Ms. Jolie Harrison, Chief
Permits and Conservation Division
Office of Protected Resources
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910-3225

Dear Ms. Harrison:

The Marine Mammal Commission (the Commission), in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the application submitted by South Fork Wind, LLC (South Fork Wind) under section 101(a)(5)(D) of the Marine Mammal Protection Act (the MMPA). South Fork Wind is seeking authorization to take small numbers of marine mammals by harassment incidental to construction of the South Fork Wind Farm and associated high-resolution geophysical (HRG) surveys. The project area is approximately 30 km southeast of Block Island, Rhode Island\(^1\). The Commission also has reviewed the National Marine Fisheries Service’s (NMFS) 5 February 2021 notice (86 Fed. Reg. 8490) requesting comments on its proposal to issue the authorization, subject to certain conditions.

South Fork Wind is proposing to conduct (1) impact pile driving to install monopiles, (2) vibratory pile driving and removal to install and remove a temporary cofferdam, and (3) HRG surveys of the inter-array cable and export cable construction area. South Fork Wind would install 16 11-m monopiles using an impact hammer on 16 days over a period of up to 31 days\(^2\) in water depths from 33 to 41 m. Vibratory pile driving would occur for up to six days in water depths from 7.6 to 12.2 m. In addition, South Fork Wind would use sub-bottom profilers (including chirp, sparker, boomer, and parametric types), echosounders, side-scan sonar, and acoustic positioning systems during its HRG surveys in water depths up to 90 m\(^3\).

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1 Bureau of Ocean Energy Management (BOEM) lease area OCS-A 0517.
2 Installing 16 monopiles, with one pile installed every other day, would take 31 rather than 30 days as specified in South Fork Wind’s application and the Federal Register notice.
3 NMFS clarified that 90 m was the deepest water depth in which HRG surveys would occur. Various shallower water depths were provided in South Fork Wind’s application, while the water depth(s) was omitted from the Federal Register notice. Water depth is a necessary parameter to estimate Level B harassment zones using NMFS’s Level B harassment user spreadsheet (86 Fed. Reg. 8515), as well as Level A harassment zones when beamwidth is accounted for.
General concerns

The Commission reviewed South Fork Wind’s application, JASCO Applied Sciences Inc.’s (JASCO) underwater acoustic\(^4\) and animal exposure\(^5\) modeling reports, NMFS’s Federal Register notice, and the proposed incidental harassment authorization. The Commission’s review revealed numerous inconsistencies, omissions, errors, and deficiencies. The most egregious issues involve—

- Underestimation of Level B harassment zones for impact pile driving of 11-m monopiles
  - JASCO’s pile driving source model (PDSM) has not been validated by in-situ measurements, but the model’s performance has been compared against other models as part of a benchmark validation\(^6\) by Lippert et al. (2016).
    - Lippert et al. (2016) indicated that JASCO’s time-domain finite-difference (TDFD) PDSM model predicted lower sound exposure levels (SELs) in the far-field region than various finite-element (FE) models, because the PDSM model did not reproduce the secondary decaying pulses characteristic of the other models, resulting in a faster decay of the pile vibration and lower SEL estimates (see Figures 3, 4, and 6).\(^7\) While the exact source level difference between the TDFD PDSM and FE models was not reported, Lippert et al. (2016) indicated that the SELs predicted by the TDFD PDSM were approximately 2.5 dB lower than the FE models at 750 m. The authors suggested that adjusting the bottom boundary parameters of the PDSM could create a closer match with the other models, but Denes et al. (2020b) provided no evidence that such an adjustment had been made, and thus the accuracy of the PDSM model for piles up to 11 m in diameter remains unknown. To help resolve this issue, JASCO could add 3 dB to the SEL predictions from the PDSM, which would be consistent with the differences identified in Lippert et al. (2016)\(^8\).
  - JASCO also used the ORCA normal mode model for sound propagation in Lippert et al. (2016) to compare against the benchmark case. The Federal Register notice indicated that for sound propagation JASCO used its Marine Operations Noise Model (MONM) based on a wide-angle parabolic equation solution to the acoustic wave equation and the U.S. Naval Research Laboratory’s Range-dependent Acoustic

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\(^{4}\) There are two underwater acoustic modeling reports: February 2020 and February 2021. NMFS indicated that the latter report included revisions related to species other than marine mammals (e.g., sea turtles). As such, the Commission’s comments are based on the February 2020 report (Denes et al. 2020b).

\(^{5}\) There are four animal exposure modeling reports: February 2020, July 2020, December 2020, and February 2021. NMFS indicated that the latter reports included revisions related to species other than marine mammals (e.g., sea turtles). As such, the Commission’s comments are based on the July 2020 report (Denes et al. 2020a).

\(^{6}\) For a 2-m pile in 10 m of water.

\(^{7}\) Lippert et al. (2016) indicated that PDSM was unable to be compared to the frequency-domain damping coefficients specified in the benchmark case in a straightforward manner, and this issue highlights an important difference between time-domain and frequency-domain methods.

\(^{8}\) Generally speaking, Level B harassment zones can be scaled based on differences in source levels and known initial zones. If one were to use the damped cylindrical spreading model (DCSM) and assume a 3-dB difference in source levels, the model-estimated Level B harassment zone of approximately 4,500 m and $z=0.9$ dB/km (based on medium sand, the worst-case scenario of 41 m of water depth, and the DCSM spreadsheet tool (DCSM) discussed further herein), the model-estimated Level B harassment zone would increase by 38.5 percent resulting in a zone of more than 6,230 m.
Model (RAM)\(^9\) for frequencies \(\leq 2\) kHz, a BELLHOP Gaussian beam ray-trace propagation model for frequencies \(>2\) kHz, and its Full-Wave Range-dependent Acoustic Model (FWRAM) based on the wide-angle parabolic equation algorithm\(^10\) (86 Fed. Reg. 8511–8512). JASCO’s modeling report indicated that FWRAM was used for sound propagation modeling of impact pile driving only and MONM was used for modeling non-impulsive sources—BELLHOP was not mentioned at all (Denes et al. 2020b). The sound propagation model(s) that JASCO used must be clarified, as well as how the model(s) would compare to the model used for the benchmark case in Lippert et al. (2016).

- NMFS could have used DCSM (Lippert et al. 2018) to substantiate the Level B harassment zones, as it was developed using and validated by in-situ measurements and is fairly simple to implement\(^11\).

  - In-situ measurements from other recent pile-driving activities also suggest that the Level B harassment zones have been underestimated. JASCO estimated\(^12\) the Level B harassment zone for impact driving of 11-m piles to be 4,684 m, assuming a 10-dB sound attenuation reduction factor based on use of a single bubble curtain\(^13\) and up to 4,000 kJ of hammer energy\(^14\) (see Tables 12 and 13; Denes et al. 2020a). In contrast, in-situ measurements\(^15\) for impact driving of a 7.8-m pile with a measured 9–12 dB sound attenuation reduction during use of a double big bubble curtain\(^16\) for a hammer operating at a maximum of 550 kJ estimated the Level B harassment zone to be 3,891 m\(^17\) (WaterProof 2020\(^18\)). It is unrealistic that an impact hammer with five times more energy intensity

\(^9\) Which is not capable of tracking temporal aspects of the propagating signal or producing time-domain waveforms.

\(^10\) Which is capable of producing time-domain waveforms (Denes et al. 2020b).

\(^11\) The Bureau of Ocean Energy Management (BOEM) funded the development of DCSiE (Heaney et al. 2020) for wind energy development. The spreadsheet tool incorporates information related to bathymetry and substrate type, in addition to the measured sound level at a reference distance (typically no less than three times the water depth at the source). Although the DCSiE results cut off at 5 km, DCSM-fit equations can be easily extended beyond 5 km. Heaney et al. (2020) indicated that DCSM is valid up to \(\alpha_r<20\) dB and, for the studies they investigated, that equated to 8.7 km from the source, after which \(25\log R\) should be used as a precautionary estimate.

\(^12\) In water depths of 34–36 m with medium sand substrate.

\(^13\) It is unclear whether a ‘big’ bubble curtain will be used or whether a smaller bubble curtain will be placed closer to or immediately surrounding the pile. However, Bellman et al. (2020) indicated that a single big bubble curtain in 40 m of water resulted in an average sound attenuation reduction of 9 dB for piles up to 8 m in diameter. The authors also indicated that effectiveness of the big bubble curtain diminishes with water depth and specifically that operators must apply a combination of different sound attenuation devices both near to (e.g., resonator/dampener devices) and far from (e.g., big bubble curtains) the pile for water depths > 25 m and pile diameters \(\geq 6\) m (Bellman et al. 2020).

\(^14\) JASCO’s underwater acoustic modeling report estimated smaller zones (see Tables E13 and 14 in Denes et al. 2020b) than used in its animal exposure modeling report. It is unclear which zones are correct.

\(^15\) In water depths of approximately 25 m with medium sand substrate. The observed sound propagation was fit and supported by DCSM from Lippert et al. (2018); see Figure 3.4 in WaterProof Marine Consultancy & Services BV (WaterProof 2020). Based on Heaney et al.’s (2020) assertion that DCSM is valid for a range up to \(\alpha_r<20\) dB, WaterProof (2020) indicated that DCSM could be applied up to 13.6 km from the source based on its measurements and environmental parameters, including an \(\alpha=1.47\) dB/km.

\(^16\) Deployed 84 and 124 m from the pile.

\(^17\) Dominion Energy Virginia (Dominion) estimated the Level B harassment zone with a 10-dB sound attenuation reduction to be less than that measured in the field (85 Fed. Reg. 30940).

\(^18\) Ørsted Wind Power North America, LLC (Ørsted) is affiliated with both South Fork Wind and Dominion, which was the action proponent for pile installation associated with the Coastal Virginia Offshore Wind project as reported in WaterProof (2020).
would increase the harassment zone by only 20 percent; rather, one would expect the Level B harassment zone to more than double.\textsuperscript{19}

- South Fork Wind would be required to conduct in-situ measurements to ensure that the Level B harassment zone is less than 4,684 m and to add additional sound attenuation measures and devices and conduct additional measurements to ensure the modeled zone is not exceeded (see condition 5(e) in the proposed authorization).
  - It is unclear how South Fork Wind will meet these requirements if the Level B harassment zone has been vastly underestimated and what would occur if the requirements cannot be met (e.g., shut down operations, increase the size of the Level B harassment zones by modifying the authorization, etc.).
  - It also is unclear if lesser hammer energies are needed for the first few piles, whether additional measurements would be conducted for those piles that need higher hammer energies to ensure the modeled Level B harassment zone is not exceeded.

- Underestimation of the Level A and B harassment takes for impact pile driving
  - In addition to the underestimated Level B harassment zones, JASCO’s assumptions used to seed its animat modeling were not appropriate.
    - JASCO used seven-day simulations\textsuperscript{20} for its exposure modeling to inform its take estimates rather than single-day simulations\textsuperscript{21} multiplied by the number of days of each activity (15 days of the standard and 1 day of a difficult pile). It is unclear whether these seven-day simulations appropriately accounted for the 16 days of proposed activities.
  - NMFS did not increase the proposed numbers of takes to at least average group size for Level A harassment takes of blue whales\textsuperscript{22} and Level B harassment takes of sperm whales, long-finned pilot whales, and Atlantic spotted dolphins based on Department of the Navy (2017).

\textsuperscript{19} The underlying source level should be proportional to the ratio of energy intensity over circumference of the pile. Since the impact hammer for South Fork Wind could exert 7.3 times more energy than the hammer used for Dominion but over a 1.4 times larger circumference, the source level for South Fork Wind should be more than 5 times larger than was determined by Dominion resulting in a source level increase of more than 7 dB. (4,000 kJ/550 kJ)/(34.5 m/24.5 m)=5.2, with 10log(5)=7 dB. Based on DCSM, a 7-dB difference in source levels, the measured Level B harassment zone of more than 3,800 m at Dominion, and \(\alpha=1.47 \text{ dB/km}\) for Dominion, the measured Level B harassment zone would increase by 81 percent resulting in a Level B harassment zone of approximately 6,890 m based on the increased hammer energies and pile size. To relate this adjusted Level B harassment zone to the environmental conditions at South Fork Wind, one must again use DCSM and assume an \(\alpha=0.9 \text{ dB/km}\). The adjusted Level B harassment zone would increase by 39.8 percent, resulting in a Level B harassment zone of more than 9,600 m for South Fork Wind.

\textsuperscript{20} Six days of pile driving for the maximum scenario installed over 20 days and three days of pile driving for the more likely scenario installed over 30 days—neither of which appears to equate to 16 days of actual pile driving, as proposed. The first would equate to at least 18 days of activities and the second would equate to 14 days of actual pile driving. Furthermore, seven-day simulations are more relevant for continuous activities such as seismic surveys. They are not relevant to a few hours of impact pile driving on every other day or even on consecutive days.

\textsuperscript{21} The 140 and 250 minutes of activities for standard and difficult-to-drive piles, respectively, with 100 Monte Carlo simulations would take less computational time than what apparently was conducted by JASCO. The density-scaled take estimates for each activity would then have only needed to be multiplied by the number of days of activities.

\textsuperscript{22} NMFS increased the Level A harassment takes for sei whales from zero to average group size but did not do the same for blue whales.
NMFS did not propose to authorize an appropriate number of Level A harassment takes of fin whales\(^{23}\) and Level A\(^{24}\) and B harassment takes of humpback whales\(^{25}\) given the frequency of occurrence and group sizes observed in the South Fork Wind project area during previous monitoring efforts (A.I.S., Inc. 2017, Smultea Environmental Sciences, LLC 2020).

It does not appear that the proposed numbers of Level B harassment takes for other frequently-observed species (e.g., common dolphins, other delphinids\(^{26}\)) are sufficient to ensure that the numbers would not be met and, in turn, cause unnecessary shut downs of activities or require South Fork Wind to seek an authorization modification.

- Inconsistent and omitted Level A and B harassment zones, clearance zones, and exclusion zones for impact pile driving
  - The Level A harassment zones are inconsistent between Denes et al. (2020b) and the Federal Register notice\(^{27}\), as well as within the Federal Register notice\(^{28}\). It is unclear what the Level A harassment zones were intended to be.
  - The Federal Register notice includes both clearance zones and exclusion zones in Table 24, whereas, the proposed authorization only denotes clearance zones in Table 2\(^{29}\). It is unclear at what distance(s) and in what circumstances (pre-activity vs. during the activity) South Fork Wind would be required to delay or shut down its activities\(^{30}\).
  - The Level A and B\(^{31}\) harassment zones were omitted from the proposed authorization\(^{32}\) and must be denoted as they exceed the clearance (and exclusion, if intended to be included) zones for humpback whales for Level A harassment and for all species except right whales for Level B harassment.

- Insufficient and incomplete monitoring measures for impact pile driving

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\(^{23}\) Ten different sightings of fin whales ranging from 2–5 animals.

\(^{24}\) Particularly given that the Level A harassment zone is estimated to be more than 3.6 km for humpback whales (see Table 24 of the Federal Register notice).

\(^{25}\) Five different sightings of humpback whales ranging from 8–18 animals (A.I.S., Inc. 2017). Humpback whales were detected 46 times in the various Ørsted lease areas off Rhode Island in 2019–2020. Unfortunately, the raw sightings data were not provided and the group sizes cannot be ascertained (Smultea Environmental Sciences, LLC 2020).

\(^{26}\) Smultea Environmental Sciences, LLC (2020) noted 380 detections of up to 4,644 common dolphins and 2 detections of 90 common bottlenose dolphins in the various Ørsted lease areas.

\(^{27}\) For example, the mean Level A harassment zone for a difficult-to-drive pile based on the cumulative SEL (SEL\(_{cum}\)) thresholds for low-frequency cetaceans is 7,868 m based on Table G.2.1 of Denes et al. (2020b), while Table 8 in the Federal Register notice noted the zone to be 7,846 m.

\(^{28}\) The Level A harassment zones are inconsistent in Tables 10 and 24 based on the SEL\(_{cum}\) thresholds for blue whales and gray seals and based on the peak sound pressure level (SPL\(_{peak}\)) thresholds for harbor porpoises and gray and harbor seals based on SPL\(_{peak}\) thresholds.

\(^{29}\) This issue applies to vibratory pile driving as well, see Table 25 in the Federal Register notice and Table 2 in the proposed authorization.

