E 3510-22-P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[RTID 0648-XC164]

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to Site Characterization Surveys offshore from Massachusetts to New Jersey for Vineyard Northeast, LLC

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

ACTION: Notice; issuance of an incidental harassment authorization.

SUMMARY: In accordance with the regulations implementing the Marine Mammal Protection Act (MMPA) as amended, notification is hereby given that NMFS is issuing an IHA to Vineyard Northeast, LLC (Vineyard Northeast) to incidentally harass, by Level B harassment, marine mammals incidental to marine site characterization surveys offshore from Massachusetts to New Jersey, including the area of Commercial Lease of Submerged Lands for Renewable Energy Development on the Outer Continental Shelf Lease Areas OCS-A 0522 and OCS-A 0544 (Lease Areas) and along potential offshore export cable corridor (OECC) routes to landfall locations.

DATES: This authorization is effective from July 27, 2022 through July 26, 2023.

FOR FURTHER INFORMATION CONTACT: Carter Esch, 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: *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 issued or, if the taking is limited to harassment, a notice of a proposed incidental take authorization may be 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.

Summary of Request

On December 17, 2021, NMFS received a request from Vineyard Northeast for an IHA to take marine mammals incidental to marine site characterization surveys offshore from Massachusetts to New Jersey, in the area of Commercial Lease of Submerged Lands for Renewable Energy Development on the Outer Continental Shelf Lease Areas OCS-A 0522 and OCS-A 0544 (Lease Areas) and potential offshore export cable corridor

(OECC) routes to landfall locations. We received a final, revised version of Vineyard Northeast's application on April 4, 2022, which we deemed adequate and complete on April 18, 2022. Vineyard Northeast's request is for take of 19 species (with 20 managed stocks) of marine mammals, by Level B harassment only. Neither Vineyard Northeast nor NMFS expects serious injury or mortality to result from this activity and, therefore, an IHA is appropriate. A notice of NMFS' proposal to issue an IHA to Vineyard Northeast was published in the Federal Register on May 20, 2022 (87 FR 30872).

NMFS previously issued an IHA (85 FR 42357; July 14, 2020) and a renewal of that IHA (86 FR 38296; July 20, 2021) to Vineyard Wind, LLC (Vineyard Wind) for similar marine site characterization surveys. Vineyard Wind has split into several corporate entities which now include Vineyard Wind, Vineyard Wind 1, LLC (Vineyard Wind 1), and, most recently, Vineyard Northeast. NMFS issued an IHA for similar surveys to Vineyard Wind 1 on July 28, 2021 (86 FR 40469). Although the surveys analyzed in this IHA issued to Vineyard Northeast will occur in an area that overlaps the survey areas in the previous Vineyard Wind IHA and Renewal IHA, and Vineyard Wind 1 IHA (and potentially a renewal, if appropriate), NMFS issued this IHA to the separate corporate entity, Vineyard Northeast. The surveys described here will occur over a much broader geographic range than the surveys completed under the previous IHAs described above, extending to southern New Jersey and incorporating a lease area (OCS-A 0544) not yet surveyed by Vineyard Wind, Vineyard Wind 1, or Vineyard Northeast. In addition, the track lines to be covered during Vineyard Northeast's surveys are distinct from those previously surveyed by Vineyard Wind and Vineyard Wind 1.

Vineyard Wind complied with all the requirements (*e.g.,* mitigation, monitoring, and reporting) of the 2020 IHA (85 FR 42357; July 14, 2020) and information regarding their monitoring results may be found in the **Estimated Take** section. Both the Renewal IHA issued to Vineyard Wind (86 FR 38296; July 20, 2021) and the 2021 IHA issued to

Vineyard Wind 1 (86 FR 40469; July 28, 2021) are ongoing, therefore, monitoring data are not yet available. Vineyard Wind's final marine mammal monitoring report submitted pursuant to the 2020 IHA can be found at: *https://www.fisheries.noaa.gov/action/incidental-take-authorization-vineyard-wind-llc-marine-site-characterization-surveys*.

Description of Specified Activity

Vineyard Northeast plans to conduct marine site characterization surveys using high-resolution geophysical (HRG) equipment in Federal offshore waters (including Lease Areas OCS-A 0522 and OCS-A 0544) and along potential OECCs in both Federal and State nearshore waters of Massachusetts, Rhode Island, Connecticut, New York, and New Jersey (see Figure 1 in the notice of the proposed IHA).

Dates and Duration

Vineyard Northeast plans to commence surveys in July 2022 and continue for 1 year. Based on 24-hour operations, HRG survey activities are expected to require 869 vessel days, with an estimated daily survey distance of 80 kilometers (km) per vessel (assuming 24-hour operations). Each day that a vessel surveys approximately 80 km within 24 hours will count as a single survey day, *e.g.,* two survey vessels operating on the same day would count as two survey days. The use of concurrently surveying vessels will facilitate completion of all 869 vessel days within one year.

A detailed description of Vineyard Northeast's planned surveys is provided in the **Federal Register** notice of the proposed IHA (87 FR 30872; May 20, 2022). Since that time, no changes have been made to the project activities. Therefore, a detailed description is not provided here. Please refer to that **Federal Register** notice for the description of the specified activities. Here, we provide brief information on the survey effort and sound sources Vineyard Northeast will use during the surveys (Table 1). We note that all decibel (dB) levels included in this notice are referenced to 1 microPascal (1

μPa). The root mean square decibel level (dB_{rms}) represents the square root of the average of the pressure of the sound signal over a given duration. The peak dB level (dB_{peak}) represents the range in pressure between zero and the greatest pressure of the signal. Operating frequencies are presented in kilohertz (kHz).

Table 1 — Summary of Representative HRG Equipment[1]

System	Frequency (kHz)	Beam width (°)	Pulse duration (ms)	Repetition rate (Hz)	In-beam Source Level (dB)	
					RMS	Pk
Shallow subbottom profiler (non-impulsive)						
EdgeTech Chirp 216	2–16	65	2	3.75	178	182
Deep seismic profiler (impulsive)						
Applied Acoustics AA251 Boomer	0.2–15	180	0.8	2	205	212
GeoMarine Geo Spark 2000 (400 tip)	0.05–3	180	3.4	1	203	213

[1] - Edge Tech Chirp 512i used as proxy source for Edge Tech 216, as Chirp 512i has similar operation settings as Chirp 216. SIG ELC 820 Sparker used as proxy for GeoMarine Geo Spark 2000 (400 tip), as SIG ELC 820 has similar operation settings as Geo Spark 2000. See Crocker and Fratantonio (2016) and Table A-3 in Appendix A of Vineyard Northeast's application for more information.

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

Comments and Responses

The notice of the proposed IHA described, in detail, Vineyard Northeast's activities, the marine mammal species that may be affected by the activities, and the anticipated effects on marine mammals. In that notice, we requested public input on the request for authorization described therein, our analyses, the proposed authorization, and any other aspect of the notice of proposed IHA, and requested that interested persons submit relevant information, suggestions, and comments. This proposed notice was available for a 30-day public comment period.

NMFS received 1 non-substantive comment from a private citizen, and two substantive comment letters from environmental non-governmental organizations (eNGOs) (Oceana, Inc. and Clean Ocean Action (COA)). A summary of comments from

Oceana and COA, and NMFS' responses, are provided below; the letters are available online at: *https://www.fisheries.noaa.gov/action/incidental-take-authorization-vineyard-northeast-llc-marine-site-characterization*-surveys.

Comment 1: Oceana made comments objecting to NMFS' renewal process regarding the extension of any one-year IHA with a truncated 15-day public comment period, and suggested an additional 30-day public comment period is necessary for any renewal request.

NMFS' response: NMFS' IHA renewal process meets all statutory requirements. In prior responses to comments about IHA renewals (*e.g.,* 84 FR 52464; October 2, 2019 and 85 FR 53342, August 28, 2020), NMFS has explained how the renewal process, as implemented, is consistent with the statutory requirements contained in section 101(a)(5)(D) of the MMPA, and, further, promotes NMFS' goals of improving conservation of marine mammals and increasing efficiency in the MMPA compliance process. Therefore, we intend to continue implementing the renewal process.

The notice of the proposed IHA published in the **Federal Register** on May 20, 2022 (87 FR 30872) made clear that the agency was seeking comment on the proposed IHA and the potential issuance of a renewal for this survey. Because any renewal is limited to another year of identical or nearly identical activities in the same location or the same activities that were not completed within the 1-year period of the initial IHA, reviewers have the information needed to effectively comment on both the immediate proposed IHA and a possible 1-year renewal, should the IHA holder choose to request one in the coming months.

While there would be additional documents submitted with a renewal request, for a qualifying renewal, these would be limited to documentation that NMFS would make available and use to verify that the activities are identical to those in the initial IHA, are nearly identical such that the changes would have either no effect on impacts to marine

mammals or decrease those impacts, or are a subset of activities already analyzed and authorized but not completed under the initial IHA. NMFS would also need to confirm, among other things, that the activities would occur in the same location; involve the same species and stocks; provide for continuation of the same mitigation, monitoring, and reporting requirements; and that no new information has been received that would alter the prior analysis. The renewal request would also contain a preliminary monitoring report, in order to verify that effects from the activities do not indicate impacts of a scale or nature not previously analyzed. The additional 15-day public comment period provides the public an opportunity to review these few documents, provide any additional pertinent information and comment on whether they think the criteria for a renewal have been met. With the initial 30-day comment period on these same activities and the additional 15 days, the total comment period for a renewal is 45 days.

In addition to the IHA renewal process being consistent with all requirements under section 101(a)(5)(D), it is also consistent with Congress' intent for issuance of IHAs to the extent reflected in statements in the legislative history of the MMPA. Through the provision for renewals in the regulations, description of the process and express invitation to comment on specific potential renewals in the Request for Public Comments section of each proposed IHA, the description of the process on NMFS' website, further elaboration on the process through responses to comments such as these, posting of substantive documents on the agency's website, and provision of 30 or 45 days for public review and comment on all proposed initial IHAs and renewals respectively, NMFS has ensured that the public is "invited and encouraged to participate fully in the agency's decision-making process," as Congress intended.

Comment 2: Oceana remarked that NMFS must utilize the best available science. The commenters further suggested that NMFS failed to do so with respect to relatively recent shifts in habitat use by right whales within Vineyard Northeast's survey area. Both

Oceana and COA specifically asserted that NMFS is not using the best available science with regard to the North Atlantic right whale (NARW) population estimate and state that NMFS should be using the 336 estimate presented in the recent North Atlantic Right Whale Report Card (*https://www.narwc.org/report-cards.html*).

