

**U.S. Department of the Interior
Bureau of Ocean Energy Management**

**Coastal Zone Management Act, Consistency Determination
(15 CFR 930.36(a))**

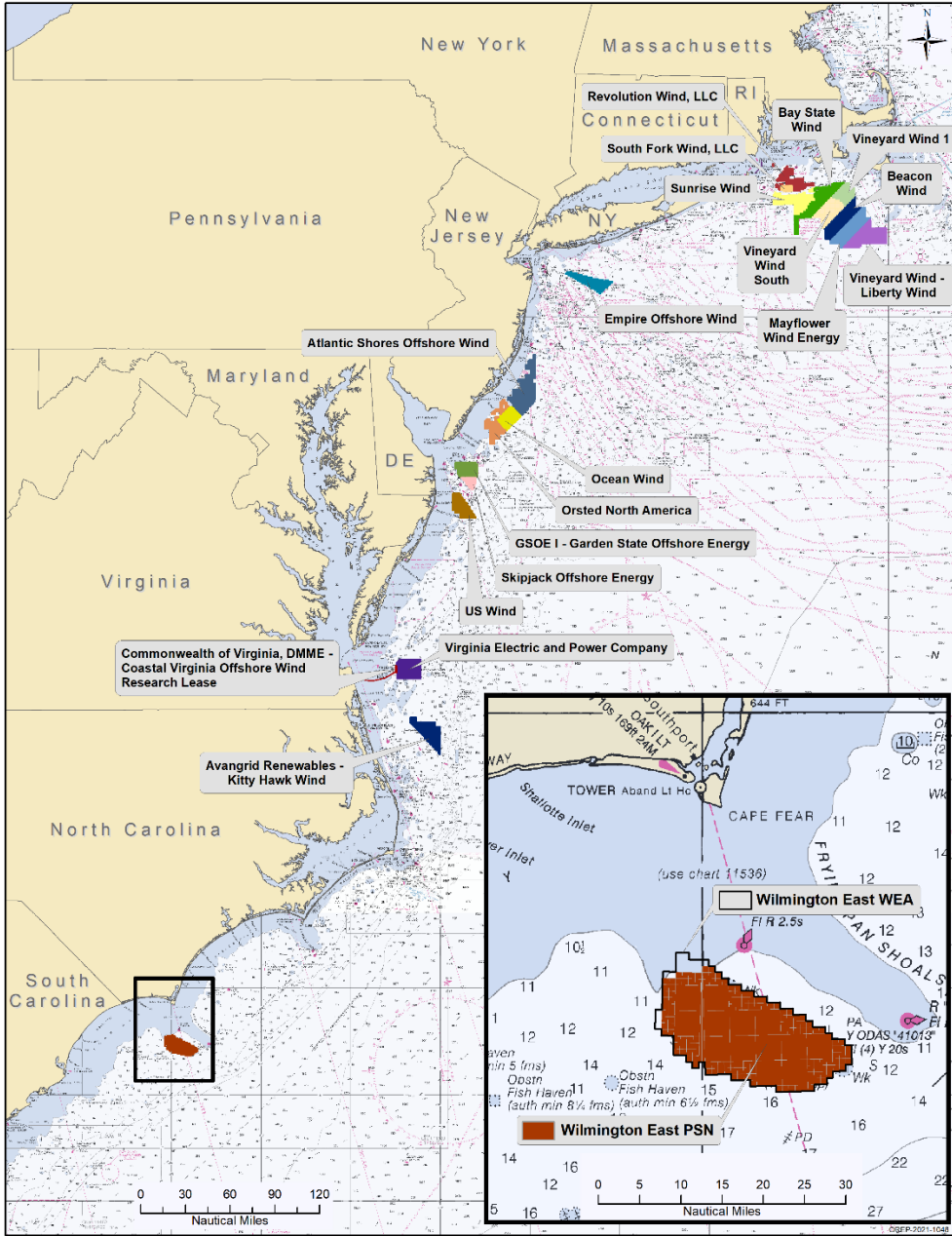
Wilmington East Wind Energy Area Offshore the State of North Carolina