\(^{30}\) For example, the clearance zone was denoted as 5,000 m for North Atlantic right whales and the exclusion zone was denoted as 2,000 m in Table 24 of the Federal Register notice. NMFS indicated that South Fork Wind would establish a clearance zone for right whales slightly larger than the Level B harassment zone to minimize all takes, but that if a right whale is detected nearing the exclusion zone, shut down would be triggered (86 Fed. Reg. 8525). If South Fork Wind is only shutting down when a right whale is at 2,000 m, Level B harassment takes would not be minimized.

\(^{31}\) The Level B harassment zones for vibratory pile driving and HRG surveys were omitted from the proposed authorization as well.

\(^{32}\) The proposed authorization also noted monitoring zones but never specified the intent or extent of such zones in Table 2, as delineated in mitigation requirement 4(c)(vii). Again, if the Level B harassment zones extend beyond the monitoring zones, the Level B harassment zones must be specified in the authorization as well.
o NMFS indicated that South Fork Wind would be capable of monitoring the exclusion zone and initiating a shut down if a right whale is detected near the zone using a combination of visual monitoring from the construction vessel, a secondary monitoring vessel stationed at 2,200 m\(^3\), and real-time passive acoustic monitoring (PAM; 86 Fed. Reg. 8525).
  
  ▪ If the intent is to minimize all impacts as specified in the Federal Register notice (86 Fed. Reg. 8525), attempting to monitor only a 2,200-m zone is inadequate based on the fact that the Level B harassment zone is 4,684 m.
  
  ▪ A single vessel stationed at 2,200 m would not be sufficient for monitoring the farther extents of the zones\(^34\)—that is, the distance to the farthest extent would be 4,200 m based on the exclusion zone and more than 6,800 m based on the Level B harassment zone.
  
  ▪ NMFS proposed to require the PAM operator to review acoustic detections within approximately 15 minutes of the original detection in order to verify whether a right whale has been detected (see mitigation requirement 4(d)(viii)(3) in the proposed authorization). A 15-minute lag in reviewing acoustic detections is not considered real-time, nor would it preclude taking.
  
  ▪ NMFS provided no information on the minimum number, type (e.g., moored, drifting, or towed), location, bandwidth/sampling rate, estimated acoustic detection range, or sensitivity of the hydrophones or the detection software (e.g., PAMGUARD)\(^35\) proposed to be used by South Fork Wind. This information is necessary to ensure that South Fork Wind can detect, classify, and locate North Atlantic right whales as intended. In addition, NMFS did not appear to consider how the direct strike pulses and reverberation from the activity could inhibit detection of marine mammal vocalizations, particularly those of right whales.

- Insufficient and inappropriate reporting requirements regarding the hydroacoustic monitoring report for impact pile driving
  
  o South Fork Wind would be required to report only the ‘depth’ and sediment type at the hydrophone location (see reporting requirement 5(f)(vii)(c) in the proposed authorization). The water depth and sediment type(s) at the pile-driving location(s) and hydrophone locations also should be reported.
  
  o South Fork Wind would be required to report only the Level B harassment zone, but it would not be required to report the relevant Level A harassment zones as well (see reporting requirement 5(f)(vii)(I) in the proposed authorization). The hydroacoustic data also should be fit using DCSM and 15logR at a minimum, as well as any other appropriate fit, as was conducted by WaterProof (2020).
  
  o South Fork Wind would be required to report the sampling rate and bandwidth of the hydrophone(s) (see reporting requirements 5(f)(vii)(E) and (F), respectively), but it would

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\(^33\) This requirement is not included in the proposed authorization, similar to others specified in the Federal Register notice. Some of the mitigation, monitoring, and reporting requirements are included in the Federal Register notice but not the proposed authorization and vice versa. In other instances, the information included in the Federal Register notice and proposed authorization is not consistent (e.g., clearance times for certain species and activities for which those apply).

\(^34\) Since NMFS assumes that the zones are radii of circles.

\(^35\) In addition to the PAM reporting requirements specified in 5(f)((vi) of the proposed authorization, the bandwidth/sampling rate and sensitivity of the hydrophones and detection software used should be reported.
not be required to report the sensitivity of the hydrophone(s) or ambient spectra necessary for diagnosing issues with the hydrophone(s).

- South Fork Wind would be required to report visibility metrics and baseline pre- and post-activity broadband\(^8\) ambient sound levels (see reporting requirement 5(f)(vii)(G) in the proposed authorization).
  - It is unclear why visibility metrics are to be reported for a hydroacoustic monitoring report. Wind speed should be sufficient, if necessary.
  - It also is unclear why pre- and post-activity broadband ambient sound levels would be reported for a source with a Level B harassment threshold at 160 dB re 1 µPa, which is well above ambient. Broadband ambient sound levels are reported when assessing transmission loss and sound levels relative to the 120-dB re 1 µPa threshold. Furthermore, specific requirements are necessary for not only the equipment (more sensitive hydrophones would be needed for measuring ambient sound levels than for impact pile driving) but also for the methods (see NMFS 2012). NMFS (2012) specified that ambient measurements need to be collected for three consecutive 24-hour periods. This type of measurement for South Fork Wind’s activities is unnecessary.

- Overestimation of the Level B harassment zones for vibratory pile driving
  - JASCO estimated the Level B harassment zones to be more than 36 km for vibratory installation of sheet piles in a sandy substrate. The modeled spectra provided in Denes et al. (2020b) are inconsistent with spectra obtained from in-situ measurements of similar activities (e.g. see California Department of Transportation (Caltrans) 2016, Illingworth & Rodkin, Inc. (Illingworth and Rodkin) 2017)).
  - Assuming 15\(\log R\) transmission loss and a Level B harassment zone of 36.8 km, the back-calculated source level would be 173.5 dB re 1 µPa at 10 m—a source level that is much higher than NMFS uses for 48-in pipe piles, let alone sheet piles\(^7\) (see Table 11; 86 Fed. Reg. 1610).

- Inaccurate Level B harassment takes for vibratory pile driving
  - In addition to the overestimated Level B harassment zones, NMFS assumed that pile driving would occur on only two days (86 Fed. Reg. 8521), rather than the maximum of six days\(^8\) specified elsewhere in the Federal Register notice (86 Fed. Reg. 8491).
  - Similar to previous comments herein on impact pile driving, NMFS did not increase the estimated Level B harassment takes to an appropriate number based on group size and frequency of occurrence in the project area for fin whales, sei whales, humpback whales, Atlantic white-sided dolphins, and common dolphins.

- Incorrect Level A harassment zones and inconsistent exclusion zones and Level B harassment zones for HRG surveys
  - Consistent with informal comments the Commission made on Ørsted’s previous proposed authorization for HRG surveys in the South Fork Wind project area (85 Fed. Reg. 48195) and those for which NMFS did not revise in the final authorization (85 Fed. Reg. 63515), NMFS incorrectly estimated the Level A harassment zones yet again.

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\(^{36}\) Or frequency weighted.

\(^{37}\) NMFS generally uses a source level between 160–165 dB re 1 µPa at 10 m for vibratory installation of sheet piles.

\(^{38}\) Up to three days for installation and up to three days for removal.
- NMFS did not specify the input parameters necessary to estimate the corresponding Level A harassment zones in the Federal Register notice.
- South Fork Wind specified incorrect frequencies in Table 13 of the application for each functional hearing group’s most sensitive frequency within the proposed operating frequencies of all impulsive sources
- Based on South Fork Wind’s specified input parameters and NMFS’s assertion that its User Spreadsheet was used to estimate the Level A harassment zones (86 Fed. Reg. 8515), the Level A harassment zones are still incorrect in Table 12 of the Federal Register notice for numerous non-impulsive and impulsive sources for multiple functional hearing groups.
- The exclusion zones for mid-frequency cetaceans, except sperm whales, and phocids are inconsistent between Table 26 in the Federal Register notice, where such zones appear to be 0 m, and Table 2 in the proposed authorization.
- The Level B harassment zones for chirps are inconsistent in Tables 12 and 26 of the Federal Register notice.

The quality of NMFS’s Federal Register notices and proposed authorizations has been diminishing for a number of years. Part of the issue appears to stem from a lack of adequate staff education and/or training in underwater acoustics and other technical aspects, as well as lack of attention to oversight and basic quality control. It is imperative that the information underlying such authorizations is accurate and the analyses are sound and that NMFS’s statutorily-required determinations are based on best available science. The Commission firmly believes that NMFS should be focusing its efforts on impact pile driving of very large monopiles as they are much more impactful than HRG surveys. In fact, the Commission has questioned whether incidental take authorizations are necessary for HRG surveys. If NMFS insists on evaluating the impacts of HRG surveys and authorizing taking of marine mammals for those activities, it must base the analyses on accurate information. NMFS must ensure that its analysts are properly trained to use its various

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39 For example, South Fork Wind specified 1.5 kHz as the most sensitive frequency for all functional hearing groups within the 0.4–5 kHz operating frequency for the GeoMarine Geo-Source 400 tip sparker. The most sensitive frequencies in fact are 1.7 kHz for low-frequency (LF) cetaceans and 5 kHz for the other three functional hearing groups.

40 For example, the Level A harassment zone for the non-impulsive GeoPulse 5430 would be 97.7 m for high-frequency (HF) cetaceans using NMFS’s user spreadsheet (which NMFS indicated was used to estimate the zones; 86 Fed. Reg. 8515), 45.1 m using NMFS’s HRG Level A harassment spreadsheet that accounts for beamwidth and an infinite water depth, and 39.2 m using NMFS’s MATLAB® code that accounts for beamwidth, water depth, and absorption. NMFS indicated that the zone was 36.5 m in Table 12 of the notice. As another example, NMFS indicated that all Level A harassment zones for all impulsive sources would be 0 m based on the SEL thresholds for HF cetaceans, which is incorrect. In addition, NMFS again specified that the Level A harassment zone for the AA Triple plate S-boom would be 4.7 m based on the SPLpeak threshold for HF cetaceans—the SPLpeak source level of 211 dB re 1 µPa peak at 1 m specified by South Fork Wind is the same for the boomer and sparkers. As such, the Level A harassment zone would be 2.8 m for the boomer consistent with the zones for all of the sparkers.

41 See its 2 September 2020 (Orsted Wind Power North America, LLC), 13 July 2020 (Equinor Wind, LLC), 6 July 2020 (Dominion Energy Virginia), 26 June 2020 (Mayflower Energy, LLC), 12 March 2020 (Vineyard Wind, LLC), 18 October 2019 (Skipjack Offshore Energy, LLC), 23 August 2019 (Orsted Wind Power LLC), 6 July 2018 (Dominion Energy Virginia), and 13 June 2018 (Orsted/Bay State Wind) letters.

42 See the Commission’s 2 September 2020 letter on Orsted’s current authorization.
spreadsheet tools and that its acoustic expert is consulted to review the Level A and B harassment zones estimated from the spreadsheet tools\(^{43}\) or more sophisticated modeling.

**Revise and republish**

Based on the deficiencies noted by the Commission herein, it is unclear how NMFS can make the relevant findings under the MMPA, including ensuring that mitigation measures would effect the least practicable impact on the species and stocks—particularly North Atlantic right whales—during impact pile driving. It should not be left to the Commission or the public to attempt to decipher or presume what NMFS intended. Given that South Fork Wind’s activities are not to begin until spring 2022, the Commission recommends that NMFS address the aforementioned issues, revise the *Federal Register* notice and proposed authorization accordingly, republish the revised notice in the *Federal Register*, and provide an additional 30-day public comment period.

**Wind energy authorizations in general**

The Commission underscores its support of wind energy development and industry operators, such as Ørsted, that are striving to conduct the activities in an environmentally-conscious manner and attempting to minimize impacts on marine mammals. It is clear that the operators have not been provided the relevant information and direction necessary to submit an informed application and to tailor mitigation and monitoring measures appropriately. Those deficiencies fall squarely on the regulatory agency. NMFS must provide consistent and informed guidance to the numerous industry operators that have submitted or soon will submit incidental take authorization applications for wind energy surveying, siting, and construction projects.

Please contact me if you have questions regarding the Commission’s recommendations.

Sincerely,

Peter O. Thomas, Ph.D.,
Executive Director

cc: Amy Scholik-Schlomer, NMFS
    Stan Labak, BOEM

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\(^{43}\) NMFS’s acoustic expert (and other properly-trained analysts) also should use the relevant code and modeling software (i.e., MATLAB® or R) to estimate more accurate Level A harassment zones for HRG surveys—this has been an ongoing issue for research permits involving HRG devices as well. Both issues can be resolved by NMFS purchasing the relevant software license(s) or rewriting the current MATLAB® code in R. In either case, the issues must be resolved in the near term.
References


March 10, 2021

Ms. Jolie Harrison
Chief, Permits and Conservation Division
Office of Protected Resources
National Marine Fisheries Service

RE: Comments on Takes of Marine Mammals Incidental to Construction of the South Fork Offshore Wind Project

Dear Ms. Harrison,


Our letter is organized into four sections: (1) background related to our support for environmentally responsible offshore wind, legal framework of the Proposed IHA, and the best available scientific information on the status and occurrence of North Atlantic right whales within the South Fork Wind Project area, as well as other large whale species that are endangered or vulnerable to the impacts of offshore wind construction; (2) specific comments on the monitoring and mitigation measures contained in this proposed IHA; (3) general concerns with NMFS’ IHA analysis and renewal process going forward; and (4) recommendations for advancing monitoring and mitigation during offshore wind development.

I. BACKGROUND

The Biden Administration has set forth an ambitious and necessary goal for the nation to have net-zero global greenhouse gas emissions by mid-century or before.\(^1\) Offshore wind energy is one of the most abundant sources of zero emissions energy and will play a significant role in enabling the nation to meet this goal. Our organizations are united in support of developing environmentally responsible offshore wind power as a critically needed climate change solution, and we have long advocated for policies and actions needed to bring it to scale in an environmentally protective manner. Responsible development of offshore wind energy avoids, minimizes, and mitigates impacts to ocean wildlife and habitat and traditional ocean uses, meaningfully engages stakeholders from the start, and uses the best available

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\(^1\) Proclamation No. 14008, 86 Fed. Reg. 7619 (EO 14008).
scientific information and data to ensure science-based and stakeholder-informed decision making. In our comments, we recommend measures to ensure the final IHA issued by NMFS for the South Fork Wind Project aligns with these tenets.

A. The Marine Mammal Protection Act

Congress enacted the Marine Mammal Protection Act (“MMPA”) because “certain species and population stocks of marine mammals are, or may be, in danger of extinction or depletion as a result of man’s activities.” The statute seeks to ensure that species and population stocks are not “permitted to diminish beyond the point at which they cease to be a significant functioning element of the ecosystem of which they are a part,” and do not “diminish below their optimum sustainable population.” Congress intended for NMFS to act conservatively in the face of uncertainty when authorizing activities harmful to marine species. This careful approach to management was deemed necessary because of the vulnerable status of many species and because it is difficult to measure the impacts of human activities on marine mammals in the wild.

At the heart of the MMPA is its “take” prohibition, which establishes a moratorium on the capture, harassing, hunting, or killing of marine mammals, and generally prohibits any person or vessel subject to the jurisdiction of the United States from taking a marine mammal on the high seas or in waters or on land under the jurisdiction of the United States. Harassment is any act that “has the potential to injure a marine mammal or marine mammal stock in the wild” or to “disturb a marine mammal . . . by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering.”

NMFS may grant exceptions to the take prohibition. As relevant here, the agency may authorize, for not more than a one-year period, the incidental, but not intentional, “taking by harassment of small numbers of marine mammals of a species or population stock” if the agency determines that such take would have only “a negligible impact on such species or stock.” The agency must prescribe permissible methods of taking to ensure that the activity has “the least practicable impact on such species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance.” NMFS must also establish monitoring and reporting requirements. No later than 45 days after receiving an

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6 16 U.S.C. § 1361(1), (3).
7 Id. §§ 1362(13), 1371(a).
8 Id. § 1362(18)(A).
9 Id. § 1371(a)(5)(D)(i).
10 Id. § 1371(a)(5)(D)(ii)(I).
11 Id. § 1371(a)(5)(D)(iii).
B. Status of Large Whales Species in the South Fork Wind Project Area

At least 14 species of cetaceans, including seven large and seven small cetaceans, are known to regularly occur in the South Fork Wind Project Area and may be affected by activities associated with construction of the South Fork Wind Project. Of the seven large whale species, five (North Atlantic right whale, fin whale, sei whale, blue whale, and sperm whale) are listed as endangered under the Endangered Species Act (“ESA”), and as depleted and strategic stocks under the MMPA. The Gulf of Maine stock of humpback whales is now classified by NMFS as a strategic stock under the MMPA.