NMFS' response: While NMFS agrees that the best available science should be used for assessing NARW abundance estimates, we disagree that, at this time, the North Atlantic Right Whale Report Card (*i.e.,* Pettis *et al.* (2022)) study represents the most recent and best available estimate for NARW abundance. Rather the revised abundance estimate (368; 95 percent with a confidence interval of 356-378) published by Pace (2021) (and subsequently included in the 2021 Stock Assessment Reports (SARs; *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports*)), which was used in the proposed IHA, provides the best available estimate, and introduced improvements to NMFS' right whale abundance model. Specifically, Pace (2021) looked at a different way of characterizing annual estimates of age-specific survival. NMFS considered all relevant information regarding NARW, including the information cited by the commenters. However, NMFS relies on the SAR.

Recently (after publication of the notice of proposed IHA), NMFS updated its species webpage to recognize the population estimate for NARWs is now below 350 animals (*https://www.fisheries.noaa.gov/species/north-atlantic-right-whale*). Accordingly, we anticipate that the draft 2022 SAR will present a lower population estimate, at which point NMFS will adopt its use. Until then, we will use the population estimate of 368 as the basis for our small numbers findings.. We note that this change in abundance estimate would not change the estimated take of NARWs or authorized take numbers, nor affect our ability to make the required findings under the MMPA for Vineyard Northeast's survey activities.

NMFS further notes that Oceana seems to be conflating the phrase "best available science" with "the most recent science." The MMPA specifies that the "best available data" must be used, which does not always mean the most recent. At this time, in consideration of all available data, NMFS considers the NARW abundance estimate of 368 from the 2021 SARs as the best available science and have appropriately used it in our analysis. The Pace (2021) results strengthened the case for a change in mean survival rates after 2010-2011, but did not significantly change other current estimates (population size, number of new animals, adult female survival) derived from the model. Furthermore, NMFS notes that the SARs are peer reviewed by other scientific review groups prior to being finalized and published and that the North Atlantic Right Whale Report Card (Pettis *et al.,* 2022) does not undertake this process.

Oceana expressed concern regarding shifting patterns in NARW occurrence and habitat usage, stating that NMFS was not appropriately considering relevant information on this topic. While this survey intersects migratory and foraging habitat for NARWs, including a newer year-round "core" NARW foraging habitat south of Martha's Vineyard and Nantucket (Oleson *et al.*, 2020), NMFS notes that prey for NARWs are mobile and broadly distributed throughout the survey area; therefore, NARW foraging efforts are not likely to be disturbed given the location of these planned activities in relation to the broader area within which NARW migrate and forage. In addition, survey activity will not occur in Cape Cod Bay from January 1 through May 15, the period when densities of right whales and zooplankton prey are highest. There is ample foraging habitat within and near the survey area that will not be ensonified by the acoustic sources used by Vineyard Northeast, such as in the Great South Channel and Georges Bank Shelf Break feeding biologically important areas (BIAs), and south of Martha's Vineyard and Nantucket. Lastly, as we stated in the proposed Notice, given that any impacts to marine mammals

from the planned survey activities are expected to be temporary and minor, such impacts are not expected to result in disruption to biologically important behaviors.

Comment 3: Oceana noted that chronic stressors are an emerging concern for NARW conservation and recovery, and stated that chronic stress may result in energetic effects for NARWs. Oceana suggested that NMFS has not fully considered both the use of the area and the effects of both acute and chronic stressors on the health and fitness of NARWs, as disturbance responses in NARWs could lead to chronic stress or habitat displacement, leading to an overall decline in their health and fitness.

NMFS' response: NMFS agrees with Oceana that both acute and chronic stressors are of concern for NARW conservation and recovery. We recognize that acute stress from acoustic exposure is one potential impact of these surveys, and that chronic stress can have fitness, reproductive, etc. impacts at the population-level scale. NMFS has carefully reviewed the best available scientific information in assessing impacts to marine mammals, and recognizes that Vineyard Northeast's surveys have the potential to impact marine mammals through behavioral effects, stress responses, and auditory masking. However, NMFS does not expect that the generally short-term, intermittent, and transitory marine site characterization survey activities planned by Vineyard Northeast would create conditions of acute or chronic acoustic exposure leading to long-term physiological stress responses in marine mammals. NMFS has also prescribed a robust suite of mitigation measures, including extended distance shutdowns for NARWs that are expected to further reduce the duration and intensity of acoustic exposure, while limiting the potential severity of any possible behavioral disruption. The potential for chronic stress was evaluated in making the determinations presented in NMFS's negligible impact analyses (please see **Negligible Impact Analysis and Determination** section for details). The survey area does partially overlap the migratory corridor BIA and migratory route SMA as well as several seasonal foraging habitats for NARWs. However, the very small

maximum Level B harassment zone (178 m radius) coupled with a maximum of two survey vessels operating at any given time in both the Lease Areas and in nearshore waters limits opportunities for potential impacts on migration and/or foraging behaviors to occur. Given that NARWs generally use the migratory corridor in a transitory manner, any potential impacts from these surveys during migration are lessened due to the brief periods when exposure is possible. In addition, there is ample foraging habitat in the northern portion of the survey area, as well as a seasonal restriction on survey activities in Cape Cod Bay from January 1 through May 15, when NARWs and their zooplankton prey occur in high densities in the Bay. NMFS expects that all potential takes would be in the form of short-term 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).

Comment 4: Oceana asserted that NMFS must fully consider the discrete effects of each activity and the cumulative effects of the suite of approved, proposed and potential activities on marine mammals and NARWs in particular and ensure that the cumulative effects are not excessive before issuing or renewing an IHA.

NMFS' response: Neither the MMPA nor NMFS' codified implementing regulations call for a separate "cumulative effects" analysis. The preamble for NMFS' implementing regulations (54 FR 40338; September 29, 1989) states in response to comments that the impacts from other past and ongoing anthropogenic activities are to be incorporated into the negligible impact analysis via their impacts on the baseline. Consistent with that direction, NMFS has factored into its negligible impact analysis the impacts of other past and ongoing anthropogenic activities via their impacts on the baseline, *e.g.,* as reflected in the density/distribution and status of the species, population size and growth rate, and other relevant stressors. The 1989 final rule for the MMPA

implementing regulations also addressed public comments regarding cumulative effects from future, unrelated activities. There NMFS stated that such effects are not separately considered in making findings under section 101(a)(5) concerning negligible impact. In this case, this IHA, as well as other IHAs currently in effect or proposed within the specified geographic region, are appropriately considered an unrelated activity relative to the others. The IHAs are unrelated in the sense that they are discrete actions under section 101(a)(5)(D), issued to discrete applicants.

Section 101(a)(5)(D) of the MMPA requires NMFS to make a determination that the take incidental to a "specified activity" will have a negligible impact on the affected species or stocks of marine mammals. NMFS' implementing regulations require applicants to include in their request a detailed description of the specified activity or class of activities that can be expected to result in incidental taking of marine mammals. 50 CFR 216.104(a)(1). Thus, the "specified activity" for which incidental take coverage is being sought under section 101(a)(5)(D) is generally defined and described by the applicant. Here, Vineyard Northeast was the applicant for the IHA, and we are responding to the specified activity as described in that application (and making the necessary findings on that basis).

Through the response to public comments in the 1989 implementing regulations, NMFS also indicated that (1) we would consider cumulative effects that are reasonably foreseeable when preparing a NEPA analysis, and (2) reasonably foreseeable cumulative effects would also be considered under section 7 of the ESA for ESA-listed species, as appropriate. Accordingly, NMFS has written Environmental Assessments (EA) that addressed cumulative impacts related to substantially similar activities, in similar locations, *e.g.,* the 2017 Ocean Wind, LLC EA for site characterization surveys off New Jersey; the 2018 Deepwater Wind EA for survey activities offshore Delaware, Massachusetts, and Rhode Island; and the 2019 Orsted EA for survey activities offshore

southern New England. Cumulative impacts regarding issuance of IHAs for site characterization survey activities such as those planned by Vineyard Northeast have been addressed under NEPA in prior environmental analyses and support NMFS' determination that this action is appropriately categorically excluded from further NEPA analysis. NMFS independently evaluated the use of a categorical exclusion for issuance of Vineyard Northeast's IHA, which included consideration of extraordinary circumstances.

For ESA-listed species, the cumulative effects of substantially similar activities in the same geographic region have been analyzed in the past under section 7 of the ESA when NMFS has engaged in formal intra-agency consultation, such as the 2013 programmatic Biological Opinion (BiOp) for BOEM Lease and Site Assessment Rhode Island, Massachusetts, New York, and New Jersey Wind Energy Areas (*https://repository.library.noaa.gov/view/noaa/29291*). Analyzed activities include those for which NMFS issued Vineyard Wind's 2020 IHA and 2021 IHA (85 FR 26940; May 6, 2020 and 86 FR 40469 July 28, 2021), which are substantially similar to those planned by Vineyard Northeast under this current IHA request. This Biological Opinion determined that NMFS' issuance of IHAs for site characterization survey activities associated with leasing, individually and cumulatively, are not likely to adversely affect listed marine mammals. NMFS notes, that while issuance of this IHA is covered under a different consultation, this BiOp remains valid and the surveys currently planned by Vineyard Northeast from 2022 to 2023 could have fallen under the scope of those analyzed previously.

Comment 5: Oceana states that NMFS must make an assessment of which activities, technologies and strategies are truly necessary to provide information to inform development of Vineyard Northeast and which are not critical, asserting that NMFS should prescribe the appropriate survey techniques. In general, Oceana stated that NMFS

must require that all IHA applicants minimize the impacts of underwater noise to the fullest extent feasible, including through the use of best available technology and methods to minimize sound levels from geophysical surveys.

NMFS' response: The MMPA requires that an IHA include measures that will effect the least practicable adverse impact on the affected species and stocks and, in practice, NMFS agrees that the IHA should include conditions for the survey activities that will first avoid adverse effects on NARWs in and around the survey site, where practicable, and then minimize the effects that cannot be avoided. NMFS has determined that the IHA meets this requirement to effect the least practicable adverse impact. Oceana does not make any specific recommendations of measures to add to the IHA. As part of the analysis for all marine site characterization survey IHAs, NMFS evaluated the effects expected as a result of the specified activity, made the necessary findings, and prescribed mitigation requirements sufficient to achieve the least practicable adverse impact on the affected species and stocks of marine mammals. It is not within NMFS' purview to prescribe the techniques or technologies most appropriate for meeting the objectives of the specified activity (*e.g.,* survey).