The purpose of this Consistency Determination (CD) is to determine whether issuing up to three commercial wind energy leases and approving site assessment activities (including the installation, operation and decommissioning of up to six meteorological buoys) within the Wilmington East Wind Energy Area (WEA) offshore North Carolina (*see* Figure 1) is consistent to the maximum extent practicable with the enforceable policies of the North Carolina and South Carolina Coastal Management Programs (CMPs). This document is provided pursuant to the requirements of 15 CFR 930.39(a) of the Coastal Zone Management Act (CZMA) Federal Consistency regulations.

Section 307(c)(1) of the CZMA, as amended, requires that Federal agency activities affecting any land or water use or natural resource of the coastal zone shall be carried out in a manner which is consistent to the maximum extent practicable with the enforceable policies of federally-approved state management programs.

The States of North Carolina and South Carolina share common coastal management issues and have similar enforceable policies as identified by their respective CMPs. Due to the proximity of the Wilmington East WEA to both states (Figure 1), and their shared impacts on environmental and socioeconomic resources and uses, BOEM has prepared a single CD for the Wilmington East WEA.

BOEM is proposing to issue up to three commercial wind energy lease(s) within the Wilmington East WEA (as illustrated in Figure 1 and described below) and approve site assessment activities that would determine whether the lease is suitable for, and would support, commercial-scale wind energy production. The lease, by itself, would not authorize the lessee to construct or operate any wind energy project on the Outer Continental Shelf (OCS).



This map depicts active commercial and research renewable energy leases issued on the Atlantic Outer Continental Shelf by the Bureau of Ocean Energy Management. Where possible individual projects have been identified.

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Data Sources: BOEM, GEBCO, NOAA, US Census Bureau
 Map Date: 12/09/2021

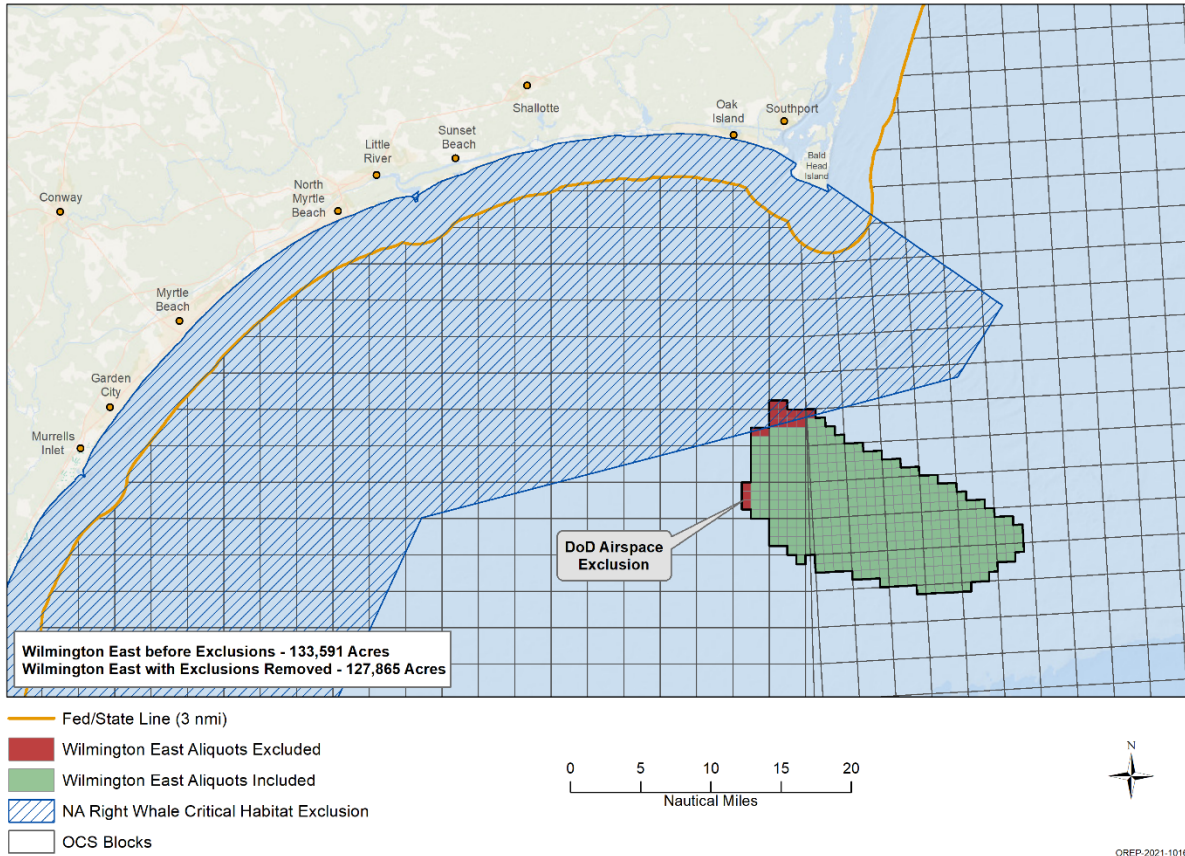
Figure 1: Wilmington East Wind Energy Area