In particular, our organizations are profoundly concerned over the rapid decline of the North Atlantic right whale. As the agency is aware, the conservation status of the species rests on a knife-edge. The best population estimate for the start of 2019 is just 356 individuals, representing a more “precipitous drop than previous years.” Moreover, the best population estimate for the end of 2018 has been revised down from 409 individuals to 380 individuals. The new 2019 and revised 2018 estimate indicate a significant decrease in survival during the last three years as a result of the ongoing unusual mortality event (“UME”). Deaths now outpace births three to two. Additionally, scientists from the New England Aquarium now believe there are “roughly 70 breeding females” remaining and that “low birth rates coupled with whale deaths means there could be no females left in the next 10 to 20 years.” The decline of the species over the past decade is also deeply disturbing. According to NMFS’ Draft

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12 Id. § 1371(a)(5)(D)(iii).
16 Id. at 4.
19 The completion of 2019 data and the processing of additional 2020 data, along with further examination of the model, may help determine whether there is, in fact, a downward bias and if so, how large it is. Id. at 4; NMFS has noted that these preliminary estimates are lower than expected because of updated photo-identification data and the worse-than-expected impact of the ongoing Unusual Mortality Event. Email from Colleen Coogan to the Atlantic Large Whale Take Reduction Team, Re: To ALWTRT: Preliminary January 2019 North Atlantic right whale population estimate, Oct. 26, 2020; see, also, NMFS, “2017-2021 North Atlantic right whale Unusual Mortality Event.” Available at: https://www.fisheries.noaa.gov/national/marine-life-distress/2017-2021-north-atlantic-right-whale-unusual-mortality-event.
Biological Opinion, an unnerving 201 North Atlantic right whales were killed from 2010 to 2019. This number is likely to be a significant underestimate of actual deaths. A recently published scientific study concludes only 29 percent (2 standard error = 2.8 percent) of North Atlantic right whale carcasses were detected from 2010 to 2017.

North Atlantic right whale distribution and habitat has shifted since 2010 in response to climate change-driven shifts in prey availability. The best available scientific information, including aerial surveys, acoustic detections, photo-identification data, stranding data, a series of Dynamic Management Areas (“DMAs”) declared by NMFS pursuant to ship strike rule, and prey data, indicate that North Atlantic right whales now rely heavily on the waters within, and in the vicinity of, the South Fork Wind Project Area. In January 2019, an aggregation representing more than a quarter of the population—100 whales—was seen south of Nantucket engaged in both foraging and social activities. Of 196 individual whales identified in the area between January 1, 2010 and June 30, 2015, 35 percent were females, 58 percent were males, and the remainder were of unknown sex. Of the 188 individuals that were assigned an age class, almost two thirds were adults and one third juveniles. Six individuals were classified as calves at


29 NOAA Fisheries Interactive DMA Analyses: https://www.nefsc.noaa.gov/rcb/interactive-monthly-dma-analyses/. Although there are challenges in the use of opportunistic sightings data (no area systematically surveyed, effort not corrected for, and potential for counting an individual whale more than once), they are a proxy for habitat used by North Atlantic right whales, as validated by NMFS’ management actions based on these data, including the implementation of DMAs.

the time of their sighting. There were 34 different reproductive females identified, eight of which had only been documented in Southern New England since the start of 2010. Further, a recent presentation at the North Atlantic Right Whale Symposium discussed new evidence showing that 11 out of 15 newly catalogued whales identified south of Cape Cod have never been sighted further north in the Bay of Fundy of the Gulf of St. Lawrence, suggesting this area may represent an end-point of the northern migration for some portion of the population.

In addition to year-round use of the area, the relative abundance in the area has increased. For example, there is evidence of a broader temporal shift in distribution resulting in greater densities off Rhode Island and Massachusetts later in the year, through May and into the summer months. April appears to be particularly important for females of reproductive age. Interannual and inter-seasonal variability in aerial and acoustic detections imply that there are no clear spatial patterns of habitat use across Southern New England and that North Atlantic right whales should be expected to be encountered equally across the region. Across the year, elevated relative densities of North Atlantic right whales occur from December through the end of April.

Protection of North Atlantic right whales during foraging, and the protection of their foraging habitat, must be one of NMFS’ utmost priorities for wind energy projects located in foraging areas. Foraging areas with suitable prey density are limited relative to the overall distribution of North Atlantic right whales, and a decreasing amount of habitat is available for resting, pregnant, and lactating females. This means that unrestricted and undisturbed access to suitable areas, when they exist, is extremely important for the species to maintain its energy budget. Scientific information on North Atlantic right whale functional ecology also shows that the species employs a “high-drag” foraging strategy that enables them to selectively target high-density prey patches, but is energetically expensive. Thus, if access to prey is limited in any way, the ability of the whale to offset its energy expenditure during foraging will be

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33 Id.


37 Id.; NOAA Fisheries Interactive DMA Analyses, supra; Redfern, J., et al., “Tools to identify and minimize risk to marine mammals,” supra.

38 Id.


40 Id.

41 Van der Hoop, J., et al., id.
jeopardized. In fact, researchers have concluded: “[R]ight whales acquire their energy in a relatively short period of intense foraging; even moderate changes in their feeding behavior or their prey energy density are likely to negatively impact their yearly energy budgets and therefore reduce fitness substantially.”

North Atlantic right whales are already experiencing significant food-stress: juveniles, adults, and lactating females have significantly poorer body condition relative to southern right whales and the poor condition of lactating females may cause a reduction in calf growth rates and potentially a reduction in calf survival. Undisturbed access to foraging habitat is necessary to adequately protect the species.

Climate-driven changes in oceanographic conditions, and resulting shifts in prey distribution, are also rapidly changing the spatial and temporal patterns of habitat use by other large whale species, in some cases exacerbating existing threats. Ongoing UMEs exist for other whales that occur in the South Fork Wind Project Area. There have been UMEs for the Atlantic population of minke whales since January 2017 and humpback whales since January 2016. Alarming ly, 105 minke whales have stranded between Maine and South Carolina from January 2017 to March 9, 2021. A disproportionate number of stranded animals (n=59) were found off Massachusetts (n=36), Rhode Island (n=7) and New York (n=16). Elevated numbers of humpback whales have also been found stranded along the Atlantic Coast since January 2016 and, in a little over four years, 147 humpback whale mortalities have been recorded in total (data through March 9, 2021). Following a similar pattern to minke whales mortalities of humpback whales have occurred in every state along the East Coast but a disproportionate number have been found in the states of Massachusetts (n=36), Rhode Island (n=7), and New York (n=16). In NMFS’ most recent Stock Assessment Report, the status of the Gulf of Maine humpback whale stock has been updated to a “strategic stock” under the MMPA. The declaration of these UMEs by the agency in the past few

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42 Id.
46 Id.
years for three large whale species for which anthropogenic impacts are a significant cause of mortality, and the recent classification of humpback whales as a “strategic stock” by NMFS, demonstrates an increasing risk to whales from human activities along the United States East Coast.

Given the concerns regarding the elevated threat to federally protected large whale species and populations in the Atlantic, and the critically endangered status of the North Atlantic right whale in particular, as well as emerging evidence of dynamic shifts in the distribution of large whale habitat that may exacerbate impacts to these species, NMFS is obligated by the MMPA and ESA to ensure that any potential stressors posed by the proposed construction on affected species and stocks are avoided, minimized, mitigated, and monitored to the full extent possible.\(^\text{49}\)

II. MONITORING AND MITIGATION MEASURES PROPOSED FOR THE SOUTH FORK WIND PROJECT

In authorizing take by incidental harassment under the general authorization provision of the MMPA, NMFS must prescribe “methods” and “means of effecting the least practicable adverse impact” on marine mammals and set additional “requirements pertaining to the monitoring and reporting of such taking.”\(^\text{50}\) In light of the risks posed to the North Atlantic right whale and other species by the construction outlined in the Proposed IHA, NMFS has an obligation to impose robust avoidance, mitigation, and monitoring requirements to protect these species to the maximum extent practicable.

A. NMFS must reduce the number of Level A takes for large whales to as close to zero as possible and ensure zero Level A takes of North Atlantic right whales

South Fork Wind proposes to construct 90-180 megawatt offshore wind energy project in Lease Area OCS-A 0517, southeast of Rhode Island. The project would consist of installation of up to 16 monopiles to support 15 offshore wind turbine generators and one offshore substation. The project also includes offshore and onshore cabling, and onshore operations and maintenance facilities.\(^\text{51}\)

We note that the number of individuals projected to experience a permanent threshold shift (“PTS”), including endangered fin whales, humpback whales and minke whales that are currently experiencing a UME, seems relatively high for a project comprising only 15 turbines. This is particularly true for humpback whales (PTS = four individuals at 10 decibel (“dB”) noise attenuation).\(^\text{52}\) NMFS must take all necessary precautions to reduce the number of Level A takes (any act of pursuit, torment, or annoyance that has the potential to injure a marine mammal or marine mammal stock in the wild)\(^\text{53}\) for large whales to as close to zero as possible.

\(^{50}\) Id. § 1371(a)(5)(D)(vi).
\(^{51}\) Proposed IHA at 8,491.
\(^{52}\) Proposed IHA at 8,519, Table 16
B. Recommendations to strengthen mitigation and monitoring to align with best management practices and best available scientific information to protect North Atlantic right whales and other large whale species

Based on the best available scientific information available for the North Atlantic right whale (as summarized in Section I.B., above), we make the following recommendations regarding how the mitigation and monitoring measures described in the Proposed IHA could be strengthened for installation of monopile foundations using impact pile driving, to ensure the species is maximally protected under the MMPA as well as the ESA. Our recommendations are informed, in part, by a suite of Best Management Practices (“BMPs”) for the protection of the North Atlantic right whale during wind energy construction and operations of fixed foundation offshore wind projects off the U.S. East Coast. The BMPs were informed by five of the world’s leading scientific experts on North Atlantic right whales and the direct input of offshore wind developers, and have been endorsed by over a dozen wildlife conservation organizations.

We note that while these measures are specifically designed to protect the North Atlantic right whale, a number of them offer co-benefits to other large whale species (e.g., vessel speed restrictions, underwater noise reduction). When designing mitigation, however, NMFS must require the most protective measures possible for all endangered and at-risk species, including fin whales, sei whales, humpback whales, and minke whales.

For comments and recommendations on high-resolution geophysical survey activities, we direct NMFS to the letter many of our organizations submitted on September 9, 2020 regarding NMFS’ failure to adequately protect endangered and protected marine mammals during marine site characterization surveys required for offshore wind development (see Attachment).

   i. Dates and duration of construction activities

The agency proposes a prohibition on impact pile driving activities from January 1 through April 30 “to minimize the potential for North Atlantic right whales to be exposed to pile driving noise.” These dates are based on two citations: Kraus et al. 2016 and Roberts et al. 2020 that indicate the “highest densities of North Atlantic right whales in the project area are expected during the months of January through April.” However, as discussed in Section I.B., best available scientific information indicates that elevated relative densities of North Atlantic right whales occur from at least December through the end of

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54 Available at: https://www.nrdc.org/resources/best-management-practices-north-atlantic-right-whales-during-offshore-wind-energy.
57 Proposed IHA at 8,525.
58 Id.
April.\textsuperscript{59} NMFS should require the seasonal prohibition on impact pile driving to be effective from December 1 through April 30.

\textit{ii. Dielectric restrictions on pile driving}

To effectively protect North Atlantic right whales and other marine mammal species, NMFS must ensure that the probability of detection of these species is maximized during the pre-start clearance period. We are therefore supportive of NMFS’ proposal to prohibit initiation of pile driving at night and the requirement that pile driving may continue after dark only when driving of the same pile began no less than 90-minutes prior to civil sunset and must proceed for human safety or installation feasibility reason.\textsuperscript{60} As discussed in Section II.B.v, night vision devices and infrared and/or thermal cameras, and passive acoustic monitoring, must be required to monitor for marine mammals during pile driving that must occur during periods of darkness. It cannot be assumed that marine mammals will not reenter the clearance and exclusion zones once pile driving has begun.

We also agree with NMFS that pile driving at \textit{any} time during the day can only commence if the full extent of all clearance zones are visible (\textit{i.e.}, not obscured by dark, rain, fog, etc.) for the full 60-minute monitoring period required prior to pile driving.\textsuperscript{61} The ability to monitor the clearance zone should be determined by the lead Protected Species Observer (PSO).

\textit{iii. Clearance Zone distances}

NMFS states “the purpose of “clearance” of a particular zone is to prevent potential instances of auditory injury and potential instances of more severe behavioral disturbance as a result of exposure to pile driving noise…by delaying the activity before it begins if marine mammals are detected within certain pre-defined distances of the pile driving equipment.”\textsuperscript{62} NMFS further states that its primary goal is to “prevent auditory injury (Level A harassment)” and that “the proposed clearance zones are larger than the modeled distances to the isopleths (assuming an effective 10 dB attenuation of pile driving noise) corresponding to Level A harassment for all marine mammal species (excluding humpback whales).”\textsuperscript{63}

For North Atlantic right whales, however, the agency takes a more cautious approach and bases the species’ Level A harassment zone on the agency’s larger Level B harassment zone, resulting in a pre-start clearance zone radial distance of 5,000 meters from the center of the pile. NMFS also does not allow pile driving to occur if a North Atlantic right whale is either visually or acoustically detected within the clearance zone; we are supportive of this combined monitoring approach.

That said, the agency cannot simply shirk its legal responsibility to minimize Level B harassment. This concern is all the more valid in light of the fact that NMFS’ current Level B acoustic threshold is not

\textsuperscript{59} Redfern, J, \textit{et al.}, “Tools to identify and minimize risk to marine mammals,” \textit{supra}; Leiter, S., \textit{et al.}, \textit{supra}.

\textsuperscript{60} Proposed IHA at 8,526.

\textsuperscript{61} \textit{Id}.

\textsuperscript{62} Proposed IHA at 8,525.

\textsuperscript{63} \textit{Id}.
based on the best commercial and scientific data available. Behavioral disturbance of foraging animals, or of mother-calf pairs, has the potential to result in population-level consequences for the North Atlantic right whale. As such, NMFS must take measures to minimize exposure of North Atlantic right whales to noise from pile driving beyond the 5,000 meter clearance zone (e.g., by requiring stringent noise reduction and attenuation technologies; see Section II.B.vii, below).

iv. Shutdown requirements

NMFS proposes a 5,000-meter pre-start clearance zone for North Atlantic right whales (and a 2,200-meter pre-start clearance zone for other large whale species); however, shutdown of pile driving would only occur if a right whale was detected within an “exclusion zone,” defined by NMFS for all large whale species as 2,000 meters from the center of the pile. After shutdown, pile driving may be initiated once all pre-start clearance zones are determined by the lead PSO to be clear of marine mammals for the minimum species-specific time periods, or if required to maintain installation feasibility. These measures are not precautionary and risk exposure of North Atlantic right whales to unnecessarily high levels of pile driving noise.

We propose that if a North Atlantic right whale is visually or acoustically detected within the 5,000-meter pre-start clearance zone, or visually detected any distance from the pile, that pile driving be shutdown, unless continued pile driving activities are necessary for reasons of human safety or installation feasibility. NMFS should also consider expanding these protections to other endangered whale species as well as those currently experiencing a UME that are in the same functional hearing group as the North Atlantic right whale.

As a general matter, NMFS must explain how the number and location of acoustic detection systems is adequate to fully cover the area within the pre-start clearance zone and exclusion zone, particularly during times of high vessel traffic and development activity (noting that detection distance is reduced the closer the acoustic detector is located to the pile driving site).

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64 We note that the Marine Mammal Commission has identified a number of methodological concerns regarding the Level A and Level B harassment zones analyzed by NMFS in the Proposed IHA that should also be addressed by the agency. See letter from Peter O’Thomas, Ph.D., Executive Director, Marine Mammal Commission, to Ms. Jolie Harrison, Chief, Permits and Conservation Division, Office of Protected Resources, NMFS, submitted March 1, 2020. Available at: https://www.mmc.gov/wp-content/uploads/21-03-01-Harrison-South-Fork-Wind-construction-HRG-IHA.pdf.


66 Proposed IHA at 8,525. NMFS further states: “If a marine mammal is observed entering or within the respective exclusion zone after pile driving has begun, the PSO will request a temporary shutdown (except when “not practicable due to imminent risk of injury or loss of life to an individual, or risk of damage to a vessel that created risk of injury or loss of life for individuals…” In this case, reduced hammer energy would be used when practicable.” Id.

