used to submit payments by mail. The IFQ Permit Holder Fee Submission Form and the Registered Crab Receiver Fee Submission Form have been revised and renamed the IFQ Permit Holder Fee Calculation Form and the Registered Crab Receiver Fee Calculation Form, respectively.

This information collection is necessary under the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), which authorizes observer deployment fees and cost recovery fees. Section 304(d) of the Magnuson-Stevens Act authorizes and requires the collection of cost recovery fees for limited access privilege programs and community development quota programs. Section 313 of the Magnuson-Stevens Act authorizes a system of fees to support a fisheries research plan and deploy observers in the North Pacific fisheries. The fee documentation forms and volume and value reports that are included in this collection are necessary to track, verify, and enforce the fee collection systems.

This information collection is required in Federal regulations at 50 CFR parts 679 and 680. Information on the observer coverage fee and cost recovery fee programs is provided on the NMFS Alaska Region website at *https://www.fisheries.noaa.gov/alaska/commercial-fishing/cost-recovery-programs-fee-collection-and-fee-payment-alaska.*

Cost recovery fees may not exceed 3 percent of the ex-vessel value of the fishery, and must recover the incremental (program) costs associated with management, data collection, and enforcement of these programs that are directly incurred by government agencies tasked with overseeing these fisheries. NMFS recovers program costs of seven cost recovery programs in this information collection: Pacific Halibut and Sablefish Individual Fishing Quota (IFQ) Program; Bering Sea and Aleutian Islands Crab Rationalization Program; Central Gulf of Alaska Rockfish Program; Western Alaska Community Development Quota Program; American Fisheries Act Program; Aleutian Islands Pollock Program; and Amendment 80 Program. The party responsible for paying the cost recovery fee varies by program.

The observer coverage fee funds deployment of observers and electronic monitoring in the partial coverage category of the North Pacific Observer Program (Observer Program). Unlike the cost recovery fees, this is a straight fee and does not recover incremental costs associated with the program. NMFS assesses a fee of 1.65 percent of the ex-vessel value of groundfish and halibut landed in the partial coverage category under the Observer Program. The information collected by observers provides scientific information for minimizing bycatch and managing the groundfish and halibut fisheries in the Bering Sea and Aleutian Islands and Gulf of Alaska.

Catcher vessel owners split the observer coverage fee with the registered buyers or owners of shoreside or stationary floating processors. While the owners of catcher vessels and processors in the partial coverage category are each responsible for paying their portion of the fee, the owners of shoreside or stationary floating processors and registered buyers are responsible for collecting the fees from catcher vessels, and remitting the full fee to NMFS. Owners of catcher/processors in the partial coverage category are responsible for remitting the full fee to NMFS.

Processors that receive and purchase landings of IFQ halibut or sablefish, rockfish, groundfish, and crab subject to observer and/or cost recovery fees must annually submit an ex-vessel volume and value report that provides information on the pounds purchased and value paid. NMFS uses this information to establish the total ex-vessel value of the fishery, calculate standard prices, and establish annual fee percentages in each fishery.

IFQ permit holders and registered crab receivers that do not agree with their NMFS assessed fee liability summary and who are paying a revised fee, use the fee calculation forms to calculate and submit documentation supporting their revised fee.

Any person who receives an initial administrative determination for incomplete payment of a cost recovery fee or observer coverage fee may appeal under the appeals procedures set out at 15 CFR part 906.

Affected Public: Business or other for-profit organizations; Individuals or households.

Frequency: Annually; as needed.

Respondent's Obligation: Mandatory, Required to Obtain or Retain Benefits.

Legal Authority: Magnuson-Stevens Fishery Conservation and Management Act.

This information collection request may be viewed at *www.reginfo.gov.* Follow the instructions to view the Department of Commerce collections currently under review by OMB.

Written comments and recommendations for the proposed information collection should be submitted within 30 days of the publication of this notice on the following website *www.reginfo.gov/public/do/PRAMain.* Find this particular information collection by selecting ''Currently under 30-day Review—Open for Public Comments'' or by using the search function and entering either the title of the collection or the OMB Control Number 0648–0711.

Sheleen Dumas,

Department PRA Clearance Officer, Office of the Chief Information Officer, Commerce Department.

[FR Doc. 2022–05946 Filed 3–18–22; 8:45 am]

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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[RTID 0648–XB845]

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to Marine Site Characterization Surveys Off of Delaware

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice; proposed incidental harassment authorization; request for comments on proposed authorization and possible renewal.

SUMMARY: NMFS has received a request from Orsted Wind Power North America, LLC, (Orsted) on behalf of Garden State Offshore Energy, LLC (Garden State) and Skipjack Offshore Energy, LLC (Skipjack) for authorization to take marine mammals incidental to site characterization surveys off the coast of Delaware. Pursuant to the Marine Mammal Protection Act (MMPA), NMFS is requesting comments on its proposal to issue an incidental harassment authorization (IHA) to incidentally take marine mammals during the specified activities. NMFS is also requesting comments on a possible one-time, one-year renewal that could be issued under certain circumstances and if all requirements are met, as described in Request for Public Comments at the end of this notice. NMFS will consider public comments prior to making any final decision on the issuance of the requested MMPA authorization and agency responses will be summarized in the final notice of our decision.

DATES: Comments and information must be received no later than April 20, 2022.

ADDRESSES: Comments should be addressed to Jolie Harrison, Chief, Permits and Conservation Division,

Office of Protected Resources, National Marine Fisheries Service. Written comments should be submitted via email to *ITP.Corcoran@noaa.gov.*

Instructions: NMFS is not responsible for comments sent by any other method, to any other address or individual, or received after the end of the comment period. Comments, including all attachments, must not exceed a 25-megabyte file size. All comments received are a part of the public record and will generally be posted online at *www.fisheries.noaa.gov/permit/incidental-take-authorizations-under-marine-mammal-protection-act* without change. All personal identifying information (*e.g.,* name, address) voluntarily submitted by the commenter may be publicly accessible. Do not submit confidential business information or otherwise sensitive or protected information.

FOR FURTHER INFORMATION CONTACT: Kim Corcoran, Office of Protected Resources, NMFS, (301) 427–8401. Electronic copies of the application and supporting documents, as well as a list of the references cited in this document, may be obtained online at: *https://www.fisheries.noaa.gov/permit/incidental-take-authorizations-under-marine-mammal-protection-act.* In case of problems accessing these documents, please call the contact listed above.

SUPPLEMENTARY INFORMATION:

Background

The MMPA prohibits the ''take'' of marine mammals, with certain exceptions. sections 101(a)(5)(A) and (D) of the MMPA (16 U.S.C. 1361 *et seq.*) direct the Secretary of Commerce (as delegated to NMFS) to allow, upon request, the incidental, but not intentional, taking of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if certain findings are made and either regulations are proposed or, if the taking is limited to harassment, a notice of a proposed incidental harassment authorization is provided to the public for review.

Authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s) and will not have an unmitigable adverse impact on the availability of the species or stock(s) for taking for subsistence uses (where relevant). Further, NMFS must prescribe the permissible methods of taking and other ''means of effecting the least practicable adverse impact'' on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of the species or stocks for taking for certain subsistence uses (referred to in shorthand as ''mitigation''); and requirements pertaining to the mitigation, monitoring and reporting of the takings are set forth.

The definitions of all applicable MMPA statutory terms cited above are included in the relevant sections below.

National Environmental Policy Act

To comply with the National Environmental Policy Act of 1969 (NEPA; 42 U.S.C. 4321 *et seq.*) and NOAA Administrative Order (NAO) 216–6A, NMFS must review our proposed action (*i.e.,* the issuance of an IHA) with respect to potential impacts on the human environment.

This action is consistent with categories of activities identified in Categorical Exclusion B4 (IHAs with no anticipated serious injury or mortality) of the Companion Manual for NOAA Administrative Order 216–6A, which do not individually or cumulatively have the potential for significant impacts on the quality of the human environment and for which we have not identified any extraordinary circumstances that would preclude this categorical exclusion. Accordingly, NMFS has preliminarily determined that the issuance of the proposed IHA qualifies to be categorically excluded from further NEPA review.

We will review all comments submitted in response to this notice prior to concluding our NEPA process or making a final decision on the IHA request.

Summary of Request

On October 1, 2021, NMFS received a request from Orsted on behalf of Garden State Offshore Energy, LLC and Skipjack Offshore Energy, LLC, both subsidiaries of Orsted, for an IHA to take marine mammals incidental to marine site characterization surveys off the coast of Delaware. Hereafter, we refer to the applicant as Orsted. Following NMFS' review of the draft application, a revised version was submitted on November 24, 2021. The application was deemed adequate and complete on February 11, 2022. Orsted's request is for take of a small number of 16 species of marine mammals by Level B harassment only. Neither Orsted nor NMFS expects serious injury or mortality to result from this activity and, therefore, an IHA is appropriate.

NMFS previously issued IHAs to Garden State (86 FR 33664; June 25, 2021)) and Skipjack (86 FR 18943; April 12, 2021)) for related work. However, work has not been completed under these IHAs at this time, which are effective until April 4, 2022 and June 10, 2022, respectively. Orsted plans to survey the combined survey area of the aforementioned projects, and the same two Lease Area currently being surveyed under those IHAs (see Figure 1).

Description of Proposed Activity

Overview

As part of their overall marine site characterization survey operations, Orsted plans to conduct high-resolution geophysical (HRG) and geotechnical surveys in Lease Areas OCS–A 0482 and 0519 (Lease Areas), and the associated export cable route (ECR) area off the coast of Delaware (Figure 1).

The purpose of the marine site characterization surveys is to collect data concerning seabed (geophysical, geotechnical, and geohazard), ecological, and archeological conditions within the footprint of offshore wind facility development. Surveys are also conducted to support engineering design and to map Unexploded Ordnance (UXO). Underwater sounds resulting from the site characterization survey activities, specifically HRG surveys, has the potential to result in incidental take of marine mammals in the form of Level B harassment. Table 1 identifies representative survey equipment with the expected potential to result in take of marine mammals.

Dates and Duration

The proposed site characterization surveys are anticipated to occur between May 10, 2022 and May 9, 2023. The exact dates have not yet been established. The activity is expected to include up to 350 survey days over the course of a single year (''survey day'' defined as a 24-hour (hr) activity period in which the assumed number of line kilometers (km) are surveyed). The number of anticipated survey days was calculated as the number of days needed to reach the overall level of effort required to meet survey objectives assuming any single vessel travels 4 knots (kn) and surveys cover, on average, 70 line km per 24-hr period. The applicant assumes the use of sparker systems, which produce the largest estimated harassment isopleths, on all survey days (see Table 1).

Specific Geographic Region

The proposed activities will occur within the survey area which includes the Lease Area and potential ECRs to landfall locations in Delaware, as shown in Figure 1. This survey area combines

the survey areas in the previously issued Garden State (86 FR 33664; June 25, 2021) and Skipjack (86 FR 18943; April 12, 2021) IHAs. The combined Lease Areas (Garden State Lease Area OCS–A–0482 and Skipjack Lease Area OCS–A–0519) are comprised of approximately 568 square kilometers (km^2) within the WEA of BOEM's Mid-Atlantic planning area (see Figure 1). Water depths in the Lease Area range from approximately 15 to 40 meters (m).

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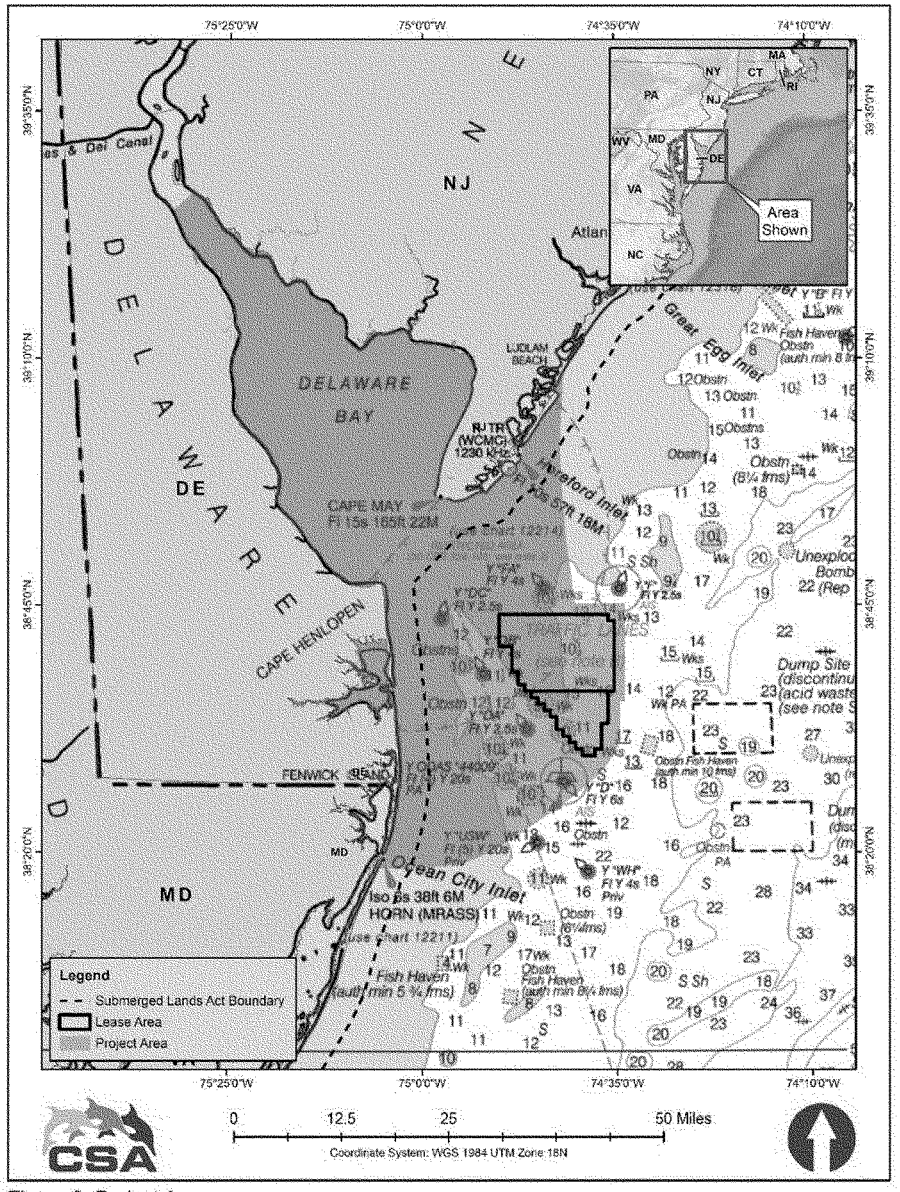

Figure 3. Project Area

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Figure 1. Survey area for the site characterization surveys which include the Lease Areas and the potential export cable route area.