In January 2011, BOEM established the North Carolina Intergovernmental Renewable Energy Task Force (Task Force). The Task Force began working to develop an area offshore of North Carolina to be considered for commercial wind energy leasing.

On December 13, 2012, BOEM published a Call for Information and Nominations (Call) in the Federal Register (under Docket ID: BOEM-2012-0088). The Call was open for public comments for 45 days. On Feb. 5, 2013, BOEM reopened the comment period for the Call to allow for additional public input. The comment period for the Call closed on March 7, 2013. After considering public comments on the Call and working closely with stakeholders, BOEM announced on August 11, 2014 that it had identified Wind Energy Areas offshore North Carolina. BOEM decided to move forward with leasing only the Kitty Hawk WEA at that time. On March 16, 2017, BOEM held a competitive lease sale (i.e. auction) for the Kitty Hawk WEA. Avangrid Renewables, LLC, which bid \$9,066,650, was the winner of lease OCS-A 0508 (122,405 acres). The lease was signed by BOEM on October 10, 2017 and went into effect on November 1, 2017.

On August 13, 2021, BOEM announced that it would prepare a supplemental Environmental Assessment (SEA) to consider additional wind leasing options offshore North Carolina and South Carolina. Specifically, BOEM is considering a lease sale for the Wilmington East WEA located approximately 15 nautical miles offshore North Carolina. The announcement initiated a 30-day public comment period that ended on September 12, 2021.

On November 1, 2021, BOEM published a proposed sale notice (PSN) for a lease sale in the Carolina Long Bay Area consisting of approximately 127,865 acres, which includes the majority of the Wilmington East WEA. Lease blocks overlapping the North Atlantic right whale critical habitat (NARW) and areas used for training identified by the Department of Defense (DoD) were removed from leasing consideration (*see* Figure 2).



OREP-2021-1016

Figure 2: Proposed Wilmington East Lease Area with NARW Critical Habitat and DoD Training Areas Removed

On Dec. 8, 2021, BOEM announced the availability of a draft SEA of proposed wind leasing offshore the Carolinas for public review and comment. BOEM hosted two virtual public meetings on December 14 and 15, 2021 to provide an overview of the draft SEA and to obtain public input. The release of the draft SEA also initiated a 30-day public comment period on the assessment itself, which will end on January 7, 2022.

Activities that may occur over the site assessment period of the lease (i.e. up to five years) include site characterization survey activities and site assessment activities involving the installation, operation, maintenance and decommissioning of meteorological buoys. Site characterization surveys would inform a lessee about site specifics of a lease area in order to prepare for submission of a Site Assessment Plan (SAP) and, potentially, a Construction and Operations Plan (COP). The projected site characterization and site assessment activities within the Wilmington East WEA are discussed in detail in Section 2 and summarized in Table 1 (below).