67 Id.

68 Detection range (“r”) is a function of signal to noise ratio (“SNR”), source level (“SL”), ambient noise (“NL”), and transmission loss (TL(r)), following the equation \[ \text{SNR} = \text{SL} - \text{NL} - \text{TL}(r) \]. Urick, R.J., “Principles of Underwater Sound,” McGraw-Hill, Inc. (1983).
v. **Real-time monitoring requirements and protocols during pre-start clearance and when pile driving activity is underway**

We are generally supportive of NMFS’ proposed real-time monitoring requirements and protocols, particularly with regard to the combined visual and acoustic approach, the adequate number of visual PSOs being on watch at any one time and utilizing the best vantage points (i.e., at least two PSOs scanning no more than 180° of the horizon), the use of night vision devises (NVDs) (Infrared (IR) and/or thermal cameras) to monitor clearance zones if pile driving continues past civil sunset, and the communication of marine mammal detections, either visual or acoustic, among PSOs stationed on different project-related vessels.

To facilitate visual monitoring of the 5,000 meter pre-start clearance zone for North Atlantic right whales (and the 2,200 meter pre-start clearance zones for other large whale species), NMFS explains that “visual monitoring would be conducted from both the construction vessel and a secondary, smaller vessel (on which dedicated PSOs would be deployed) surveying the circumference of the construction vessel at a radius approximate to the pre-start clearance zone for large whales.” We are concerned that the use of only one secondary vessel will result in “blind spots” during the 60-minute monitoring period (i.e., when the vessel is north of the pile driving site, it will not be possible to fully monitor the southern portion of the pre-start clearance zone. **NMFS should provide more detail on how the secondary vessel will be deployed during the 60-minute pre-start clearance period (e.g., vessel speed, configuration of PSOs on the vessel, etc.) to monitor the entire pre-start clearance zones as well as the 3,642-meter Level A harassment zone for humpback whales, which the agency implies will be monitored by the secondary vessel.** If it is not possible to provide full coverage of the clearance zone for the full 60-minute period, NMFS should require additional monitoring vessels and PSOs.

vi. **Vessel speed restrictions and other vessel related measures**

**Vessel strikes are one of the leading causes of large whale injury and mortality and are a primary driver of the existing UMEs.** Vessel strikes are one of the primary factors driving the North Atlantic right whale to extinction. North Atlantic right whales are particularly prone to vessel strike given their slow speeds, their occupation of waters near shipping lanes, and the extended time they spend at or near the water’s surface. Some types of anthropogenic noise have been shown to induce sub-surface

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69 Proposed IHA at 8,526.
70 Proposed IHA at 8,530.
71 Proposed IHA at 8,526.
72 Proposed IHA at 8,525.
73 Id.
74 Id. “While the clearance zone (2,200 m) for humpback whales is smaller than the Level A harassment zone (3,642 m), visual monitoring would be conducted from both the construction vessel and a secondary, smaller vessel (on which dedicated PSOs would be deployed) surveying the circumference of the construction vessel at a radius approximate to the pre-start clearance zone for large whales (2,200 m). NMFS expects that this additional visual monitoring would facilitate detection of humpback whales within the Level A harassment zone.”
positioning in North Atlantic right whales, increasing the risk of vessel strike at relatively moderate levels of exposure. Scientists have deemed it “likely” that noise from pile driving during offshore wind development could lead to displacement of large whales and that this potential impact should be treated as “high importance.”

Serious injury or mortality can occur from a vessel traveling above ten knots irrespective of its length, and vessels of any length travelling below this speed still pose a serious risk. The number of recorded vessel collisions on large whales each year is likely to grossly underestimate the actual number of animals struck, as animals that are struck but not recovered, or not thoroughly examined, cannot be accounted for. In fact, observed carcasses of North Atlantic right whales from all causes of death may have only accounted for 36% of all estimated death during 1990-2017.

NMFS should therefore act conservatively and implement mitigation measures to prevent any further vessel strikes for North Atlantic right whales or other species of large whale currently experiencing an UME (i.e., humpback whales and minke whales), as well as species such as fin and sei whales. The broad distributional shifts observed for multiple species, as well as mixed-species feeding aggregations observed in the region, pose an increased risk of vessel strike for large whales. This may potentially exacerbate current UMEs or increase the risk of additional species experiencing a UME in the future.

During construction of the project, South Fork Wind anticipates that an average of approximately five to ten vessels will operate during a typical workday in the lease area and along the export cable route. Many of these vessels will remain in those areas for days or weeks at a time, potentially making only infrequent trips to port for bunkering and provisioning as needed.

NMFS currently requires vessels 65-feet in length and above comply with the Seasonal Management Area and that project-associated vessels of all sizes operate at 10 knots or less within dynamic management

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79 NOAA-NMFS, “Reducing ship strikes to North Atlantic right whales.” Available at: https://www.fisheries.noaa.gov/national/endangered-species-conservation/reducing-ship-strikes-north-atlantic-right-whales#:~:text=All%20vessels%2065%20feet%20(19.8,endedgered%20North%20Atlantic%20right%20whales. To reflect the risk posed by vessels of any length, the Commonwealth of Massachusetts established a mandatory vessel speed restriction for all vessels (including under 20 meters) in the Cape Cod Bay SMA.


83 The actual number of vessels is highly dependent on the project’s final schedule, the final design or the project’s components, and the logistics needed to ensure compliance with the Jones Act. Proposed IHA at 8,492.

84 Id.
areas, and when operating port-to-port between November 1 and April 30, except for vessels transiting inside Narragansett Bay or Long Island Sound. A trained, dedicated visual observer and alternative visual detection systems (e.g., thermal cameras) will be stationed on all transiting vessels that intend to operate at greater than 10 knots from November 1 through April 30.

Outside of DMAs, SMAs, and the Nov 1 through April 30 timeframe, a near real-time monitoring system would be instigated. Localized detections of North Atlantic right whales, using passive acoustics, would trigger a slow down to 10 knots or less in the area of detection (zone) for the following 12 hours. Each subsequent detection would trigger a 12-hour reset. A slow-down in that zone expires when there has been no further visual or acoustic detection in the past 12-hour within the triggered zone.

The proposed vessel strike mitigation measures are under protective. First, any interaction between a vessel and whale poses a risk of serious injury or mortality. This is true irrespective of the number of other vessels operating in the same location. As demonstrated by the documented deaths of North Atlantic right whale calves in July 2020 and February 2021, and the serious injury, thus, likely death of a third calf in January 2020, an addition of even a single vessel traveling at speeds over 10 knots pose an unacceptable risk. Second, the dire conservation status of the North Atlantic right whale means that even a single vessel strike will have population-level consequences. Third, while we need to advance toward near real-time monitoring, there is currently no scientific evidence to suggest the near real-time monitoring proposed by NMFS will be effective at reducing risk of vessel strike. To assume this outcome places species at risk.

All Project-associated vessels should adhere to a ten-knot speed restriction at all times except in limited circumstances where the best available scientific information demonstrates that whales do not use the area. The Project may develop, in consultation with NOAA, a monitoring plan that modifies these vessel speed restrictions. However, the monitoring methods that inform the plan must be proven effective using vessels traveling ten knots or less and following a scientific study design. If the resulting monitoring plan is scientifically proven to be equally or more effective at reducing vessel strike risk than a blanket 10-knot speed restriction, the monitoring plan could be used as an alternative to a 10-knot speed restriction.

vii. Underwater noise reduction

Underwater noise reduction and attenuation is the most effective way to reduce incidental takes of marine mammals (and reduce stress to other marine life) when pile driving is required. While we are encouraged to see NMFS analyze a range of noise attenuation levels as part of the impacts analysis, we are disappointed with the agency’s under-protective target of an average attenuation target of only 10 decibels.

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85 Proposed IHA at 8,529.
86 Id.
87 Id.
89 I.e., via a peer-reviewed scientific study.
NMFS suggests that “the attenuation system would likely be a single bubble curtain, but may include one of the following or some combination of the following: A double [big bubble curtain], Hydro-sound Damper, and/or Noise Abatement System.” And that “South Fork would also have a second back-up attenuation devise (e.g., additional bubble curtain or similar) available, of needed, to achieve the targeted reduction in noise levels that would result in the measured Level A harassment and Level B harassment isopleths corresponding to these modeled assuming a 10 dB attenuation, pending results of sound field verification testing.” Single bubble curtains do not represent best commercially available noise mitigation technology. To constrain the use of a second attenuation system to a 10 dB noise reduction when greater levels of reduction may be achieved is illogical.

**NMFS should require South Fork Wind to use best commercially feasible technology and methods to minimize sound levels from pile driving.** Specifically, NMFS should require a combination of noise mitigation systems to: (i) Obtain the greatest noise reduction and attenuation using technically and commercially feasible measures considering factors such as project design and seabed conditions; and (ii) Achieve no less than 10 dB (sound exposure level, SEL) in combined noise reduction and attenuation, taking as a baseline, projections from prior noise measurements of unmitigated piles from Europe and North America. It should be expected that the South Fork Wind Project, in meeting condition (i) above, will aim to obtain mitigation results at least comparable to that achieved in Europe through use of the same or similar combination of systems.

Our organizations remain supportive of the use of a soft-start procedure for impact pile driving.

**viii. Reporting**

NMFS should require South Fork Wind to report all visual observations and acoustic detections of North Atlantic right whales to NMFS or the Coast Guard as soon as possible and no later than the end of the PSO shift. We note that, in some cases, such as with the use of near real-time autonomous buoy systems, the detections will be reported automatically on a preset cycle. South Fork Wind should also be required to immediately report an entangled or dead North Atlantic right whale to NMFS, the Marine Animal Response Team (1-800-900-3622) or the United States Coast Guard immediately via one of several available systems (e.g. phone, app, radio).

**III. CONCERNS WITH NMFS’ ANALYSIS AND RENEWAL PROCESS MOVING FORWARD**

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90 Proposed IHA at 8,526.

91 *Id.*


93 See, *e.g.*, *id*. Our groups look forward to seeing the results of the recent federal study on noise measurements undertaken as part of the Coastal Virginia Offshore Wind (CVOW) project. See https://www.boem.gov/renewable-energy/state-activities/coastal-virginia-offshore-wind-project-cvow.

94 Proposed IHA at 8,526.
The MMPA requires that NMFS base its IHA analysis on the best available scientific information. It is our position that future IHAs should fully consider the following issues.

A. NMFS must incorporate additional data sources into calculations of marine mammal density and take

To comply with statutory requirements of the MMPA, NMFS must base its IHA analysis on the best available scientific information. However, in determining the proportion of marine mammal species and populations taken by the proposed activities—a calculation that lies at the heart of the agency’s “small numbers” analysis—NMFS has chosen to rely on estimates of marine mammal densities derived from the habitat-based density model (the “Roberts et al.” model) produced by the Duke University Marine Geospatial Ecology Laboratory. While this model has been updated to incorporate additional data sources, including the Cape Cod Bay, and two or more years of data, it still excludes important data sources. This is particularly important as, by NMFS’ own admission, “it is clear that North Atlantic right whales are present in or near the project area throughout the year, particularly south of Martha’s Vineyard and Nantucket Islands, and that habitat use is changing (Leiter et al., 2017; Stone et al., 2017; Oleson et al., 2020).”

NMFS must require that all available data are used to ensure that any potential shifts in North Atlantic right whale habitat usage are reflected in estimations of their density and take. Additional data can be obtained from sightings databases (e.g., NOAA Right Whale Sighting Advisory System; NEFSC Monthly DMA analysis), and passive acoustic monitoring efforts (e.g., Robots4Whales detections; NEFSC Acoustic Indicators of Right Whale Occurrence). Further, from February 2017 through June

98 Id.
99 Proposed IHA at 8,498.
100 NOAA Fisheries, “NOAA Right Whale Sighting Advisory System.” Available at: https://apps-nefsc.fisheries.noaa.gov/psb/surveys/MapperiframeWithText.html.
103 Northeast Fisheries Science Center, “Acoustic Indicators of Right Whale Occurrence.” Available at: https://apps-nefsc.fisheries.noaa.gov/psb/surveys/interactive-monthly-dma-analyses/.
2018, monthly standardized marine mammal aerial surveys were flown in the Massachusetts and Rhode Island and Massachusetts Wind Energy Areas (“WEAs”) by the New England Aquarium. Right whales were seen in every season and in 14 of the 18 months surveyed.104 As part of the New England Aquarium Study, a digital acoustic monitoring instrument at Nomans Land station detected right whales throughout the sampling period.105 During the 2018 Atlantic Marine Assessment Program for Protected Species (“AMAPPS”) ship-based surveys,106 two foraging right whales were sighted within the Massachusetts WEA by NMFS researchers studying the potential linkages between biological and physical oceanography and marine mammal sightings on April 7. Additional sightings in the North Atlantic right whale consortium database document 47 right whales in the WEA from March 18, 2018 to April 11, 2018. A study funded by the Bureau of Offshore Energy Management (“BOEM”) using an autonomous vehicle for real-time monitoring of marine mammals from December 2019 through March 2020, and again from December 2020 through February 2021, on Cox Ledge acoustically detected right whales in all months of the study.107 NMFS should take immediate steps to collate and integrate these different data sets that more accurately reflect marine mammal presence for future IHAs and other work.

B. NMFS should acknowledge the potential for take from vessel collisions and vessel noise

Vessel collisions should be incorporated into NMFS’s take analysis. Vessel collisions are a leading cause of large whale mortality108 and have been implicated as one of the major causes of death underlying the UMEs for North Atlantic right whales, humpback whales, and minke whales,109 with North Atlantic right whales being particularly vulnerable.110 The localized elevation in vessel activity occurring during offshore wind construction increases the vessel collision risk for large whales in the area. Given the demonstrated vulnerability of large whales to vessel collisions off the east coast, and the increased risk from the offshore wind projects, it is remiss of the agency to overlook vessel collisions as a source of potential take.

In addition, some types of anthropogenic noise, such as that produced during offshore wind construction, may displace whales into nearby shipping lanes, increasing the risk of ship-strike even at relatively moderate levels of exposure. The agency implies in its Proposed IHAs that all potential areas that marine mammals may be displaced to, due to disturbance during construction, are equally safe: “The availability

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105 Id.
of alternate areas of similar habitat value for marine mammals to temporarily vacate the project area during the proposed project to avoid exposure to sounds from the activity.”

Given the presence of shipping lanes and fishing areas in the vicinity of the offshore wind areas, the risks posed should be considered up front and adaptively mitigated.

C. NMFS must analyze cumulative impacts to North Atlantic right whales and other endangered and protected marine mammal species and stocks as part of the take estimation and permitting process. The best available scientific information shows that the North Atlantic right whale population cannot withstand any additional stressors; any potential interruption of foraging behavior may lead to population-level effects and is of critical concern. Currently, NMFS undertakes take analyses and prescribes mitigation measures on a project-by-project basis, leading to inconsistency, inefficiency, and inadequacy. NMFS must carefully analyze the cumulative impacts from the multiple proposed offshore wind development activities on the North Atlantic right whale and other endangered and protected species and stocks and ensure appropriate mitigation of these cumulative impacts. We suggest that the agency advance a programmatic incidental take regulation for offshore wind development activities that takes into account risks from other sectors. This will ensure NMFS considers alternatives and mitigation measures at the scale at which impacts will occur and may potentially help increase the pace of environmentally responsible offshore wind development along the East Coast.

D. NMFS should represent increases in abundance objectively.

The agency states in the Proposed IHA: “[b]ased on the best available information, the long-term presence of the WTGs and OSS is not expected to have negative impacts on habitats used by marine mammals, and may ultimately have beneficial impacts on those habitats as a result of increased presence of prey species in the project area due to the WTGs and OSS acting as artificial reefs (Russell et al., 2014).” While we agree that these activities may result in a change in the marine community and, in some cases, an increase in the abundance of certain species or in overall diversity, we caution against NMFS representing these changes as “beneficial,” particularly as it is unclear what implications these

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111 See, e.g., 84 Fed. Reg. at 18,380; and Proposed IHA at 8,535.
113 See Letter from National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, Conservation Law Foundation, Defenders of Wildlife, Sierra Club, Mass Audubon, New Hampshire Audubon, NY4WHALES, Southern Environmental Law Center, Surfrider, and Whale and Dolphin Conservation, submitted to the Program Manager, Office of Renewable Energy, Bureau of Ocean Energy Management, re: “Vineyard Wind 1 Construction and Operations Plan Supplement to the Draft Environmental Impact Statement.” Docket ID: BOEM-2020-0005 (July 27, 2020). Some of our groups have mirrored this recommendation in comments to BOEM. To best account for the impacts of the simultaneous development of multiple lease areas on the North Atlantic right whale, we have stressed that BOEM prepare a full Programmatic Environmental Impact Statement (“EIS”) encompassing all U.S. East Coast renewable energy development as soon as possible to inform future offshore wind development. It would be highly beneficial to collectively consider available information on North Atlantic right whales in U.S. Atlantic waters to build a picture of responsible development accounting for the lifespan and migratory movements of the species, which have the potential to overlap with every Lease Area along the U.S. East Coast on a twice-yearly basis (i.e., northern and southern migration). A Programmatic EIS is also particularly timely given the climate-driven shifts in North Atlantic right whale habitat use observed over the past decade as well as significant changes in their conservation status and major threats.
114 Proposed IHA at 8,509.
changes may have on the wider ecosystem. We recommend that the Final IHA and future authorizations remain objective in language used in their impacts analysis (e.g., by using terminology such as “increase,” “decrease,” and “change”).