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Detailed Description of Specific Activity

Orsted proposes to conduct HRG survey operations, including multibeam depth sounding, seafloor imaging, and shallow and medium penetration sub-bottom profiling. The HRG surveys will include the use of seafloor mapping

equipment with operating frequencies above 180 kilohertz (kHz) (*e.g.,* side-scan sonar (SSS), multibeam echosounders (MBES)); magnetometers and gradiometers that have no acoustic output; and shallow- to medium-penetration sub-bottom profiling (SBP) equipment (*e.g.,* parametric sonars, compressed high-intensity radiated pulses (CHIRPs), boomers, sparkers) with operating frequencies below 180 kilohertz (kHz). No deep-penetration SBP surveys (*e.g.,* airgun or bubble gun surveys) will be conducted. Survey equipment will be deployed from as many as three vessels or remotely operated vehicles (ROVs) during the site characterization activities within the Lease area and ECR area. Equipment deployed on the ROVs would be identical to that deployed on the vessel; however, the sparker systems are not normally deployed from an ROV due to the power supply required. For Orsted's proposed survey activity, ROVs would be used for smaller impact sources (*i.e.,* CHIRPs) or de minimus sources. The extent of ROV usage in this project is unknown at this time, however NMFS expects the use of ROVs to have de minimus impacts relative to the use of vessels given the smaller sources and inherent nature of utilizing an ROV (*e.g.,* much smaller size of an ROV relative to a vessel and less acoustic exposure given location of their use in the water column). For these reasons, our analysis focuses on the acoustic sources themselves and the use of vessels to deploy such sources, rather than the specific use of ROVs to deploy the survey equipment. Therefore, ROVs are not further analyzed in this notice.

Orsted assumes that vessels would generally conduct survey effort at a transit speed of approximately 4 kn, which equates to 70 line km per 24-hour operation period. On this basis a total of 350 vessel survey days are expected within Lease Areas OCS–A 0482, OCS–A 0519, and the associated ECR area. Water depths in the Lease Areas range from approximately 15 to 40 meters (m). Water depths within the ECR area extend from the shoreline to approximately 40 m deep.

Acoustic sources planned for use during HRG survey activities proposed by Orsted include the following. Survey equipment can either be towed, pole mounted, hull-mounted on the vessel (or on an ROV as noted above), or mounted on other survey equipment (*e.g.,* transponders) (Table 1):

- Shallow penetration, non-impulsive, intermittent, mobile, non-parametric SBPs (*i.e.,* CHIRP SBPs) are used to map the near-surface stratigraphy (top 0 to 10 m) of sediment below seabed. A CHIRP system emits sonar pulses that increase in frequency from approximately 2 to 20 kHz over time. The frequency range can be adjusted to meet project variables. These sources are typically mounted on a pole, either over the side of the vessel or through a moon pool in the bottom of the hull. The operational configuration and relatively narrow beamwidth of these sources reduce the likelihood that an animal would be exposed to the signal.
- Medium penetration SBPs (boomers) are used to map deeper subsurface stratigraphy as needed. A boomer is a broad-band sound source operating in the 3.5 Hz to 10 kHz frequency range. This system is commonly mounted on a sled and towed behind the vessel. Boomers are impulsive and mobile sources. The sound levels produced by this equipment type have the potential to result in Level B harassment of marine mammals; and
- Medium penetration SBPs (sparkers) are used to map deeper subsurface stratigraphy as need. Sparkers create acoustic pulses from 50 Hz to 4 kHz omnidirectionally from the source, and are considered to be impulsive and mobile sources. Sparkers are typically towed behind the vessel with adjacent hydrophone arrays to receive the return signals. The sound levels produced by this equipment type have the potential to result in Level B harassment of marine mammals.

Operation of the following survey equipment types is not reasonably expected to result in take of marine mammals and will not be discussed further beyond the brief summaries provided below:

- Parametric SBPs, also commonly referred to as sediment echosounders, are used to provide high data density in sub-bottom profiles that are typically required for cable routes, very shallow water, and archaeological surveys. Parametric SPBs are typically mounted on a pole, either over the side of the vessel or through a moon pool in the bottom of the hull. Crocker and Fratantonio (2016) does not provide relevant measurements or source data for parametric SBPs, however, some source information is provided by the manufacturer. For the proposed project, the SBP used would generate short, very narrow-beam (1° to 3.5°) sound pulses at relatively high frequencies (generally around 85 to 100 kHz). The narrow beamwidth significantly reduces the potential for exposure while the high frequencies of the source are rapidly attenuated in sea water. Given the narrow beamwidth and relatively high frequency. NMFS does not reasonably expect there to be potential for marine mammals to be exposed to the signal;
- Acoustic Cores are seabed-mounted sources with three distinct sound sources: A high-frequency parametric source, a high-frequency CHIRP sonar, and a low-frequency CHIRP sonar. The beamwidth is narrow (3.5° to 8°) and the source is operated roughly 3.5 m above the seabed from a seabed mount, with the transducer pointed directly downward;
- Ultra-short baseline (USBL) positioning systems are used to provide high accuracy ranges by measuring the time between the acoustic pulses transmitted by vessel transceiver and a transponder (or beacon) necessary to produce the acoustic profile. It is a two-component system with a moon pool- or side pole mounted transceiver and one or several transponders mounted on other survey equipment. USBLs are expected to produce extremely small acoustic propagation distances in their typical operating configuration;
- Multibeam echosounders (MBES) are used to determine water depths and general bottom topography. MBES sonar systems project sonar pulses in several angled beams from a transducer mounted to a ship's hull. The beams radiate out form the transducer in a fan-shaped pattern orthogonally to the ship's direction. The proposed MBESs all have operating frequencies >180 kHz and are therefore outside the general hearing range of marine mammals; and
- Side scan sonars (SSS) are used for seabed sediment classification purposes and to identify natural and man-made acoustic targets on the seafloor. The sonar device emits conical or fan-shaped pulses down toward the seafloor in multiple beams at a wide angle, perpendicular to the path of the sensor through the water column. The proposed SSSs all have operating frequencies >180 kHZ and are therefore outside the general hearing range of marine mammals.

Table 1 identifies representative survey equipment with the expected potential to result in exposure of marine mammals and thus potentially result in take. The make and model of the listed geophysical equipment may vary depending on availability and the final equipment choices will vary depending upon the final survey design, vessel availability, and survey contractor selection.

TABLE 1—SUMMARY OF REPRESENTATIVE HRG SURVEY EQUIPMENT

Equipment	Reference for SL	Operating frequency (kHz)	SL (SPL dB re 1 μPa m)	SL (SEL dB re 1 μPa^2 m^2 s)	SL (PK dB re 1 μPa m)	Pulse duration (width) (ms)	Repetition rate (Hz)	Beamwidth (degrees)
ET 216 (2000DS or 3200 top unit)	MAN	2–16 2–8	195	178		20	6	24
ET 424 3200–XS	CF	4–24	176	152		3.4	2	71
ET 512i	CF	0.7–12	179	158		9	8	80
GeoPulse 5430A	MAN	2–17	196	183		50	10	55
Teledyne Benthos Chirp III—TTV 170	MAN	2–7	197	185		60	15	100
Pangeo SBI	MAN	4.5–12.5	188.2	165		4.5	45	120
AA, Dura-spark UHD Sparker (400 tips, 500 J)[1]	CF	0.3–1.2	203	174	211	1.1	4	Omni
AA, Dura-spark UHD Sparker Model 400 x 400[4]	CF	0.3–1.2	203	174	211	1.1	4	Omni
GeoMarine, Dual 400 Sparker, Model Geo-Source 800[1 2].	CF	0.4–5	203	174	211	1.1	2	Omni
GeoMarine Sparker, Model Geo-Source 200–400[1 2]	CF	0.3–1.2	203	174	211	1.1	4	Omni
GeoMarine Sparker, Model Geo-Source 200 Lightweight[1 2].	CF	0.3–1.2	203	174	211	1.1	4	Omni
AA, triple plate S-Boom (700–1,000 J)[3]	CF	0.1–5	205	172	211	0.6	4	80

μPa = micropascal; AA = Applied Acoustics; CF = Crocker and Fratantonio (2016); CHIRP = compressed high-intensity radiated pulses; dB = decibel; EM = equipment mounted; ET = edgetech; J = joule; Omni = omnidirectional source; re = referenced to; PK = zero-to-peak sound pressure level; PM = pole mounted; SBI = sub-bottom imager; SEL = sound exposure level; SL = source level; SPL = root-mean-square sound pressure level; T = towed; TB = Teledyne benthos; UHD = ultra-high definition; WFA = weighting factor adjustment.

[1] The Dura-spark measurements and specifications provided in Crocker and Fratantonio (2016) were used for all sparker systems proposed for the survey. The data provided in Crocker and Fratantonio (2016) represent the most applicable data for similar sparker systems with comparable operating methods and settings when manufacturer or other reliable measurements are not available.

[2] The AA Dura-spark (500 J, 400tips) was used as a proxy source.

[3] Crocker and Fratantonio (2016) provide S-Boom measurements using two different power sources (CSP–D700 and CSP–N). The CSP–D700 power source was used in the 700 J measurements but not in the 1,000 J measurements. The CSP–N source was measured for both 700 J and 1,000 J operations but resulted in a lower SL; therefore, the single maximum SL value was used for both operational levels of the S-Boom.

Proposed mitigation, monitoring, and reporting measures are described in detail later in this document (please see Proposed Mitigation and Proposed Monitoring and Reporting).

Description of Marine Mammals in the Area of Specified Activities

Sections 3 and 4 of the application summarize available information regarding status and trends, distribution and habitat preferences, and behavior and life history, of the potentially affected species. Additional information regarding population trends and threats may be found in NMFS's Stock Assessment Reports (SARs; *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments*) and more general information about these species (*e.g.,* physical and behavioral descriptions) may be found on NMFS's website (*https://www.fisheries.noaa.gov/find-species*).

Table 2 lists all species or stocks for which take is expected and proposed to be authorized for this action, and summarizes information related to the population or stock, including regulatory status under the MMPA and Endangered Species Act (ESA) and potential biological removal (PBR), where known. For taxonomy, we follow Committee on Taxonomy (2021). PBR is defined by the MMPA as the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population (as described in NMFS's SARs). While no mortality is anticipated or authorized here, PBR and annual serious injury and mortality from anthropogenic sources are included here as gross indicators of the status of the species and other threats.

Marine mammal abundance estimates presented in this document represent the total number of individuals that make up a given stock or the total number estimated within a particular study or survey area. NMFS's stock abundance estimates for most species represent the total estimate of individuals within the geographic area, if known, that comprises that stock. For some species, this geographic area may extend beyond U.S. waters. All managed stocks in this region are assessed in NMFS's U.S. Atlantic and Gulf of Mexico SARs (*e.g.,* Hayes *et al.,* 2021). All values presented in Table 2 are the most recent available at the time of publication and are available in the 2020 SARs (Hayes *et al.,* 2021) and the draft 2021 SARs (available online at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/draft-marine-mammal-stock-assessment-reports*).

TABLE 2—MARINE MAMMAL SPECIES LIKELY TO OCCUR NEAR THE SURVEY AREA THAT MAY BE AFFECTED BY ORSTED'S ACTIVITY

Common name	Scientific name	Stock	ESA/MMPA status; strategic (Y/N)[1]	Stock abundance (CV, N_{min}, most recent abundance survey)[2]	PBR	Annual M/SI[3]
Order Cetartiodactyla—Cetacea—Superfamily Mysticeti (baleen whales)						
Family Balaenidae:						
North Atlantic right whale	*Eubalaena glacialis*	Western Atlantic	E, D, Y	368 (0, 364, 2019)	0.7	7.7
Family Balaenopteridae (rorquals):						
Fin whale	*Balaenoptera physalus*	Western North Atlantic	E, D, Y	6802 (0.24, 5573, 2016)	11	1.8
Sei whale	*Balaenoptera borealis*	Nova Scotia	E, D, Y	6292 (1.02, 3098, 2016)	6.2	0.8
Minke whale	*Balaenoptera acutorostrata*	Canadian Eastern Coastal.	-,-, N	21,968 (0.31, 17002, 2016)	170	10.6

TABLE 2—MARINE MAMMAL SPECIES LIKELY TO OCCUR NEAR THE SURVEY AREA THAT MAY BE AFFECTED BY ORSTED'S ACTIVITY—Continued

Common name	Scientific name	Stock	ESA/ MMPA status; strategic (Y/N) [1]	Stock abundance (CV, N_{min}, most recent abundance survey) [2]	PBR	Annual M/SI [3]
Humpback whale	*Megaptera novaeangliae*	Gulf of Maine	-,-, Y	1396 (0, 1380, 2016)	22	12.15
Superfamily Odontoceti (toothed whales, dolphins, and porpoises)						
Family Physeteridae:						
Sperm whale	*Physeter macrocephalus*	North Atlantic	E, D, Y	4349 (0.28, 3451, See SAR)	3.9	0
Family Delphinidae:						
Atlantic white-sided dolphin	*Lagenorhynchus acutus*	Western North Atlantic	-, -, N	93,233 (0.71, 54443, See SAR)	544	27
Atlantic spotted dolphin	*Stenella frontalis*	Western North Atlantic	-, -, N	39,921 (0.27, 32032, See SAR)	320	0
Common bottlenose dolphin	*Tursiops truncatus*	Western North Atlantic Offshore.	-, -, N	62,851 (0.23, 51914, See SAR)	519	28
		Western North Atlantic Northern Migratory Coastal.	-, -, Y	6,639 (0.41, 4759, 2016)	48	12.2–21.5
Long-finned pilot whale	*Globicephala melas*	Western North Atlantic	-, -, N	39,215 (0.3, 30627, See SAR)	306	29
Short-finned pilot whale	*Globicephala macrorhynchus*	Western North Atlantic	-, -, Y	28,924 (0.24, 23637, See SAR)	236	136
Risso's dolphin	*Grampus griseus*	Western North Atlantic	-, -, N	35,215 (0.19, 30051, 2016)	301	34
Common dolphin	*Delphinus delphis*	Western North Atlantic	-, -, N	172,974 (0.21, 145216, 2016)	1,452	390
Family Phocoenidae (porpoises):						
Harbor porpoise	*Phocoena phocoena*	Gulf of Maine/Bay of Fundy.	-, -, N	95,543 (0.31, 74034, 2016)	851	164
Order Carnivora—Superfamily Pinnipedia						
Family Phocidae (earless seals):						
Gray seal [4]	*Halichoerus grypus*	Western North Atlantic	-, -, N	27300 (0.22, 22785, 2016)	1,389	4453
Harbor seal	*Phoca vitulina*	Western North Atlantic	-, -, N	61,336 (0.08, 57637, 2018)	1,729	339

[1] Endangered Species Act (ESA) status: Endangered (E), Threatened (T)/MMPA status: Depleted (D). A dash (-) indicates that the species is not listed under the ESA or designated as depleted under the MMPA. Under the MMPA, a strategic stock is one for which the level of direct human-caused mortality exceeds PBR or which is determined to be declining and likely to be listed under the ESA within the foreseeable future. Any species or stock listed under the ESA is automatically designated under the MMPA as depleted and as a strategic stock.