Table 1: Projected Site Characterization & Assessment Activities in the WEA

Potential Leaseholds	Site Characterization Activities			Site Assessment Activities
	High Resolution Geophysical (HRG) Surveys (Total Trips)	Sub-bottom Sampling (Total Trips)	Avian and Fish Surveys	Installation of Met Buoys (max)
3	278	504	132-168	6

1. BACKGROUND

BOEM is authorized to issue leases on the OCS for the purposes of wind energy development pursuant to Section 388 of the Energy Policy Act of 2005 (EPAct). On April 22, 2009, BOEM promulgated regulations implementing this authority at 30 CFR Part 585. The regulations establish a program to grant leases, easements and rights-of-way (ROWs) for orderly, safe and environmentally responsible renewable energy development activities, such as the siting and construction of offshore wind facilities on the OCS as well as other forms of renewable energy such as marine hydrokinetic (i.e., wave and current). The Minerals Management Service (MMS) prepared a programmatic Environmental Impact Statement (EIS) to evaluate the impact of establishing of a comprehensive, nationwide MMS Alternative Energy Program on the OCS (*Programmatic Environmental Impact Statement for Alternative Energy Development and Production and Alternate Use of Facilities on the Outer Continental Shelf, Final Programmatic Environmental Impact Statement*, October, 2007 (Programmatic EIS.) The final rule and the Programmatic EIS can be reviewed for reference on the BOEM website at: <http://www.boem.gov/Renewable-Energy-Program/Regulatory-Information/Index.aspx> and: <http://www.boem.gov/Renewable-Energy-Program/Regulatory-Information/Guide-To-EIS.aspx>. In addition, BOEM published the Atlantic Geological and Geophysical Activities Programmatic Environmental Impact Statement (G&G PEIS). The G&G PEIS can be viewed here: <http://www.boem.gov/Atlantic-G-G-PEIS/>. The 2013 biological opinion in effect at the time of the 2015 EA expired in 2020. On October 24, 2018, BOEM requested reinitiation of consultation on offshore wind data collection activities in the Atlantic OCS, including the activities considered in this SEA. The new consultation concluded with a Letter of Concurrence (LoC) from NMFS on June 29, 2021. Documents from the 2021 consultation can be here: <https://www.boem.gov/renewable-energy/nmfs-esa-consultations>.

On September 18, 2015, BOEM released the *Commercial Wind Lease Issuance and Site Assessment Activities on the Atlantic Outer Continental Shelf Offshore North Carolina Revised Environmental Assessment* (2015 EA), which is available online at: <http://www.boem.gov/NC-EA-Camera-FONSI/>. The 2015 EA analyzes the reasonably foreseeable consequences associated with two distinct BOEM actions in the Wilmington East WEA:

- (1) Lease issuance (including reasonably foreseeable consequences associated with shallow hazards, geological, geotechnical, archaeological resources, and biological surveys); and
- (2) SAP approval (including reasonably foreseeable consequences associated with the installation of a meteorological tower and meteorological buoys).

BOEM does not issue permits for shallow hazards, geological, geotechnical or archaeological resource surveys. However, since BOEM regulations require that a lessee include the results of these surveys in its application for SAP and COP approval, the 2015 EA treats the environmental consequences of these surveys as reasonably foreseeable consequences of issuing a lease.

In August 2021, BOEM announced it would be updating its environmental review of proposed wind leasing options offshore the Carolinas. On Dec. 8, BOEM posted a draft of the SEA on its website for public review and comment. The draft SEA considers new information relevant to environmental considerations that were not available when BOEM originally published the 2015 EA. The draft SEA assesses the potential impacts from the issuance of commercial leases within the Wilmington East WEA. Potential impacts include those that could occur from site characterization activities (i.e., shallow hazards, geological, geotechnical, archeological, and biological surveys of the lease area and potential cable routes) and site assessment activities (i.e., installation and operation of meteorological buoys) associated with issuing wind energy leases in the Wilmington East WEA. It is important to note that the draft SEA no longer considers the installation of meteorological towers as part of the proposed action. The offshore wind industry is using meteorological buoys instead of towers to assess wind resources and all BOEM lessees on the Atlantic OCS have used meteorological buoys instead of towers.