Comment 6: Oceana suggests that PSOs complement their survey efforts using additional technologies, such as infrared detection devices when in low-light conditions.

NMFS' response: NMFS agrees with Oceana regarding this suggestion and a requirement to utilize a thermal (infrared) device during low-light conditions was included in the **Federal Register** notice for the proposed IHA. That requirement is included as a requirement of the issued IHA.

Comment 7: Oceana recommended that NMFS restrict all vessels of all sizes associated with the proposed survey activities to speeds less than 10 knots (kn) (18.5 km/hour) at all times due to the risk of vessel strikes to NARWs and other large whales.

NMFS' response: While NMFS acknowledges that vessel strikes can result in injury or mortality, we have analyzed the potential for ship strike resulting from Vineyard Northeast's activity and have determined that based on the nature of the activity and the required mitigation measures specific to vessel strike avoidance included in the IHA, potential for vessel strike is so low as to be discountable. These mitigation measures, all of which were included in the proposed IHA and are required in the final IHA, include: a requirement that all vessel operators and crews maintain a vigilant watch for all marine mammals and slow down, stop their vessel, or alter course as appropriate to avoid striking any marine mammal; a requirement that all vessel operators, regardless of vessel size, observe the 10 kn (18.5 km/hour) or less speed restriction in any Seasonal Management Area (SMA) and Dynamic Management Area (DMA) (when in effect), and check regularly for information regarding detections of NARWs in the survey area before and throughout survey activities, and establishment of a DMA; a requirement that all vessel operators reduce vessel speed to 10 kn (18.5 km/hour) or less when mother/calf pairs, pods, or large assemblages of cetaceans are observed near the vessel; a requirement that all survey vessels maintain a separation distance of 500 m or greater from any ESA-listed whales or other unidentified large whale that cannot be confirmed to species; a requirement that, if underway, vessels must steer a course away from any sighted ESA-listed whale at 10 kn (18.5 km/hour) or less until the 500-m minimum separation distance has been established; a requirement that, if an ESA-listed whale is sighted in a vessel's path, or within 500 m of an underway vessel, the underway vessel must reduce speed and shift the engine to neutral; a requirement that all vessels underway must maintain a minimum separation distance of 100 m from all non-ESA-listed baleen whales; and a requirement that all vessels underway 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). We have determined that the ship strike avoidance measures in the IHA are sufficient to ensure the least practicable adverse impact on species or stocks and their habitat. Furthermore, no vessel strikes have been documented for any marine site characterization surveys which were issued IHAs from NMFS during the survey activities themselves or while transiting to and from survey sites.

Comment 8: Oceana suggests that NMFS require vessels to maintain a separation distance of at least 500 m from NARWs at all times.

NMFS' response: NMFS agrees with Oceana regarding this suggestion and a requirement to maintain a separation distance of at least 500 m from NARWs at all times was included in the proposed **Federal Register** notice and was included as a requirement in the issued IHA.

Comment 9: Oceana recommended that the IHA should require all vessels supporting site characterization to be equipped with and using Class A Automatic Identification System (AIS) devices at all times while on the water. Oceana suggested this requirement should apply to all vessels, regardless of size, associated with the survey.

NMFS' response: NMFS is generally supportive of the idea that vessels involved with survey activities be equipped with and using Class A Automatic Identification System (devices) at all times while on the water. Indeed, there is a precedent for NMFS requiring such a stipulation for geophysical surveys in the Atlantic Ocean (38 FR 63268, December 7, 2018); however, these activities carried the potential for much more significant impacts than the marine site characterization surveys to be carried out by Vineyard Northeast, with the potential for both Level A and Level B harassment take, of greater number and severity. Given the small isopleths and small numbers of take authorized by this IHA, NMFS does not agree that the benefits of requiring AIS on all vessels associated with the survey activities outweighs the cost and impracticability issues associated with this requirement (*e.g.,* poor data quality, necessary to use in

corroboration with other data sources, often produces misleading tracks). Therefore, we have determined that the measure is not warranted for this activity and have not included it.

Comment 10: Oceana asserts that the IHA must include requirements to hold all vessels associated with site characterization surveys accountable to the IHA requirements, including vessels owned by the developer, contractors, employees, and others regardless of ownership, operator, and contract. They state that exceptions and exemptions will create enforcement uncertainty and incentives to evade regulations through reclassification and redesignation. They recommend that NMFS simplify this by requiring all vessels to abide by the same requirements, regardless of size, ownership, function, contract or other specifics.

NMFS' response: NMFS agrees with Oceana and required these measures in the proposed IHA and final IHA. The IHA requires that a copy of the IHA must be in the possession of Vineyard Northeast, the vessel operators, the lead PSO, and any other relevant designees of Vineyard Northeast operating under the authority of this IHA. The IHA also states that Vineyard Northeast must ensure that all the vessel operators and other relevant vessel personnel, including the Protected Species Observer (PSO) team, are briefed on all responsibilities, communication procedures, marine mammal monitoring protocols, operational procedures, and IHA requirements prior to the start of survey activity, and when relevant new personnel join the survey operations.

Comment 11: Oceana stated that the IHA must include a requirement for all phases of the Vineyard Northeast site characterization to subscribe to the highest level of transparency, including frequent reporting to federal agencies, requirements to report all visual and acoustic detections of NARWs and any dead, injured, or entangled marine mammals to NMFS or the Coast Guard as soon as possible and no later than the end of the PSO shift. Oceana states that to foster stakeholder relationships and allow public

engagement and oversight of the permitting, the IHA should require all reports and data to be accessible on a publicly available website.

NMFS' response: NMFS agrees with the need for reporting and indeed, the MMPA calls for IHAs to incorporate reporting requirements. As was included in the proposed IHA, the final IHA includes requirements for reporting that supports Oceana's recommendations. Vineyard Northeast is required to submit a monitoring report to NMFS within 90 days after completion of survey activities that fully documents the methods and monitoring protocols, summarizes the data recorded during monitoring, and describes, assesses and compares the effectiveness of monitoring and mitigation measures. PSO datasheets or raw sightings data must also be provided with the draft and final monitoring report. Further, the draft IHA and final IHA stipulate that if a NARW is observed at any time by any survey vessels, during surveys or during vessel transit, Vineyard Northeast must immediately report sighting information to the NMFS North Atlantic Right Whale Sighting Advisory System and to the U.S. Coast Guard, and that any discoveries of injured or dead marine mammals be reported by Vineyard Northeast to the Office of Protected Resources, NMFS, and to the New England/Mid-Atlantic Regional Stranding Coordinator as soon as feasible. All reports and associated data submitted to NMFS are included on the website for public inspection.

Comment 12: Oceana recommended increasing the shutdown zone size to 1,000 m for NARWs.

NMFS' response: NMFS notes that the 500 m shutdown zone for NARWs exceeds the modeled distance to the largest 160 dB Level B harassment isopleth (178 m) by a conservative margin. Oceana does not provide a compelling rationale for why the shutdown zone should be even larger. Given that these surveys are relatively low impact and that NMFS has prescribed a precautionary NARW shutdown zone that is larger than the conservatively estimated largest harassment zone, NMFS has determined that the

shutdown zone size is appropriate. Further, Level A harassment is not expected, even in the absence of mitigation, given the characteristics of the sources planned for use. As described in the Mitigation section, NMFS has determined that the prescribed mitigation requirements are sufficient to effect the least practicable adverse impact on all affected species or stocks.

Comment 13: Oceana recommended that NMFS should require Vineyard Northeast to monitor pre-start clearance and shutdown zones using Passive Acoustic Monitoring (PAM) to maximize the probability of detecting NARWs.

NMFS' response: Oceana does not explain why they expect that PAM would be effective in detecting vocalizing mysticetes, nor does NMFS agree that this measure is warranted, as it is not expected to be effective for use in detecting the species of concern. It is generally accepted that, even in the absence of additional acoustic sources, using a towed passive acoustic sensor to detect baleen whales (including NARWs) is not typically effective because the noise from the vessel, the flow noise, and the cable noise are in the same frequency band and will mask the vast majority of baleen whale calls. Vessels produce low-frequency noise, primarily through propeller cavitation, with main energy in the 5-300 Hertz (Hz) frequency range. Source levels range from about 140 to 195 decibel (dB) re 1 μPa (micropascal) at 1 m (NRC, 2003; Hildebrand, 2009), depending on factors such as ship type, load, and speed, and ship hull and propeller design. Studies of vessel noise show that it appears to increase background noise levels in the 71-224 Hz range by 10-13 dB (Hatch *et al.*, 2012; McKenna *et al.*, 2012; Rolland *et al.*, 2012). PAM systems employ hydrophones towed in streamer cables approximately 500 m behind a vessel. Noise from water flow around the cables and from strumming of the cables themselves is also low-frequency and typically masks signals in the same range. Experienced PAM operators participating in a relatively recent workshop (Thode *et al.*, 2017) emphasized that a PAM operation could easily report that no acoustic

encounters occurred, depending on species present, simply because background noise levels rendered any acoustic detection impossible. The same workshop report stated that a typical eight-element array towed 500 m behind a vessel could be expected to detect delphinids, sperm whales, and beaked whales at the required range, but not baleen whales, due to expected background noise levels (including vessel noise and flow noise).

There are several additional reasons why we do not agree that use of PAM is warranted for HRG surveys. While NMFS agrees that PAM can be an important tool for augmenting detection capabilities in certain circumstances, its utility in further reducing impact during HRG survey activities is limited. First, for this activity, the area expected to be ensonified above the Level B harassment threshold is relatively small (a maximum of 178 m); this reflects the fact that, to start with, the source level is comparatively low and the intensity of any resulting impacts would be lower level and, further, it means that inasmuch as PAM will only detect a portion of any animals exposed within a zone, the overall probability of PAM detecting an animal in the harassment zone is low. Together these factors support the limited value of PAM for use in reducing take with smaller zones. PAM is only capable of detecting animals that are actively vocalizing, yet many marine mammal species vocalize infrequently or during certain activities, which means that only a subset of the animals within the range of the PAM would be detected (and potentially experience reduced impacts). Additionally, localization and range detection can be challenging under certain scenarios. For example, odontocetes are fast moving and often travel in large or dispersed groups which makes localization difficult.