[2] NMFS marine mammal stock assessment reports online at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports-species-stock.* CV is coefficient of variation; N_{min} is the minimum estimate of stock abundance.

[3] These values, found in NMFS's SARs, represent annual levels of human-caused mortality plus serious injury from all sources combined (*e.g.,* commercial fisheries, ship strike). Annual M/SI often cannot be determined precisely and is in some cases presented as a minimum value or range. A CV associated with estimated mortality due to commercial fisheries is presented in some cases.

[4] The NMFS stock abundance estimate (and associated PBR value) applies to the U.S. population only, however the actual stock abundance is approximately 451,431 (including animals in Canada). The annual mortality and serious injury (M/SI) value given is for the total stock.

As indicated above, all 16 species (with 17 managed stocks) in Table 2 temporally and spatially co-occur with the activity to the degree that take is reasonably likely to occur, and we have proposed authorizing it. In addition to what is included in Sections 3 and 4 of Orsted's application, the SARs, and NMFS' website, further detail informing the baseline for select species (*e.g.,* information regarding current Unusual Mortality Events (UMEs) and important habitat areas) is provided below.

North Atlantic Right Whales

The western North Atlantic right whale population ranges from calving grounds in coastal waters of the southeastern United States to feeding grounds in New England waters and the Canadian Bay of Fundy, Scotian Shelf, and Gulf of St. Lawrence (Hayes *et al.,* 2021). In the late fall months (*e.g.,* November), right whales are generally thought to depart from the feeding grounds in the northeast Atlantic and migrate south to their calving grounds off the coast of Georgia and Florida. However, passive acoustic studies of right whales have demonstrated their year-round presence in the Gulf of Maine (Morano *et al.,* 2012; Bort *et al.,* 2015), New Jersey (Whitt *et al.,* 2013), and Virginia (Salisbury *et al.,* 2016). Off the coast of New Jersey, right whales were acoustically detected in all seasons, with peak detections occurring in April and May (Whitt *et al.,* 2013), and visually observed in winter, spring, and summer during an environmental baseline study (EBS) conducted by the New Jersey Department of Environment Protection (NJDEP, 2010). A comprehensive study of passive acoustic monitoring data from 2004 through 2014 by Davis *et al.* (2017) demonstrated year-round presence of certain individual right whales across their entire habitat range (southeastern Atlantic to northern Atlantic), suggesting that not all individuals undergo consistent annual migration.

The proposed survey area is located within the migratory corridor Biologically Important Area (BIA) for North Atlantic right whales (March–April and November–December) that extends from Massachusetts to Florida (LaBrecque *et al.,* 2015). Off the coast of New Jersey and Delaware, the migratory BIA extends from the coast to beyond the shelf break. This important migratory area is approximately 269,488 km^2 in size and is comprised of the waters of the continental shelf offshore the East Coast of the United States, extending from Florida through Massachusetts.

NMFS' regulations at 50 CFR part 224.105 designated nearshore waters of the Mid-Atlantic Bight as Mid-Atlantic U.S. Seasonal Management Areas (SMA) for right whales in 2008. SMAs were developed to reduce the threat of collisions between ships and right whales around their migratory route and calving grounds. A portion of one SMA, which occurs off the mouth of the Delaware Bay, overlaps spatially for the proposed survey area (*https://apps-nefsc.fisheries.noaa.gov/psb/surveys/MapperiframeWithText.html*). This SMA is active from November 1 through April 30 of each year.

In addition to active SMAs, Dynamic Management areas (DMAs) may be established by NOAA Fisheries based on visual sightings documenting the presence of three or more right whales within a discrete area. DMAs are voluntary slow-speed zones and mariners are encouraged to avoid these areas or reduce speeds to 10 kn or less while transiting through these areas. More information, as well as the most up-to-date DMA establishments can be found on NMFS' website (*https://www.fisheries.noaa.gov/national/endangered-species-conservation/reducing-vessel-strikes-north-atlantic-right-whales*).

Elevated right whale mortalities have been documented since June 7, 2017 along the U.S. and Canadian coast and have collectively been declared an UME. As of January 7, 2022, there have been a total of 34 dead stranded whales (21 in Canada; 13 in the United States), and the leading category for cause of death for this UME is ''human interaction'', specifically from entanglements or vessel strikes. The cumulative total number of animals in the North Atlantic right whale UME has been updated to 50 individuals to include both the confirmed mortalities (dead, stranded or floating) (n=34) and seriously injured free-swimming whales (n=16). This number better reflects the number of whale likely removed from the population during the UME and more accurately reflects the population impacts. More information is available online at: *https://www.fisheries.noaa.gov/national/marine-life-distress/2017-2022-north-atlantic-right-whale-unusual-mortality-event.*

Humpback Whales

Humpback whales are found worldwide in all oceans. In winter, humpback whales from waters off New England, Canada, Greenland, Iceland, and Norway, migrate to mate and calve primarily in the West Indies, where spatial and genetic mixing among these groups occurs. NMFS currently defines humpback whale stocks on the basis of feeding locations, *i.e.,* Gulf of Maine. However, our reference to humpback whales in this document refers to any individual of the species that are found in the specific geographic region. These individuals may be from the same breeding population (*e.g.,* West Indies breeding population of humpback whales) but visit different feeding areas.

Based on photo-identification, only 39 percent of individual humpback whales observed along the mid- and south Atlantic U.S. coasts are from the Gulf of Marine stock (Barco *et al.,* 2002). Therefore, the SAR abundance estimate is an underrepresentation of the relevant population, *i.e.,* the West Indies breeding population.

Prior to 2016, humpback whales were listed under the ESA as an endangered species worldwide. Following a 2015 global status review (Bettridge *et al.,* 2015), NMFS established 14 DPSs with different listing statuses (81 FR 62259; September 8, 2016) pursuant to the ESA. Humpback whales in the survey area are expected to be from the West Indies DPS, which consists of the whales whose breeding range includes the Atlantic margin of the Antilles from Cuba to northern Venezuela, and whose feeding range primarily includes the Gulf of Marine, eastern Canada, and western Greenland. This DPS is not ESA listed. Bettridge *et al.* (2003) estimated the size of the West Indies DPS at 12,312 (95% CI 8,688–15,954) whales in 2004–2005, which is consistent with previous population estimates of approximately 10,000–11,000 whales (Stevick *et al.,* 2003; Smith *et al.,* 1999) and the increasing trend for the West Indies DPS (Bettridge *et al.,* 2015).

Although humpback whales are migratory between feeding areas and calving areas, individual variability in the timing of migrations may result in the presence of individuals in high-latitude areas throughout the year (Straley, 1990). Records of humpback whales off the U.S. mid-Atlantic coast (New Jersey to North Carolina) from January through March suggest these waters may represent a supplemental winter feeding ground used by juvenile and mature humpback whales of the U.S. and Canadian North Atlantic stocks (LaBrecque *et al.,* 2015).

Since January 2016, elevated humpback whale mortalities have occurred along the Atlantic coast from Maine to Florida. Partial or full necropsy examinations have been conducted on approximately half of stranded humpback whales. Of the whales examined, about 50 percent had evidence of human interactions, either ship strike or entanglement. In total, 10 humpback whale strandings occurred in 2021. While a portion of the whales have shown evidence of pre-mortem vessel strike, this finding is not consistent across all whales examined and more research is needed. NOAA is consulting with researchers that are conducting studies on the humpback whale populations, and these efforts may provide information on changes in whale distribution and habitat use that could provide additional insight into how these vessel interactions occurred. More information is available at: *https://www.fisheries.noaa.gov/national/marine-life-distress/2016-2022-humpback-whale-unusual-mortality-event-along-atlantic-coast.*

Fin Whales

Fin whales are common in waters off the U.S. Atlantic Exclusive Economic Zone (EEZ), primarily from Cape Hatteras northward (Hayes *et al.,* 2021). Fin whales are present north of 35° latitude in every season and are broadly distributed throughout the western North Atlantic for most of the year (Hayes *et al.,* 2021). They are typically found in small groups of up to five individuals (Brueggeman *et al.,* 1987). The main threats to fin whales are fishery interactions and vessel collisions (Hayes *et al.,* 2021).

Sei Whales

The Nova Scotia stock of sei whales can be found in deeper waters of the continental shelf edge of the northeastern U.S. and northeastward to south of Newfoundland. The southern portion of the stock's range during spring and summer includes the Gulf of Maine and Georges Bank. Spring is the period of greatest abundance in the U.S. waters, with sightings concentrated along the eastern margin of Georges Bank and into the Northeast Channel area, and along the southwestern edge of Georges Bank in the area of Hydrographer Canyon (Hayes *et al.,* 2021). Sei whales occur in shallower waters to feed. Although sightings of sei whales are uncommon in the survey area, sightings have occurred in waters off of Maryland and Delaware during previous surveys (Garden State Offshore Energy 2019; Atlantic Shores 2020). The main threats to this stock are human interactions with fisheries and vessel collisions.

Minke Whales

Minke whales can be found in temperate, tropical, and high-latitude waters. The Canadian East Coast stock can be found in the area from the western half of the Davis Strait (45° W) to the Gulf of Mexico (Hayes *et al.,* 2021). This species generally occupies waters less than 100 m deep on the continental shelf. Strong seasonal distribution has been documented with minke whales in the survey areas, in which spring through fall are times are relatively widespread and common occurrence whereas during the winter whales are largely absent (Hayes *et al.,* 2021).

Since January 2017, elevated minke whale mortalities have occurred along the Atlantic coast from Maine through South Carolina leading to a declared UME. As of January 7, 2022, 122 minke

whale strandings have occurred since the UME was declared in 2017. Full or partial necropsy examinations were conducted on more than 60 percent of the whales. Preliminary findings of the whales have shown evidence of human interactions or infectious disease. These findings are not consistent across all of the whales examined, so more research is needed. More information on this UME is available at: *https://www.fisheries.noaa.gov/national/marine-life-distress/2017-2022-minke-whale-unusual-mortality-event-along-atlantic-coast.*

Sperm Whales

The distribution of sperm whales in the U.S. EEZ occurs on the continental shelf edge, over the continental slope, and into the mid-ocean regions (Hayes *et al.,* 2021). The basic social unit of the sperm whale appears to be the mixed school of adult females plus their calves and some juveniles of both sexes, normally numbering 20–40 animals in all. There is evidence that some social bonds persist for many years (Christal *et al.,* 1998). This species forms stable social groups, site fidelity, and latitudinal range limitations in groups of females and juveniles (Whitehead, 2002). In winter, sperm whales concentrate east and northeast of Cape Hatteras. In spring, distribution shifts northward to the east of Delaware and Virginia, and is widespread throughout the central Mid-Atlantic Bight and the southern part of Georges Bank. In the fall, sperm whale occurrence on the continental shelf (inshore of the 100 m isobaths) south of New England reaches peak levels, and there remains a continental shelf edge occurrence in the Mid-Atlantic Bight (Hayes *et al.,* 2021). No sperm whales were recorded during the Mid-Atlantic Bight surveys or the NJDEP EBS surveys. CETAP and NMFS Northeast Fisheries Science Center sightings in the shelf-edge and off-shelf waters included many social groups with calves and juveniles (CETAP, 1982). Sperm whales were usually seen at the tops of seamounts and rises and did not generally occur over slops. Sperm whales were recorded at depths varying from 800 to 3,500 m. Although the likelihood of occurrence within the survey area remains very low, the sperm whale was included as an affected species due to its high seasonal densities east of the survey area.

Atlantic White-Sided Dolphin

White-sided dolphins are found in temperate and sub-polar waters of the North Atlantic, primarily in continental shelf waters to the 100 m depth contour from central West Greenland to North Carolina (Hayes *et al.,* 2021). The Gulf of Maine stock is most common in continental shelf waters from Hudson Canyon to Georges Bank, and in the Gulf of Maine and lower Bay of Fundy. Sighting data indicate seasonal shifts in distribution (Northridge *et al.,* 1997). During January to May, low numbers of white-sided dolphins are found from Georges Bank to Jeffreys Ledge (off New Hampshire), with even lower numbers south of Georges Bank, as documented by a few strandings collected on the beaches of Virginia to South Carolina. From June through September, large numbers of white-sided dolphins are found from Georges Bank to the lower Bay of Fundy. From October to December, white-sided dolphins occur at intermediate densities from southern Georges Bank to southern Gulf of Maine (Payne and Heinemann, 1990). Sightings south of Georges Bank, particularly around Hudson Canyon, occur year round but at low densities.

Atlantic Spotted Dolphin

Atlantic spotted dolphins are found in tropical and warm temperate waters ranging from southern New England, south to the Gulf of Mexico and the Caribbean to Venezuela (Hayes *et al.,* 2021). This stock regularly occurs in continental shelf waters south of Cape Hatteras and in continental shelf edges and slope waters north of this region (Hayes *et al.,* 2021). There are two forms of this species, with the larger ecotype inhabiting the continental shelf and usually found within or near the 200 m isobaths (Hayes *et al.,* 2021).

Bottlenose Dolphin

There are two distinct bottlenose dolphin morphotypes in the western North Atlantic: The coastal and offshore forms (Hayes et al., 2021). The offshore form is distributed primarily along the outer continental shelf and continental slope in the Northwest Atlantic Ocean from Georges Bank to the Florida Keys. The coastal morphotype is morphologically and genetically distinct from the larger, more robust morphotype that occupies habitats further offshore. Spatial distribution data, tag-telemetry studies, photo-ID studies and genetic studies demonstrate the existence of a distinct Northern Migratory coastal stock of coastal bottlenose dolphins (Hayes et al., 2021).