2. PROPOSED ACTION DESCRIPTION

Offshore Site Characterization Surveys

BOEM regulations require that a lessee provide the results of a number of surveys with both a SAP and a COP, including: a shallow hazards survey, a geological survey, biological surveys, a geotechnical survey, and an archaeological resource survey (30 CFR 585.626(a)(1) to (a)(5), respectively). BOEM refers to these surveys as “site characterization” activities. Site characterization activities (e.g., locating shallow hazards, cultural resources and hard-bottom areas; evaluating installation feasibility; assisting in the selection of appropriate foundation system designs, and determining the variability of subsurface sediments) would necessitate using high-resolution geophysical (HRG) surveys and geotechnical exploration. The purpose of the HRG survey would be to acquire geophysical shallow hazards data and information pertaining to the presence or absence of archaeological resources and to conduct bathymetric charting. The purpose of geotechnical exploration would be to assess the suitability of shallow foundation soils for supporting a structure or transmission cable under any operational and environmental conditions that might be encountered (including extreme events) and to document soil characteristics necessary for the design and installation of all structures and cables. The results of geotechnical exploration allow for a thorough investigation of the stratigraphic and geo-engineering properties of the sediment that may affect the anchoring systems of a meteorological buoy, which would be necessary for BOEM to consider in a SAP, or later a COP, submitted for a lease.

Site characterization activities would also necessitate vessel and/or aerial surveys to characterize three primary biological resource categories: (1) benthic habitats; (2) avian resources; and (3) marine fauna. BOEM does not anticipate lessees needing to conduct separate surveys to characterize the benthic habitats which could be affected by their

potential future leasehold activities because the geological and geotechnical surveys would provide enough detailed information for BOEM to adequately assess potential impacts on benthic habitats in the area. For lessees to describe the state of the avian and marine fauna resources, resource surveys would generally involve simple visual observation, either from a vessel or aircraft. For avian and marine fauna surveys, multi-year assessment periods may be necessary to capture natural seasonal and inter-annual variability of marine fauna within the WEA and immediate surroundings if current data available is not sufficient to determine spatial and temporal distribution of species. It is generally envisioned that the fish, marine mammal, sea turtle, and bird aerial and shipboard surveys could be conducted simultaneously.

It is assumed that the site of a meteorological buoy would be surveyed first to meet the similar data requirements for a lessee's SAP (30 CFR 585.610 and 585.611), and the site of a meteorological buoy would not be resurveyed when the remainder of the leasehold is surveyed to meet the data requirements for a lessee's COP (30 CFR 585.626(a)). However, a lessee could conduct all of their surveys at the same time (to support both a SAP and a COP).

Meteorological Buoys

While a meteorological tower has been the traditional device for assessing wind conditions, only meteorological buoys have been installed on BOEM issued leases on the Atlantic OCS. Therefore, BOEM is only considering meteorological buoys as part of the proposed action. Meteorological buoys are used for collecting wind, wave, and current data in the offshore environment. The draft SEA assumes that a lessee would install a maximum of two buoys per lease. These meteorological buoys would be anchored at fixed locations and would regularly collect observations from many different atmospheric and oceanographic sensors. There are three primary types of buoys BOEM anticipates could be used for meteorological resource data collection on the lease: discus-shaped hull buoys; boat-shaped hull buoys; and spar-type buoys. Discus-shaped and boat-shaped buoys are typically towed or carried aboard a vessel to the installation location. A discus-type buoy would use a combination of chain, nylon and buoyant polypropylene materials, while a boat-shaped buoy would be moored using an all-chain mooring. Once at the location site, the buoy would be either lowered to the surface from the deck of the transport vessel or placed over the final location. Then the mooring anchor is dropped. Transport and installation vessel anchoring would typically require one day for these types of buoys. The total area of bottom disturbance for boat-shaped and discus shaped buoys would be approximately 6 ft² (.55 square meters [m²]) for the actual footprint and 370,260 ft² (34,398 m²) for the anchor sweep. A spar-type buoy would require two distinct phases for installation, with typically a total of 2-3 days to install. The total area of bottom disturbance associated with a spar-type buoy and installation vessel anchors would be roughly 785 ft² (73 m²). See Section 3.2.2.2 of the 2015 EA for more information on meteorological buoys and their anchor systems.