E. NMFS must prohibit extensions of any one-year authorizations through a truncated 15-day comment period as it is contrary to the MMPA

On March 7, 2019, NMFS began issuing notice of a new reauthorization process for a multitude of permits. Specifically, NMFS requests comment on the potential one-year renewal of authorizations on a case-by-case basis for identical or nearly identical activities, with only an additional 15 days for public comment, should various criteria be met. As we describe below, this appears to be a mis-interpretation of the law by the previous Administration that could be easily remedied to comply with the process and provide adequate opportunity for public input.

For several reasons, our organizations have repeatedly opposed this process as contrary to law. First, NMFS’ proposal to provide one-year renewals does not comport with the plain language of the MMPA. Section 101(a)(D)(i) unambiguously states that incidental harassment authorizations are valid for periods of not more than one year. Second, the statute is clear on its face that a 30-day comment period is required in all instances. The legislative history of the 1972 Act demonstrates that Congress viewed a robust notice and comment process as central to the agency’s implementation of the IHA process: “As approved by the Committee, the [MMPA] involves a number of basic concepts,” one being that “the public is invited and encouraged to participate fully in the agency decision-making process.” When NMFS adheres to this process, “the public is assured of the right to be informed of actions taken or proposed.” Third, the legislative history removes any doubt that this 30-day comment period applies even in cases where a new application extends the IHA for another year without change.

The agency lacks discretionary authority to interpret the statute otherwise, whether by regulation, by policy, or on a permit-by-permit basis as it purports to do here. Moreover, NMFS has not supplied a sufficient explanation for why it might assert that the statutory language of Sec. 101(a)(5)(D)(iii) is ambiguous, such that the agency might appropriately exercise its congressionally-delegated gap-filling


117 Id. § 1371(a)(5)(D)(iii).


119 Id. at 4146.


121 See Chevron, U.S.A., Inc. v. NRDC, 467 U.S. 837, 842-43 (1984) (“If the intent of Congress is clear, that is the end of the matter; for the court, as well as the agency, must give effect to the unambiguously expressed intent of Congress.”).
authority to set forth a permissible interpretation of the statute that comports with the statute’s objectives.\textsuperscript{122}

Should the agency wish to establish its new IHA renewal process as a reasonable interpretation of an ambiguous statutory provision, it should do so through notice-and-comment rulemaking or comparable process with the appropriate indicia of formality. In so doing, NMFS must also explain why applicants whose activities may result in the incidental harassment of marine mammals over more than one year should not be required to apply for authorization to do so through the incidental take regulation procedure established by Sec. 101(a)(5)(A)(i), which provides for authorizing incidental take during periods of “not more than five consecutive years each.”\textsuperscript{123} Where Congress established clear and distinct statutory processes for authorizing incidental take via harassment for one-year periods versus periods extending more than one year and up to five years, NMFS must justify how its proposed unlawful hybrid administrative extension process, with a curtailed comment period, is consistent with both statutorily-established processes.

NMFS’ statement regarding Incidental Harassment Authorization Renewals on its website\textsuperscript{124} fails to provide a clear and legally adequate justification for its purported new reauthorization process especially in light of the burden the foreshortened comment period places on interested members of the public to review and formulate comments, all within 15 calendar days. If NMFS still intends the new reauthorization process to become the rule rather than the exception, it is incumbent on the agency to set forth, via proposed regulation or policy document, its rationale for this new process and to allow public comment.

IV. ADVANCING MONITORING AND MITIGATION DURING OFFSHORE WIND DEVELOPMENT

While the best available scientific information justifies the use of seasonal restrictions to temporally separate wind development activity from North Atlantic right whales in some areas, it is becoming increasingly clear that there may not be a time of “low risk” for this species. The population size is now so small that any individual-level impact is of great concern. In addition, climate-driven changes in oceanographic conditions, and resulting shifts in prey distribution, are rapidly changing the spatial and temporal patterns of habitat use by North Atlantic right whales and other large whale species.\textsuperscript{125}

\textsuperscript{122} See \textit{Northpoint Tech. Ltd. v. FCC}, 412 F.3d 145, 151 (D.C. Cir. 2005) (a “‘reasonable’ explanation of how an agency’s interpretation serves the statute’s objectives is the stuff of which a ‘permissible’ construction is made”).

\textsuperscript{123} 16 U.S.C. § 1371(a)(5)(A)(i) (emphasis added). \textit{See also id. at} § 1371(a)(5)(A)(i)(I) (negligible impact finding must evaluate total of such taking “during each five-year (or less) period concerned”) (emphasis added).


Therefore, we recommend NMFS work, with relevant experts and stakeholders, towards developing a robust and effective near real-time monitoring and mitigation system for North Atlantic right whales and other endangered and protected species (e.g., fin, sei, minke, and humpback whales) during offshore wind energy development.

The ability to reliably detect North Atlantic right whales and other species on a near real-time basis and adjust survey (and future construction) activities accordingly (e.g., if a North Atlantic right whale is detected with X meters distance of the survey/construction area on Day 1, no survey/construction activity will be undertaken on Day 2) would enable NMFS to adaptively manage and mitigate risks to protected species in near-real time while affording flexibility to offshore wind developers. This approach could be used in conjunction with seasonal restrictions in North Atlantic right whale foraging areas (e.g., off southern New England), or potentially year-round in the Mid-Atlantic region where a changing climate is leading to novel spatial and temporal habitat-use patterns. A near real-time monitoring and mitigation approach would also minimize risks to other protected species that may be present at high densities at times when North Atlantic right whales are expected to be present in lower numbers (e.g., humpback whale and fin whale foraging aggregations that occur in the summer months in the New York Bight). An added benefit is that the biological data collected during construction could be used to inform future wind energy development activities and adaptive management.

There are several technologies in various stages of development that would allow near real-time detection of protected species (e.g., Robots4Whales126) and convey that information to decisionmakers (e.g., “Mysticetus”127) to inform mitigation action. Near real-time monitoring systems are already being deployed to mitigate risks to North Atlantic right whales. For example, an unmanned acoustic glider capable of auto-detecting North Atlantic right whale calls is currently informing decisions being made by Transport Canada on when to impose vessel speed restrictions in the Laurentian Channel. Ten-knot speed limits can be issued within an hour of North Atlantic right whales being detected.128 NMFS should evaluate the current status of near real-time detection technologies and develop recommendations for an integrated near real-time monitoring and mitigation system that combines, at minimum, both visual and acoustic detections.

It is also of paramount importance that NMFS encourage and promote adaptive management and robust long-term monitoring to assess impacts as offshore wind energy is developed and becomes operational. This is imperative considering the effects of a changing climate on large whale species and other cumulative anthropogenic stressors. Offshore wind energy development remains a relatively nascent technology in the U.S. and it is therefore imperative that the impact of offshore wind operations on marine wildlife and the ocean ecosystem be closely monitored to guide the industry’s adaptive management and future development. It is vital that we gain an understanding of baseline environmental conditions prior to large-scale offshore wind energy development in the United States. To this end, NMFS must coordinate with BOEM to establish and fund a robust, long-term scientific plan to monitor the effects of offshore wind energy development on marine mammals and other species before, during, and

127 Available at: https://www.mysticetus.com/.
after large-scale commercial projects are constructed. Without strong baseline data collection and environmental monitoring in place, we risk losing the ability to detect and understand potential impacts and set an under-protective precedent for future offshore wind energy development. Such monitoring must inform and drive future mitigation as well as potential practical changes to existing operations to reduce any potential impacts to natural resources and wildlife. We are extremely concerned that no such long-term monitoring requirements are currently in place for the first commercial-scale projects in the United States.

V. CONCLUSION

Thank you for considering our comments. We welcome the opportunity to meet with you, and your staff, at any time to discuss these matters.

Sincerely,

Francine Kershaw, Ph.D.
Staff Scientist, Marine Mammal Protection & Oceans
Natural Resources Defense Council

Priscilla M. Brooks, Ph.D.
Vice President and Director of Ocean Conservation
Conservation Law Foundation

Carl Lobue
NY Ocean Programs Director
The Nature Conservancy

Howard Rosenbaum, Ph.D.
Director, Ocean Giants Program
Senior Conservation Scientist, Global Conservation
Wildlife Conservation Society

Shyamala Rajan
Senior Policy Analyst, Renewable Energy and Wildlife
Defenders of Wildlife
Colleen Weiler
Jessica Rekos Fellow for Orca Conservation
WDC, Whale and Dolphin Conservation

Matt Gove
Mid-Atlantic Policy Manager
Surfrider Foundation

Catherine Bowes
Program Director, Offshore Wind Energy
National Wildlife Federation

ATTACHMENT:
1. ENGO letter to NMFS re Concerns Regarding IHAs for Offshore Wind Site Characterization. (Sep. 9, 2020).
September 9, 2020

Ms. Donna Wieting  
Director, Office of Protected Resources  
National Marine Fisheries Service  
1315 East-West Hwy.  
Silver Spring, MD 20910

Ms. Jolie Harrison  
Division Chief, Permits and Conservation Division, Office of Protected Resources  
National Marine Fisheries Service  
1315 East-West Hwy.  
Silver Spring, MD 20910

RE: Failure to Adequately Protect Endangered and Protected Marine Mammals During Marine Site Characterization Surveys Required for Offshore Wind Development

Dear Ms. Wieting and Ms. Harrison,

We are writing to express our profound concern regarding flaws in the incidental harassment authorizations (“IHAs”) issued by the National Marine Fisheries Service (“NMFS”) for marine site characterization surveys required for offshore wind development. Our organizations are united in support of responsibly developed offshore wind energy as a critically needed climate change solution, and we have long advocated for policies and actions needed to bring it to scale in an environmentally protective manner. We are heartened to see that in some instances developers are going beyond sub-standard NMFS requirements to adopt more protective measures, but NMFS should require even stronger protections of all developers.

Since March 2018, our groups have submitted 12 comment letters to NMFS on proposed IHAs for marine site characterization surveys associated with 12 offshore wind Lease Areas and associated potential export cable route corridors from Massachusetts to North Carolina (see Attachment 1). In these letters, we consistently identified recurring flaws in NMFS’ incidental take analyses and recommended measures to mitigate and monitor potential impacts to endangered and protected marine mammals—actions critical to environmentally responsible offshore wind development. Despite our urging, NMFS has made no meaningful improvements to the IHAs issued; in fact, NMFS has weakened the required mitigation and monitoring measures over time. This trend is irresponsible in light of the worsening conservation status of a number of species, including the critically endangered North Atlantic right whale, and the significant increase in the number and geographic and temporal scale of marine site characterization surveys.

Here, we summarize our overarching concerns and necessary improvements, and request a meeting with you and your staff to discuss how NMFS should adjust its current IHA process to reflect requirements under the Marine Mammal Protection Act (“MMPA”).
In brief, NMFS must:

A. Incorporate additional data sources into calculations of marine mammal density and take;
B. Analyze cumulative impacts to North Atlantic right whales and other endangered and protected marine mammal species and stocks as part of the take estimation and permitting process;
C. Not adjust take numbers downward for large whales based on unproven mitigation measures;
D. Require mitigation measures that meet the least practicable adverse impact standard;
E. Strengthen its vessel speed restrictions to mitigate the harm of increased vessel traffic; and
F. Prohibit extensions of any one-year IHA through a truncated 15-day comment period as is contrary to the MMPA.

We also submit our recommendations for advancing monitoring and mitigation during offshore wind development.

I. The Marine Mammal Protection Act

Congress enacted the MMPA because “certain species and population stocks of marine mammals are, or may be, in danger of extinction or depletion as a result of man’s activities.” The statute seeks to ensure that species and population stocks are not “permitted to diminish beyond the point at which they cease to be a significant functioning element of the ecosystem of which they are a part,” and do not “diminish below their optimum sustainable population.” Congress intended for NMFS to act conservatively in the face of uncertainty when authorizing activities harmful to marine species. This careful approach to management was deemed necessary because of the vulnerable status of many species and because it is difficult to measure the impacts of human activities on marine mammals in the wild.

At the heart of the MMPA is its “take” prohibition, which establishes a moratorium on the capture, harassing, hunting, or killing of marine mammals, and generally prohibits any person or vessel subject to the jurisdiction of the United States from taking a marine mammal on the high seas or in waters or on land under the jurisdiction of the United States. Harassment is any act that “has the potential to injure a marine mammal or marine mammal stock in the wild” or to “disturb a marine mammal . . . by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering.”

NMFS may grant exceptions to the take prohibition. As relevant here, the agency may authorize, for not more than a one-year period, the incidental, but not intentional, “taking by harassment of small numbers

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1 16 U.S.C. § 1361(1).
2 Id. § 1361(2); see also Conservation Council for Hawaii v. NMFS, 97 F. Supp. 3d 1210, 1216 (D. Haw. 2015).
5 Id. § 1362(13), 1371(a).
6 Id. § 1362(18)(A).
of marine mammals of a species or population stock” if the agency determines that such take would have only “a negligible impact on such species or stock.” The agency must prescribe permissible methods of taking to ensure that the activity has “the least practicable impact on such species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance.” NMFS must also establish monitoring and reporting requirements. No later than 45 days after receiving an application for an IHA, NMFS must publish a proposed authorization and open a 30-day comment period.

II. The Status of Marine Mammals in the Northwestern Atlantic

The North Atlantic right whale is on a path to extinction. Although the species has been listed as endangered under the Endangered Species Act (“ESA”) for decades, recent scientific analysis confirms a population decline since 2010 due to entanglements in commercial fishing gear and vessel strikes. In the wake of an alarming number of detected deaths of North Atlantic right whales in 2017, NMFS declared an Unusual Mortality Event (“UME”), which devotes additional federal resources to determining and—if possible—mitigating the source of excessive mortality. This designation is still in effect. At least 31 animals are known to have been killed since 2017 and an additional ten whales have been documented with serious injuries they will not survive. These 41 animals represent roughly ten percent of the population that now numbers approximately 400 individuals. Moreover, these documented serious injuries and deaths only represent a small fraction of whales that are injured or killed by human activities. Of great concern is that females are more negatively affected than males by the lethal and sublethal effects of human activity, surviving to only 30-40 years of age with an extended inter-calf interval of approximately ten years. Calf survival is also severely diminished. Two of the ten calves born in the 2019/2020 calving season are already either confirmed or likely dead due to vessel strikes.

7 Id. § 1371(a)(5)(D)(i).
8 Id. § 1371(a)(5)(D)(ii)(I).
9 Id. § 1371(a)(5)(D)(iii).
10 Id. § 1371(a)(5)(D)(iii).
13 The preliminary cumulative total number of animals in NMFS’ North Atlantic right whale Unusual Mortality Event has been updated to 41 individuals to include both the confirmed mortalities (dead stranded or floaters) (n=31) and seriously injured free-swimming whales (n=10) to better reflect the confirmed number of whales likely removed from the population during the UME and more accurately reflect the population impacts. Id.
14 NOAA Fisheries, “North Atlantic right whale.” Available at: https://www.fisheries.noaa.gov/species/north-atlantic-right-whale.
are one of nine marine species to be at greatest risk of extinction in the United States. In July, the International Union for Conservation of Nature (“IUCN”) reclassified the North Atlantic right whale from “endangered” to “critically endangered” on the IUCN Red List of Threatened Species, one step away from “extinction.”