North of Cape Hatteras, there is separation of the offshore and coastal morphotypes across bathymetric contours during summer months. Aerial surveys flown from 1979 through 1981 indicated a concentration of bottlenose dolphins in waters <25 m deep that corresponded with the coastal morphotype, and an area of high abundance along the shelf break that corresponded with the offshore stock (Hayes et al., 2020). Torres et al. (2003) found a statistically significant break in the distribution of the morphotypes; almost all dolphins found in waters >34 m depth and >34 km from shore were of the offshore morphotype. The coastal stock is best defined by its summer distribution, when it occupies coastal waters from the shoreline to the 20-m isobath between Virginia and New York (Hayes et al., 2021). This stock migrates south during late summer and fall, and during colder months it occupies waters off Virginia and North Carolina (Hayes et al., 2021). Therefore, during the summer, dolphins found inside the 20-m isobath in the survey area are likely to belong to the coastal stock, while those found in deeper waters or observed during cooler months belong to the offshore stock.

Long-Finned Pilot Whale

Long-finned pilot whales are found from North Carolina to Iceland, Greenland and the Barents Sea (Hayes *et al.,* 2021). In the U.S. Atlantic waters the species is distributed principally along the continental shelf edge off the northeastern U.S. coast in winter and early spring and in late spring, pilot whales move onto Georges Bank and into the Gulf of Maine northward, and remain in these areas through late fall (Hayes *et al.,* 2021). Long-finned and short-finned pilot whales overlap spatially along the mid-Atlantic shelf break between Delaware and the southern flank of Georges Bank. Long-finned pilot whales have occasionally been observed stranded as far south as South Carolina, but sightings of long-finned pilot whales south of Cape Hatteras would be considered unusual (Hayes *et al.,* 2021). The main threats to this species include interactions with fisheries and habitat issues including exposure to high levels of polychlorinated biphenyls and chlorinated pesticides, and toxic metals including mercury, lead, and cadmium, and selenium (Hayes *et al.,* 2021).

Short-Finned Pilot Whale

As described above, long-finned and short-finned pilot whales overlap spatially with the survey area and along the mid-Atlantic shelf. There is limited information on the distribution of short-finned pilot whales. They prefer warmer tropical waters and deeper waters offshore, and in the northeastern United States they are often sighted near the Gulf Stream (Hayes *et al.,* 2021). Short-finned pilot whales have occasionally been observed stranded as far north as

Massachusetts but north of ~42°N short-finned pilot whale sightings would be considered unusual while south of Cape Hatteras most pilot whales would expected to be short-finned pilot whales (Hayes *et al.,* 2021). As with long-finned pilot whales, the main threats to this species include interactions with fisheries and habitat issues including exposure to high levels of polychlorinated biphenyls and chlorinated pesticides, and toxic metals including mercury, lead, cadmium, and selenium (Hayes *et al.,* 2021).

Risso's Dolphin

Risso's dolphins are large dolphins with a characteristic blunt head and light coloration, often with extensive scarring. They are widely distributed in tropical and temperate seas. In the Western North Atlantic they occur from Florida to eastern Newfoundland (Leatherwood et al., 1976; Baird and Stacey, 1991). Off the U.S. Northeast Coast, Risso's dolphins are primarily distributed along the continental shelf, but can also be found swimming in shallower waters to the mid-shelf (Hayes *et al.,* 2021).

Risso's dolphins occur along the continental shelf edge from Cape Hatteras to Georges Bank during spring, summer, and autumn. In winter, they are distributed in the Mid-Atlantic from the continental shelf edge outward (Hayes et al., 2021). The majority of sightings during the 2011 surveys occurred along the continental shelf break with generally lower sighting rates over the continental slope (Palka, 2012). Risso's dolphins can be found in Mid-Atlantic waters year-round and are more likely to be encountered offshore given their preference for deeper waters along the shelf edge. However, previous surveys have commonly observed this species in shallower waters, making it possible this species could be encountered in the survey area, particularly in summer when they are more abundant in this region (Curtice et al., 2019; Williams et al., 2015a, b; Hayes et al., 2021).

Common Dolphin

The common dolphin is found world-wide in temperate to subtropical seas. In the North Atlantic, common dolphins are commonly found over the continental shelf between the 100-m and 2,000-m isobaths and over prominent underwater topography and east to the mid-Atlantic Ridge (Hayes et al., 2021). Common dolphins are distributed in waters off the eastern U.S. coast from Cape Hatteras northeast to Georges Bank (35° to 42° N) during mid-January to May and move as far north as the Scotian Shelf from mid-summer to autumn (CETAP, 1982; Hayes et al., 2020; Hamazaki, 2002; Selzer and Payne, 1988).

Harbor Porpoise

Harbor porpoises commonly occur throughout Massachusetts Bay from September through April. During the fall and spring, harbor porpoises are widely distributed along the east coast from New Jersey to Maine. During the summer, the porpoises are concentrated in the Northern Gulf of Maine and Southern Bay of Fundy in water depths <150 m. In winter, densities increase in the waters off New Jersey to North Carolina and decrease in the waters from New York to New Brunswick; however, specific migratory timing or routes are not apparent. Although still considered uncommon, harbor porpoises were regularly detected offshore of Maryland during winter and spring surveys (Wingfield et al., 2017). They were the second most frequently sighted cetacean during the NJDEP EBS, with 90 percent of the sightings during the winter, three during the spring, and one during the summer (Whitt et al., 2015). The lack of sightings during the fall was attributed to low visibility conditions during those months, but available data indicate this species is likely present offshore New Jersey during fall and winter (Whitt et al., 2015).

In the survey area, only the Gulf of Maine/Bay of Fundy stock may be present. This stock is found in U.S. and Canadian Atlantic waters and is concentrated in the northern Gulf of Maine and southern Bay of Fundy region, generally in waters less than 150 m deep (Hayes et al., 2021). They are seen from the coastline to deep waters (>1,800 m; Westgate et al. 1998), although the majority of the population is found over the continental shelf (Hayes et al., 2021). The main threat to the species is interactions with fisheries, with documented take in the U.S. northeast sink gillnet, mid-Atlantic gillnet, and northeast bottom trawl fisheries and in the Canadian herring weir fisheries (Hayes et al. 2021).

Harbor Seal

The harbor seal is found in all nearshore waters of the North Atlantic and North Pacific Oceans and adjoining seas above 30 °N (Burns, 2009). In the western North Atlantic, harbor seals are distributed from the eastern Canadian Arctic and Greenland south to southern New England and New York, and occasionally to the Carolinas (Hayes *et al.,* 2021). The harbor seals within the survey area are part of the single Western North Atlantic stock. Between September and May they undergo seasonal migrations into southern New England and the Mid-Atlantic (Hayes *et al.,* 2021).

From July 2018 through March 2020, elevated numbers of harbor seal and gray seal mortalities have occurred across Maine, New Hampshire and Massachusetts. Additionally, stranded seals have shown clinical signs as far south as Virginia, although no in elevated numbers, therefore the UME investigation encompassed all seal strandings from Maine to Virginia. A total of 3,152 reported strandings (of both harbor and gray seals) occurred during the declared UME. Full or partial necropsy examinations have been conducted on some of the seals and samples have been collected for testing. Based on tests conducted as of April 30, 2021, the main pathogen found in the seals is phocine distemper virus. NMFS is performing additional testing to identify any other factors that may be involved in this UME. This event was declared a UME from 2018 through 2020, and is currently pending closure to become non-active. Therefore, this UME will not be addressed further in this document. Further information is available at: *https://www.fisheries.noaa.gov/new-england-mid-atlantic/marine-life-distress/2018-2020-pinniped-unusual-mortality-event-along.*

Gray Seal

There are three major populations of gray seals found worldwide; eastern Canada (western North Atlantic stock), northwestern Europe, and the Baltic Sea. Gray seals in the survey area belong to the Western North Atlantic stock. The range for this stock is thought to be from New Jersey to Labrador. Although gray seals are not regularly sighted offshore of Delaware, their range has been expanding southward in recent years, and have recently been observed as far south as the barrier islands of Virginia. Current population trends show that gray seal abundance is likely increasing in the U.S. Atlantic EEZ (Hayes *et al.,* 2021). It is believed that recolonization by Canadian gray seals is the source of the U.S. population (Hayes *et al.,* 2021). As described above, elevated seal mortalities, including gray seals, have occurred from Maine to Virginia from 2018 through 2020. Phocine distemper virus has been the main pathogen found in stranded seals. More information is available at: *https://www.fisheries.noaa.gov/new-england-mid-atlantic/marine-life-distress/2018-2020-pinniped-unusual-mortality-event-along.*

Marine Mammal Hearing

Hearing is the most important sensory modality for marine mammals underwater, and exposure to anthropogenic sound can have deleterious effects. To appropriately assess the potential effects of exposure to sound, it is necessary to understand the frequency ranges marine mammals are able to hear. Current data indicate that not all marine mammal species have equal hearing capabilities (*e.g.,* Richardson *et al.,* 1995; Wartzok and Ketten, 1999; Au and Hastings, 2008). To reflect this, Southall *et al.* (2007) recommended that marine mammals be divided into functional hearing groups based on directly measured or estimated hearing ranges on the basis of available behavioral response data, audiograms derived using auditory evoked potential techniques, anatomical modeling, and other data. Note that no direct measurements of hearing ability have been successfully completed for Mysticetes (*i.e.,* low-frequency cetaceans). Subsequently, NMFS (2018) described generalized hearing ranges for these marine mammal hearing groups. Generalized hearing ranges were chosen based on the approximately 65 decibel (dB) threshold from the normalized composite audiograms, with the exception for lower limits for low-frequency cetaceans where the lower bound was deemed to be biologically implausible and the lower bound from Southall *et al.* (2007) retained. Marine mammal hearing groups and their associated hearing ranges are provided in Table 3.

TABLE 3—MARINE MAMMAL HEARING GROUPS

[NMFS, 2018]

Hearing group	Generalized hearing range *
Low-frequency (LF) cetaceans (baleen whales)	7 Hz to 35 kHz.
Mid-frequency (MF) cetaceans (dolphins, toothed whales, beaked whales, bottlenose whales)	150 Hz to 160 kHz.
High-frequency (HF) cetaceans (true porpoises, *Kogia,* river dolphins, cephalorhynchid, *Lagenorhynchus cruciger* & *L. australis*).	275 Hz to 160 kHz.
Phocid pinnipeds (PW) (underwater) (true seals)	50 Hz to 86 kHz.
Otariid pinnipeds (OW) (underwater) (sea lions and fur seals)	60 Hz to 39 kHz.

* Represents the generalized hearing range for the entire group as a composite (*i.e.,* all species within the group), where individual species' hearing ranges are typically not as broad. Generalized hearing range chosen based on ~65 dB threshold from normalized composite audiogram, with the exception for lower limits for LF cetaceans (Southall *et al.* 2007) and PW pinniped (approximation).

The pinniped functional hearing group was modified from Southall *et al.* (2007) on the basis of data indicating that phocid species have consistently demonstrated an extended frequency range of hearing compared to otariids, especially in the higher frequency range (Hemilä *et al.,* 2006; Kastelein *et al.,* 2009; Reichmuth and Holt, 2013).

For more detail concerning these groups and associated frequency ranges, please see NMFS (2018) for a review of available information. 16 marine mammal species (14 cetacean and 2 pinniped (both phocid) species) have the reasonable potential to co-occur with the proposed survey activities. Please refer to Table 2. Of the cetacean species that may be present, five are classified as low-frequency cetaceans (*i.e.,* all mysticete species), nine are classified as mid-frequency cetaceans (*i.e.,* all delphinid and ziphiid species and the sperm whale), and one is classified as high-frequency cetaceans (*i.e.,* harbor porpoise and Kogia spp.).

Potential Effects of Specified Activities on Marine Mammals and Their Habitat

This section includes a summary and discussion of the ways that Orsted's specified activity may impact marine mammals and their habitat. Detailed descriptions of the potential effects of similar specified activities have been provided in other recent **Federal Register** notices, including for survey activities using the same methodology, over a similar amount of time, and occurring in the Mid-Atlantic region, including Delaware waters (*e.g.,* 82 FR 20563, May 3, 2017; 85 FR 36537, June 17, 2020; 85 FR 37848, June 24, 2020; 85 FR 48179, August 10, 2020; 86 FR 11239, February 24, 2021, 86 FR 28061, May 25, 2021). No significant new information is available, and we refer the reader to these documents rather than repeating the details here. The Estimated Take section includes a quantitative analysis of the number of individuals that are expected to be taken by Orsted's activity. The Negligible Impact Analysis and Determination section considers the potential effects of the specified activity, the Estimated Take section, and the Proposed Mitigation section, to draw conclusions regarding the likely impacts of these activities on the reproductive success or survivorship of individuals and how those impacts on individuals are likely to impact marine mammal species or stocks.

Summary on Specified Potential Effects of Acoustic Sound Sources

Underwater sound from active acoustic sources can include one or more of the following: Temporary or permanent hearing impairment, non-auditory physical or physiological effects, behavioral disturbance, stress, and masking. The degree of effect is intrinsically related to the signal characteristics, received level, distance from the source, and duration of the sound exposure. Marine mammals exposed to high-intensity sound, or to lower-intensity sound for prolonged periods, can experience hearing threshold shift (TS), which is the loss of hearing sensitivity at certain frequency ranges (Finneran, 2015). TS can be permanent (PTS), in which case the loss of hearing sensitivity is not fully recoverable, or temporary (TTS), in which case the animal's hearing threshold would recover over time (Southall *et al.,* 2007).

Animals in the vicinity of Orsted's proposed site characterization survey activity are unlikely to incur even TTS due to the characteristics of the sound sources, which include relatively low sound source levels (176 to 205 dB re 1 μPa-m) and generally very short pulses and potential duration of exposure. These characteristics mean that instantaneous exposure is unlikely to cause TTS, as it is unlikely that exposure would occur close enough to the vessel for received levels to exceed peak pressure TTS criteria, and that the cumulative duration of exposure would be insufficient to exceed cumulative sound exposure level (SEL) criteria. Even for high-frequency cetacean species (*e.g.,* harbor porpoises), which have the greatest sensitivity to potential TTS, individuals would have to make a very close approach and also remain very close to vessels operating these

sources in order to receive multiple exposures at relatively high levels, as would be necessary to cause TTS. Intermittent exposures—as would occur due to the brief, transient signals produced by these sources—require a higher cumulative SEL to induce TTS than would continuous exposures of the same duration (*i.e.,* intermittent exposure results in lower levels of TTS). Moreover, most marine mammals would more likely avoid a loud sound source rather than swim in such close proximity as to result in TTS. Kremser *et al.,* (2005) noted that the probability of a cetacean swimming through the area of exposure when a sub-bottom profiler emits a pulse is small—because if the animal was in the area, it would have to pass the transducer at close range in order to be subjected to sound levels that could cause TTS and would likely exhibit avoidance behavior to the area near the transducer rather than swim though at such a close range. Further, the restricted beam shape of many of HRG survey devices planned for use (Table 1) makes it unlikely that an animal would be exposed more than briefly during the passage of the vessel.

