. Meteorological buoys are used to assess the offshore wind resource, and to collect additional oceanographic and meteorological data necessary to plan for any future commercial development of the lease area.

At this time, BOEM is not considering construction and operation of a wind energy facility on a lease that may be issued in the WEAs. If, after a lease is issued, a lessee proposes to construct a commercial wind energy facility, the lessee would be required to submit a COP to BOEM for review and approval. BOEM would then conduct a project-specific National Environmental Policy Act (NEPA) review and would initiate project-specific ESA consultation with FWS, which would include the lessee's proposed transmission line(s) to shore. During the NEPA review of a COP, BOEM will also analyze a "no-action" alternative. BOEM will use the project specific NEPA review to decide whether to approve, approve with modifications, or disapprove a lessee's COP pursuant to 30 CFR 585.638.

Background

BOEM identified the WEAs through extensive collaboration and consultation with stakeholders including the New York Task Force, federal agencies, federally recognized tribes, the New Jersey Board of Public Utilities, New York Department of State and other state agencies, the general public, and other relevant stakeholders beginning in December 2016 (see <https://www.boem.gov/renewable-energy/state-activities/new-york-bight> for details).

On April 11, 2018, BOEM published in the Federal Register (Docket ID: BOEM-2018-0004; 83 FR 15602) a Commercial Leasing for Wind Power on the Outer Continental Shelf in the New York Bight—Call for Information and Nominations (Call) to seek additional nominations from companies interested in obtaining commercial wind energy leases within the Call Area. The Call contained four proposed areas for development entitled "Fairways North," "Fairways South," "Hudson North," and "Hudson South"

(the Call Areas). BOEM delineated the Call Areas in consultation with numerous parties and information sources, including the State of New York and the Intergovernmental Renewable Energy Task Force. In addition to soliciting public comment in the Federal Register, BOEM hosted public meetings with participation from members of the New York, New Jersey, Massachusetts, and Rhode Island Task Forces, as well as from other representatives from relevant Federal, state, local, and tribal government entities. BOEM also held subject matter specific meetings to better understand concerns related to potential impacts to fisheries, navigation, and other potential use conflicts. BOEM received over 130 comments from the general public, Federal agencies, State and local agencies, fishing industry, industry groups, offshore wind developers, nongovernmental organizations, universities, and other stakeholders. The subjects receiving the most comments were commercial fisheries and navigation. Nine offshore wind developers submitted nominations in response to the Call. While each of the Call Areas received at least one nomination, the majority of nominations were concentrated in Hudson South.

On March 29, 2021, BOEM released the Announcement of the Wind Area Identification (Area ID). The WEAs are a subset of the Call areas (Figure 1). The WEAs extend generally northeast from Cape May in New Jersey to Montauk Point on the eastern tip of Long Island. The WEAs contain 326,736 hectares (ha). Concurrently, BOEM published a notice to stakeholders (NTS) regarding its intent to prepare an environmental assessment (EA) to consider potential environmental consequences of site characterization activities (i.e., biological, archeological, geological, and geophysical surveys and core samples) and site assessment activities (i.e., installation of meteorological buoys) associated with issuing wind energy leases in the WEAs. The EA also considers project easements associated with each potential lease issued and grants for subsea cable corridors in the NY Bight. As part of the EA process, BOEM sought comments on the issues and alternatives to be considered in the EA and received approximately 3,000 comments, which can be found at <http://www.regulations.gov>, under Docket No. BOEM–2021–0021.

On August 10, 2021, BOEM published a draft EA titled Commercial and Research Wind Lease and Grant Issuance and Site Assessment Activities on the Atlantic Outer Continental Shelf of the New York Bight (BOEM 2021) with a 30-day public comment period (<https://www.boem.gov/renewable-energy/state-activities/new-york-bight>). The draft EA considers potential impacts associated with issuing a lease, associated surveys, and approving the installation of wind resource assessment facilities (i.e., up to two meteorological buoys per lease area) in the WEA. The draft EA provides a comprehensive description of potential buoy types (see Section 2.2.4) that could be deployed.