Ongoing UMEs exist for other large whales. Alarmingly, 93 minke whales have stranded between Maine and South Carolina from January 2017 to September 2020 (data through September 1, 2020). Elevated numbers of humpback whales have also been found stranded along the Atlantic Coast since January 2016 and, in a little over four years, 131 humpback whale mortalities have been recorded (data through September 1, 2020), with strandings occurring in every state along the East Coast. NMFS’ declaration of these UMEs in the past few years for three large whale species for which anthropogenic impacts are a significant cause of mortality demonstrates an increasing risk to whales from human activities along the East Coast.

In addition to endangered and protected large whales, the Western North Atlantic Southern Migratory Coastal stock of bottlenose dolphin is of concern. The stock is considered to be both strategic and depleted under the MMPA due to the number of annual human-caused mortalities and previous UMEs.

We also note that the waters off Cape Hatteras, North Carolina, have the highest marine mammal biodiversity of any area along the East Coast, and compare favorably to other locations internationally renowned for their diversity of species, including waters off Northwest Spain, New Zealand, and South Africa. Nine families and 34 species (29 cetaceans, 4 pinnipeds, and 1 manatee) were recorded for the entire coast of North Carolina in a recent study. In addition to the diversity of species, marine mammals also occur at unusually high densities off Cape Hatteras compared to other areas along the East Coast.

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18 NOAA-NMFS, “North Atlantic right whale – In the Spotlight.” Available at: https://www.fisheries.noaa.gov/species/north-atlantic-right-whale#spotlight.
25 Id.
light of the outstanding importance for marine mammals, including the aforementioned strategic species and stocks, this area demands special attention from NMFS during the IHA permitting process.

NMFS is obligated under both the ESA and the MMPA to protect the North Atlantic right whale from additional harmful impacts of human activities and required by the MMPA to consider the full range of potential impacts on all marine mammal species, including minke and humpback whales and strategic stocks of small cetaceans, that are known to utilize the proposed survey area(s) and surrounding regions before issuing an IHA with appropriate avoidance, minimization, mitigation, and monitoring measures. NMFS must use the best available scientific information on marine mammal presence and density, as required by law.\(^{27}\) Considering the elevated threat to federally protected species and populations in the Atlantic, and emerging evidence of dynamic shifts in the distribution of marine mammal habitat, NMFS must ensure that any potential stressors posed by the proposed surveys are mitigated to effectuate the least practicable impact on affected species and stocks.\(^{28}\)

### III. Concerns Regarding Current Incidental Harassment Authorizations for Marine Site Characterizations Surveys and Necessary Improvements

#### A. NMFS must incorporate additional data sources into calculations of marine mammal density and take

To comply with statutory requirements of the MMPA, NMFS must base its IHA analysis on the best available scientific information.\(^{29}\) However, in determining the proportion of marine mammal species and populations taken by the proposed activities—a calculation that lies at the heart of the agency’s “small numbers” analysis—NMFS has chosen to rely on estimates of marine mammal densities derived from the habitat-based density model (the “Roberts et al.” model) produced by the Duke University Marine Geospatial Ecology Laboratory.\(^{30}\) While this model has been updated to incorporate additional data sources, including in Cape Cod Bay, and two or more years of data,\(^{31}\) it still excludes important data sources.

Of particular concern is NMFS’ continuing assertion that the lease areas and cable routes south of Nantucket and Martha’s Vineyard are situated only within the North Atlantic right whale

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31 Id.
migratory corridor, rather than acknowledging that North Atlantic right whales are now regularly observed aggregating socially and foraging in these areas year-round. This omission is irresponsible in light of NMFS’ current work to develop new regulations to reduce entanglement of North Atlantic right whales, for which the importance of this area as a new aggregation and foraging site forms a central point of consideration. A recent NMFS Technical Memorandum authored by the agency’s North Atlantic right whale “Expert Working Group” describes the area “South of the Islands” as “core” North Atlantic right whale foraging habitat during the “Winter/Spring/Summer/Fall.” The Roberts et al. model does not adequately capture this increase in habitat use by right whales and, therefore, levels of take based solely on those models will most certainly be underestimates. The Expert Working Group specifically notes the need to improve the North Atlantic right whale habitat model and recommends “a coordinated and unified modeling approach [with Canada] to provide distribution and density predictions across the range of NARW habitat.”

Similarly, NMFS defined the North Atlantic right whale migratory corridor as a biologically important area (“BIA”) in 2015 before evidence emerged of the new foraging areas south of Martha’s Vineyard and Nantucket. While helpful in identifying key areas of importance, the BIAs are not comprehensive and are intended to be periodically reviewed and updated to reflect the best available scientific information. Until this review is undertaken for the East Coast, NMFS should not rely on the North Atlantic right whale migratory corridor BIA as the sole indicator of habitat importance for the species.

NMFS must require that all available data are used to ensure that any potential shifts in North Atlantic right whale habitat usage are reflected in estimations of marine mammal density and take. Additional data can be obtained from sightings databases (e.g., NOAA Right Whale Sighting Advisory System; NEFSC Monthly DMA analysis), and passive acoustic monitoring efforts (e.g., Robots4Whales detections).

35 Id., at 22.
36 “However, these BIAs are meant to be living documents that should be routinely reviewed and revised to expand the number of species covered and to update the existing BIAs as new information becomes available.” Van Parijs, S. M., “Letter of introduction to the Biologically Important Areas issue.” Aquatic Mammals, vol. 41, p.1 (2015).
37 NOAA Fisheries, “NOAA Right Whale Sighting Advisory System.” Available at: https://apps-nefsc.fisheries.noaa.gov/psb/surveys/MapperiframeWithText.html.
NEFSC Acoustic Indicators of Right Whale Occurrence\textsuperscript{40}). Further, from February 2017 through June 2018, monthly standardized marine mammal aerial surveys were flown in the Massachusetts and Rhode Island and Massachusetts Wind Energy Areas (“WEAs”) by the New England Aquarium. Right whales were seen in every season and 14 of the 18 months surveyed.\textsuperscript{41} As part of the New England Aquarium Study, a digital acoustic monitoring instrument at Nomans Land station detected right whales throughout the sampling period.\textsuperscript{42} During the 2018 Atlantic Marine Assessment Program for Protected Species (“AMAPPS”) ship-based surveys,\textsuperscript{43} two foraging right whales were sighted within the Massachusetts WEA by NMFS researchers studying the potential linkages between biological and physical oceanography and marine mammal sightings on April 7. Additional sightings in the North Atlantic right whale consortium database document 47 right whales in the WEA from March 18, 2018 to April 11, 2018. A study funded by the Bureau of Offshore Energy Management (“BOEM”) using autonomous vehicles for real-time monitoring of marine mammals from December 2019 through March 2020 on Cox’s Ledge acoustically detected right whales in all months of the study.\textsuperscript{44} NMFS should take immediate steps to collate and integrate these different data sets that more accurately reflect marine mammal presence for future IHAs and other work.

As a general matter, the Roberts et al. model does not differentiate between species of pilot whale or seal, or between stocks of bottlenose dolphin, including the depleted and strategic Western North Atlantic Southern Migratory Coastal Stock of bottlenose dolphin. To make up for the general data, NMFS authorizes the total take for each stock of bottlenose dolphins and all pilot whale and seal species.\textsuperscript{45} However, the MMPA requires that the agency look at the impact to both species and marine mammal stocks to support a negligible impact finding. A record that provides “general discussions with little, if any, relevance to the population-level effects on specific species and stock, and to conclusory statements that no such effects are expected,” is inadequate.\textsuperscript{46} Miscalculation of take levels based on incomplete data could have serious implications for the future conservation of these species and stocks.

\textbf{B. NMFS must analyze cumulative impacts to North Atlantic right whales and other endangered and protected marine mammal species and stocks as part of the take estimation and permitting process}

\textsuperscript{40} Northeast Fisheries Science Center. “Acoustic Indicators of Right Whale Occurrence.” Available at: https://apps-nefsc.fisheries.noaa.gov/psb/surveys/interactive-monthly-dma-analyses/.


\textsuperscript{42} Id.

\textsuperscript{43} Id.


The spatial and temporal scale of site characterization surveys has increased significantly over the last three years. For example, the Final IHA issued to Orsted Wind Power LLC in 2019, authorizes surveys conducted across a geographic area spanning waters off Massachusetts, Rhode Island, and New York twenty-four hours a day for up to a year, utilizing between five and nine survey vessels at any one time (representing 666 “vessel days”). The number of authorizations granted to different applicants in the same geographic region has also increased. This is particularly true of the Lease Areas and associated potential export cable routes off Rhode Island and Massachusetts where there are currently eight separate wind energy projects in various stages of development. Each project has, or will need to, request authorization from NMFS to carry out site assessment and characterization activities that will then be undertaken concurrently or sequentially in space and time.

The operation of multiple, large-scale geophysical surveys within the same area at the same time presents significant potential for cumulative disturbance of strategic and otherwise vulnerable marine mammal species and stocks. The agency acknowledges that “[a]ny disturbance to marine mammals is likely to be in the form of temporary avoidance or alteration of opportunistic foraging behavior near the survey location,” but makes no attempt to account for cumulative impacts from multiple sound sources operating concurrently and continuously across the survey areas. Additionally, “vessel days” are treated equally by the agency in terms of potential impacts to marine mammals even though there are times of year when some species have higher vulnerability to noise exposure from the survey activities being undertaken (e.g., during foraging periods), or may have reduced ability to avoid noise exposure due to multiple survey vessels operating in the same vicinity at the same time.

We are extremely concerned about the cumulative impacts of survey activities in the Lease Areas and associated potential cable export routes off Rhode Island and Massachusetts on North Atlantic right whales. These areas coincide directly with year-round “core” North Atlantic right whale foraging habitat and well as ESA critical habitat. Protection of North Atlantic right whales during foraging, and the protection of their foraging habitat, must be one of NMFS’ highest priorities. Foraging areas with suitable prey density are limited relative to the overall distribution of North Atlantic right whales, and a decreasing amount of habitat is available for resting, pregnant and lactating females. This means that

48 See, BOEM, “Atlantic OCS Renewable Energy – Massachusetts to South Carolina,” (March 30, 2020). Available at: https://www.boem.gov/sites/default/files/images/Map%20of%20Atlantic%20OCS%20renewable%20energy%20areas.jpg
50 Id.
unrestricted and undisturbed access to suitable areas, when they exist, is extremely important for the species to maintain its energy budget.\textsuperscript{54} Scientific information on North Atlantic right whale functional ecology also shows that the species employs a “high-drag” foraging strategy that enables them to selectively target high-density prey patches, but is energetically expensive.\textsuperscript{55} Thus, if access to prey is limited in any way, the ability of the whale to offset its energy expenditure during foraging is jeopardized. In fact, researchers have concluded: “[R]ight whales acquire their energy in a relatively short period of intense foraging; even moderate changes in their feeding behavior or their prey energy density are likely to negatively impact their yearly energy budgets and therefore reduce fitness substantially.”\textsuperscript{56} North Atlantic right whales are already experiencing significant food-stress: juveniles, adults, and lactating females have significantly poorer body condition relative to southern right whales and the poor condition of lactating females may cause a reduction in calf growth rates.\textsuperscript{57} NMFS must ensure undisturbed access to foraging habitat to adequately protect the species.

The best available scientific information shows that the North Atlantic right whale population cannot withstand any additional stressors; any potential interruption of foraging behavior may lead to population-level effects and is of critical concern.\textsuperscript{58} Currently, NMFS undertakes take analyses and prescribes mitigation measures on a project-by-project basis, leading to inconsistency, inefficiency, and inadequacy. \textbf{NMFS must carefully analyze the cumulative impacts from the proposed survey activities on the North Atlantic right whale and other endangered and protected species and stocks and ensure appropriate mitigation of these cumulative impacts. We suggest that the agency advance a programmatic incidental take regulation for site characterization activities.}\textsuperscript{59} This will ensure NMFS considers alternatives and mitigation measures at the scale at which impacts will occur and may potentially help increase the pace of environmentally responsible offshore wind development along the East Coast.

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\textsuperscript{54} See, e.g., supra note 53.
\textsuperscript{55} See Letter from National Wildlife Federation, Natural Resources Defense Council, National Audubon Society, Conservation Law Foundation, Defenders of Wildlife, Sierr Club, Mass Audubon, New Hampshire Audubon, NY4WHALES, Southern Environmental Law Center, Surfrider, and Whale and Dolphin Conservation, submitted to the Program Manager, Office of Renewable Energy, Bureau of Ocean Energy Management, re: “Vineyard Wind 1 Construction and Operations Plan Supplement to the Draft Environmental Impact Statement.” Docket ID: BOEM-2020-0005 (July 27, 2020). Some of our groups have mirrored this recommendation in comments to BOEM. To best account for the impacts of the simultaneous development of multiple lease areas on the North Atlantic right whale, we have stressed that BOEM prepare a full Programmatic Environmental Impact Statement (“EIS”) encompassing all U.S. East Coast renewable energy development as soon as possible to inform future offshore wind development. It would be highly beneficial to collectively consider available information on North Atlantic right whales in U.S. Atlantic waters to build a picture of responsible development accounting for the lifespan and migratory movements of the species, which have the potential to overlap with every Lease Area along the U.S. East Coast on a twice-yearly basis (\textit{i.e.}, northern and southern migration). A Programmatic EIS is also particularly timely given the climate-driven shifts in North Atlantic right whale habitat use observed over the past decade as well as significant changes in their conservation status and major threats.
C. **NMFS must not adjust take numbers downward for large whales based on unproven mitigation measures**

In a number of IHAs, NMFS elected to adjust take numbers of endangered large whales downward by as much as 100 percent, based on assumptions that marine mammals will avoid the sound and the presumed effectiveness of mitigation measures. For example, in the IHA for Bay State Wind, issued in 2018, the agency elected to adjust take numbers of North Atlantic right whales to zero “due to the implementation of a 500 m shutdown zone [i.e., exclusion zone or “EZ”], which is greater than the 400 m Level B behavioral harassment zone.”

For Avangrid Renewables, LLC (issued in 2019), NMFS adjusted take numbers of endangered North Atlantic right whales and fin whales to zero as “the calculated numbers of potential acoustic exposures above the 160 dB threshold are small” and based on the implementation of a 500-m exclusion zone for North Atlantic right whales and a 200-m exclusion zone for fin whales that are greater than or, in the case of fin whales, equal to the calculated Level B harassment zone. In the IHA for Mayflower Wind issued in 2020, NMFS adjusted take numbers for North Atlantic right whales and other large whale species downward by 50 percent, acknowledging risk to the species during the night:

 “… expect[s] the proposed mitigation measures, including a 500-m exclusion zone for right whales (which exceeds the Level B harassment zone by over 350-m), will be effective in reducing the potential for takes by Level B harassment, but there is still a risk that right whales may not be detected within the Level B harassment zone during periods of diminished visibility, particularly at night.”

While we appreciate NMFS’ decision to authorize fewer Level B takes for the North Atlantic right whale and other endangered and protected species, **we do not share the agency’s confidence that it can successfully mitigate Level B harassment simply through the implementation of the IHA mitigation measures currently required.**

Our reasons are threefold. First, NMFS’ reliance on a 160 dB threshold for behavioral harassment is not supported by the best available scientific information and grossly underestimates Level B take. Second,
the agency relies on the assumption that marine mammals will take measures to avoid the sound even though studies have not found avoidance behavior to be generalizable among species and contexts and even though avoidance may itself constitute take under the MMPA. Third, we agree with the Marine Mammal Commission that until the effectiveness of mitigation measures are determined, it is premature to include any related assumptions to reduce the numbers of marine mammal takes.

Disturbingly, we have also witnessed an erosion in the strength of mitigation measures in recent IHAs that NMFS has issued compared to previous IHA authorizations for the region, even as the conservation status of the North Atlantic right whale and other species has continued to deteriorate. For example, NMFS required multiple Protected Species Observers (“PSO”), night vision and infrared technology, and passive acoustic monitoring for Bay State Wind in 2018. In subsequent IHAs, NMFS required the use of PSOs as the sole monitoring method and, by Fall 2019, NMFS further weakened requirements to only a single PSO as the primary means of detecting marine mammals during the day, requiring neither night vision or infrared technology nor real-time passive acoustic monitoring.

Collectively, the agency’s assumptions regarding acoustic thresholds and mitigation effectiveness are unfounded and NMFS cannot justify any reduction in the number of takes authorized based on these faulty assumptions.

D. NMFS must require mitigation measures that meet the least practicable adverse impact standard

Mammal Commission “…remains concerned that NMFS’ current behavior thresholds do not reflect the current state of understanding regarding the temporal and spectral characteristics of various sound sources and their impacts on marine mammals. Therefore, the Commission recommends that, until the behavior thresholds are updated, NMFS require applicants to use the 120- rather than 160-dB re 1 µPa threshold for acoustic, non-impulsive sources (e.g., parametric SBPs, chirps, echosounders, and other sonars including side-scan and fish-finding).”