Behavioral disturbances may include a variety of effects, including subtle changes in behavior (*e.g.,* minor or brief avoidance of an area or changes in vocalizations), more conspicuous changes in similar behavioral activities, and more sustained and/or potentially severe reactions, such as displacement from or abandonment of high-quality habitat. Behavioral responses to sound are highly variable and context-specific and any reactions depend on numerous intrinsic and extrinsic factors (*e.g.,* species, state of maturity, experience, current activity, reproductive state, auditory sensitivity, time of day), as well as the interplay between factors. Available studies show wide variation in response to underwater sound; therefore, it is difficult to predict specifically how any given sound in a particular instance might affect marine mammals perceiving the signal.

In addition, sound can disrupt behavior through masking, or interfering with, an animal's ability to detect, recognize, or discriminate between acoustic signals of interest (*e.g.,* those used for intraspecific communication and social interactions, prey detection, predator avoidance, navigation). Masking occurs when the receipt of a sound is interfered with by another coincident sound at similar frequencies and at similar or higher intensity, and may occur whether the sound is natural (*e.g.,* snapping shrimp, wind, waves, precipitation) or anthropogenic (*e.g.,* shipping, sonar, seismic exploration) in origin. Marine mammal communications would not likely be masked appreciably by the acoustic signals given the directionality of the signals for most HRG survey equipment types planned for use (Table 1) and the brief period when an individual mammal is likely to be exposed.

Sound may affect marine mammals through impacts on the abundance, behavior, or distribution of prey species (*e.g.,* crustaceans, cephalopods, fish, zooplankton) (*i.e.,* effects to marine mammal habitat). Prey species exposed to sound might move away from the sound source, experience TTS, experience masking of biologically relevant sounds, or show no obvious direct effects. The most likely impacts (if any) for most prey species in a given area would be temporary avoidance of the area. Surveys using active acoustic sound sources move through an area relatively quickly, limiting exposure to multiple pulses. In all cases, sound levels would return to ambient once a survey ends and the noise source is shut down and, when exposure to sound ends, behavioral and/or physiological responses are expected to end relatively quickly. Finally, the HRG survey equipment will not have significant impacts to the seafloor and does not represent a source of pollution.

Vessel Strike

Vessel collisions with marine mammals, or ship strikes, can result in death or serious injury of the animal. These interactions are typically associated with large whales, which are less maneuverable than are smaller cetaceans or pinnipeds in relation to large vessels. Ship strikes generally involve commercial shipping vessels, which are generally larger and of which there is much more traffic in the ocean than geophysical survey vessels. Jensen and Silber (2004) summarized ship strikes of large whales worldwide from 1975–2003 and found that most collisions occurred in the open ocean and involved large vessels (*e.g.,* commercial shipping). For vessels used in geophysical survey activities, vessel speed while towing gear is typically only 4–5 kn (as is the speed of the vessel for Orsted's proposed HRG survey). At these speeds, both the possibility of striking a marine mammal and the possibility of a strike resulting in serious injury or mortality are so low as to be discountable. At average transit speed for geophysical survey vessels, the probability of serious injury or mortality resulting from a strike is less than 50 percent. However, the likelihood of a strike actually happening is again low given the smaller size of these vessels and generally slower speeds. Notably in the Jensen and Silber study, no strike incidents were reported for geophysical survey vessels during that time period.

The potential effects of Orsted's specified survey activity are expected to be limited to Level B behavioral harassment. No permanent or temporary auditory effects, or significant impacts to marine mammal habitat, including prey, are expected.

Estimated Take

This section provides an estimate of the number of incidental takes proposed for authorization through this IHA, which will inform both NMFS' consideration of ''small numbers'' and the negligible impact determination.

Harassment is the only type of take expected to result from these activities. Except with respect to certain activities not pertinent here, section 3(18) of the MMPA defines ''harassment'' as any act of pursuit, torment, or annoyance, which (i) has the potential to injure a marine mammal or marine mammal stock in the wild (Level A harassment); or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering (Level B harassment).

Authorized takes would be by Level B harassment only, in the form of disruption of behavioral patterns for individual marine mammals resulting from exposure to noise from certain HRG acoustic sources. Based primarily on the characteristics of the signals proposed by the acoustic sources planned for use, Level A harassment is neither anticipated (even absent mitigation), nor proposed to be authorized. Consideration of the anticipated effectiveness of the measures (*i.e.,* exclusion zones and shutdown measures), discussed in detail below in the Proposed Mitigation section, further strengthens the conclusion that Level A harassment is not a reasonably anticipated outcome of the survey activity. As described previously, no serious injury or mortality is anticipated or proposed to be authorized for this activity. Below we describe how the take is estimated.

Generally speaking, we estimate take by considering: (1) Acoustic thresholds above which NMFS believes the best available science indicates marine mammals will be behaviorally harassed or incur some degree of permanent hearing impairment; (2) the area or volume of water that will be ensonified above these levels in a day; (3) the

density or occurrence of marine mammals within these ensonified areas; and, (4) the number of days of activities. We note that while these basic factors can contribute to a basic calculation to provide an initial prediction of takes, additional information that can qualitatively inform take estimates is also sometimes available (*e.g.,* previous monitoring results or average group size). Below, we describe the factors considered here in more detail and present the proposed take estimate.

Acoustic Thresholds

NMFS recommends the use of acoustic thresholds that identify the received level of underwater sound above which exposed marine mammals would be reasonably expected to be behaviorally harassed (equated to Level B harassment) or to incur PTS of some degree (equated to Level A harassment).

Level B Harassment for non-explosive sources—Though significantly driven by received level, the onset of behavioral disturbance from anthropogenic noise exposure is also informed to varying degrees by other factors related to the source (*e.g.,* frequency, predictability, duty cycle), the environment (*e.g.,* bathymetry), and the receiving animals (hearing, motivation, experience, demography, behavioral context) and can be difficult to predict (Southall *et al.,* 2007, Ellison *et al.,* 2012). Based on what the available science indicates and the practical need to use a threshold based on a factor that is both predictable and measurable for most activities, NMFS uses a generalized acoustic threshold based on received level to estimate the onset of behavioral harassment. NMFS predicts that marine mammals are likely to be behaviorally harassed in a manner we consider Level B harassment when exposed to underwater anthropogenic noise above received levels of 160 dB re 1 µPa (rms) for impulsive (*e.g.,* sparkers and boomers) evaluated here for Orsted's proposed activity.

Level A harassment for non-explosive sources—NMFS' Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 2.0) (Technical Guidance, 2018) identifies dual criteria to assess auditory injury (Level A harassment) to five different marine mammal groups (based on hearing sensitivity) as a result of exposure to noise from two different types of sources (impulsive or non-impulsive). For more information, see NMFS 2018 Technical Guidance, which may be accessed at *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-acoustic-technical-guidance.*

Orsted's proposed HRG survey includes the use of impulsive sources. However, as described above, NMFS has concluded that Level A harassment is not a reasonably likely outcome for marine mammals exposed to noise through use of the sources proposed for use here, and the potential for Level A harassment is not evaluated further in this document. Please see Orsted's application for details of a quantitative exposure analysis exercise, *i.e.,* calculated Level A harassment isopleths and estimated Level A harassment exposures. Orsted did not request authorization of take by Level A harassment, and no take by Level A harassment is proposed for authorization by NMFS.

Ensonified Area

Here, we describe operational and environmental parameters of the activity that will feed into identifying the area ensonified above the acoustic thresholds, which include source levels and transmission loss coefficient.

NMFS has developed a user-friendly methodology for determining the rms sound pressure level (SPL_{rms}) at the 160-dB isopleth for the purpose of estimating the extent of Level B harassment isopleths associated with HRG survey equipment (NMFS, 2020). This methodology incorporates frequency and some directionality to refine estimated ensonified zones. Orsted used NMFS's methodology, using the source level and operation mode of the equipment planned for used during the proposed survey, to estimate the maximum ensonified area over a 24-hr period also referred to as the harassment area (Table 1). Potential takes by Level B harassment are estimated within the ensonified area (*i.e.,* harassment area) as an SPL exceeding 160 dB re 1 µPa for impulsive sources (*e.g.,* sparkers, boomers) within an average day of activity.

The harassment zone is a representation of the maximum extent of the ensonified area around a sound source over a 24-hr period. The harassment area was calculated per the following formula:

Stationary Source: Harassment zone = πr^2

Mobile Source: Harassment zone = (Distance/day 2r) + πr^2

Where r is the linear distance from the source to the isopleth for the Level B harassment threshold and day = 1 (*i.e.,* 24 hours).

The estimated potential daily active survey distance of 70 km was used as the estimated areal coverage over a 24-hr period. This distance accounts for the vessel traveling at roughly 4 kn and only for periods during which equipment <180 kHz is in operation. A vessel traveling 4 kn can cover approximately 110 km per day; however, based on data from 2017, 2018, and 2019 surveys, survey coverage over a 24-hour period is closer to 70 km per day as a result of delays due to, *e.g.,* weather, equipment malfunction. For daylight only vessels, the distance is reduced to 35 km per day; however, to maintain the potential for 24-hr surveys, the corresponding Level B harassment zones provide in Table 4 were calculated for each source based on the Level B threshold distances within a 24-hour (70 km) operational period.

TABLE 4—CALCULATED HARASSMENT ZONES ENCOMPASSING LEVEL B [1] THRESHOLDS FOR EACH SOUND SOURCE OR COMPARABLE SOUND SOURCE CATEGORY

Source	Level B harassment isopleths (m)	Level B harassment zone (km^2) [2]
ET 216 CHIRP	9	1.3
ET 424 CHIRP	4	0.6
ET 512i CHIRP	6	0.8
GeoPulse 5430	21	2.9
TB CHIRP III	48	6.7
Pangeo SBI	22	3.1
AA Triple plate S-Boom (700–1,000 J)	34	4.8
AA, Dura-spark UHD Sparkers	141	[3] 19.8

TABLE 4—CALCULATED HARASSMENT ZONES ENCOMPASSING LEVEL B [1] THRESHOLDS FOR EACH SOUND SOURCE OR COMPARABLE SOUND SOURCE CATEGORY—Continued

Source	Level B harassment isopleths (m)	Level B harassment zone (km^2) [2]
GeoMarine Sparkers	141	[3] 19.8

AA = Applied Acoustics; CHIRP = compressed high-intensity radiated pulses; ET = edgetech; HF = high-frequency; J = joules; LF = low-frequency; MF = mid-frequency; PW = phocid pinnipeds in water; SBI = sub-bottom imager; SBP = sub-bottom profiler; TB = Teledyne benthos; UHD = ultra-high definition.

[1] The applicant calculated both Level A and B isopleths to comprehensively assess the potential impacts of the predicted source operations as required for this Application. However, as described previously throughout this document, Level A takes are not expected and thus, are not proposed to be authorized, therefore they are not discussed in this document. Please refer to Orsted's application for more information.

[2] Based on maximum threshold distances provided in Table 4 of Orsted's application and calculated for Level B root-mean-square sound pressure level thresholds.

Marine Mammal Occurrence

In this section, we provide the information about the presence, density, or group dynamics of marine mammals that will inform the take calculations.

Habitat based density models produced by the Duke University Marine Geospatial Ecology Laboratory (Roberts *et al.,* 2016, 2017, 2018, 2020) represent the best available information regarding marine mammal densities in the survey area. The density data presented by Roberts *et al.* (2016, 2017, 2018, 2020) incorporate aerial and shipboard line-transect data from NMFS and other organizations and incorporate data from 8 physiographic and 16 dynamic oceanographic and biological covariates, and control for the influence of sea state, group size, availability bias, and perception bias on the probability of making a sighting. These density models were originally developed for all cetacean taxa in the U.S. Atlantic (Roberts *et al.,* 2016). In subsequent years, certain models have been updated based on additional data as well as certain methodological improvements. More information is available online at *https://seamap.env.duke.edu/models/Duke/EC/.* Marine mammal density estimates in the survey area (animals/km^2) were obtained using the most recent model results for all taxa (Roberts *et al.,* 2016, 2017, 2018, 2020, 2021). The updated models incorporate sighting data, including sightings from NOAA's Atlantic Marine Assessment Program for Protected Species (AMAPPS) surveys.

For exposure analysis, density data from Roberts *et al.,* (2016, 2017, 2018, 2020, 2021) were mapped using a geographic information system (GIS). Density grid cells that included any portion of the proposed survey Area were selected for all survey months (see Figure 3 of Orsted's application). For the survey area (*i.e.,* Lease Areas OCS–A–0482, 5219), the densities for each species as reported by Roberts *et al.,* 2016, 2017, 2018, 2020, 2021) were averaged by month; those values were then used to calculate the mean annual density for each species within the survey Area. Estimated mean monthly and annual densities (animals per km^2) of all marine mammal species that may be taken by the proposed survey are shown in Table 7 of Orsted's application. The mean annual density values used to estimate take numbers are shown in Table 5 below.

Due to limited data availability and difficulties identifying individuals to species level during visual surveys, individual densities are not able to be provided for all species and they are instead grouped into ''guilds'' (Roberts *et al.,* 2021). These guilds include pilot whales, and seals. Long- and short-finned pilot whales are difficult to distinguish during shipboard surveys so individual habitat models were not able to be developed and thus, densities are assumed to apply to both species. Similarly, Roberts *et al.* (2018) produced density models for all seals but did not differentiate by seal species. Because the seasonality and habitat use by gray seals roughly overlaps with that of harbor seals in the survey areas, it was assumed that the mean annual density could refer to either of the represented species and was, therefore, divided equally between the two species.

For bottlenose dolphin densities, Roberts *et al.* (2016, 2017, 2018, 2020, 2021) does not differentiate by stock. As previously discussed, both the northern migratory coastal stock and the Western North Atlantic offshore stock are expected to occur in the proposed survey Area. To estimate densities for both stocks, the density blocks from within the survey Area were divided using the 20 m isobath (Hayes *et al.* 2021). Therefore, any density blocks located between the coastline and the 20 m isobath were attributed to the migratory coastal stock, and density blocks beyond this isobath were attributed to the offshore stock (see Table 5 for average annual densities calculated).