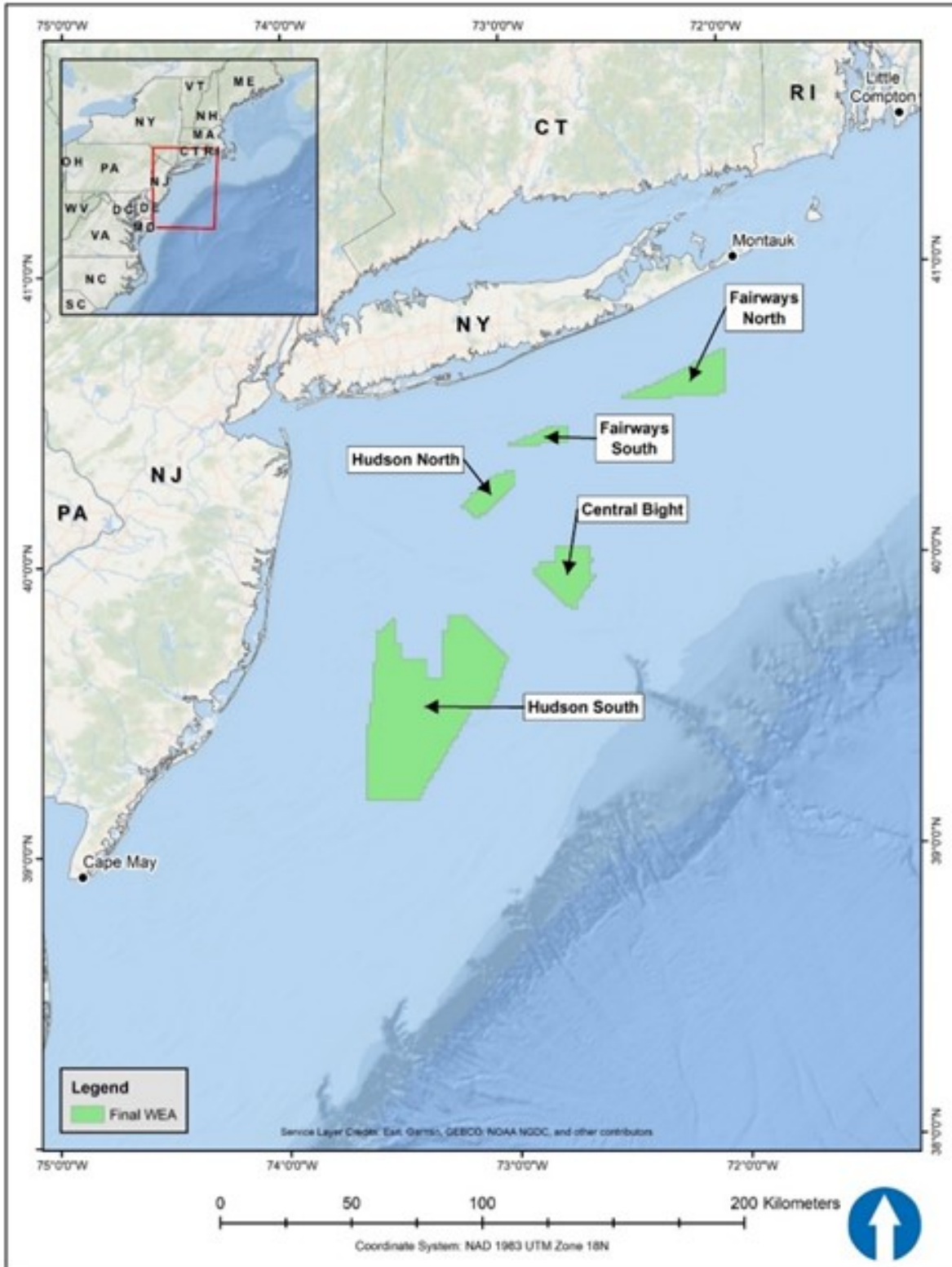


Figure 1. New York Bight Call Area/Wind Energy Areas (See Appendix D, Figure D-1 in the Draft EA for a map that includes areas leased for wind energy development).

Consultation History

This BA is based upon BOEM's experience with similar actions in the NY Bight.

On March 24, 2011, BOEM requested informal ESA Section 7 consultation with FWS for lease issuance and site assessment activities off New Jersey, Delaware, Maryland, and Virginia. On June 20, 2011, FWS concurred with BOEM's determinations that the risk to the roseate tern, piping plover, Bermuda petrel (cahow), and red knot regarding lease issuance, associated site characterization (survey work), and site assessment activities (construction, operation, and decommissioning of buoys and meteorological towers) was "small and insignificant" and, therefore, not likely to adversely affect the three ESA listed species and one candidate species.

On July 27, 2016, BOEM requested informal ESA Section 7 consultation with FWS for the construction, operation, and decommissioning of a single met tower off New York in what is now OCS-A 0512. On September 14, 2016, FWS concurred with BOEM's not likely to adversely affect determination for roseate tern, piping plover, and red knot, and no effect determination to Northern long-eared bat.

2. Threatened and Endangered Species

The Atlantic coast is a major flyway for birds, including terrestrial species, shorebirds, waterbirds, and marine birds. Five federally listed birds may be found within the WEAs: Piping Plover (*Charadrius melodus*); Red Knot (*Calidris canutus rufa*); Roseate Tern (*Sterna dougallii dougallii*); Bermuda Petrel (*Pterodroma cahow*); and Black-capped Petrel (*Pterodroma hasitata*). The Northern Long-eared Bat (*Myotis septentrionalis*) is also included in this BA. The draft EA also provides a description (Section 2.3) of birds and bats that may occur within the WEAs. Activities included within the Proposed Action of the draft EA do not include the installation of meteorological towers. Although the results presented in previous EAs had included meteorological tower installation, this potential source of impact has been removed from the present analysis and may account for a different (reduced) impact rating relative to prior assessments. The evaluations and conclusions in those documents are consistent with BOEM's determination that several resource areas, including birds and bats, will not be carried forward for analysis in the draft EA because impacts to those resources are anticipated to be negligible or less.

Piping Plover

The Piping Plover is a small migratory shorebird that breeds along the Atlantic coast, the Great Lakes, and the Great Plains regions of the United States and winters in coastal habitats of the southeastern United States, coastal Gulf of Mexico, and the Caribbean (Elliot-Smith and Haig 2004; USFWS 1996; FWS 2020a). The FWS listed the Atlantic coast breeding population as threatened. Critical wintering habitat has been established along the coasts of North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, and Texas (66 FR 36038). Only the Atlantic coast population has the potential to occur within the NY Bight during the breeding season, as well as spring and fall migration. Coastal development and the primary anthropogenic threat to piping plovers. Other threats include disturbance by humans, dogs, and vehicles on sandy beaches and dune habitats (Elliott-Smith and Haig 2004; FWS 2020a). Despite these population pressures, there is little risk of near-term extinction of the Atlantic Coast population of piping plovers (Plissner and Haig 2000), and since that prediction, the Atlantic Coast Population has been steadily growing. In fact, since the time of its listing in 1985, the Atlantic Coast Piping Plover population has increased 239 percent from a low of 790 breeding pairs to an estimated 1,879 breeding pairs in 2018 (FWS 2020a).