Given that the effects to marine mammals from the types of surveys authorized in this IHA are expected to be limited to low level behavioral harassment even in the absence of mitigation, the limited additional benefit anticipated by adding this detection method (especially for NARWs and other low frequency cetaceans, species for which PAM has limited efficacy), and the cost and impracticability of implementing a full-time

PAM program, we have determined the current requirements for visual monitoring are sufficient to ensure the least practicable adverse impact on the affected species or stocks and their habitat. NMFS has previously provided discussions on why PAM isn't a required monitoring measure during HRG survey IHAs in past **Federal Register** notices (see 86 FR 21289, April 22, 2021 and 87 FR 13975, March 11, 2022 for examples).

Regarding monitoring for species that may be present yet go unobserved, NMFS recognizes that visual detection based mitigation approaches are not 100 percent effective. Animals are missed because they are underwater (availability bias) or because they are available to be seen, but are missed by observers (perception and detection biases) (*e.g.,* Marsh and Sinclair, 1989). However, visual observation remains one of the best available methods for marine mammal detection. Although it is likely that some marine mammals may be present yet unobserved within the harassment zone, all expected take of marine mammals has been appropriately authorized. For mysticete species in general, it is unlikely that an individual would occur within the estimated 141 m harassment zone and remain undetected. For NARW in particular, the required pre-start clearance and shutdown zone are 500 m and, therefore, it is even less likely that an individual would approach the harassment zone undetected.

Comment 14: Oceana recommended a shutdown requirement if a NARW or other ESA-listed species is detected in the pre-start clearance zone as well as a publically available explanation of any exemptions as to why the applicant would not be able to shutdown in these situations.

NMFS' response: There are several shutdown requirements described in the **Federal Register** notice of the proposed IHA (87 FR 30872, May 20, 2022), and required in the final IHA, including the stipulation that geophysical survey equipment must be immediately shut down if any marine mammal is observed within or entering the relevant shutdown zone while geophysical survey equipment is operational. There is no

exemption for the shutdown requirement. In regards to reporting, Vineyard Northeast must notify NMFS if a NARW is observed at any time by any survey vessels during surveys or during vessel transit. Additionally, Vineyard Northeast is required to report the relevant survey activity information, such as such as the 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.) as well as the estimated distance to an animal and its heading relative to the survey vessel at the initial sighting and survey activity information. We note that if a right whale is detected within the shutdown zone before a shutdown is implemented, the right whale and its distance from the sound source, including if it is within the Level B harassment zone, would be reported in Vineyard Northeast's final monitoring report and made publicly available on NMFS' website. Vineyard Northeast is required to immediately notify NMFS of any sightings of NARWs and report survey activity information. NMFS believes that these requirements address the commenter's concerns.

Comment 15: Oceana recommended that when HRG surveys are allowed to resume after a shutdown event, the surveys should be required to use a ramp-up procedure to encourage any nearby marine life to leave the area.

NMFS' response: NMFS agrees with this recommendation and included in the **Federal Register** notice of the proposed IHA (87 FR 30972, May 20, 2022) and this final IHA a stipulation that when technically feasible, survey equipment must be ramped up at the start or restart of survey activities. Ramp-up must begin with the power of the smallest acoustic equipment at its lowest practical power output appropriate for the survey. When technically feasible the power must then be gradually turned up and other acoustic sources added in a way such that the source level would increase gradually. NMFS notes that ramp-up would not be required for short periods where acoustic sources were shut down (*i.e.,* less than 30 minutes) if PSOs have maintained constant visual

observation and no detections of marine mammals occurred within the applicable shutdown zones.

Comment 16: COA asserts that Level A harassment may occur, and that this was not accounted for in the proposed Notice.

NMFS' response: NMFS acknowledges the concerns brought up by the commenters regarding the potential for Level A harassment of marine mammals. However, no Level A harassment is expected to result, even in the absence of mitigation, given the characteristics of the sources planned for use. This is additionally supported by the required mitigation and very small estimated Level A harassment zones described in Vineyard Wind's 2020 **Federal Register** notice (85 FR 26940, May 6, 2020) and 2021 IHA (86 FR 40469, July 28, 2021) which, as stated earlier, carried out similar activities using the same type of acoustic sources in the same geographic area. Furthermore, the commenters do not provide any support or scientific basis for the apparent contention that Level A harassment is a "likely" outcome of these activities. As discussed in the notice of proposed IHA, NMFS considers this category of survey operations to be near de minimis, with the potential for Level A harassment for any species to be discountable.

Comment 17: COA claims that the proposed vessel strike avoidance measures are insufficient and only directed at Vineyard Northeast's survey vessels, whereas the risk of collision between right whales and vessels not associated with the specified activity will increase because these two entities will be forced to navigate around survey vessels.

NMFS' response: Vineyard Northeast did not request authorization for take incidental to vessel traffic during Vineyard Northeast's marine site characterization survey. Nevertheless, NMFS analyzed the potential for vessel strikes to occur during the survey, and determined that the potential for vessel strike is so low as to be discountable. NMFS does not authorize any take of marine mammals incidental to vessel strike resulting from the survey. If Vineyard Northeast were to strike a marine mammal with a

vessel, this would be an unauthorized take and be in violation of the MMPA. This gives Vineyard Northeast a strong incentive to operate its vessels with all due caution and to effectively implement the suite of vessel strike avoidance measures called for in the IHA. Vineyard Northeast proposed a very conservative suite of mitigation measures related to vessel strike avoidance, including measures specifically designed to avoid impacts to NARWs. Section 4(f) in the IHA contains a suite of non-discretionary requirements pertaining to vessel strike avoidance, including vessel operation protocols and monitoring. To date, NMFS is not aware of any site characterization vessel from surveys reporting a ship strike within the United States. In addition, Vineyard Northeast will only operate a maximum of two survey vessels in the Lease Area and two survey vessels in the nearshore area (< 30 m) at any given time, thus further reducing the potential for vessel strike to occur. When considered in the context of low overall probability of any vessel strike by Vineyard Northeast vessels, given the limited additional survey-related vessel traffic relative to existing traffic in the survey area, the comprehensive visual monitoring, and other additional mitigation measures described herein, NMFS believes these measures are sufficiently protective to avoid vessel strike. These measures are described fully in the **Mitigation** section below, and include, but are not limited to: training for all vessel observers and captains, daily monitoring of NARW Sighting Advisory System, WhaleAlert app, and USCG Channel 16 for situational awareness regarding NARW presence in the survey area, communication protocols if whales are observed by any Vineyard Northeast personnel, vessel operational protocol should any marine mammal be observed, and visual monitoring.

The potential for vessel strike by vessels not associated with site characterization survey vessels is separate from the aforementioned analysis of potential for vessel strike during Vineyard Northeast's specified survey activities, and outside the scope of analysis related to the authorization of take incidental to Vineyard Northeast's specified activity

under the MMPA. For more information about cumulative impacts, please see NMFS' response to comment 4.

Comment 18: COA claimed that it was not clear whether the analyses and proposed take applied to short-beaked or long-beaked common dolphins, and pointed out an error in reporting the amount of take proposed for authorizations for this species.

NMFS' response: We appreciate COA pointing out the errors in the amount of take and percent of the population abundance reported for common dolphins in the **Federal Register** notice for the proposed IHA. Although the **Federal Register** notice reported an incorrect amount of take of common dolphins (24,480), the proposed IHA itself did report the correct amount (13,904). NMFS has made the necessary correction such that this notice and the final IHA authorized take values align, and has corrected the percentage of authorized take relative to the species' overall abundance to 8.0 percent.

Regarding the claim that it is not clear if the amount of take requested for common dolphins is attributed to short-beaked or long-beaked common dolphins, or some combination of the two, please note that the application and **Federal Register** notice specify that only short-beaked common dolphins are expected to be encountered in the survey. This assumption is noted by the exclusive species name designation in Table 2 (*Delphinus delphis*) of the **Federal Register** notice for the proposed IHA and in section 4.2.6 of Vineyard Northeast's application.

Comment 19: COA is concerned regarding the number of species that could be impacted by the activities, as well as a lack of baseline data available for species in the area, noting particular concern for harbor seals occurring in New Jersey waters.

NMFS' response: We appreciate the concern expressed by COA. NMFS utilizes the best available science when analyzing which species may be impacted by an applicant's proposed activities. Based on information found in the scientific literature, as well as based on density models developed by Duke University, all marine mammal

species included in the proposed **Federal Register** Notice (87 FR 30972, May 20, 2022) have some likelihood of occurring in Vineyard Northeast's survey areas. Furthermore, the MMPA requires us to evaluate the effects of the specified activities in consideration of the best scientific evidence available and, if the necessary findings are made, to issue the requested take authorization. The MMPA does not allow us to delay decision making in hopes that additional information may become available in the future.

Regarding the lack of baseline information cited by COA, with specific concern regarding harbor seals, NMFS points towards two sources of information for marine mammal baseline information: the Ocean/Wind Power Ecological Baseline Studies, January 2008 - December 2009 completed by the New Jersey Department of Environmental Protection in July 2010 (*https://dspace.njstatelib.org/xmlui/handle/10929/68435*) and the Atlantic Marine Assessment Program for Protected Species (AMAPPS; *https://www.fisheries.noaa.gov/new-england-mid-atlantic/population-assessments/atlantic-marine-assessment-program-protected*) with annual reports available from 2010 to 2020 (*https://www.fisheries.noaa.gov/resource/publication-database/atlantic-marine-assessment-program-protected-species*). NMFS has duly considered this and all available information.

NMFS has determined that no new information has become available, nor do the commenters present additional information, that would change our determinations since the publication of the proposed notice.

Changes from the Proposed to the Final IHA

Since publication of the notice of proposed IHA, NMFS has acknowledged that the population estimate of NARWs is now under 350 animals (*https://www.fisheries.noaa.gov/species/north-atlantic-right-whale*). However, NMFS has determined that this change in the abundance estimate would not change the

estimated take of NARWs or authorized take number, nor affect our ability to make the required findings under the MMPA for Vineyard Northeast's survey activities. The status and trends of the NARW population remain unchanged for the purposes of our analyses.