To obtain meteorological data, scientific measurement devices consisting of anemometers, vanes, barometers and temperature transmitters would be mounted either directly on a buoy or on instrument support arms. A meteorological buoy also could accommodate environmental monitoring equipment, such as avian monitoring equipment (e.g., radar units, thermal imaging cameras), acoustic monitoring for marine mammals, data-logging

computers, power supplies, visibility sensors, water measurements (e.g., temperature, salinity), communications equipment, material hoist, and storage containers.

To measure the speed and direction of ocean currents, Acoustic Doppler Current Profilers (ADCPs) would likely be installed on or near a meteorological buoy. The ADCP is a remote-sensing technology which transmits sound waves at a constant frequency and measures the ricochet of the sound wave off fine particles or zooplanktons suspended in the water column. The ADCPs may be mounted independently on the seafloor, or to the legs of the platform, or attached to a buoy. A typical ADCP is about 1 to 2 ft tall (approximately 0.3 to 0.6 m) and 1 to 2 ft wide (approximately 0.3 to 0.6 m).

A SAP describes the activities (e.g., installation of meteorological buoys) a lessee plans to perform for the assessment of the wind resources and ocean conditions at its commercial lease (30 CFR 585.605). No site assessment activities may take place on a lease until BOEM has approved a lessee's SAP (30 CFR 585.600(a)). Once approved, the site assessment term for a commercial lease is five years from the date of SAP approval (30 CFR 585.235(a)(2)). It is assumed that the lessee would install data-collection devices (e.g., meteorological buoys) on its lease area to assess the wind resources and ocean conditions of the leasehold. This information would allow the lessee to determine whether the lease is suitable for wind energy development, where on the lease it would propose development, and what form of development to propose in a COP.

If a lessee submits a SAP, then after BOEM has deemed it complete and sufficient, BOEM must send the SAP as well as all supporting information to the North Carolina Department of Environmental Quality (NCDEQ) Division of Coastal Management (DCM). After providing the SAP to DCM and prior to approving the SAP, BOEM must hold a conference call with DCM and the North Carolina Division of Marine Fisheries (DMF) in order to ensure adequate communication regarding precise installation location and timing for the proposed meteorological buoys.

A lessee must submit a COP at least six months before the end of the site assessment term if the lessee intends to continue to the lease's operations term (30 CFR 585.601(c)). If the COP describes continued use of existing facilities, such as a meteorological buoy approved in the SAP, a lessee may keep such facilities in place on its lease during BOEM's review of the COP (30 CFR 585.618(a)), which may take up to two years. If, after the technical and environmental review of a submitted COP, BOEM determines that such facilities may not remain in place throughout the operations term, a lessee must initiate the decommissioning process (30 CFR 585.618(c)).