The Piping Plover breeding season extends from April through August. Piping plovers arrive at breeding locations in mid-March and into April. Post-breeding staging in preparation for migration extends from late July through September. The breeding season, and spring and fall migration overlap; therefore, at either end of the breeding season, there may be plover movement through the NY Bight as it migrates along the coast. The Atlantic coast Piping Plover population winters along the southern Atlantic Coast from North Carolina to Florida, and in the Bahamas and West Indies (Elliott-Smith & Haig, 2004).

The Piping Plover migratory pathways along the coast and to the Bahamas are not well known (FWS 2020; Normandeau et al. 2011). Due to the difficulty in detecting piping plovers in the offshore environment during migration because of nocturnal or high-elevation migratory flights (Normandeau et al., 2011), there are no definitive observations of this species in offshore environments greater than three miles from the Atlantic Coast (Normandeau et al. 2011). Although there are sightings of Piping Plover along the shores of Long Island, NY (eBird 2016), no piping plovers were detected in the WEA during previous offshore survey efforts (O'Connell et al. 2009). However, a small percentage of adult and subadult migrant piping plovers may fly over the offshore component of the NY Bight (Figure 2). The NY Bight lies within the migratory corridor for plovers leaving nesting and staging grounds in and north of Massachusetts in the fall where Loring et al. (2019) studied the flight patterns of migratory plovers in proximity to WEAs on the mid-Atlantic Bight using radio telemetry.

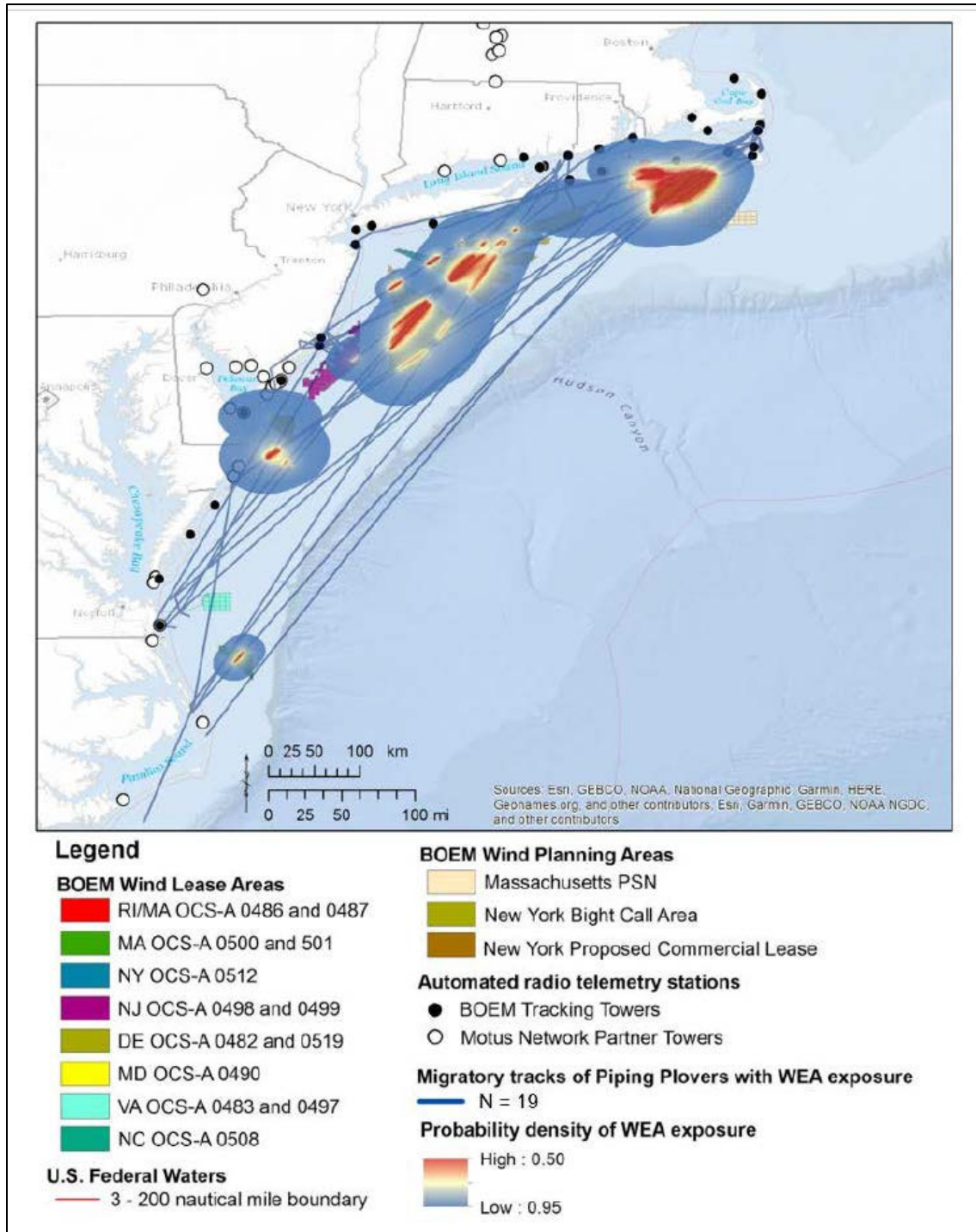


Figure 2. Modeled Migratory Tracks and Composite Probability Density of Piping Plovers with WEA Exposure in the Mid-Atlantic Bight, 2015 to 2017 (Loring et al. 2019, Figure 64).

Red Knot

The Red Knot is a shorebird that breeds in the central Canadian arctic and winters as far south as Tierra del Fuego in South America. The red knot has declined dramatically over the past 20 years from a population estimated at 100,000 to 150,000, down to 18,000 to 33,000 (Niles et al. 2008). The primary threat to the Red Knot population is the reduced availability of horseshoe crab eggs (*Limulus polyphemus*), a major food source, in Delaware Bay arising from elevated harvest of adult crabs (Niles et al. 2008). Despite restrictions to the crab harvest, the 2007 horseshoe crab harvest was still greater than the 1990 harvest, and no recovery of knots was detectable (Niles et al. 2009). In December 2014, the Red Knot was listed as threatened. No critical habitat has been designated for Red Knot.