In addition, we made corrections to take values for several species in Table 5 of this notice to ensure alignment with the analogous values in Table 1 of the draft IHA. Finally, we added condition 5(b) to the IHA, which states that on a case-by-case basis, non-independent observers may be approved by NMFS for limited, specific duties (*i.e.,* stand watch while the independent NMFS-approved PSO takes the required 2-hour break between 4-hour shifts) om smaller vessels with limited occupancy. Non-independent observers may only perform PS0 duties during daylight hours and in nearshore waters. Vineyard Northeast intends to utilize an approximately 15-m (50-ft) vessel that can accommodate a captain, 4-person survey team, one independent NMFS-approved PSO, and a project overseer. The onboard project overseer will serve as the non-independent relief observer and must be trained on protected species detection and identification, vessel strike minimization procedures, and reporting requirements in this IHA. In addition, the relief observer must have no duties other than marine mammal monitoring when on watch. Finally, if a whale is observed but cannot be confirmed as a species other than a right whale, the non-independent observer must assume that it is a right whale, and take appropriate action (*i.e.,* call for a delay or shutdown). Given the limited role of the non-independent observer and the training and additional safeguards required, we conclude that the condition 5(b) will not affect our analyses or determination that the IHA meets all applicable requirements.

Description of Marine Mammals in the Area of Specified Activities

Sections 3 and 4 of Vineyard Northeast's application summarize available information regarding status and trends, distribution and habitat preferences, and behavior and life history, of the potentially affected species. NMFS fully considered all

of this information and, rather than replicating it here, we refer the reader to these descriptions in the application. Additional information regarding population trends and threats may be found in NMFS' 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' website (*https://www.fisheries.noaa.gov/find-species)*.

Table 2 lists all species or stocks for which take is 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, NMFS follows Committee on Taxonomy (2022). 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' 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' 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' U.S. Atlantic and Gulf of Mexico SARs. All values presented in Table 2 are the most recent available at the time of publication and are available in the Draft 2021 SARs (*Hayes et al.*, 2021), available at:

https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports).

Table 2 — Species Likely Impacted by the Specified Activities

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)						
Blue whale	*Balaenoptera musculus*	Western North Atlantic	E/D, Y	402 (unk, 402; 2008	0.8	0
North Atlantic right whale	*Eubalaena glacialis*	Western North Atlantic	E/D, Y	368[4] (0; 364; 2019)	0.7	7.7
Humpback whale	*Megaptera novaeangliae*	Gulf of Maine	-/-; Y	1,396 (0; 1,380; 2016)	22	12.15
Fin whale	*Balaenoptera physalus*	Western North Atlantic	E/D, Y	6,802 (0.24; 5,573; 2016)	11	1.8
Sei whale	*Balaenoptera borealis*	Nova Scotia	E/D, Y	6,292 (1.02; 3,098; 2016)	6.2	0.8
Minke whale	*Balaenoptera acutorostrata*	Canadian Eastern Coastal	-/-, N	21,968 (0.31; 17,002; 2016)	170	10.6
Superfamily Odontoceti (toothed whales, dolphins, and porpoises)						
Sperm whale	*Physeter macrocephalus*	North Atlantic	E/D, Y	4,349 (0.28; 3,451; 2016)	3.9	0
Long-finned pilot whale	*Globicephala melas*	Western North Atlantic	-/-, N	39,215 (0.3; 30,627; 2016)	306	29
Killer whale	*Orcinus Orca*	Western North Atlantic	-/-, N	unk (unk; unk; 2016)	unk	0
False killer whale	*Pseudorca crassidens*	Western North Atlantic	-/-, N	1,791 (0.56; 1,154; 2016)	12	0
Atlantic spotted dolphin	*Stenella frontalis*	Western North Atlantic	-/-, N	39,921 (0.27; 32,032; 2016)	320	0
Atlantic white-sided dolphin	*Lagenorhynchus acutus*	Western North Atlantic	-/-, N	93,233 (0.71; 54,443; 2016)	544	227
Bottlenose dolphin	*Tursiops truncatus*	Western North Atlantic Northern Migratory Coastal	-/D, Y	6,639 (0.41; 4,759; 2016)	48	12.2 - 21.5
		Western North Atlantic Offshore	-/-, N	62,851 (0.23; 51,914; 2016)	519	28
Common dolphin	*Delphinus delphis*	Western North Atlantic	-/-, N	172,974 (0.21, 145,216, 2016)	1,452	390
Risso's dolphin	*Grampus griseus*	Western North Atlantic	-/-, N	35,215 (0.19; 30,051; 2016)	301	34

White-beaked dolphin	*Lagenorhynchus albirostris*	Western North Atlantic	-/-, N	536,016 (0.31; 415,344; 2016)	4,153	0
Harbor porpoise	*Phocoena phocoena*	Gulf of Maine/Bay of Fundy	-/-, N	95,543 (0.31; 74,034; 2016)	851	164
Order Carnivora—Superfamily Pinnipedia						
Harbor seal	*Phoca vitulina*	Western North Atlantic	-/-, N	61,336 (0.08; 57,637; 2018)	1,729	339
Gray seal[5]	*Halichoerus grypus*	Western North Atlantic	-/-, N	27,300 (0.22; 22,785; 2016)	1,389	4,453

[1] - 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 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: *www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments*. CV is the coefficient of variation; N_{min} is the minimum estimate of stock abundance. In some cases, CV is not applicable.
[3] - These values, found in NMFS' SARs, represent annual levels of human-caused mortality plus serious injury from all sources combined (*e.g.,* commercial fisheries, ship strike).
[4] - The draft 2022 SARs have yet to be released; however, NMFS has updated its species webpage to recognize the population estimate for NARWs is now below 350 animals (*https://www.fisheries.noaa.gov/species/north-atlantic-right-whale*).
[5] - NMFS' gray seal stock abundance estimate (and associated PBR value) applies to U.S. population only. Total stock abundance (including animals in Canada) is approximately 450,000. The annual mortality and serious injury (M/SI) value given is for the total stock.

Table 2 includes 15 species (with 16 managed stocks) that temporally and spatially co-occur with the activity to the degree that take is reasonably likely to occur. Vineyard Northeast is also requesting take of four species that are considered rare in the survey area (*i.e.,* blue whale, killer whale, false killer whale, and white-beaked dolphin). These species are generally considered unlikely to occur in the survey area but the take request is made on the basis of recent detections (acoustic and/or visual) of these species in the survey area (see **Estimated Take** section for more details). In total, Vineyard Northeast has requested take of 19 species (with 20 managed stocks). In addition to what is included in Sections 3 and 4 of the application, the SARS, and NMFS' website, further detail informing the baseline for select species (*i.e.,* information regarding status and distribution) was provided in the notice of the proposed IHA (87 FR 30872; May 20, 2022) and is not repeated here. No new information other than that discussed above is available since publication of that notice.

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

*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, 2013).

For more detail concerning these groups and associated frequency ranges, please see NMFS (2018) for a review of available information.

Potential Effects of Specified Activities on Marine Mammals and their Habitat

The effects of underwater noise from the deployed acoustic sources have the potential to result in behavioral harassment of marine mammals in the vicinity of the study area. The **Federal Register** notice for the proposed IHA (87 FR 30872; May 20, 2022) included a discussion of the effects of anthropogenic noise on marine mammals and their habitat, therefore, that information is not repeated here; please refer to the **Federal Register** notice (87 FR 30872; May 20, 2022) for that information.

Estimated Take

This section provides the process by which the estimated takes were devised and the number of incidental takes NMFS authorized in the IHA, which informs both NMFS' consideration of "small numbers" and the negligible impact determinations.

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 are 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 produced by the acoustic sources planned for use, Level A harassment is neither anticipated (even absent mitigation), nor authorized. Consideration of the anticipated effectiveness of the mitigation measures (*i.e.,* pre-start clearance and shutdown measures), discussed in detail below in the **Mitigation** section, further strengthens the conclusion that Level A harassment is not a reasonably expected outcome of the survey activity. As previously described, no serious injury or mortality is anticipated or authorized for this activity. Below we describe how 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) and 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 take estimates.

Acoustic Thresholds

NMFS uses 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 – 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 may be behaviorally harassed (*i.e.,* Level B harassment) when exposed to underwater anthropogenic noise above received levels of 160 dB re 1 µPa (rms) for impulsive sources (*i.e.*., boomers, sparkers) and non-impulsive, intermittent sources (*e.g.,* CHIRP SBPs) evaluated here for Vineyard Northeast's proposed activity.

Level A harassment - 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.

Vineyard Northeast's proposed activity includes the use of impulsive (*i.e.,* boomers and sparkers) and non-impulsive (*e.g.,* CHIRP SBPs) sources. However, as discussed above, NMFS has concluded that Level A harassment is not a reasonably likely outcome for marine mammals exposed to noise from the sources proposed for use here, and the potential for Level A harassment is not evaluated further in this document. Please see Vineyard Northeast's application for details of a quantitative exposure analysis (*i.e.,* calculated distances to Level A harassment isopleths and Level A harassment exposures). Vineyard Northeast did not request authorization of take by Level A harassment and no take by Level A harassment is authorized.

Ensonified Area

NMFS has developed a user-friendly methodology for estimating the extent of the Level B harassment isopleths associated with relevant HRG survey equipment (NMFS, 2020). This methodology incorporates frequency and directionality to refine estimated ensonified zones. For acoustic sources that operate with different beamwidths, the maximum beamwidth was used, and the lowest frequency of the source was used when calculating the frequency-dependent absorption coefficient (Table 1).

Results of modeling using the methodology described above indicated that, of the HRG survey equipment planned for use by Vineyard Northeast that has the potential to result in Level B harassment of marine mammals, the Applied Acoustics AA251 Boomer would produce the largest distance to the Level B harassment isopleth (178 m). Estimated distances to the Level B harassment isopleth for all source types evaluated here, including the boomer, are provided in Table 4. Although Vineyard Northeast does not expect to use the AA251 Boomer source on all planned survey days, it proposes to assume, for purposes of analysis, that the boomer sources would be used on all survey days and

across all hours within a given survey day. This is a conservative approach, as the actual sources used on individual survey days, or during a portion of a survey day, may produce smaller distances to the Level B harassment isopleth.