TABLE 5—ESTIMATED AVERAGE ANNUAL DENSITIES (ANIMALS PER km^2) OF POTENTIALLY AFFECTED MARINE MAMMALS WITHIN THE PROPOSED SURVEY AREA BASED ON MONTHLY HABITAT DENSITY MODELS

[Roberts *et al.,* 2017, 2018, 2020, 2021]

Species	Average annual density (km^2)
Fin whale	0.001
Sei Whale	0
Minke Whale	0.0003
Humpback whale	0.0005
North Atlantic Right Whale	0.0017
Sperm Whale	0.0001
Atlantic White-Sided Dolphin	0.0015
Atlantic Spotted Dolphin	0.0007

TABLE 5—ESTIMATED AVERAGE ANNUAL DENSITIES (ANIMALS PER km²) OF POTENTIALLY AFFECTED MARINE MAMMALS WITHIN THE PROPOSED SURVEY AREA BASED ON MONTHLY HABITAT DENSITY MODELS—Continued

[Roberts *et al.,* 2017, 2018, 2020, 2021]

Species	Average annual density (km²)
Bottlenose Dolphin (Offshore) [1]	0.0569
Bottlenose Dolphin (Migratory) [1]	0.3972
Long-finned Pilot Whale [2]	0.0004
Short-Finned Pilot Whale [2]	0.0004
Risso's Dolphin	0
Common Dolphin	0.0101
Harbor Porpoise	0.0085
Gray Seal [3 4]	0.0007
Harbor Seal [3 4]	0.0007

[1] Bottlenose dolphin stocks were delineated based on the 20-m isobath as identified in NMFS 2021 Stock Assessment Report; all density blocks falling inshore of the 20-m depth contour were assumed to belong to the migratory coastal stock, and those beyond this depth were assumed to belong to the offshore stock.

[2] Roberts (2021) only provides density estimates for ''generic'' pilot whales, so individual densities for each species are unavailable and densities were therefore assumed to apply to both species as both species have the same potential to occur in the survey area.

[3] Seal densities are not given by individual months or species, instead, seasons are divided as summer (June, July, August) and Winter (September–May) and applied to ''generic'' seals; as a result, reported seasonal densities for spring and fall are the same and are not provided for each species (Roberts, 2021) (See Table 7 in Orsted's application).

[4] Data used to establish the density estimates from Roberts (2021) are based on information for all seal species that may occur in the Western North Atlantic (*e.g.,* harbor, gray, hooded, harp). However, only the harbor seal and gray seal are reasonably expected to occur in the survey area, and the densities were split evenly between both species.

Take Calculation and Estimation

Here, we describe how the information provided above is brought together to produce a quantitative take estimate.

For most species, the potential Level B harassment exposures were estimated by multiplying the average annual density of each species (Table 5) within the Lease Area and ECR area by the largest daily harassment zone (19.8 km²) (Table 4). That product was then multiplied by the number of operating vessel days (350), and the product is rounded to the nearest whole number:

Estimated take = species density × harassment zone × # of Survey Days

For bottlenose dolphin densities, Roberts *et al.* (2016a, 2016b, 2017, 2018, 2020) does not differentiate by individual stock. The WNA offshore stock is assumed to be located in depths exceeding the 20 m isobath, while the WNA Northern migratory coastal stock is assumed to be found in shallower depths than the 20 m isobath north of Cape Hatteras (Reeves *et al.,* 2002; Waring *et al.,* 2016). The maximum potential Level B harassment takes calculated for each stock of bottlenose dolphins are based on the full survey duration occurring inside or outside the 20 m isobath; however only a portion of the survey will occur in each area. At this time, Orsted does not know the exact number of survey days that may occur within each area, and could not differentiate the maximum number of calculated instances of take (2,752, calculated for the migratory stock) between the two stocks of bottlenose dolphins potentially present during the proposed survey activities. Orsted therefore requested, and NMFS proposes to authorize, 2,752 instances of take of bottlenose dolphins, regardless of stock.

No takes were calculated for sei whale, sperm whale, or Risso's dolphin; however, based on anticipated species distributions and data from previous surveys in the same general area it is possible that these species could be encountered. Therefore, Orsted requested, and NMFS proposes to authorize, takes of these species based on estimated group sizes (Kenney and Vigness-Raposa, 2010; Barkaszi and Kelly, 2019). For common dolphins, only 70 takes were calculated. However, draft Protected Species Observer (PSO) reports from the ongoing Garden State and Skipjack surveys near the proposed action area and completed surveys from 2018 through 2020 indicate the potential for more common dolphins to be encountered in the area. Therefore, Orsted requested, and NMFS proposes to authorize, take of 400 common dolphins. Calculated exposure estimates and proposed take authorizations are shown in Table 6.

TABLE 6—PROPOSED AUTHORIZED AMOUNT OF TAKING, BY LEVEL B HARASSMENT ONLY, BY SPECIES AND STOCK AND PERCENT OF TAKE BY STOCK

Species	Stock	Abundance	Level B takes [a]	Max percent of population
Low-frequency cetaceans:				
Fin whales	Western North Atlantic	6,802	7	0.10
Sei whales	Nova Scotia	6,292	0 (1)	0.02
Minke whales	Canadian Eastern Coastal	21,968	2	0.01
Humpback whales	Gulf of Maine	1,396	4	0.29
North Atlantic right whale	Western Atlantic	368	11	2.99
Mid-frequency cetaceans:				
Sperm whale	North Atlantic	4,349	0 (3)	0.07
Atlantic white-sided dolphin	Western North Atlantic	93,233	10 (50)	0.05
Atlantic spotted dolphin	Western North Atlantic	39,921	5 (15)	0.04
Common bottlenose dolphin [b]	WNA Offshore	62,851	[c] 2,752	4.38

TABLE 6—PROPOSED AUTHORIZED AMOUNT OF TAKING, BY LEVEL B HARASSMENT ONLY, BY SPECIES AND STOCK AND PERCENT OF TAKE BY STOCK—Continued

Species	Stock	Abundance	Level B takes [a]	Max percent of population
	WNA Northern Migratory Coastal	6,639	.....	41.45
Pilot whales	Short-finned	28,924	3 (20)	0.07
	Long-finned	39,215	3 (20)	0.05
Risso's dolphin	Western North Atlantic	35,215	0 (30)	0.09
Common dolphin	Western North Atlantic	172,974	70 (400)	0.23
High-frequency cetaceans:				
Harbor porpoise	Gulf of Maine/Bay of Fundy	95,543	82	0.09
Pinnipeds:				
Gray seal	Western North Atlantic	27,300	4	0.01
Harbor seal	Western North Atlantic	61,336	4	0.01

[a] Parentheses denote proposed take authorization where different from Orsted's calculated take estimates. Calculated takes were adjusted for the proposed take authorization in one of two ways: (1) For species for which calculated take was significantly less than the number of individuals reported in the available monitoring reports and any available draft data (*e.g.,* ongoing surveys) in the area, the total number of individuals reported were used for take requests; (2) For species with no calculated takes, or takes were less than mean group size, requested takes were based the mean group sizes derived from the following references:
- Sei whale: Kenney and Vigness-Raposa, 2010
- Sperm whale: Barkaszi and Kelly, 2018
- Atlantic white-sided dolphin: NMFS, 2021
- Atlantic spotted dolphin: NMFS, 2021
- Pilot whales: Kenney and Vigness-Raposa, 2010

[b] Risso's dolphin: Barkaszi and Kelly, 2018; and Take estimate is based on the maximum number of calculated instances of take for either stock and is assumed to apply to all bottlenose dolphins potentially present in the survey area. Therefore takes could consist of individuals from either the Offshore or the Northern Migratory Coastal stock. Although unlikely, for purposes of calculating max percentage of population, we assume all takes could be allocated to either stock.

[c] Assumes multiple repeated takes of same individuals from each stock. Please see the Small Numbers section for additional information.

Proposed Mitigation

In order to issue an IHA under section 101(a)(5)(D) of the MMPA, NMFS must set forth the permissible methods of taking pursuant to the activity, and other means of effecting the least practicable impact on the species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of the species or stock for taking for certain subsistence uses (latter not applicable for this action). NMFS regulations require applicants for incidental take authorizations to include information about the availability and feasibility (economic and technological) of equipment, methods, and manner of conducting the activity or other means of effecting the least practicable adverse impact upon the affected species or stocks and their habitat (50 CFR 216.104(a)(11)).

In evaluating how mitigation may or may not be appropriate to ensure the least practicable adverse impact on species or stocks and their habitat, as well as subsistence uses where applicable, we carefully consider two primary factors:

(1) The manner in which, and the degree to which, the successful implementation of the measure(s) is expected to reduce impacts to marine mammals, marine mammal species or stocks, and their habitat. This considers the nature of the potential adverse impact being mitigated (likelihood, scope, range). It further considers the likelihood that the measure will be effective if implemented (probability of accomplishing the mitigating result if implemented as planned), the likelihood of effective implementation (probability implemented as planned), and;

(2) The practicability of the measures for applicant implementation, which may consider such things as cost, impact on operations.

Mitigation for Marine Mammals and Their Habitat

NMFS proposes the following mitigation measures be implemented during Orsted's proposed marine site characterization surveys. Pursuant to section 7 of the ESA, Orsted would also be required to adhere to relevant Project Design Criteria (PDC) of the NMFS Greater Atlantic Regional Office (GARFO) programmatic consultation (specifically PDCs 4, 5, and 7) regarding geophysical surveys along the U.S. Atlantic coast (see NOAA GARFO, 2021; *https://www.fisheries.noaa.gov/new-england-mid-atlantic/consultations/section-7-take-reporting-programmatics-greater-atlantic#offshore-wind-site-assessment-and-site-characterization-activities-programmatic-consultation*).

Marine Mammal Exclusion Zones and Harassment Zones

Marine mammal Exclusion Zones (EZ) would be established around the HRG survey equipment and monitored by NMFS-approved protected species observers (PSOs):

- 500 m EZ for North Atlantic right whales (NARW) during use of acoustic sources <180 kHz (*e.g.,* Sparkers, Non-parametric sub-bottom profilers); and
- 100 m EZ for all other marine mammals, with certain exceptions specified below, during operation of impulsive acoustic sources (boomer and/or sparker).

If a marine mammal is detected approaching or entering the EZs during the HRG survey, the vessel operator would adhere to the shutdown procedures described below to minimize noise impacts on the animals. These stated requirements will be included in the site-specific training to be provided to the survey team.

Pre-Start Clearance

Marine mammal clearance zones would be established around the HRG survey equipment and monitored by protected species observers (PSOs):

- 500 m for all ESA-listed marine mammals; and
- 100 m for all other marine mammals.

Orsted would implement a 30-minute pre-start clearance period prior to the initiation of ramp-up of specified HRG equipment. During this period, clearance zones will be monitored by PSOs, using the appropriate visual technology. Ramp-up may not be initiated if any marine mammal(s) is within its respective clearance zone. If a marine mammal is observed within a

clearance zone during the pre-star clearance period, ramp-up may not begin until the animal(s) has been observed exiting its respective exclusion zone or until an additional time period has elapsed with no further sighting (*i.e.,* 15 minutes for small odontocetes and seals, and 30 minutes for all other species).

Ramp-Up of Survey Equipment

A ramp-up procedure, involving a gradual increase in source level output, is required at all times as part of the activation of the acoustic source when technically feasible. The ramp-up procedure would be used at the beginning of HRG survey activities in order to provide additional protection to marine mammals near the survey area by allowing them to vacate the area prior to the commencement of survey equipment operation at full power. Operators should ramp-up sources to half power for 5 minutes and then proceed to full power.

Ramp-up activities will be delayed if a marine mammal(s) enters its respective exclusion zone. Ramp-up will continue if the animal has been observed exiting its respective exclusion zone or until an additional time period has elapsed with no further sighting (*i.e.,* 15 minutes for small odontocetes and 30 minutes for all other species).

Ramp-up may occur at times of poor visibility, including nighttime, if appropriate visual monitoring has occurred with no detections of marine mammals in the 30 minutes prior to beginning ramp-up. Acoustic source activation may only occur at night where operational planning cannot reasonably avoid such circumstances.

Shutdown Procedures

An immediate shutdown of the impulsive HRG survey equipment would be required if a marine mammal is sighted entering or is within its respective exclusion zone. The vessel operator must comply immediately with any call for shutdown by the Lead PSO. Any disagreement between the Lead PSO and vessel operatory should be discussed only after shutdown has occurred. Subsequent restart of the survey equipment can be initiated if the animal has been observed exiting its respective exclusion zone or until an additional time period has elapsed (*i.e.,* 15 minutes for small odontocetes and 30 minutes for all other species).

If species for which authorization has not been granted, or, a species for which authorization has been granted but the authorization number of takes have been met, approaches or is observed within the Level B harassment zone (Table 4), shutdown would occur.

If the acoustic source is shut down for reasons other than mitigation (*e.g.,* mechanical difficulty) for less than 30 minutes, it may be activated again without ramp-up if SOs have maintained constant observation and no detections of any marine mammal have occurred within the respective exclusion zones. If the acoustic source is shut down for a period longer than 30 minutes, then pre-clearance and ramp-up procedures will be initiated as described in the previous section.

The shutdown requirement would be waived for pinnipeds and for small delphinids of the following genera: *Delphinus, Lagenorhynchus, Stenella,* and *Tursiops.* Specifically, if a delphinid from the specified genera or a pinniped is visually detected approaching the vessel (*i.e.,* to bow ride) or towed equipment, shutdown is not required. Furthermore, if there is uncertainty regarding identification of a marine mammal species (*i.e,.* whether the observed marine mammal(s) belongs to one of the delphinid genera for which shutdown is waived), PSOs must use best professional judgement in making the decision to call for a shutdown. Additionally, shutdown is required if a delphinid or pinniped is detected in the exclusion zone and belongs to a genus other than those specified.

Shutdown, pre-start clearance, and ramp-up procedures are not required during HRG survey operations using only non-impulsive sources (*e.g.,* echosounders) other than non-parametric sub-bottom profilers (*e.g.,* CHIRPs).