Each May, red knots congregate in Delaware Bay during their northward migration to feed on horseshoe crab eggs and refuel for breeding in the Arctic. Red knots are known to fly very high during migration (78 FR 60024). A red knot tracking study using automated radio telemetry (Loring et al. 2018) found that the majority (77% of n=30) of flights across WEAs were estimated to have occurred in the rotor swept zone of offshore wind turbines (20 to 200 meters [m]), with a mean altitude of 106 m (range 22 m to 882 m). However, these estimates were subject to large error bounds (typically 100 to 200 m) and should be interpreted with caution. Although the precise migration route has not been firmly established, recent studies using birds tracked with light-sensitive geo-locators, as well as analysis of large geospatial datasets of coastal observations, have revealed some migratory patterns of red knots in the US Atlantic OCS (Niles et al. 2010; Normandeau Associates 2011; Burger et al. 2012a, 2012b). Some individuals traverse the northern sections of the US Atlantic OCS as they travel directly between northeastern US migratory stopover sites, and wintering areas or stopover sites in South America and the Caribbean, while others follow the US Atlantic coast or traverse the US Atlantic OCS further to the south as they move between US Atlantic coastal stopover sites and wintering areas (Niles et al. 2010; Normandeau Associates 2011; Burger et al. 2012a). This was confirmed by modeling Red Knot movement using data from a telemetry study by Loring and others (2018). In a follow-up study, some red knots traveled along the coast in NY Bight during fall migration and only a handful crossed the NY Bight (Figure 3) (Loring et al. 2020). Although there are sightings of red knots along the shores of Long Island, NY (eBird 2016), no red knots were detected in the WEAs during previous offshore survey efforts (O'Connell et al. 2009) presumably because most offshore flights occur during the night (Loring et al. 2018).

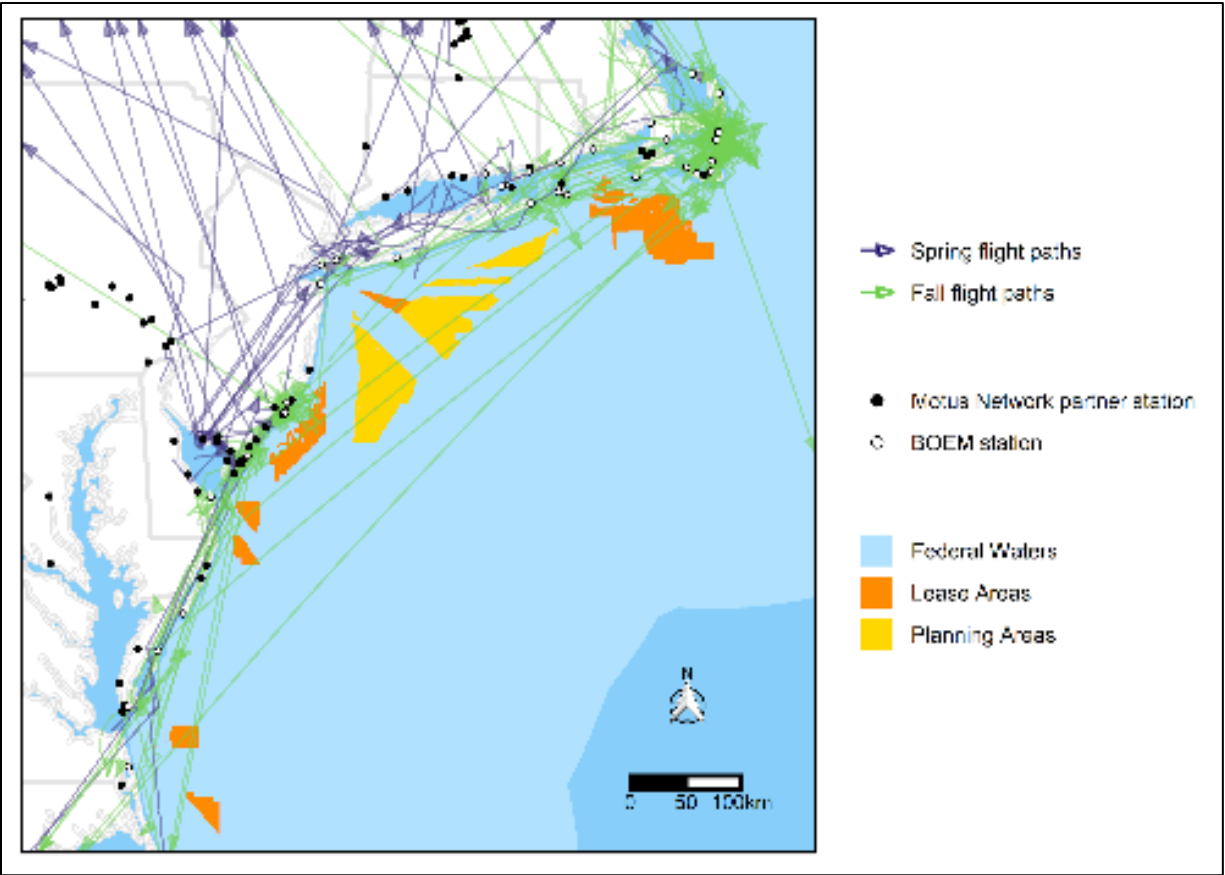


Figure 3. Modeled flight paths of Red Knots during spring migration ($n = 31$) and fall migration ($n = 146$) in 2014 to 2017. Arrows indicate direction and location of the last detection in the Study Area for each individual. (Loring et al. 2020, Figure 14).