Table 4 — Distances to Level B Harassment Isopleth

Equipment	Distance to Level B Harassment Isopleth (m)
Edge Tech Chirp 216	4
GeoMarine Geo Spark 2000 (400 tip)	141
Applied Acoustics AA 251 Boomer	178

Marine Mammal Occurrence

In this section, we provide the information about 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, 2021) represent the best available information regarding marine mammal densities in the survey area. The density data presented by Roberts *et al.* (2016, 2017, 2018, 2021) incorporates aerial and shipboard line-transect survey data from NMFS and other organizations and incorporates data from 8 physiographic and 16 dynamic oceanographic and biological covariates, and controls 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: *seamap.env.duke.edu/models/Duke-EC/.*

Density estimates for all marine mammal species within the survey area were obtained using the most recent model results by Roberts *et al.* (2016; 2017; 2018; 2021). Those data provide density estimates for a species or guild within 10 km x 10 km grid cells (100 km^2) or, in the case of NARW densities, within 5 km x 5 km grid cells (25

km^2) , on a monthly or annual basis, depending on the species. Using a GIS (ESRI 2017), both the survey area polygon and the NARW Cape Cod Bay SMA polygon (see Figure 1 in the notice of the proposed IHA (87 FR 30872; May 20, 2022)) were used to select grid cells from the Roberts *et al.* (2016; 2017; 2018; 2021) data that contain the most recent monthly or annual estimates for each species for the months of May through December. For the months of January through April, only the survey area polygon was used to select density grid cells since it excludes waters within Cape Cod Bay, where no surveys will occur while the Cape Cod Bay SMA is active from January 1 through May 15. The average monthly abundance for each species was calculated as the mean value of all grid cells within the survey area and then converted to density (individuals/1 km^2) by dividing by 100 km^2. Finally, an average annual density was calculated by taking the mean across all 12 months for each species. See Table 8 in Vineyard Northeast's IHA application for all density information. When determining requested take numbers, Vineyard Northeast also considered average group sizes based on PSO sighting reports from previous surveys in the region.

Take Calculation and Estimation

Here we describe how the information provided above is brought together to produce a quantitative take estimate. In order to estimate the number of marine mammals predicted to be exposed to sound levels that would result in harassment, radial distances to predicted isopleths corresponding to harassment thresholds are calculated, as described above. The maximum distance (*i.e.,* 178 m distance associated with boomers) to the Level B harassment criterion and the estimated trackline distance traveled per day by a given survey vessel (*i.e.,* 80 km) are then used to calculate the daily ensonified area, or zone of influence (ZOI) around the survey vessel.

The ZOI is a representation of the maximum extent of the ensonified area around a HRG sound source over a 24-hr period. The ZOI for each piece of equipment operating at or below 180 kHz was calculated per the following formula:

$ZOI = (Distance/day \times 2r) + \pi r^2$

Where r is the linear distance from the source to the harassment isopleth.

The largest daily ZOI (28.6 km^2), associated with the proposed use of boomers, was applied to all planned survey days.

Potential Level B density-based harassment exposures are estimated by multiplying the average annual density of each species within the survey area by the daily ZOI. That product is then multiplied by the number of planned survey days (869), and the product is rounded to the nearest whole number. These results are shown in Table 5.

For other less common species, the predicted densities from Roberts *et al.* (2016; 2017; 2018; 2021) are very low and the resulting density-based estimate is less than a single animal or a typical group size for the species. In such cases, the density-based exposure estimate is increased to the mean group size for the species to account for a chance encounter during an activity. Mean group sizes for each species were calculated from recent aerial and/or vessel-based surveys (Kraus *et al*, 2016; Palka *et al.*, 2017) as shown in Table 5 (below) and Table 10 of the IHA application.

The larger of the two estimates from the approaches described above, density-based exposure estimates or mean group size, was selected as the amount of authorized take as shown in Table 5. However, based on observational data collected during prior HRG surveys in this area, the density of common dolphins predicted by the Roberts *et al.* (2018) model does not appear to adequately reflect the number of common dolphins that may be encountered during the planned surveys. Data collected by PSOs on survey vessels operating in 2020–2021 showed that an average of approximately 16 common dolphins may be observed within 200 m of a vessel (the approximate Level B harassment

isopleth distance) per survey day (Vineyard-Wind 2021). Multiplying the anticipated 869 survey days by 16 common dolphins per day results in an estimated take of 13,904 common dolphins, the amount of authorized take of common dolphins shown in Table 5.

The estimated monthly density of seals provided in Roberts *et al.* (2018) includes all seal species present in the region as a single guild. To split the resulting "seal" density-based exposure estimate by species, Vineyard Northeast multiplied the estimate by the proportion of the combined abundance attributable to each species. Specifically, Vineyard Northeast summed the SAR N_{best} abundance estimates (Hayes *et al.* 2021) for the two species (gray seal = 27,300, harbor seal = 61,336; total = 88,636) and divided the total by the estimate for each species to get the proportion of the total for each species (gray seal = 0.308; harbor seal = 0.692). The total estimated exposure from the "seal" density provide by Roberts *et al.* (2018) was then multiplied by these proportions to get the species-specific density-based exposure estimates.

Bottlenose dolphins encountered in most of the survey area would belong to the Western North Atlantic Offshore stock. However, approximately 21 percent of the survey area is located south of New York Harbor where members of the North Atlantic Northern Migratory Coastal stock may be present. Therefore, NMFS assumes that 21 percent (151 individuals) of the authorized bottlenose dolphin take would be from the North Atlantic Northern Migratory Coastal stock while the remaining 79 percent (569 individuals) would likely be from the Western North Atlantic Offshore stock.

Similarly, the distributions of short- and long-finned pilot whales are described in Hayes *et al.* (2020, 2021) as likely overlapping in the southern portion of the survey area off New Jersey. However, a review of sightings data available on the Ocean Biodiversity Information System (OBIS) data portal (*http://seamap.env.duke.edu*) that were positively identified to either species showed only long-finned pilot whale sightings occurring in the survey area, while the vast majority of short-finned pilot whale sightings occurred well to

the south of the survey area. For that reason, all authorized pilot whale take is of long-finned pilot whales.

Species considered to be rare or not expected to occur in the survey area were not included in Vineyard Northeast's previous density-based exposure estimates because the densities would be too low to provide meaningful results. Nonetheless, species considered to be rare are occasionally encountered. For example, white-beaked dolphins were observed in both 2019 and 2020 during marine site characterization surveys in the survey area (Vineyard Wind 2019, 2020), with the sighting of white-beaked dolphins in 2019 consisting of 30 animals. Other rare species encountered in the survey area during previous surveys include the false killer whale in 2019 (five individuals) and 2021 (one individual) (Vineyard Wind 2019, 2021), and killer whale in 2022 (two individuals; data not yet submitted). Vineyard Northeast is requesting take of each of these three species, based on the largest number of individuals observed within 1 year (Table 5).

Finally, recent deployments of passive acoustic devices in the New York Bight yielded detections of blue whale vocalizations approximately 20 nautical miles (nm) (37 km) southeast of the entrance to New York Harbor during the months of January, February, and March (Muirhead *et al.* 2018); blue whale vocalizations have also been recorded off the coast of Rhode Island during acoustic surveys (Kraus *et al.* 2016). More recently, during 3 years of monthly aerial surveys in the New York Bight (2017–2020), Zoidis *et al.* (2021) reported 3 sightings of blue whales, totaling 5 individuals. Although sightings of blue whales in the survey area are rare, in light of these recent observations of blue whales, Vineyard Northeast requested, and NMFS has authorized, take of one blue whale based on the average group size (Palka *et al.*, 2017) (Table 5).

Table 5 – Summary of Authorized Take

Species	Density-based Exposure Estimate	Mean Group Size[1]	Take by Level B Harassment Requested	Abundance	Authorized Take as Percent of Stock

Blue whale[2]	0.2	1.0	1	402	0.2
Fin whale	76.7	1.8	77	6,802	1.1
Humpback whale	46.2	2.0	47	1,396	3.4
Minke whale	41.2	1.2	42	21,968	0.2
North Atlantic right whale	39.4	2.4	40	368	10.9
Sei whale	4.8	1.6	5	6,292	0.1
Sperm whale	11.9	1.5	12	4,349	0.3
Killer whale[2]	--	--	2	Unk	0.0
False killer whale[2]	--	--	5	1,791	0.3
Atlantic spotted dolphin	19.3	29.0	29	39,921	0.1
Atlantic white-sided dolphin	1,123.3	27.9	1,124	92,233	1.2
Bottlenose dolphin (Western North Atlantic offshore stock)	720	7.8	569	62,851	0.9
Bottlenose dolphin (Western North Atlantic northern migratory coastal stock)			151	6,639	2.3
Common dolphin	1,159.3	34.9	13,904	172,974	8.0
Long-finned pilot whale	404.8	8.4	405	39,215	1.0
White-beaked dolphin[2]	--	--	30	536,016	0.0
Risso's dolphin	100.1	5.4	101	35,215	0.3
Harbor porpoise	2,032.4	2.7	2,033	95,543	2.1
Gray seal	417.8	0.4	418	27,300	1.5
Harbor seal	938.7	1.0	939	61,336	1.5

[1] - Mean group size based on Kraus *et al.*, 2016 (fin, humpback, minke, North Atlantic right, sei, and pilot whales; Atlantic white-sided, bottlenose, and common dolphins; harbor porpoise) or Palka *et al.*, 2017 (blue and sperm whales; Atlantic spotted and Risso's dolphin; harbor and gray seals)
[2] - Rare (or unlikely to occur) species

Table 5 provides the total amount of take authorized in the IHA.

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 and impact on operations.

Mitigation for Marine Mammals and their Habitat

The following mitigation measures must be implemented during Vineyard Northeast's planned marine site characterization surveys.

Pre-Start Clearance

Marine mammal clearance zones (CZs) must be established around the HRG survey equipment:

- 500-m SZ for NARWs; and
- 100-m SZ for all other marine mammal species

Vineyard Northeast must implement a 30-minute monitoring period of the CZs prior to initiation of ramp-up of HRG equipment. During this period, CZs will be monitored by PSOs, using the appropriate visual technology.

Ramp-Up

Where technically feasible (*e.g.,* equipment is not on a binary on/off switch), a ramp-up procedure will be used for HRG survey equipment capable of adjustment of energy levels at the start or restart of survey activities. This procedure will be used at the beginning of HRG survey activities 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. 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 sources, when technically feasible. Operators must ramp up sources to half power for five minutes and then proceed to full power. A 30-minute pre-start clearance observation period must occur prior to the start of ramp up (or initiation of source used if ramp up is not technically feasible). If a marine mammal is observed within its CZ during the pre-start clearance period, ramp-up may not begin until the animal(s) has been observed exiting its respective CZ or until an additional time has elapsed with no further sighting (*i.e.,* 15 minutes for small dolphins and seals, and 30 minutes for all other marine mammal species). In addition, activation of survey equipment through ramp-up procedures is not permitted when visual observation of the pre-start clearance/shutdown zone is not expected to be effective using the appropriate visual technology (*i.e.,* during inclement conditions such as heavy rain or fog).