See, e.g., “We expect 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, reactions that are considered to be of low severity and with no lasting biological consequences (e.g., Southall et al., 2007).” 85 Fed. Reg. at 37,872.


In authorizing “take” by incidental harassment under the general authorization provision of the MMPA, NMFS must prescribe “methods” and “means of effecting the least practicable adverse impact” on marine mammals and set additional “requirements pertaining to the monitoring and reporting of such taking.” Knowing the cumulative risks posed to the North Atlantic right whale and other protected marine mammal stocks by increased site assessment and characterization activities, NMFS has an obligation to impose robust mitigation requirements to protect these species to the maximum extent practicable.

The following site assessment and characterization mitigation measures would help ensure adequate protections for the North Atlantic right whale; many offer protections to other endangered and protected species and stocks as well.

a. Seasonal and diel restrictions

It is most protective to avoid and reduce impacts in the first instance by separating harmful activities from the species potentially affected. NMFS should prohibit site assessment and characterization activities involving equipment with noise levels that could cause injury or harassment to North Atlantic right whales (based on the best available science, we consider source levels greater than 180 dB re 1 μPa (SPL) at 1-meter at frequencies between 7 and 35 kHz to be potentially harmful to low-frequency cetaceans) during periods of highest risk to right whales. These periods are defined as times of highest relative density of animals during their migration, and times when mother-calf pairs, pregnant females, surface active groups (indicative of breeding or social behavior), or aggregations of three or more whales (indicative of feeding or social behavior) are, or are expected to be, present, as supported by review of the best available scientific information at the time of the activity (see Attachment 2).

Further, while NMFS must minimize existing and potential stressors to the North Atlantic right whale to promote the survival and recovery of the species, the agency must also address potential impacts to other protected whale species, particularly in light of the UMEs declared for humpback whales and minke whales, as well as the several strategic stocks that populate the Atlantic seaboard. It is therefore imperative that NMFS fully account for the consequences of the proposed North Atlantic right whale seasonal restriction on other protected species. NMFS should also advance a robust and effective near real-time monitoring and mitigation system for North Atlantic right whales and other endangered and protected species.

73 Letter from Kraus, S., Quintana, E., Rice, A., Good, C., and Baumgartner, M. to Mr. James Bennet, Chief of the Office of Renewable Energy Programs, Bureau of Ocean Energy Management, and Ms. Donna Wieting, Director, Office of Protected Resources, National Marine Fisheries Service, regarding recommendations for adequate and effective mitigation of noise impacts to the North Atlantic right whale during offshore wind construction (August 2, 2018). For the Rhode Island and Massachusetts and Massachusetts Wind Energy Areas, the scientists recommend a temporary prohibition on pile driving from January 1 to April 30 and an “enhanced mitigation protocol be in place from May 1 through 14 and November 1 through December 31. As North Atlantic right whale distribution is known to be shifting, the scientists recommend the dates of these restrictions and the enhanced mitigation protocol be reassessed every two years by an independent advisory group based on the best scientific and commercial data available.
protected species (see Section IV: “Advancing Monitoring and Mitigation During Offshore Wind Development”).

In addition, when geophysical survey equipment with the potential to injure or harass protected species and stocks is deployed, NMFS should require that work commence, with ramp up, only during daylight hours and good visibility conditions to maximize the probability that marine mammals are detected and confirmed clear of the exclusion zone before activities begin. The activity can then continue into periods of darkness and low visibility. If the activity is halted or delayed because of documented or suspected North Atlantic right whale presence in the area, NMFS should require developers to wait until daylight hours and good visibility conditions to recommence.

b. Adequate monitoring of exclusion zones

As noted above, the 160 dB threshold for behavioral harassment is not supported by best available scientific information and grossly underestimates Level B take (see Section III(C)). For the North Atlantic right whale, NMFS should establish an exclusion zone of 1,000-meters around each vessel conducting activities with noise levels that could result in injury or harassment to this species (i.e., source levels > 180 dB re 1 μPa (SPL) at 1-meter at frequencies between 7 and 35 kHz). NMFS should establish a minimum exclusion zone of 500 meters for other large whale species and strategic stocks. We agree with NMFS’ previous requirements that observations must begin at least 30 minutes prior to the commencement of geophysical survey activity and should be conducted throughout the time of geophysical survey activity. NMFS should require that activity be halted or delayed if a North Atlantic right whale or other species is detected in the relevant exclusion zone.

As noted above in Section C, NMFS has established a wholly inadequate standard for visual monitoring during marine site characterization surveys and has weakened that inadequate standard over time. Recently, NMFS approved an IHA that required only a single PSO to be on duty during daylight hours and 30 minutes prior to and during nighttime ramp-ups of HRG equipment, stating that “[v]isual PSOs would coordinate to ensure 360° visual coverage around the vessel from the most appropriate observation posts…” It is not possible for a single PSO to continually visually monitor 360°. NMFS’ minimum requirement of a single PSO is underprotective. Furthermore, PSOs are unable to visually monitor the exclusion area during darkness and periods of low visibility. NMFS must require the use of infrared equipment to support visual monitoring by PSOs during periods of darkness.

76 Id.
Moreover, visual observations are not enough. Studies suggest that North Atlantic right whales exhibit behaviors that reduce their likelihood of detection by PSOs. These behavioral responses may be heightened when whales are in the proximity of the acoustic disturbance from geophysical surveys, meaning that animals may be less detectable by observers during the survey period relative to other times. Other endangered and protected large whales pose similar monitoring challenges. There are also sighting condition limitations. For even the most conspicuous large whale species, estimates of relative detection probability for a Beaufort Sea State of 6 is less than half that for a Beaufort Sea State of 0. Based on data collected by the National Buoy Data Center, a monthly average Beaufort Sea State of at least 3 or 4 can be expected in lease areas situated along the East Coast, year-round. Given these data, observers alone are certain to underestimate the total number of large whales in the mitigation area based on sea state.

NMFS’ failure to require using passive acoustic monitoring at any time during geophysical surveys is extremely concerning. **NMFS should require passive acoustic monitoring at all times—not only during nighttime hours—to maximize the probability of detection for North Atlantic right whales, and ideally other protected species and stocks**, including during periods of fog, precipitation, and high sea states, when PSOs and infrared technologies are less effective. It should be noted that passive acoustic monitoring without visual observers would also be insufficient as individuals may not continually vocalize. At minimum, NMFS should always require a combination of agency-approved PSOs to visually detect whales and passive acoustic monitoring to detect vocalizations in real or near-real time when noise levels that could result in injury or harassment to the species are being conducted.

c. Reduction of underwater noise

According to NOAA’s “Ocean Noise Strategy Roadmap:”

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in light of the current UMEs declared for the Atlantic coast. Further, NMFS should encourage developers to partner with scientists and collect data that increases our understanding of the effectiveness of infrared technologies, with a view towards greater reliance on these technologies to commence surveys during nighttime hours in the future.


Barlow, J., “Inferring trackline detection probabilities, g(0), for cetaceans from apparent densities in different survey conditions,” *Marine Mammal Science*, vol. 31, p. 923-943 (2015); Baumgartner, M.F., Cole, T.V.N., Clapham, P.J., and Mate, B.R., “North Atlantic right whale habitat in the lower Bay of Fundy and on the SW Scotian Shelf during 1999-2001.” *Marine Ecology Progress Series*, vol. 264, p. 137-154 (2003). Sea state has been demonstrated to have a direct effect on the sighting probability of North Atlantic right whales in the Lower Bay of Fundy and in Roseway Basin of the Southwest Scotian Shelf (Baumgartner et al. 2003). In line with Barlow (2015), the probability of sighting a North Atlantic right whale in this area changed by a factor of 0.628 (95% CI: 0.428-0.921) for every unit increase in sea state. These studies indicate the effect of increasing Beaufort Sea State in reducing the probability of detection of large whales, including the North Atlantic right whale. From the findings of Baumgartner et al. (2003), a reduction in detection probability of North Atlantic right whales by up to 84.5 percent based on an average Beaufort Sea State of 4 would be expected, relative to ideal sighting conditions (*i.e.*, Beaufort sea state = 0). Notably, the detectability of North Atlantic right whales even under ideal sighting conditions is likely to be significantly less than 100 percent given availability and perception biases other than those involving sea state.

“[W]here noise is concerned, mitigation should be broadly designed to do one of two things: (1) reduce the temporal or spatial overlap of ensonified areas with marine taxa (or acoustic habitat) in particular times, places or circumstances, and/or (2) reduce the sound level at the source (which may include replacing the source with a different type of source capable of the same function).”

In addition, simulation studies comparing the level of risk reduction associated with technologies that allow for reduced source levels and current exclusion zone mitigation practices indicate that there will be very few instances where mitigation using visual observers can achieve a greater risk reduction than would be achieved by a reduction in source level. Thus, reducing sound emissions at the source is one the most effective means of mitigating the impacts of noise on protected species.

**NMFS must require IHA applicants to 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.** For example, NMFS should require developers to select sub-bottom profiling systems, and operate those systems at power settings, that achieve the lowest practicable source level for the objective. NMFS currently has no such requirements.

**E. NMFS must strengthen its vessel speed restrictions to mitigate the harm of increased vessel traffic**

Vessel collisions are a leading cause of large whale injury and mortality and a primary driver of the East Coast’s three ongoing UMEs. Serious injury or mortality can occur from a vessel traveling above 10 knots irrespective of its length. The number of recorded vessel collisions on large whales each year is likely a gross underestimate of the actual number of animals struck, as animals struck but not recovered, or not thoroughly examined, cannot be accounted for. North Atlantic right whales are particularly prone to vessel strike given their slow speeds, their occupation of waters near shipping lanes, and the extended time they spend at or near the water’s surface. Some types of anthropogenic noise have been shown to induce sub-surface positioning in North Atlantic right whales, increasing the risk of vessel strike at

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83 NOAA-NMFS, “Reducing ship strikes to North Atlantic right whales.” Available at: https://www.fisheries.noaa.gov/national/endangered-species-conservation/reducing-ship-strikes-north-atlantic-right-whales#~text=All%20vessels%2065%20feet%20%2819.8%20m%29%20%20endangered%20North%20Atlantic%20right%20whales. To reflect the risk posed by vessels of any length, the Commonwealth of Massachusetts established a mandatory vessel speed restriction for all vessels (including under 20 meters) in the Cape Cod Bay SMA.


relatively moderate levels of exposure.\textsuperscript{86} It is possible that geophysical surveys could produce the same effects, and should therefore be treated conservatively. \textbf{The agency has a responsibility to implement mitigation measures to prevent any further vessel collisions for the North Atlantic right whale and other large whale species currently experiencing a UME (i.e., humpback whales and minke whales), as well as other endangered and protected marine mammals (e.g., fin whales), which, in light of the broad distributional shifts observed for multiple species,\textsuperscript{87} may be at potential future risk of experiencing a UME.}

NMFS’ authorizations acknowledge that vessel strikes can kill animals, that speed is a factor, and that North Atlantic right whales are particularly vulnerable because they are “generally unresponsive to vessel sound” and “more susceptible to vessel collisions,”\textsuperscript{88} yet these authorizations only discuss the impacts of survey vessels that generally travel at speeds of less than four knots.\textsuperscript{89} This ignores the impacts of all other project vessels on right whales (e.g., crew transfer vessels). While we appreciate that NMFS expressly requires all survey vessels to observe a 10-knot speed restriction within Seasonal Management Areas (“SMAs”) or otherwise voluntary Dynamic Management Areas (“DMAs”),\textsuperscript{90} NMFS implicitly authorizes project vessels to travel at speeds greater than 10 knots at all other times, unless a right whale is actually observed within 500 meters.\textsuperscript{91} This is wholly insufficient. The recent death of a North Atlantic right whale calf off New Jersey\textsuperscript{92} indicates how even single or pairs of animals are at risk of vessel strike year-round. North Atlantic right whales had been acoustically detected in the New York/New Jersey Bight region, yet no vessel speed rules were triggered under current regulations. In light of this tragic event, a sighting of three or more North Atlantic right whales is too high a bar to trigger a DMA. As a general matter, \textbf{NMFS should require mandatory speed restrictions within DMAs in every instance that a single North Atlantic right whale is sighted or acoustically detected, not just aggregations of three or more whales.} At minimum, NMFS must immediately pay special attention to protecting mother-calf pairs.

As NMFS notes, studies indicate that noise can induce flight responses, behavioral disturbances, habitat avoidance, and stress responses that reduce feeding rates and reproductive success.\textsuperscript{93} Because of the noise, geophysical surveys could also cause horizontal displacement\textsuperscript{94} and push a North Atlantic right whale out of a protected area (SMA or DMA) into an area where vessels are traveling at greater speed, presenting an


\textsuperscript{88} See, e.g., 85 Fed. Reg. at 37,862 (Jun. 24, 2020) (citing Nowacek et al., 2004).

\textsuperscript{89} See, e.g., 85 Fed. Reg. at 37,866 (Jun. 24, 2020)

\textsuperscript{90} See, e.g., 85 Fed. Reg. at 55,430 (Sep. 8, 2020).

\textsuperscript{91} See, e.g., id.

\textsuperscript{92} NOAA Fisheries, “Dead North Atlantic Right Whale Sighted off New Jersey” (June 29, 2020). Available at: https://www.fisheries.noaa.gov/feature-story/dead-north-atlantic-right-whale-sighted-new-jersey#:~:text=June%2028%2C%202020,of%20the%202019%2F20%20season.

\textsuperscript{93} See, e.g., 85 Fed. Reg. at 37,860-37,862 (Jun. 24, 2020).

\textsuperscript{94} E.g., Castellote, M., Clark, C.W., and Lammers, M.O., “Acoustic and behavioural changes by fin whales (\textit{Balaenoptera physalus}) in response to shipping and airgun noise.” \textit{Biological Conservation}, vol. 147, pp. 115-122 (2012).
even greater danger of vessel collision. Thus, NMFS’ analysis must also account for habitat displacement producing an indirect vessel strike.

**Vessel strikes pose an unacceptable risk. NMFS must require all project vessels operating within or transiting to/from survey areas, regardless of size, to observe a 10-knot speed restriction during the entire survey period.**

**F. NMFS must prohibit extensions of any one-year authorizations through a truncated 15-day comment period as is contrary to the MMPA**

On March 7, 2019, NMFS began issuing notice of a new reauthorization process for a multitude of permits. Specifically, NMFS requests comment on the potential one-year renewal of authorizations on a case-by-case basis for identical or nearly identical activities, with only an additional 15 days for public comment, should various criteria be met.95

For several reasons, our organizations have repeatedly opposed this process as contrary to law. First, NMFS’ proposal to provide one-year renewals does not comport with the plain language of the MMPA. Section 101(a)(D)(i) unambiguously states that incidental harassment authorizations are valid for periods of not more than one year.96 Second, the statute is clear on its face that a 30-day comment period is required in all instances.97 The legislative history of the 1972 Act demonstrates that Congress viewed a robust notice and comment process as central to the agency’s implementation of the IHA process: “As approved by the Committee, the [MMPA] involves a number of basic concepts,” one being that “the public is invited and encouraged to participate fully in the agency decision-making process.”98 When NMFS adheres to this process, “the public is assured of the right to be informed of actions taken or proposed.”99 Third, the legislative history removes any doubt that this 30-day comment period applies even in cases where a new application extends the IHA for another year without change.100 The agency lacks discretionary authority to interpret the statute otherwise, whether by regulation, by policy, or on a permit-by-permit basis as it purports to do here.101 Moreover, NMFS has not supplied a sufficient explanation for why it might assert that the statutory language of Sec. 101(a)(5)(D)(iii) is ambiguous, such that the agency might appropriately exercise its congressionally-delegated gap-filling


97 Id. § 1371(a)(5)(D)(iii).


99 Id. at 4146.


101 See Chevron, U.S.A., Inc. v. NRDC, 467 U.S. 837, 842–43 (1984) (“If the intent of Congress is clear, that is the end of the matter; for the court, as well as the agency, must give effect to the unambiguously expressed intent of Congress.”).
authority to set forth a permissible interpretation of the statute that comports with the statute’s objectives.\textsuperscript{102}

Should the agency wish to establish its new IHA renewal process as a reasonable interpretation of an ambiguous statutory provision, it should do so through notice-and-comment rulemaking or comparable process with the appropriate indicia of formality. In so doing, NMFS must also explain why applicants whose activities may result in the incidental harassment of marine mammals over more than one year should not be required to apply for authorization to do so through the incidental take regulation procedure established by Sec. 101(a)(5)(A)(i), which provides for authorizing incidental take during periods of “not more than five consecutive years each.”\textsuperscript{103} Where Congress established clear and distinct statutory processes for authorizing incidental take via harassment for one-year periods versus periods extending more than one year and up to five years, NMFS must justify how its proposed unlawful hybrid administrative extension process, with a curtailed comment period, is consistent with both statutorily-established processes.