Roseate Tern

The Roseate Tern is a small tern that breeds in colonies. Roseate terns from the Atlantic and Caribbean populations winter along the northeastern coast of South America (FWS 2020b). Roseate terns in the northwestern Atlantic population are listed under the ESA as endangered, while terns in the Caribbean population are listed as threatened (FWS 2020b). No critical habitat has been designated for this species (52 FR 42064). The FWS published a five-year status review of the Roseate Tern that provides detailed information about the species (FWS 2020b). The breeding population of roseate terns is currently restricted to a small number of colonies located on predator-free islands from Nova Scotia to Long Island, New York. Since 2010, the number of breeding pairs of roseate terns in the US and Canada has increased 45% from 3,013 to 4,374 in 2019 (FWS 2020b). The migration routes of roseate terns are poorly known, but they are believed to be largely or exclusively pelagic during spring and fall (Nisbet 1984; Gochfeld et al. 1998; FWS 2020b).

Most roseate terns (1,524 pairs in 2009) nest on Great Gull Island located in the eastern most part of Long Island Sound. During the breeding season, terns from Great Gull Island travel long distances to foraging sites at Napatree Point, RI; Montauk Point, NY; Block Island, RI and Trustom Pond NWR, RI (see Figures 14 & 15 in Loring et al. 2019). Although there are sightings of roseate terns along the shores of

Long Island, NY (eBird 2016), no roseate terns were detected in the WEAs during previous offshore survey efforts (O’Connell et al. 2009; Robinson Willmott et al. 2021). In addition, very little Roseate Tern activity is expected to occur within marine waters in and around the WEAs (Figures 4 through 6). This prediction is based on a statistical model that used 354 roseate tern sightings from many scientific surveys throughout the Atlantic OCS during the spring, summer, and fall months (Winship et al. 2018). The modeling effort only used terns that were identified as roseate terns (terns that were not identified as roseates were excluded from the analysis) and are based on the relationship between roseate terns and surface chlorophyll a, distance from shore, turbidity, and other factors (see Winship et al. 2018). As shown in blue on Figure 4, the model predicts that roseate terns are virtually absent from the marine portion of the project area. However, given that roseate terns migrate mainly offshore during spring and fall (Nisbet et al. 2014), it is possible that some birds may pass through the WEAs during migration. This assumption is supported by the observations of common terns (*Sterna hiruno*, a similar species to roseates) tagged at a nesting colony in the Gulf of Maine, crossed the New York Bight during fall and spring (Loring et al. 2019, Appendix j). Aerial surveys using high-definition imagery in the NY Bight observed some roseate terns near the Fairways North WEA in spring (see Figures 23 in Robinson Willmott et al. 2021). More detailed information is needed on offshore movements of roseate terns to assess exposure risk, particularly during staging and migratory periods.

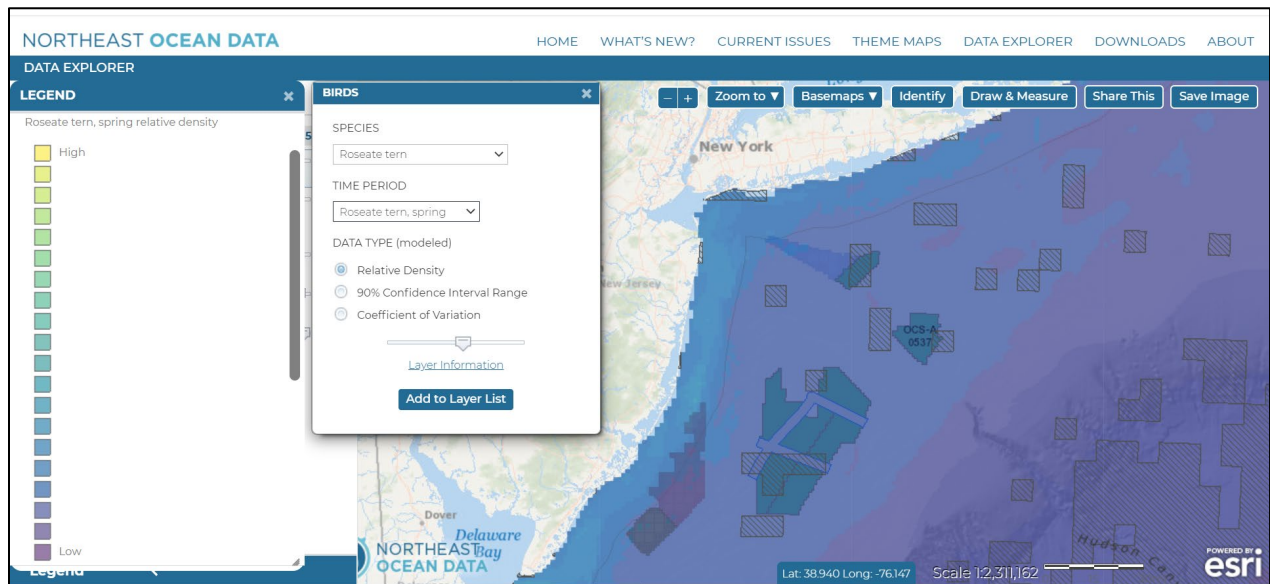


Figure 4. Predicted Seasonal (Spring) Relative Density of Roseate Terns with Hudson North, Central Bight, and Hudson South WEAs. Empire Wind, Ocean Shores, and Ocean Wind leases are included for reference.¹

¹ Note: Abundance model results are the long-term average relative number of individuals per unit area. Source data used to create the models are from January 1978 through October 2016. Model resolution is 2km x 2km grid cells, and models were generated with an original extent of approximately the entire US east coast EEZ. For more information about the modeling methodology and data sources used, see [the MDA Technical Report on the Methods and Development of Marine-life Data](#).