Shutdown Procedures

Marine mammal shutdown zones (SZs) must established around the HRG survey equipment:

- 500-m SZ for NARWs; and

- 100-m SZ for all other marine mammal species

The vessel operator must comply immediately with any call for shutdown by a PSO. Any disagreement between the PSO and vessel operator 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 SZ or the relevant time has elapsed without redetection *(i.e.,* 15 minutes for harbor porpoise, 30 minutes for all other species).

The shutdown requirement is waived for pinnipeds and for small delphinids of the following genera: *Delphinus, Lagenorhynchus, Stenella (frontalis* only*),* and *Tursiops*.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 detected in the shutdown zone and belongs to a genus other than those specified.

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 only if PSOs have maintained constant observation and the SZs are clear of marine mammals. If the acoustic source is turned off for more than 30 minutes, it may only be restarted after PSOs have cleared the SZs for 30 minutes. If a species for which authorization has not been granted, or a species for which authorization has been granted but the authorized number of takes have been met, approaches or is observed within the applicable Level B harassment zone (178 m), shutdown is required. 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.,* CHIRP SBPs).

Vessel Strike Avoidance

Vineyard Northeast must ensure that vessel operators and crew maintain a vigilant watch for marine mammals and slow down or stop their vessels to avoid striking these species. All personnel responsible for navigation and marine mammal observation duties will receive site-specific training on marine mammals sighting/reporting and vessel strike avoidance measures. Vessel strike avoidance measures include the following, except under circumstances when complying with these requirements would put the safety of the vessel or crew at risk:

- Vessel operators and crews must maintain a vigilant watch for all marine mammals and slow down, stop their vessel, or alter course, as appropriate and regardless of vessel size, to avoid striking any marine mammal. 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 to identify a marine mammal as a NARW, other whale (defined in this context as sperm whales or baleen whales other than NARWs), or other marine mammal.
- Members of the monitoring team will consult NMFS North Atlantic right whale reporting system and Whale Alert at the start of every PSO shift, for situational awareness regarding the presence of NARWs throughout the survey area, and for the establishment of Slow Zones (including visual-detection-triggered dynamic management areas (DMAs) and acoustically-triggered slow zones) within or near the survey area.
- All survey vessels, regardless of size, must observe a 10-kn (2.1 m/s) speed restriction in specific areas designated by NMFS for the protection of NARW from vessel strikes, including SMAs and DMAs, when in effect;

- Vessel speeds must be reduced to 10 kn (5.1 m/s) or less when mother/calf pairs, pods, or large assemblages of cetaceans are observed near a vessel;
- All vessels must maintain a minimum separation distance of 500-m from NARWs and other ESA-listed species. If an ESA-listed species is sighted within the relevant separation distance, the vessel must steer a course away at 10 kn (5.1 m/s) or less until the 500-m separation distance has been established. If a whale is observed but cannot be confirmed as a species that is not ESA-listed, the vessel operator must assume that it is an ESA-listed species and take appropriate action.
- All vessels must, to the maximum extent practicable, attempt to maintain a minimum separation distance of 100-m from all 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 must 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.

Seasonal Restrictions

Survey activities using HRG equipment operating at or below 180 kHz are prohibited from January 1 through May 15 within the NARW SMA in Cape Cod Bay.

Crew Training

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. In addition to the aforementioned measures, Kitty Hawk will abide by all marine mammal relevant conditions in the Greater Atlantic Regional Office's (GARFO) informal programmatic consultation, dated June 29, 2021 (revised September 2021), pursuant to section 7 of the ESA. These include the relevant best management practices of project design criteria (PDCs) 4, 5, and 7.

Based on our evaluation of the measures contained in the IHA, NMFS has determined that the mitigation measures provide the means of effecting 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.

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 to both 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.

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. Vineyard Northeast must 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. As described previously, on a case-by-case basis, non-independent observers may be approved by NMFS for limited, specific duties (*i.e.,* stand watch while an independent NMFS-approved PSO takes the required 2-hour break between 4-hour shifts) on the smaller (~50 ft or 15 m), nearshore survey vessel that can only accommodate the captain, a 4-member survey team, an independent PSO, and a project overseer. During these 12-hr daylight-only surveys, the project overseer will serve as the non-independent observer; they must receive training in protected species detection and identification, vessel strike minimization procedures, and the reporting requirements in this IHA, and must have no other duties other than marine mammal monitoring while on watch. Finally, should the non-independent observer observe a whale that cannot be confirmed to species, they must assume that it is a right whale and take the appropriate action (*i.e.,* call for a delay or shutdown). Section 5 of the IHA contains further details regarding PSO approval.

The PSOs will be responsible for monitoring the waters surrounding each survey vessel to the farthest extent permitted by sighting conditions, including shutdown zones, during all HRG survey operations. PSOs will visually monitor and identify marine mammals, including those approaching or entering the established shutdown zones during survey activities. It will be the responsibility of the Lead PSO on duty to communicate the presence of marine mammals to the vessel operator 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 a specified 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° 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 observation 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 shutdown 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, behavior); and details of any observed marine mammal behavior that occurs (*e.g.,* noted behavioral disturbances).

Reporting Measures

Within 90 days after completion of survey activities or expiration of this IHA, whichever comes sooner, a final technical 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. A final report must be submitted within 30 days following resolution of any comments on the draft report. All draft and final marine mammal monitoring reports must be submitted to *PR.ITP.MonitoringReports@noaa.gov*, *nmfs.gar.incidental-take@noaa.gov,* and *ITP.Esch@noaa.gov*. The report must contain at minimum, the following:

- PSO names and affiliations;
- Dates of departures and returns to port with port name;
- 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-start 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 NARW is observed at any time by PSOs or personnel on any survey vessels, during surveys or during vessel transit, Vineyard Northeast must immediately report sighting information to the NMFS North Atlantic Right Whale Sighting Advisory System (866) 755-6622. NARW sightings in any location may also be reported to the U.S. Coast Guard via channel 16.

In the event that Vineyard Northeast personnel discover an injured or dead marine mammal, Vineyard Northeast must report the incident as soon as feasible to the NMFS Office of Protected Resources (OPR) and the NMFS New England/Mid-Atlantic Stranding Network by phone (866-755-6622) and by email (*nmfs.gar.stranding@noaa.gov* and *PR.ITP.MonitoringReports@noaa.gov)*. The report must include the following information:

1. Time, date, and location (latitude/longitude) of the first discovery (and updated location information if known and applicable);
2. Species identification (if known) or description of the animal(s) involved;

3. Condition of the animal(s) (including carcass condition if the animal is dead);

4. Observed behaviors of the animal(s), if alive;

5. If available, photographs or video footage of the animal(s); and

6. 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 the activities covered by the IHA, Vineyard Northeast must report the incident to NMFS OPR and the NMFS Office of Protected Resources and the NMFS New England/Mid-Atlantic Stranding Network by phone (866-755-6622) and by email (*nmfs.gar.stranding@noaa.gov* and *PR.ITP.MonitoringReports@noaa.gov*) as soon as feasible but within 24 hours. The report must 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' 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, the majority of our analysis applies to the species listed in Table 5, given that many of the anticipated effects of the survey to be similar in nature. Where there are meaningful differences between species or stocks, or groups of species, in anticipated individual responses to activities, impact of the authorized take on the population due to differences in population status, or impacts on habitat, they are

included in a separate subsection. NMFS does not anticipate that mortality, serious injury, or injury would occur for any species as a result from HRG surveys, even in the absence of mitigation, and no serious injury or mortality is authorized.

As discussed in the **Potential Effects of Specified Activities on Marine Mammals and their Habitat** section above, non-auditory physical effects and vessel strike are not expected to occur. NMFS expects that all potential takes would be in the form of short-term 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). As described above, Level A harassment is not expected to occur given the nature of the operations, the estimated size of the Level A harassment zones, and the required shutdown zones for certain activities.

In addition to being temporary, the maximum harassment zone around a survey vessel is 178 m from use of the Applied Acoustics AA251 Boomer. When estimating Level B harassment take numbers, Vineyard Northeast made the conservative assumption that this maximum zone size applied to all 869 survey days when, in reality, the Applied Acoustics AA251 Boomer will not be used throughout the entire 24 hours of every survey day. The other acoustic sources with the potential to result in take of marine mammals are expected to produce harassment zones with even smaller radii (141 m, Edge Tech CHIRP 216; 4 m, GeoMarine Geo Spark 2000). The ensonified area surrounding each acoustic source is relatively small compared to the overall distribution of the animals in the area and their use of the habitat.

In addition, 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 survey area.

North Atlantic Right Whales

The status of the NARW population is of heightened concern and, therefore, merits additional analysis. As described in the Federal Register notice of the proposed IHA (87 FR 30872; May 20, 2022), elevated NARW mortalities began in June 2017 and there is currently an active UME. Overall, preliminary findings support human interactions, specifically vessel strikes and entanglements, as the cause of death for the majority of NARWs.

The survey area partially overlaps with the migratory corridor BIA (Figure 2.5 in LaBrecque *et al.*, 2015) and migratory route SMA for NARWs, which extends from Massachusetts to Florida, and from the coast to beyond the shelf break. That the spatial extent of the sound produced by the survey would be very small relative to the spatial extent of the available migratory habitat in the BIA supports the expectation that NARW migration will not be impacted by the survey.

The northernmost and northeastern portions of the survey area overlap with the Cape Cod Bay (January 1-May 15), Off Race Point (March 1-April 30), and Great South Channel (April 1-July 31) SMAs. There is also a partial overlap between the eastern edge of survey area and the western-most portion of the Great South Channel feeding BIA (April 1 to June 30) and a feeding BIA within and north of Cape Cod Bay (February 1 to April 30) (Figure 2.5 in LaBrecque *et al.*, 2015). The seasonal restriction on survey activities in Cape Cod Bay (which is also part of a feeding BIA (February 1-April 30) and

ESA-designated critical foraging habitat for NARWs) when the SMA is active minimizes potential impacts on the species' foraging when densities of NARWs and their prey are expected to be highest in that section of the survey area. The seasonal restriction also minimizes the likelihood that survey activities would occur during the period when the Off Race Point SMA is effective, which overlaps in time with and is in close proximity to the Cape Cod Bay SMA.