Vessel Strike Avoidance

Orsted must adhere to the following measures except in the case where compliance would create an imminent and serious threat to a person or vessel or to the extent that a vessel is restricted in its ability to maneuver and, because of the restriction, cannot comply:

- Vessel operators and crews must maintain a vigilant watch for all protected species and slow down, stop their vessel, or alter course, as appropriate and regardless of vessel size, to avoid striking any protected species. A visual observer aboard the vessel must monitor a vessel strike avoidance zone based on the appropriate separation distance around the vessel (distances stated below). Visual observers monitoring the vessel strike avoidance zone may be third-party observers (*i.e.,* PSOs) or crew members, but crew members responsible for these duties must be provided sufficient training to (1) distinguish protected species from other phenomena, and (2) broadly identify a marine mammal as a right whale, other whale (defined in this context as sperm whales or baleen whales other than right whales), or other marine mammal;
- All survey vessels, regardless of size, must observe a 10-knot speed restriction in specified areas designated by NMFS for the protection of North Atlantic right whales from vessel strikes including seasonal management areas (SMAs) and dynamic management areas (DMAs) when in effect;
- Members of the monitoring team will consult NMFS North Atlantic right whale reporting system and Whale Alert, as able, for the presence of North Atlantic right whales throughout survey operations, and for the establishment of a DMA. If NMFS should establish a DMA in the survey area during the survey, the vessels will abide by speed restrictions in the DMA;
- All vessels greater than or equal to 19.8 m in overall length operating from November 1 through April 30 will operate at speeds of 10 kn or less at all times;
- All vessels must reduce their speed to 10 kn or less when mother/calf pairs, pods, or large assemblages of any species of cetaceans is observed near a vessel;
- All vessels must maintain a minimum separation distance of 500 m from right whales and other ESA-listed large whales;
- If a whale is observed but cannot be confirmed as a species other than a right whale or other ESA-listed large whale, the vessel operator must assume that it is a right whale and take appropriate action;
- All vessels must maintain a minimum separation distance of 100 m from non-ESA listed whales;
- All vessels must, to the maximum extent practicable, attempt to maintain a minimum separation distance of 50 m from all other marine mammals, with an understanding that at times this may not be possible (*e.g.,* for animals that approach the vessel);
- When marine mammals are sighted while a vessel is underway, the vessel shall take action as necessary to avoid violating the relevant separation distance (*e.g.,* attempt to remain parallel to the animal's course, avoid excessive speed or abrupt changes in direction until the animal has left the area). If marine mammals are sighted within the relevant separation distance, the vessel must reduce speed and shift the engine to neutral, not engaging the engines until animals are clear of the area. This does not apply to any vessel towing gear

or any vessel that is navigationally constrained.

Project-specific training will be conducted for all vessel crew prior to the start of a survey and during any changes in crew such that all survey personnel are fully aware and understand the mitigation, monitoring, and reporting requirements. Prior to implementation with vessel crews, the training program will be provided to NMFS for review and approval. Confirmation of the training and understanding of the requirements will be documented on a training course log sheet. Signing the log sheet will certify that the crew member understands and will comply with the necessary requirements throughout the survey activities.

Based on our evaluation of the applicant's proposed measures, as well as other measures considered to by NMFS, NMFS has preliminarily determined that the proposed mitigation measures provide the means of effective the least practicable impact on marine mammal species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance.

Proposed Monitoring and Reporting

In order to issue an IHA for an activity, section 101(a)(5)(D) of the MMPA states that NMFS must set forth requirements pertaining to the monitoring and reporting of such taking. The MMPA implementing regulations at 50 CFR 216.104(a)(13) indicate that requests for authorizations must include the suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and of the level of taking or impacts on populations of marine mammals that are expected to be present in the proposed action area. Effective reporting is critical both to compliance as well as ensuring that the most value is obtained from the required monitoring.

Monitoring and reporting requirements prescribed by NMFS should contribute to improved understanding of one or more of the following:

- Occurrence of marine mammal species or stocks in the area in which take is anticipated (*e.g.,* presence, abundance, distribution, density);
- Nature, scope, or context of likely marine mammal exposure to potential stressors/impacts (individual or cumulative, acute or chronic), through better understanding of: (1) Action or environment (*e.g.,* source characterization, propagation, ambient noise); (2) affected species (*e.g.,* life history, dive patterns); (3) co-occurrence of marine mammal species with the action; or (4) biological or behavioral context of exposure (*e.g.,* age, calving or feeding areas);
- Individual marine mammal responses (behavioral or physiological) to acoustic stressors (acute, chronic, or cumulative), other stressors, or cumulative impacts from multiple stressors;
- How anticipated responses to stressors impact either: (1) Long-term fitness and survival of individual marine mammals; or (2) populations, species, or stocks;
- Effects on marine mammal habitat (*e.g.,* marine mammal prey species, acoustic habitat, or other important physical components of marine mammal habitat); and
- Mitigation and monitoring effectiveness.

Proposed Monitoring Measures

Visual monitoring will be performed by qualified, NMFS-approved PSOs, the resumes of whom will be provided to NMFS for review and approval prior to the start of survey activities. Orsted would employ independent, dedicated, trained PSOs, meaning that the PSOs must (1) be employed by a third-party observer provider, (2) have no tasks other than to conduct observational effort, collect data, and communicate with and instruct relevant vessel crew with regard to the presence of marine mammals and mitigation requirements (including brief alerts regarding maritime hazards), and (3) have successfully completed an approved PSO training course appropriate for their designated task. On a case-by-case basis, non-independent observers may be approved by NMFS for limited, specified duties in support of approved, independent PSOs on smaller vessels with limited crew operating in nearshore waters.

The PSOs will be responsible for monitoring the waters surrounding each survey vessel to the farthest extent permitted by sighting conditions, including exclusion zones, during all HRG survey operations. PSOs will visually monitor and identify marine mammals, including those approaching or entering the established exclusion zones during survey activities. It will be the responsibility of the Lead PSO on duty to communicate the presence of marine mammals as well as to communicate the action(s) that are necessary to ensure mitigation and monitoring requirements are implemented as appropriate.

During all HRG survey operations (*e.g.,* any day on which use of an HRG source is planned to occur), a minimum of one PSO must be on duty during daylight operations on each survey vessel, conducting visual observations at all times on all active survey vessels during daylight hours (*i.e.,* from 30 minutes prior to sunrise through 30 minutes following sunset). Two PSOs will be on watch during nighttime operations. The PSO(s) would ensure 360 degree visual coverage around the vessel from the most appropriate observation posts and would conduct visual observations using binoculars and/or night vision goggles and the naked eye while free from distractions and in a consistent, systematic, and diligent manner. PSOs may be on watch for a maximum of 4 consecutive hours followed by a break of at least 2 hours between watches and may conduct a maximum of 12 hours of observations per 24-hr period. In cases where multiple vessels are surveying concurrently, any observations of marine mammals would be communicated to PSOs on all nearby survey vessels.

PSOs must be equipped with binoculars and have the ability to estimate distance and bearing to detect marine mammals, particularly in proximity to exclusion zones. Reticulated binoculars must also be available to PSOs for use as appropriate based on conditions and visibility to support the sighting and monitoring of marine mammals. During nighttime operations, night-vision goggles with thermal clip-ons and infrared technology would be used. Position data would be recorded using hand-held or vessel GPS units for each sighting.

During good conditions (*e.g.,* daylight hours; Beaufort sea state BSS) 3 or less), to the maximum extent practicable, PSOs would also conduct observations when the acoustic source is not operating for comparison of sighting rates and behavior with and without use of the active acoustic sources. Any observations of marine mammals by crew members aboard any vessel associated with the survey would be relayed to the PSO team. Data on all PSO observations would be recorded based on standard PSO collection requirements. This would include dates, times, and locations of survey operations; dates and times of observations, location and weather, details of marine mammal sightings (*e.g.,* species, numbers, behaviors); and details of any observed marine mammal behavior that occurs (*e.g.,* notes behavioral disturbances). For more detail on the proposed monitoring requirements, see Condition 5 of the draft IHA.

Proposed Reporting Measures

Within 90 days after completion of survey activities or expiration of this IHA, whichever comes sooner, a draft comprehensive report will be provided to NMFS that fully documents the methods and monitoring protocols, summarizes the data recorded during monitoring, summarizes the number of marine mammals observed during survey activities (by species, when known), summarizes the mitigation actions taken during surveys including what type of mitigation and the species and number of animals that prompted the mitigation action, when known), and provides an interpretation of the results and effectiveness of all mitigation and monitoring. Any recommendations made by NMFS must be addressed in the final report prior to acceptance by NMFS. A final report must be submitted within 30 days following any comments on the draft report. All draft and final marine mammal and acoustic monitoring reports must be submitted to *PR.ITP.MonitoringReports@noaa.gov* and *ITP.Corcoran@noaa.gov.* The report must contain at minimum, the following:

- PSO names and affiliations;
- Dates of departures and returns to port with port names;
- Dates and times (Greenwich Mean Time) of survey effort and times corresponding with PSO effort;
- Vessel location (latitude/longitude) when survey effort begins and ends; vessel location at beginning and end of visual PSO duty shifts;
- Vessel heading and speed at beginning and end of visual PSO duty shifts and upon any line change;
- Environmental conditions while on visual survey (at beginning and end of PSO shift and whenever conditions change significantly), including wind speed and direction, Beaufort sea state, Beaufort wind force, swell height, weather conditions, cloud cover, sun glare, and overall visibility to the horizon;
- Factors that may be contributing to impaired observations during each PSO shift change or as needed as environmental conditions change (*e.g.,* vessel traffic, equipment malfunctions); and
- Survey activity information, such as type of survey equipment in operation, acoustic source power output while in operation, and any other notes of significance (*i.e.,* pre-clearance survey, ramp-up, shutdown, end of operations, etc.).

If a marine mammal is sighted, the following information should be recorded:

- Watch status (sighting made by PSO on/off effort, opportunistic, crew, alternate vessel/platform);
- PSO who sighted the animal;
- Time of sighting;
- Vessel location at time of sighting;
- Water depth;
- Direction of vessel's travel (compass direction);
- Direction of animal's travel relative to the vessel;
- Pace of the animal;
- Estimated distance to the animal and its heading relative to vessel at initial sighting;
- Identification of the animal (*e.g.,* genus/species, lowest possible taxonomic level, or unidentified); also note the composition of the group if there is a mix of species;
- Estimated number of animals (high/low/best);
- Estimated number of animals by cohort (adults, yearlings, juveniles, calves, group composition, etc.);
- Description (as many distinguishing features as possible of each individual seen, including length, shape, color, pattern, scars or markings, shape and size of dorsal fin, shape of head, and blow characteristics);
- Detailed behavior observations (*e.g.,* number of blows, number of surfaces, breaching, spyhopping, diving, feeding, traveling; as explicit and detailed as possible; note any observed changes in behavior);
- Animal's closest point of approach and/or closest distance from the center point of the acoustic source;
- Platform activity at time of sighting (*e.g.,* deploying, recovering, testing, data acquisition, other); and
- Description of any actions implemented in response to the sighting (*e.g.,* delays, shutdown, ramp-up, speed or course alteration, etc.) and time and location of the action.

If a North Atlantic right whale is observed at any time by PSOs or personnel on any project vessels, during surveys or during vessel transit, Orsted must immediately report sighting information to the NMFS North Atlantic Right Whale Sighting Advisory System: (866) 755–6622. North Atlantic right whale sightings in any location may also be reported to the U.S. Coast Guard via channel 16.

In the event that Orsted personnel discover an injured or dead marine mammal, Orsted will report the incident to the NMFS Office of Protected Resources OPR) and the NMFS New England/Mid-Atlantic Stranding Coordinator as soon as feasible. The report would include the following information:

- Time, date, and location (latitude/longitude) of the first discovery (and updated location information if known and applicable);
- Species identification (if known) or description of the animal(s) involved;
- Condition of the animal(s) (including carcass condition if the animal is dead);
- Observed behaviors of the animal(s), if alive;
- If available, photographs or video footage of the animal(s); and
- General circumstances under which the animal was discovered.

In the unanticipated event of a ship strike of a marine mammal by any vessel involved in this activities covered by the IHA, Orsted would report the incident to NMFS OPR and the NMFS New/England/Mid-Atlantic Stranding Coordinator as soon as feasible. The report would include the following information:

- Time, date, and location (latitude/longitude) of the incident;
- Species identification (if known) or description of the animal(s) involved;
- Vessel's speed during and leading up to the incident;
- Vessel's course/heading and what operations were being conducted (if applicable);
- Status of all sound sources in use;
- Description of avoidance measures/requirements that were in place at the time of the strike and what additional measures were taken, if any, to avoid strike;
- Environmental conditions (*e.g.,* wind speed and direction, Beaufort sea state, cloud cover, visibility) immediately preceding the strike;
- Estimated size and length of animal that was struck;
- Description of the behavior of the marine mammal immediately preceding and following the strike;
- If available, description of the presence and behavior of any other marine mammals immediately preceding the strike;
- Estimated fate of the animal (*e.g.,* dead, injured but alive, injured and moving, blood or tissue observed in the water, status unknown, disappeared); and
- To the extent practicable, photographs or video footage of the animal(s).

Negligible Impact Analysis and Determination

NMFS has defined negligible impact as an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival (50 CFR 216.103). A negligible impact

finding is based on the lack of likely adverse effects on annual rates of recruitment or survival (*i.e.,* population-level effects). An estimate of the number of takes alone is not enough information on which to base an impact determination. In addition to considering estimates of the number of marine mammals that might be ''taken'' through harassment, NMFS considers other factors, such as the likely nature of any responses (*e.g.,* intensity, duration), the context of any responses (*e.g.,* critical reproductive time or location, migration), as well as effects on habitat, and the likely effectiveness of the mitigation. We also assess the number, intensity, and context of estimated takes by evaluating this information relative to population status. Consistent with the 1989 preamble for NMFS's implementing regulations (54 FR 40338; September 29, 1989), the impacts from other past and ongoing anthropogenic activities are incorporated into this analysis via their impacts on the environmental baseline (*e.g.,* as reflected in the regulatory status of the species, population size and growth rate where known, ongoing sources of human-caused mortality, or ambient noise levels).

To avoid repetition, our analysis applies to all species listed in Table 6, given that NMFS expects the anticipated effects of the proposed survey to be similar in nature. Where there are meaningful differences between species or stocks—as is the case of the North Atlantic right whale—they are included as separate subsections below. NMFS does not anticipate that serious injury or mortality would occur as a result from HRG surveys, even in the absence of mitigation, and no serious injury or mortality is proposed to be authorized. As discussed in the Potential Effects of Specified Activities on Marine Mammals and their Habitat section, non-auditory physical effects and vessel strike are not expected to occur. NMFS expects that all potential takes would be in the form of Level B behavioral harassment in the form of temporary avoidance of the area or decreased foraging (if such activity was occurring), reactions that are considered to be of low severity and with no lasting biological consequences (*e.g.,* Southall *et al.,* 2007, 2021). Even repeated Level B harassment of some small subset of an overall stock is unlikely to result in any significant realized decrease in viability for the affected individuals, and thus would not result in any adverse impact to the stock as a whole. As described above, Level A harassment is not expected to occur given the nature of the operations and the estimated small size of the Level A harassment zones.