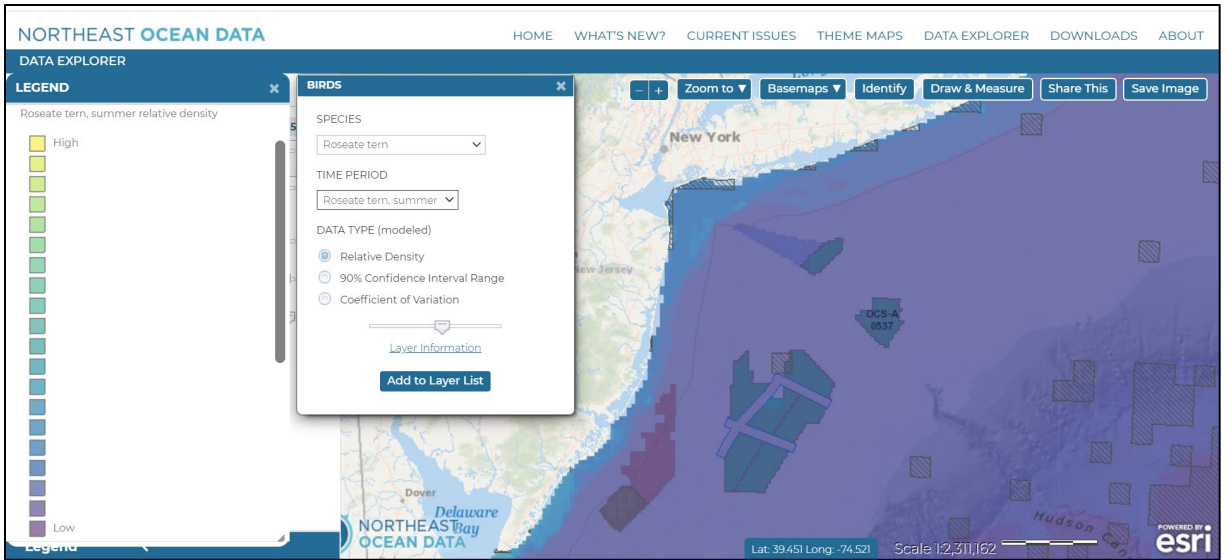


Figure 5. Predicted Seasonal (Summer) Relative Density of Roseate Terns with Hudson North, Central Bight, and Hudson South WEAs. Empire Wind, Ocean Shores, and Ocean Wind leases are included for reference.²

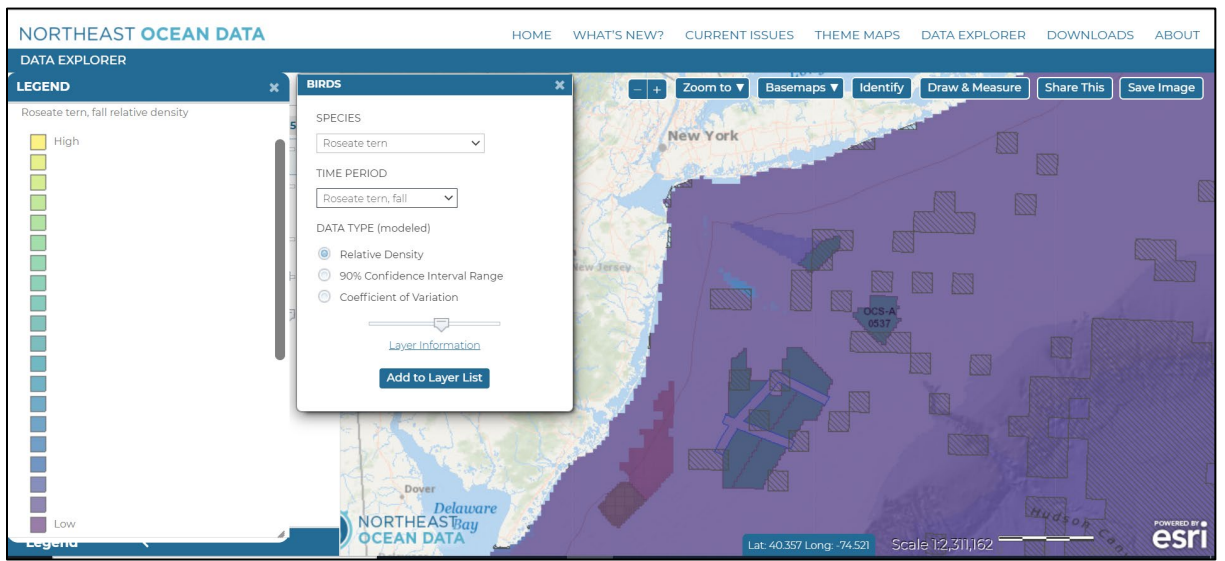


Figure 6. Predicted Seasonal (Fall) Relative Density of Roseate Terns with Hudson North, Central Bight, and Hudson South WEAs. Empire Wind, Ocean Shores, and Ocean Wind leases are included for reference.³

² Note: Abundance model results are the long-term average relative number of individuals per unit area. Source data used to create the models are from January 1978 through October 2016. Model resolution is 2km x 2km grid cells, and models were generated with an original extent of approximately the entire US east coast EEZ. For more information about the modeling methodology and data sources used, see [the MDAI Technical Report on the Methods and Development of Marine-life Data](#).