The slow survey speed (approximately 4 kn (2.1 m/s)) and required vessel strike avoidance measures will decrease the risk of ship strike such that no ship strike is expected to occur during Vineyard Northeast's survey activities. Additionally, although take by Level B harassment of NARWs has been authorized by NMFS, we anticipate a very low level of harassment, should it occur, because Vineyard Northeast is required to maintain a shutdown zone of 500 m if a NARW is observed. The authorized take accounts for any missed animals wherein the survey equipment is not shutdown immediately. Because shutdown would be called for immediately upon detection (if the whale is within 500 m), it is likely the exposure time would be very limited and received levels would not be much above the harassment threshold. Further, the 500-m shutdown zone for right whales is conservative, considering the distance to the Level B harassment isopleth for the most impactful acoustic source (*i.e.,* Applied Acoustics AA251 Boomer - which may not be used on all survey days) is estimated to be 178 m, and thereby minimizes the potential for behavioral harassment of this species. Last, the authorized take of 40 represents instances of takes, and while it is possible that one individual could incur more than one of those 40 takes (*i.e.,* on multiple days), given the mobile nature of the surveys and the whales, there is no reason to think that any individual whale would accrue more than 2 or 3 within the year. The small magnitude and severity of take by Level B harassment is not expected to impact the reproduction or survival and any individuals.

As noted previously, Level A harassment is not expected due to the characteristics of the signals produced by the acoustic sources planned for use; this finding is further enforced by the mitigation measures. NMFS does not anticipate NARW takes that would result from Vineyard Northeast's activities would impact annual rates of recruitment or survival. Thus, any takes that occur will not result in population level impacts.

Other Marine Mammal Species with Active UMEs

There are several active UMEs occurring in the vicinity of Vineyard Northeast's 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, and the total numbers of stranded individuals (123) from 2017-2022 is below the Potential Biological Removal for the species (170). The status of common minke whales relative to Optimal Sustainable Yield (OSP) in the U.S. Atlantic EEZ is unknown. Common minke whales are not listed as threatened or endangered under the Endangered Species Act, and the Canadian East Coast stock is not considered strategic under the Marine Mammal Protection Act. It is expected that the uncertainties described above will have little effect on the designation of the status of the entire stock.

The required mitigation measures are expected to reduce the number and/or severity of the authorized takes for all species listed in Table 5, including those with

active UMEs, to the level of least practicable adverse impact. In particular, ramp-up procedures would provide animals in the vicinity of the survey vessel the opportunity to move away from the sound source 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 authorized.

NMFS expects that takes would be in the form of short-term behavioral harassment by way of 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, required mitigation measures would further reduce exposure to sound that could result in more severe behavioral harassment.

Biologically Important Areas for Other Species

Biologically Important Areas for Fin Whales

A small fin whale feeding BIA (March-October) located east of Montauk Point, New York (Figure 2.3 in LaBrecque *et al.*, 2015), is fully encompassed by the survey area (see Figure 1 in the **Federal Register** notice of the proposed IHA (87 FR 30872, May 20, 2022)). A second larger yearlong feeding BIA extends from the Great South Channel (east of the smaller fin whale feeding BIA) north to southern Maine, and partially overlaps the northernmost portion of the survey area. The surveys will cover 69,529 km (43,203 miles) of trackline throughout 24,836 square kilometers (*i.e.*, total survey area; 9,597 square miles), of which the BIA just east of Montauk Point occupies a small proportion (2,933 km^2). The amount of time Vineyard Northeast will survey in the area overlapping this small BIA will also be a fraction of the 869 planned survey days

and, when surveys do occur, the ensonified Level B harassment zone will be limited to a maximum 178-m radius from the boomer. Any disruption of feeding behavior or avoidance of the western BIA by fin whales on survey days from March to October is expected to be temporary, with habitat utilization by fin whales returning to baseline once the disturbance ceases. In addition, the larger fin whale feeding BIA will provide suitable alternate habitat and ample foraging opportunities consistently throughout the year, rather than seasonally like the smaller, western BIA. Because of the temporary nature of the disturbance and the availability of similar habitat and resources in the surrounding area, the impacts of these surveys to fin whales and the food sources that they utilize are not expected to cause significant or long-term consequences for individual fin whales or their population.

Biologically Important Area for Sei Whales

An extensive sei whale feeding BIA (May-November) stretching from the 25-m depth contour off central Maine and Massachusetts to the 200-m contour in central Gulf of Maine, including the northern shelf break of Georges Bank (see Figure 2.2 in LaBrecque *et al.*, 2015). This BIA also includes the southern shelf break area of Georges Bank from depths of 100 m to 2,000 m and the Great South Channel. Similar to NARWs, the most northern and eastern parts of the survey area overlaps the western side of this BIA (just to the east and north of Cape Cod). However, this very limited overlap is sufficiently small that feeding opportunities for sei whales are not expected to be reduced appreciably, if at all.

Biologically Important Area for Minke Whales

LaBrecque *et al.* (2015) define a vast minke whale feeding BIA (March-November) in waters less than 200 m, extending throughout the southern and southwestern section of the Gulf of Maine, including George's Bank, the Great South Channel, Cape Cod Bay and Massachusetts Bay, Stellwagen Bank, Cape Anne, and

Jeffreys Ledge (Figure 2.1 in LaBrecque *et al.*, 2015). Relative to the size of this BIA, the very small overlap of its western side and the survey area (including waters just east of Cape Cod, Cape Cod Bay and Massachusetts Bay), coupled with the small ensonified zone when surveys do occur in this overlapping area, is not expected to limit access to suitable habitat or deter foraging behavior for minke whales in any perceptible way.

Biologically Important Area for Humpback Whales

A humpback whale feeding BIA (March-December; Figure 2.8 in LaBrecque *et al* .2015) spans the Gulf of Maine, Stellwagen Bank, and the Great South Channel. As is the case for fin, sei, and minke whales, this large BIA overlaps only the most northern and northeastern portion of Vineyard Northeast's survey area. Even if humpback whales completely avoided this overlapping area while the acoustic sources used during surveys were active, nearby suitable habitat would be easily accessible as would their primary prey (herring and capelin). Alternatively, if humpback whales were present while acoustic sources were active, any disturbance is expected to be temporary and minor, such that foraging behavior (if it were previously occurring) would resume once the use of active acoustics ceases.

As previously discussed, impacts from the surveys are expected to be localized to the specific area of activity and only during periods of time where Vineyard Northeast's acoustic sources are active. While areas of biological importance to foraging fin whales, sei whales, minke whales, and humpback whales exist within the survey area, NMFS does not expect this specified activity to affect these areas or any species' ability to utilize prey resources within the BIAs, given the nature of the survey activity, and the combination of the mitigation and monitoring measures being required of Vineyard Northeast.

Several major haul-out sites exist for harbor seals within the survey area along the New Jersey coast (*e.g.,* Great Bay, Sandy Hook, and Barnegat Inlet), New York Coast

(*e.g.,* Montauk Island), and Rhode Island coast (*e.g.,* Narragansett Bay), and for gray and harbor seals along the Massachusetts coast (*e.g.,* Cape Cod, Monomoy Island) (DiGiovanni and Sabrosky 2010). However, as hauled-out seals would be out of the water, no in-water effects are expected.

In summary and as described above, the following factors primarily support our 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 authorized;
- No Level A harassment (PTS) is anticipated, even in the absence of mitigation measures, or authorized;
- 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 by Level B behavioral harassment only, consisting of brief startling reactions and/or temporary avoidance of the survey area;
- While the survey area overlaps with a portion of the NARW migratory BIA, the survey activities will occur in such a comparatively small area that any avoidance of the survey area due to activities will not affect migration. The survey area also overlaps a foraging BIA that includes Cape Cod Bay; however, a seasonal restriction on survey activities (see below) will limit any survey impacts on NARW foraging in the Bay. In addition, the requirement to shut down at 500 m to minimize potential for Level B behavioral harassment will limit the effects of the action on migratory or feeding behavior of the species. Furthermore, NMFS has analyzed the potential for ship strike

resulting from Vineyard Northeast's activity and has determined that, based on the extensive suite of required mitigation measures specific to vessel strike avoidance included in the IHA, the potential for vessel strike is so low as to be discountable;

- Due to the relatively small footprint of the survey activities in relation to the size of foraging BIAs for fin, sei, minke, and humpback whales, survey activities are not expected to affect foraging behavior of these species;
- As no injury or mortality is expected or authorized, and Level B harassment will be reduced to the level of least practicable adverse impact through use of mitigation measures, the authorized number of takes for North Atlantic right, humpback, and minke whales would not exacerbate or compound the effects of the ongoing UMEs in any way;
- A seasonal restriction on survey activities in Cape Cod Bay (January 1 through May 15), when NARW occurrence is highest in this ESA-designated critical foraging habitat and the Cape Cod Bay SMA is active, will minimize the likelihood that NARW foraging behavior would be affected by survey activities; and
- The mitigation measures, including visual monitoring and shutdowns, are expected to minimize the intensity of 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 monitoring and mitigation measures, NMFS finds that the total marine mammal take the 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 less 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. For this IHA, take of all species or stocks is below one third of the estimated stock abundance (*i.e.,* less than 11 percent for all stocks, equal to or less than 8 percent for 19 stocks, and less than 4 percent for 18 stocks (Table 5)).

Based on the analysis contained herein of the proposed activity (including the mitigation and monitoring measures) and the anticipated take of marine mammals, NMFS finds that small numbers of marine mammals would 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 is authorizing take, by Level B harassment only, of a NARWs, fin whales, sei whales, and a blue whale which are all species listed under the ESA. On June 29, 2021 (revised September 2021), GARFO completed an informal programmatic consultation on the effects of certain site assessment and site characterization activities to be carried out to support the siting of offshore wind energy development projects off the U.S. Atlantic coast. Part of the activities considered in the consultation are geophysical surveys such as those proposed by Vineyard Northeast and for which we are authorizing take. GARFO concluded site assessment surveys are not likely to adversely affect endangered species or adversely modify or destroy critical habitat. NMFS has determined issuance of the IHA is covered under the programmatic consultation; therefore, ESA consultation has been satisfied.

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 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 determined that the issuance of the IHA qualifies to be categorically excluded from further NEPA review.

Authorization

As a result of these determinations, NMFS is issuing an IHA to Vineyard Northeast for the potential harassment of small numbers of 19 marine mammal species (with 20 managed stocks) incidental to conducting marine site characterization surveys offshore from Massachusetts to New Jersey, in the area of the Commercial Lease of Submerged Lands for Renewable Energy Development on the Outer Continental Shelf Lease Areas OCS-A 0522 and OCS-A 0544 and along OECC routes to landfall locations, provided the previously mentioned mitigation, monitoring, and reporting requirements are followed. The final IHA and supporting documents can be found at *https://www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-take-authorizations-other-energy-activities-renewable*.

Dated: August 23, 2022.

Catherine Marzin,

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National Marine Fisheries Service.

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