In addition to being temporary, the maximum expected harassment zone around the survey vessel is 141 m. Therefore, the ensonified area surrounding each vessel is relatively small compared to the overall distribution of the animals in the area and their use of the habitat. Feeding behavior is not likely to be significantly impacted as prey species are mobile and are broadly distributed throughout the survey area; therefore, marine mammals that may be temporarily displaced during survey activities are expected to be able to resume foraging once they have moved away from areas with disturbing levels of underwater noise. Because of the temporary nature of the disturbance and the availability of similar habitat and resources in the surrounding area, the impacts to marine mammals and the food sources that they utilize are not expected to cause significant or long-term consequences for individual marine mammals or their populations.

There are no rookeries, mating or calving grounds known to be biologically important to marine mammals within the proposed survey area and there are no feeding areas known to be biologically important to marine mammals within the proposed survey area. The proposed survey area lies significantly south (over 250 miles (402 km)) of where Biologically Important Areas are defined for fin and humpback whales. Therefore, they are not considered to be ''nearby'' the survey area and are not discussed further. There is no designated critical habitat for any ESA-listed marine mammals in the proposed survey area.

North Atlantic Right Whales

The status of the North Atlantic right whale (NARW) population is of heightened concern and therefore, merits additional analysis. As noted previously, elevated NARW mortalities began in June 2017 and there is an active UME. Overall, preliminary findings support human interactions, specifically vessel strikes and entanglements, as the cause of death for the majority of right whales. The proposed survey area overlaps with a migratory corridor Biologically Important Area (BIA) for North Atlantic right whales (effective March–April; November–December) that extends from Massachusetts to Florida (LaBrecque *et al.,* 2015). Off the coast of Delaware, this migratory BIA extends from the coast to beyond the shelf break. Due to the fact that the proposed survey activities would be very small relative to the spatial extent of the available migratory habitat in the BIA, right whale migration is not expected to be impacted by the proposed survey. Given the relatively small size of the ensonified area, it is unlikely that prey availability would be adversely affected by HRG survey operations. Required vessel strike avoidance measures will also decrease risk of ship strike during migration; no ship strike is expected to occur during Orsted's proposed activities. Additionally, only very limited take by Level B harassment of NARW has been requested and is being proposed for authorization by NMFS as HRG survey operations are required to maintain a 500 EZ and shutdown if a NARW is sighted at or within the EZ. The 500 m shutdown zone for right whales is conservative, considering the Level B harassment isopleth for the most impactful sources (*i.e.,* GeoMarine Sparkers, AA Dura-spark UHD Sparkers, AA Triple plate S-Boom) is estimated to be 141 m, and thereby minimizes the potential for behavioral harassment of this species. As noted previously, Level A harassment is not expected, nor authorized, due to the small PTS zones associated with HRG equipment types proposed for use. NMFS does not anticipate NARW takes that result from the proposed survey activities would impact annual rates of recruitment or survival. Thus, any takes that occur would not result in population level impacts.

Other Marine Mammals With Active UMEs

As noted previously, there are several active UMEs occurring in the vicinity of Garden State's proposed survey area. Elevated humpback whale mortalities have occurred along the Atlantic coast from Maine through Florida since January 2016. Of the cases examined, approximately half had evidence of human interaction (ship strike or entanglement). The UME does not yet provide cause for concern regarding population-level impacts. Despite the UME, the relevant population of humpback whales (the West Indies breeding population, or DPS) remains stable at approximately 12,000 individuals.

Beginning in January 2017, elevated minke whale strandings have occurred along the Atlantic coast from Maine through South Carolina, with highest numbers in Massachusetts, Maine, and New York. This event does not provide cause for concern regarding population level impacts, as the likely population abundance is greater than 20,000 whales.

The required mitigation measures are expected to reduce the number and/or severity of proposed takes for all species listed in Table 6, including those with active UMEs, to the level of least practicable adverse impact. In particular, they would provide animals the opportunity to move away from the sound source throughout the survey area before HRG survey equipment reaches full energy, thus preventing them from being exposed to sound levels that have the potential to cause injury (Level A harassment) or more severe Level B harassment. No Level A harassment is anticipated, even in the absence of mitigation measures, or proposed for authorization.

NMFS expects that takes would be in the form of short-term Level B behavioral harassment by way of brief startling reactions and/or temporary vacating of the area, or decreased foraging (if such activity was occurring)—reactions that (at the scale and intensity anticipated here) are considered to be of low severity, with no lasting biological consequences. Since both the sources and marine mammals are mobile, animals would only be exposed briefly to a small ensonified area that might result in take. Additionally, the required mitigation measures would further reduce exposure to sound that could result in more severe behavioral harassment.

In summary and as described above, the following factors primarily support our preliminary determination that the impacts resulting from this activity are not expected to adversely affect the species or stock through effects on annual rates of recruitment or survival:

- No mortality or serious injury is anticipated or proposed for authorization;
- No Level A harassment (PTS) is anticipated, even in the absence of mitigation measures, or proposed for authorization;
- Foraging success is not likely to be significantly impacted as effects on species that serve as prey species for marine mammals from the survey are expected to be minimal;
- The availability of alternate areas of similar habitat value for marine mammals to temporarily vacate the survey area during the planned survey to avoid exposure to sounds from the activity;
- Take is anticipated to be of Level B behavioral harassment only consisting of brief startling reactions and/or temporary avoidance of the survey area;
- While the survey area is within areas noted as a migratory BIA for North Atlantic right whales, the activities would occur in such a comparatively small area such that any avoidance of the survey area due to activities would not affect migration. In addition, mitigation measures require shutdown at 500 m (almost four times the size of the Level B harassment isopleth (141 m), which minimizes the effects of the take on the species; and
- The proposed mitigation measures, including visual monitoring and shutdowns, are expected to minimize potential impacts to marine mammals.

Based on the analysis contained herein of the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the implementation of the proposed monitoring and mitigation measures, NMFS preliminarily finds that the total marine mammal take from the proposed activity will have a negligible impact on all affected marine mammal species or stocks.

Small Numbers

As noted above, only small numbers of incidental take may be authorized under sections 101(a)(5)(A) and (D) of the MMPA for specified activities other than military readiness activities. The MMPA does not define small numbers and so, in practice, where estimated numbers are available, NMFS compares the number of individuals taken to the most appropriate estimation of abundance of the relevant species or stock in our determination of whether an authorization is limited to small numbers of marine mammals. When the predicted number of individuals to be taken is fewer than one third of the species or stock abundance, the take is considered to be of small numbers. Additionally, other qualitative factors may be considered in the analysis, such as the temporal or spatial scale of the activities.

The amount of take NMFS proposes to authorize is below one third of the estimated stock abundance for all species (in fact, take of individuals is less than 5 percent of the abundance of the affected stocks for these species, see Table 6) except for the WNA northern migratory coastal stock of bottlenose dolphins. The figures presented in Table 6 are likely conservative estimates as they assume all takes are of different individual animals which is likely not to be the case. Some individuals may return multiple times in a day, but PSOs would count them as separate takes if they cannot be individually identified. This is the particularly the case for bottlenose dolphins.

As mentioned above, there are two bottlenose dolphin stocks that could occur in the survey area: The WNA Offshore and WNA northern migratory coastal stocks. Given the uncertainty regarding the number of days Orsted's proposed survey may be within the 20 m isobath, the proposed authorization of 2,752 instances of take by Level B harassment is not allocated to a specific stock but rather could be of either stock. However, based on the stocks' respective occurrence in the area and the consideration of various factors as described below, we have determined that the number of individuals taken would comprise of less than one-third of the best available population abundance estimate of either stock. Detailed descriptions of the stocks' ranges have been provided in the Description of Marine Mammals in the Area of Specified Activities section.

Both the northern migratory and offshore stocks have expansive ranges and are the only dolphin stocks thought to make broad-scale, seasonal migrations in the coastal waters of the North Atlantic. Given the large ranges associated with these two stocks, it is unlikely that large segments of either stock would consistently remain in the survey area. The majority of both stocks are likely to be found widely dispersed across their respective habitat ranges, and individuals within each stock migrate on a seasonal basis.

The northern migratory stock spans from the shelf waters of Florida to Long Island, New York and experience spatiotemporal overlap with several other bottlenose dolphin stocks in the Western North Atlantic. The stock is best defined by its distribution during summer water months (July and August), when it overlaps with the fewest stocks, during which it occupies coastal waters from the shoreline to approximately the 20-m isobath between Assateague, Virginia and Long Island, New York (Hayes *et al.,* 2021). However, during the winter months (*e.g.,* January and February), the stock occupies coastal waters from approximately Cape Lookout, North Carolina to the North Carolina/Virginia border. A study of tagged individuals found that four dolphins off the coast of New Jersey in the late summer moved south to North Carolina and inhabited waters near and just south of Cape Hatteras during cold water months. These animals then returned to the coastal waters of New Jersey in the following warm weather months (Garrison *et al.,* 2017). Additionally, during aerial and ship surveys off the New Jersey coast in 2008 and 2009, no sightings of common bottlenose dolphins were made during November through February, and bottlenose dolphins were sighted from early March to mid-October and were most abundant

during May–August. Therefore, the stock is not expected to be present in its entirety year round at the proposed project location.

Further, many of the dolphin observations in the Delaware Bay and South of Cape May, NJ are likely repeated sightings of the same individuals. A by Toth *et al.,* (2010) conducted 73 boat-based photo-identification surveys in southern New Jersey near the Bay from 2003–2005 and found that of the 205 individuals identified, 44 percent were sighted multiple times within or among the years. Multiple sightings of the same individual would considerably reduce the number of individual animals that are taken by harassment.

The offshore stock is distributed primarily along the outer continental shelf and continental slope in the Northwest Atlantic Ocean from Georges Band to the Florida Keys (Hayes *et al.,* 2021). There is suspected overlap of the two stocks south of Cape Hatteras, North Carolina to some degree.

In summary and as described above, the following factors primarily support our determination regarding the incidental take of small numbers of the affected stocks of a species or stock:

- The take of marine mammal stocks comprises less than 5 percent of any stock abundance (with the exception of the northern migratory stock of bottlenose dolphins);
- Potential bottlenose dolphin takes in the survey area are likely to be allocated between both distinct stocks;
- Bottlenose dolphin stocks in the survey area have extensive ranges and it would be unlikely to find a high percentage of individuals from either stock concentrated in a relatively small area such as the proposed survey area;
- Many of the takes would likely be repeats of the same animals, especially during summer months.

Based on the analysis contained herein of the proposed activity (including the proposed mitigation and monitoring measures) and the anticipated take of marine mammals, NMFS preliminarily finds that small numbers of marine mammals will be taken relative to the population size of the affected species or stocks.

Unmitigable Adverse Impact Analysis and Determination

There are no relevant subsistence uses of the affected marine mammal stocks or species implicated by this action. Therefore, NMFS has determined that the total taking of affected species or stocks would not have an unmitigable adverse impact on the availability of such species or stocks for taking for subsistence purposes.

Endangered Species Act

Section 7(a)(2) of the Endangered Species Act of 1973 (ESA: 16 U.S.C. 1531 *et seq.*) requires that each Federal agency insure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of designated critical habitat. To ensure ESA compliance for the issuance of IHAs, NMFS Office of Protected Resources (OPR) consults internally whenever we propose to authorize take for endangered or threatened species.

NMFS OPR is proposing to authorize the incidental take of four species of marine mammals which are listed under the ESA, including the North Atlantic right, fin, sei, and sperm whale, and NMFS has determined that issuance of the proposed IHA falls within the scope of activities analyzed in NMFS GARFO's programmatic consultation regarding geophysical surveys along the U.S. Atlantic coast in the three Atlantic Renewable Energy Regions (completed June 29, 2021; revised September 2021).

Proposed Authorization

As a result of these preliminary determinations, NMFS proposes to issue an IHA to Orsted for conducting marine site characterization surveys off the coast of Delaware from May 10, 2022 through May, 2023, provided the previously mentioned mitigation, monitoring, and reporting requirements are incorporated. A draft of the proposed IHA can be found at *https://www.fisheries.noaa.gov/permit/incidental-take-authorizations-under-marine-mammal-protection-act.*

Request for Public Comments

We request comment on our analyses, the proposed authorization, and any other aspect of this notice of proposed IHA for the proposed marine site characterization survey. We also request at this time comment on the potential Renewal of this proposed IHA as described in the paragraph below. Please include with your comments any supporting data or literature citations to help inform decisions on the request for this IHA or a subsequent Renewal IHA.

On a case-by-case basis, NMFS may issue a one-time, one-year Renewal IHA following notice to the public providing an additional 15 days for public comments when (1) up to another year of identical or nearly identical activities as described in the Description of Proposed Activities section of this notice is planned or (2) the activities as described in the Description of Proposed Activities section of this notice would not be completed by the time the IHA expires and a Renewal would allow for completion of the activities beyond that described in the *Dates and Duration* section of this notice, provided all of the following conditions are met:

- A request for renewal is received no later than 60 days prior to the needed Renewal IHA effective date (recognizing that the Renewal IHA expiration date cannot extend beyond one year from expiration of the initial IHA).
- The request for renewal must include the following:

(1) An explanation that the activities to be conducted under the requested Renewal IHA are identical to the activities analyzed under the initial IHA, are a subset of the activities, or include changes so minor (*e.g.,* reduction in pile size) that the changes do not affect the previous analyses, mitigation and monitoring requirements, or take estimates (with the exception of reducing the type or amount of take); and

(2) A preliminary monitoring report showing the results of the required monitoring to date and an explanation showing that the monitoring results do not indicate impacts of a scale or nature not previously analyzed or authorized.

Upon review of the request for Renewal, the status of the affected species or stocks, and any other pertinent information, NMFS determines that there are no more than minor changes in the activities, the mitigation and monitoring measures will remain the same and appropriate, and the findings in the initial IHA remain valid.

Dated: March 16, 2022.

Kimberly Damon-Randall,

Director, Office of Protected Resources, National Marine Fisheries Service.

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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[RTID 0648–XB890]

Taking and Importing Marine Mammals; Taking Marine Mammals Incidental to Construction and Operation of the Revolution Wind Offshore Wind Farm Offshore of Rhode Island

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and