³ Note: Abundance model results are the long-term average relative number of individuals per unit area. Source data used to create the models are from January 1978 through October 2016. Model resolution is 2km x 2km grid cells, and models were generated with an original extent of

Bermuda Petrel

The Bermuda Petrel, or cahow, is a pelagic bird that is endemic to Bermuda, and is federally listed as endangered (35 FR 6069). The cahow nests in burrows among the uninhabited islets of Bermuda from October to June. The cahow was believed to be extinct in the 1620s; however, 18 breeding pairs were found on rocky islets in Castle Harbour in 1951, and an extensive conservation program has since developed, resulting in a record 105 breeding pairs in 2013 (Madeiros, 2013). Cahows are extremely aerial birds and rarely land on the sea, feeding by snatching food or “dipping” near the sea surface. They are known to feed at night, primarily on squid, but also on fish and invertebrates to a lesser degree. They are also known to scavenge dead or dying prey floating on or near the sea surface (Warham 1990). Threats to the cahow include the flooding of nesting areas by storms, destruction of nesting areas due to collapsing cliffs and erosion, and rats (Dobson and Madeiros 2008).

Outside of the breeding season, the cahow is probably widespread in the North Atlantic, following the warm waters on the western edges of the Gulf Stream, feeding on squid near the surface at night. Although it is possible for the Bermuda petrel to be less than 100 mi (161 km) offshore of NY, it is unlikely to use the WEAs because the core of its range is farther east (see Figures 16 & 17 in Madeiros et al. 2014).

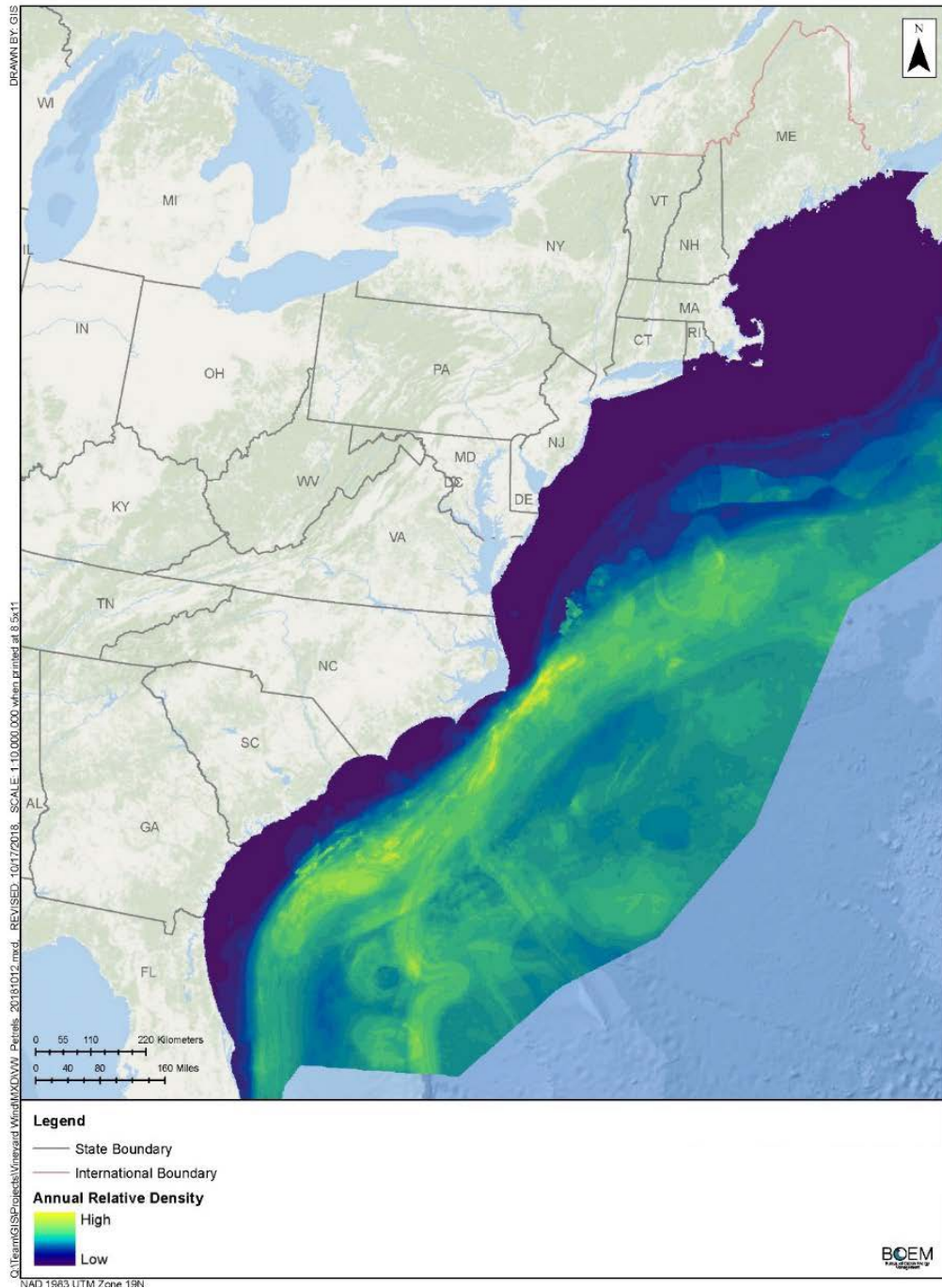
Black-capped Petrel

The Black-capped Petrel is a medium-sized pelagic seabird that currently breeds at four locations on the island of Hispanola in the Caribbean Sea and spends a portion of the year at sea in the western Atlantic (Jodice et al. 2015; threatened species status for the Black-capped petrel with a Section 4(d) Rule, 83 Fed. Reg. 195 [9 October 2018]). From January to June, the Black-capped Petrel occupy nesting grounds in habitats characterized by steep mountainous terrain with a sparse and open understory, and decaying vegetation or loose soils to facilitate burrow excavation (Wingate 1964; Simmons et al. 2013). The current size of the Black-capped Petrel population is unknown, though Simmons et al. (2013) estimate it at a total of 2,000 to 4,000 birds of which perhaps 500 to 1,000 are breeding pairs (FWS 2018).