Coastal Activity

A lessee will likely determine specific ports to be used for site assessment and survey activities based primarily on proximity to the lease blocks, capacity to handle the proposed activities, and/or established business relationships between port facilities and the lessee. Existing ports or industrial areas in North Carolina and South Carolina are adequate to support proposed action activities. Survey vessels would use existing ports and harbors for trip departures and returns and require a diesel refueling station. Vessels conducting HRG

surveys and geotechnical exploration work can depart from either one of the major ports or from one of the smaller ports identified in the 2015 EA and in the closest proximity to the Wilmington East WEA. Because the survey vessels used for HRG surveys and geotechnical exploration are smaller than most commercial ocean-going vessels and require a smaller navigation channel depth, they can use most existing commercial ports in the North Carolina and South Carolina coastal area. Because anticipated offshore site characterization work is generally smaller in scale than other activities within existing ports, port infrastructure requirements are also likely to be smaller. Because of their proximity to the Wilmington East WEA, the majority of onshore activities would be divided among existing commercial and/or smaller ports in North Carolina and South Carolina. BOEM therefore does not anticipate expansion of port facilities to meet lessee needs, and therefore considers only existing facilities that can currently accommodate proposed site characterization and site assessment activities.

In order to survey all of the Wilmington East WEA, a lessee may have to use multiple vessels over several years. BOEM anticipates that 65 to 100 ft long vessels would be used, depending on availability, and that they could conduct several surveys simultaneously. Vessels must be able to accommodate a crew for several days and be large enough to mount enough cable to tow instruments.

Vessel Traffic

Approximately 1,046 to 1,334 total vessel round trips are anticipated to occur as a result of the proposed action over a five year period (*see* Table 2). Approximately 914 to 950 of these vessel trips (round trips) would be associated with all site characterization surveys conducted as a result of the proposed action over five years, from 2023 to 2028. The total vessel traffic estimated as a result of the installation, decommissioning, and routine maintenance of the meteorological buoys that could be reasonably anticipated in connection with the proposed action would range from 132 to 384 round trips over a five-year period.

Table 2: Total Vessel Round Trips

HRG Surveys	Cable surveys	Geotechnical Sampling Surveys	Avian Surveys	Fish Surveys	Met Buoys	Total
275	3	504	72-108	60	132-384	1,046-1,334

The total vessel traffic estimated as a result of the HRG surveys and geotechnical exploration work that could be reasonably anticipated in connection with the proposed action would be approximately 782 round trips over five years and spread over existing and available port facilities in North Carolina and South Carolina. In addition, BOEM presumes 132 to 168 extra independent surveys conducted to characterize avian and fish resources under the proposed action.

Meteorological buoys would typically take 1 to 2 days to install by one vessel, and 1 to 2 days to decommission by one vessel. Maintenance trips to would occur monthly to quarterly for each buoy (*see* Table 3).

Table 3: Vessel Traffic for Meteorological Buoy Installation, Maintenance, and Decommissioning

Activity	Round Trips	Formula
Meteorological Buoy Installation	6-12	1-2 round trips x 6 buoys
Meteorological Buoy Maintenance	120-360	4 quarters x 6 buoys x 5 years 12 months x 6 buoys x 5 years
Meteorological Buoy Decommissioning	6-12	1-2 round trips x 6 buoys
Total Meteorological Buoy Trips	132-384	

3. STATE ENFORCEABLE POLICIES

As part of this CD, BOEM has evaluated and documented in the enclosed table (*see* Table 4), policies identified by North Carolina and South Carolina as enforceable, applicable offshore and coastal resources or uses, and CZMA “reasonably foreseeable coastal effects” that might be expected for activities conducted under the proposed action. While reviewing and making these determinations on the policies the states have identified as enforceable in this CD, BOEM has considered the common enforceable policies identified by each of the two states as enforceable in their CMP as listed in Table 4

4. CONSISTENCY DETERMINATION

BOEM has evaluated all applicable enforceable policies of North Carolina and South Carolina and the potential activities resulting from the proposed action. This CD has examined whether the proposed action described in Section 1 is consistent to the maximum extent practicable with the policies and provisions identified as enforceable by the CMPs of North Carolina and South Carolina (*see* Table 4). Based on the preceding information and analyses, and the incorporated-by-reference Programmatic EIS, G&G PEIS, 2015 EA, 2021 consultations, and the draft SEA, BOEM has determined the proposed action will be consistent to the maximum extent practicable with the policies that North Carolina and South Carolina have identified as enforceable.