Waters off the eastern coast of North America from New Jersey south to Florida are included in the pelagic distribution of Black-capped petrels (Figure 7). The pelagic distribution generally includes deep waters (200 to 2,000 meters) where seamounts, submarine ridges, and other landscape features bring prey items to the surface (FWS 2018). Areas in the deeper offshore zone near South Carolina and northern Georgia as well as the Cape Hatteras, North Carolina area are where the greatest number of Black-capped petrels has been found (Jodice et al. 2015; FWS 2018). From June through September, Black-capped petrels frequent the western edge of the Gulf Stream (Farnsworth 2010). A recent telemetry study supports this (see <https://www.atlanticseabirds.org/bcpe-2019>). Aerial surveys using high-definition imagery in the NY Bight observed Black-capped petrels mostly at the shelf break, but some were detected near the Fairways North WEA in summer (see Figures 24 in Robinson Willmott et al. 2021).

approximately the entire US east coast EEZ. For more information about the modeling methodology and data sources used, see [the MDAIT Technical Report on the Methods and Development of Marine-life Data](#).

Given that (1) the WEAs are outside of the known distribution of the Black-capped Petrel, and (2) no observations of Black-capped petrels exist within the WEAs, the Proposed Action would have no effect on the Black-capped Petrel. As such, this document does not further discuss the species.



Source: Winship et al. 2018; Curtice et al. 2018.

Figure 7. Modeled Predicted Relative Density of Black-Capped Petrels

Northern Long-eared Bat

The Northern Long-eared Bat is a cave dwelling bat that used to be common and is now rare in the eastern part of the US. Over the past ten years, the species has been decimated by white noise syndrome. On April 2, 2015, the northern long-eared bat was listed as threatened. The range of Northern long-eared bat on Long Island includes Queens, Nassau, and Suffolk counties (FWS 2016). Unlike tree bats that migrate long distances to warmer climates in the winter, Northern long-eared bats do not migrate long distances, especially over open water. Instead, colonies of Northern long-eared bats hibernate in caves for the winter, and in the summer, individuals roost in trees and forage primarily in wooded habitat within a km of their roost (80 FR 17974). Although migrating tree bats were detected on the OCS (Pelletier et al. 2013; Peterson and Pelletier 2016) and during geological surveys conducted in 2018 for Empire Wind's COP (see Figure R-2 in Tetra Tech 2021), no Northern long-eared bats were detected during those surveys in the NY Bight (Tetra Tech 2021). Therefore, given the rarity of the Northern Long-eared Bat in the region, its ecology and habitat requirements, it is extremely unlikely that any Northern long-eared bats would venture so far from land and on to the OCS and into the WEAs.

3. Effects of Proposed Action

The proposed action could affect the following ESA-listed species under the jurisdiction of the FWS: Piping Plover, Red Knot, Roseate Tern, Bermuda Petrel, and Black-capped Petrel. Seafloor disturbance is not an impact producing factor for these birds because they do not use offshore benthic habitats and is not considered in this BA. In addition, onshore activities are not considered further, as no expansion of ports is expected in support of the proposed action (BOEM 2016). Given the relatively small size of meteorological buoys and their low profile, the activities associated with the installation, operation, and decommissioning of meteorological buoys and their impacts to avian resources were found to be negligible in the draft EA (Section 2.3); therefore, not considered further in this BA.

4. Determination of Effect

Federally listed birds could occur in the WEA, and given the geographic scope of the proposed action, some birds could reasonably be expected to come into contact with a meteorological buoys or associated activities. However, the relatively small size of meteorological buoys and their low profile, the activities associated with the installation, operation, and decommissioning of up to 20 meteorological buoys and their impacts to avian resources were found to be negligible in the draft EA (Section 2.3); therefore, the proposed action would **Not Likely Adversely Affect** piping plovers, red knots, roseate terns, Black-capped petrels, and Bermuda petrels. Given that the activities will occur on the OCS, there would be **No Effect** to piping plover critical habitat and **No Effect** to Northern long-eared bats.

5. Avoidance, Minimization, and Mitigation Measures

This section outlines the standard operating conditions (SOCs) to minimize or eliminate potential impacts to ESA-listed and candidate bird species. These SOCs appear in Chapter 5 of the draft EA, and are considered part of the proposed action and could be incorporated as stipulations to any future lease:

1. Any lights used to aid marine navigation by the lessee during construction, operations, and decommissioning of a meteorological buoy must meet USGS requirements for private aids to navigation [https://www.uscg.mil/forms/cg/CG_2554.pdf] and BOEM's Guidelines for Lighting and Marking of Structures Supporting Renewable Energy Development [<https://www.boem.gov/2021-lighting-and-marking-guidelines>]. For any additional lighting, the lessee must use such lighting only when necessary, and the lighting must be hooded downward and directed when possible, to reduce upward illumination and illumination of adjacent waters.
2. To help address information gaps on offshore movements of birds and bats, including ESA-listed species, installation of Motus stations on meteorological or environmental data buoys in coordination with U.S. Fish and Wildlife Service's Offshore Motus network.
3. To minimize the attraction of birds, the Lessee must install bird deterrent devices (e.g., anti-perching), where appropriate.
4. An annual report shall be provided to BOEM and FWS documenting any dead (or injured) birds or bats found on vessels and structures during construction, operations, and decommissioning. The report must contain the following information: the name of species, date found, location, a picture to confirm species identity (if possible), and any other relevant information. Carcasses with Federal or research bands must be reported to the United States Geological Survey Bird Band Laboratory, available at <https://www.pwrc.usgs.gov/bbl/>.
5. The lessee must provide the results of avian surveys and data to BOEM and FWS with its plans.

Based on the information regarding the proposed activities (see Section 1) within the WEA, no additional mitigations for ESA-listed and ESA candidate species are necessary.

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