NMFS’ statement regarding Incidental Harassment Authorization Renewals on its website\textsuperscript{104} fails to provide a clear and legally adequate justification for its purported new reauthorization process especially in light of the burden the foreshortened comment period places on interested members of the public to review and formulate comments, all within 15 calendar days. As NMFS apparently intends the new reauthorization process to become the rule rather than the exception, it is incumbent on the agency to set forth, via proposed regulation or policy document, its rationale for this new process and to allow public comment.

IV. Advancing Monitoring and Mitigation During Offshore Wind Development

While the best available scientific information justifies the use of seasonal restrictions to temporally separate survey activity from North Atlantic right whales in some areas, it is becoming increasingly clear that there may not be a time of “low risk” for this species. The population size is now so small that any individual-level impact is of great concern. In addition, climate-driven changes in oceanographic conditions, and resulting shifts in prey distribution, are rapidly changing the spatial and temporal patterns of habitat use for North Atlantic right whales and other large whale species.\textsuperscript{105} Therefore, we recommend NMFS work, with relevant experts and stakeholders, towards developing a robust and effective near real-time monitoring and mitigation system for North Atlantic right whales and other

\textsuperscript{102} See Northpoint Tech. Ltd. v. FCC, 412 F.3d 145, 151 (D.C. Cir. 2005) (a “‘reasonable’ explanation of how an agency’s interpretation serves the statute’s objectives is the stuff of which a ‘permissible’ construction is made”).

\textsuperscript{103} 16 U.S.C. § 1371(a)(5)(A)(i) (emphasis added). See also id. at § 1371(a)(5)(A)(i)(I) (negligible impact finding must evaluate total of such taking “during each five-year (or less) period concerned”) (emphasis added).


endangered and protected species (e.g., fin, sei, minke, and humpback whales) during offshore wind development.

The ability to reliably detect North Atlantic right whales and other species on a near real-time basis and adjust survey (and future construction) activities accordingly (e.g., if a North Atlantic right whale is detected with X distance of the survey/construction area on Day 1, no survey/construction activity will be undertaken on Day 2) would enable NMFS to adaptively manage and mitigate risks to protected species in near-real time while affording flexibility to offshore wind developers. This approach could be used in conjunction with seasonal restrictions in North Atlantic right whale foraging areas (e.g., off southern New England), or potentially year-round in the Mid-Atlantic region where a changing climate is leading to novel spatial and temporal habitat-use patterns. A near real-time monitoring and mitigation approach would also minimize risks to other protected species that may be present at high densities at times when North Atlantic right whales are expected to be present in lower numbers (e.g., humpback whale and fin whale foraging aggregations that occur in the summer months in the New York Bight).

There are several technologies in various stages of development that would allow near real-time detection of protected species (e.g., Robots4Whales\(^{106}\)) and convey that information to decisionmakers (e.g., “Mysticetus”\(^ {107}\)) to inform mitigation action. Near real-time monitoring systems are already being deployed to mitigate risks to North Atlantic right whales. For example, an unmanned acoustic glider capable of auto-detecting North Atlantic right whale calls is currently informing decisions being made by Transport Canada on when to impose vessel speed restrictions in the Laurentian Channel. Ten-knot speed limits can be issued within an hour of North Atlantic right whales being detected.\(^ {108}\) NMFS should evaluate the current status of near real-time detection technologies and develop recommendations for an integrated near real-time monitoring and mitigation system that combines, at minimum, both visual and acoustic detections.

It is also of paramount importance that NMFS encourage and promote adaptive management and robust long-term monitoring to assess impacts as offshore wind is developed and operational. Offshore wind remains a relatively nascent technology in the U.S. and it is therefore imperative that the impact of offshore wind operations on marine wildlife and the ocean ecosystem be closely monitored to guide the industry’s adaptive management and future development. It is vital that we gain an understanding of baseline environmental conditions prior to large-scale offshore wind development in the United States. To this end, NMFS must coordinate with BOEM to establish and fund a robust, long-term scientific plan to monitor the effects of offshore wind development on marine mammals and other species before, during, and after large-scale commercial projects are constructed. Without strong baseline data collection and environmental monitoring in place, we risk losing the ability to detect and understand potential impacts and set an under-protective precedent for future offshore wind development. Such monitoring must inform and drive future mitigation as well as potential practical changes to existing operations to reduce any potential impacts to natural resources and wildlife. We are extremely concerned that no such long-


\(^{107}\) Available at: https://www.mysticetus.com/.

term monitoring requirements are currently in place for the first commercial-scale projects in the United States.

V. Conclusion

NMFS’ current approach to authorizing incidental take of marine mammals during marine site characterization activities for offshore wind energy development is inadequate and not compliant with the law. Our groups request the opportunity to meet with you and your staff to further discuss these issues and necessary improvements in more detail. For further discussion, please contact Michael Jasny (mjasny@nrdc.org) at the Natural Resources Defense Council.

Sincerely,

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Natural Resources Defense Council

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Paul L. Sieswerda  
President, CEO  
Gotham Whale

George Povall  
Executive Director  
All Our Energy
ATTACHMENTS:
1. “ENGO Comments on Proposed IHAs 2018-2020”

CC: Mr. James F. Bennett, Program Manager, Renewable Energy Program, Bureau of Ocean Energy Management
Re: Notice of Proposed Incidental Harassment Authorization; Taking Marine Mammals Incidental to Construction of the South Fork Offshore Wind Project; Docket No. NOAA-NMFS-2021-02263

Dear Ms. Harrison,

The Responsible Offshore Development Alliance (RODA) submits the following comments regarding the National Marine Fisheries Service (NMFS) proposed incidental harassment authorization (IHA) for the construction of a commercial wind energy project as requested by South Fork Wind, LLC (SFW).¹ These comments, while responsive to the proposed IHA for the SFW project, are also directed toward the proposed Vineyard Wind project and others under development in the U.S. Atlantic. Due to the absence of a public comment period after changes in the Vineyard Wind project design and regulatory context, and the lack of a programmatic or cumulative approach to OSW planning in the region, this constitutes one of the only opportunities for public involvement and therefore we request full attention to these comments.

RODA is a national coalition of independent fishing businesses, associations, companies and community members committed to ensuring the compatibility of new offshore development with their businesses. Members of our coalition operate in federal and state waters and shoreside throughout the New England, Mid-Atlantic, and Pacific coasts.

Fishermen are extremely concerned about potential impacts to protected resources arising from the construction of offshore wind energy (OSW) facilities. As you know, many Atlantic fisheries are severely constrained by regulations designed to minimize North Atlantic right whale (NARW) and other protected resource interactions, and any increase in take or harassment of these species will very likely result in further impacts to fishing operations.

There is an ongoing Unusual Mortality Event for the NARW since 2017. NMFS’s website lists climate change, vessel strikes, entanglements, and ocean noise as the primary threats to NARWs.² Three out of four of these threats will increase as a direct result of OSW project construction. Since

² See https://www.fisheries.noaa.gov/species/north-atlantic-right-whale .
2017 alone, 32 NARW have died and 14 have been seriously injured.\(^3\) With only 356 individual NARW estimated remaining, margins for error (e.g., one ship strike) are very slim. The injury or death of a single North Atlantic right whale could have population-level impacts, so the response to any take is drastic. Allowing activities which will dramatically increase the risk/likelihood of take needs to be strictly scrutinized.

RODA is appreciative that OSW developers have worked with NMFS and others to adopt mitigation measures in order to minimize construction impacts to marine mammals. However, the adequacy of these measures, as all information provided to the government by interested private parties, requires robust independent review. In several instances, project applicants have provided information on fisheries impacts that is incorrect or based upon faulty data, including those referenced in RODA’s comments on the SFW project Draft Environmental Impact Statement (DEIS). For that reason, we encourage NMFS to evaluate the proposed IHA with utmost care utilizing the best available science.

**Right Whales Commonly Occur in OSW Areas**

The location of the proposed SFW project is at the heart of an area that has seen significant congregations of NARWs in recent years. Over one third of the total population, including up to 30 percent of known calving females, visited the RI and MA Lease Areas between 2010 and 2015.\(^4\) The presence of NARWs south of Martha’s Vineyard and Nantucket, where the Proposed Project is to be located, has been documented as increasing since at least 2016.\(^5\) As recently as 48 hours ago, approximately 10-20% of the estimated remaining NARWs were observed in the MA/RI WEA; based on available maps they appear to be primarily in the Vineyard Wind I and SFW project areas. Due to the evidence of increased use of the MA/RI Wind Energy Areas (WEA) by growing aggregations of NARWs, it is imperative that analyses utilized to review the proposed IHA rely on the most recent available data.

NARWs must locate and exploit extremely dense patches of zooplankton, specifically, high concentrations of lipid-rich copepods (*Calanus finmarchicus*) to feed efficiently. These dense patches are common in the Project Area during the spring, summer, and fall. Any activities which may impact the NARW’s ability to forage within the Project Area need to minimized. Given the concentration of NARWs within and adjacent to the Project Area, it is crucial that potential impacts to this population be fully considered before IHA issuance. Scientists agree that the loss of even one more breeding female whale would be catastrophic to the population.

\(^3\) Id.
The following maps depict NARW observations for the period 2/24/21 - 3/10/21 (on left; source http://whalemap.org/WhaleMap/) and the MA/RI WEAs (on right; source Mid-Atlantic Ocean Data Portal):

**Failure to Mitigate Survey Impacts Will Increase Uncertainty in Analysis**

The above map shows not only the location of NARWs, but the tracks for NMFS “spotter” planes used to assess the population. The aerial surveys are used in population assessments to inform management, as well as to identify entanglement situations and assist in responding to those events. The construction and operation of OSW projects will prohibit the operation of these surveys within the project areas “because the planned maximum-case scenario [turbine] blade tip height [] would exceed the survey altitude with current surveying methodologies.”

From an operational standpoint, the spotter planes must fly below the cloud ceiling to make visual contact with NARW. If these surveys are forced to higher elevations, will it impact the ability to make that visual contact; thus impacting NMFS ability to proactively prevent interactions with NARWs. Development of offshore wind in the RI and MA Lease Areas would impact approximately 60 percent of the NARW aerial survey blocks in the area.

BOEM has previously determined that the effects on survey aerial coverage will substantially impact NMFS’ ability to continue using current methods to fulfill its mission of precisely and accurately assessing protected species. This will result in an unacceptable level of uncertainty in protected resource management. It will also potentially result in an event that may otherwise be a “harassment” event become a mortality event, if entanglement response is delayed, hampered, or made impossible and injured whales cannot be rescued. So too is the cessation of NMFS protected resource surveys a threat to climate science itself; assessment of protected resource and fish stocks

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6 Vineyard Wind SEIS, p. 3-127.
7 The DEIS and proposed IHA do not appear to analyze the impact of clouds to survey operations nor the effects of OSW turbine operation to cloud formation.
8 Vineyard Wind SEIS, p. 3-127.
9 Id.
over long time series is a key factor in understanding ecosystem health, function and shifts and responses to climate change.

**Serious Concerns Exist Regarding Treatment of Whales in OSW Permitting**

A major concern is the high amount of increased vessel traffic associated with the MA/RI WEAs-up to 2,600 vessels throughout the life of the SFW project alone.\(^{10}\) BOEM has also estimated that construction of each future OSW project would require an additional 25-46 vessels *per project* operating in the proximal geographic area at any given time, and that up to four projects would be under construction at the same time in the next few years.\(^{11}\) This large increase in traffic would greatly increase the risk of ship strike to the endangered NARW. NMFS has stated that slowing down vessel traffic and reducing ocean noise, as well as reducing risks of entanglements are key to regulation and management plans.

Additionally, associated increases in vessel noise could contribute to the suite of ongoing stressors impacting the NARW population. Noise has been found to interfere with right whale communication and increase their stress levels. In turn, “females that undergo energetic stress from reproduction may be more susceptible than males to dying from chronic injuries such as those from entanglement or vessel strikes.”\(^{12}\) Noise from human activities, such as that which would occur with activities associated with wind energy installation and operation of the proposed project, can disrupt normal behavior of NARWs and may further reduce their ability to identify physical surroundings, find food, navigate, and find mates.

BOEM’s analyses of these concerns in the DEIS were inadequate and not based on the best available science, as discussed in RODA’s comment letter dated February 22, 2021. However, we are not the only ones to raise concerns; organizations with far more expertise in whale research have also expressed criticism.

The Marine Mammal Commission (MMC) submitted comments on this application and raised several concerns, identified shortcomings and inaccuracies in the proposed IHA. As they are more knowledgeable on impacts of pile driving and acoustics to marine mammals, we defer to their expertise and recommend NMFS fully review the concerns they identify in their public comment. In particular, MMC cites poor analyses such as underestimation of harassment takes from impact and vibratory pile driving, noise, insufficient and incomplete monitoring measures and reporting requirements. As identified, those issues may result in costly closures or strict management crackdowns for fisheries. We urge NMFS to use the best available science including the most comprehensive models for estimating marine mammal take and developing robust mitigation measures.

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\(^{10}\) BOEM, South Fork Wind Farm Draft Environmental Impact Statement (2021), p. 3-62.

\(^{11}\) Vineyard Wind SEIS, p. 3-111.

\(^{12}\) See https://www.fisheries.noaa.gov/species/north-atlantic-right-whale.
On September 9, 2020, seventeen environmental NGOs submitted a public comment letter outlining several concerns and recommendations related to the IHA for site characterization surveys required for these OSW projects. Again, we defer to their expertise but echo their concerns regarding: a) the lack of sufficient data and observations of NARWs and other protected species in the WEAs and associated cable routes that are not sufficiently described by the models used by NMFS, b) the failure to take a cumulative look at take and harassment as there are numerous areas to be developed and each project will submit an IHA, c) the untested proposed mitigation and insufficient monitoring measures intended to minimize impacts to protected species, and d) no long term monitoring plans for marine mammals and protected species. This coalition provided concrete recommendations for improving mitigation measures for surveys, including: (1) to incorporate additional data sources including real-world observational data into calculations of marine mammal density and take; (2) not adjust take numbers downward for large whales based on unproven mitigation measures; (3) require mitigation measures that meet the least practicable adverse impact standard; and (4) strengthen its vessel speed restrictions. We urge NMFS to ensure that each of these important topics raised by whale experts are fully addressed.

**Fishermen Will Be Affected by Any Protected Resource Take**

Negative impacts to local fishermen and coastal communities as a result of a potentially adverse impact to NARWs (e.g. vessel strike resulting in death or severe injury) are not mentioned or evaluated in the DEIS, proposed IHA, or biological opinion for this project, and should be included in a comprehensive analysis. The lack of an adequate analysis of individual and cumulative impacts to these protected whale species is concerning, given that fishermen are already highly restricted in their ability to harvest due to NARW protections. For instance, all MA state waters are closed to lobster gear from Feb. 1 - May 15th, with the exemption of waters south and southwest of the Cape.

The entire fishing industry pays the price to protect right whales, not just those closest to the project area. An impacts to right whales off the South Atlantic, will result in impacts to fisheries in Maine, impacts in Cape Cod Bay impact fishermen in Southern New England, and so on. These reverberating impacts are not addressed nor analyzed in the DEIS, the biological opinion, nor the proposed IHA.

**Cumulative Review Is Required for All Project Phases**

It is imperative that vessel and noise impacts from offshore wind energy development not be considered in isolation, that is, phase-by-phase for each project, particularly when it comes to impacts to whales. They are highly migratory and rely on resources and habitats all along the entire U.S. eastern seaboard in the same areas where numerous wind energy areas have already been leased, and more will likely be leased in the future. A basic cumulative analysis of this nature has never occurred but is required by laws such as the Marine Mammal Protection Act, Endangered Species Act, and National Environmental Policy Act.
In addition to construction impacts, noise impacts from OSW site characterization surveys are also a primary concern. Certain types of these surveys could result in long-term and high-intensity impacts on marine mammals, depending on the design and effectiveness of mitigation measures. It cannot be said that mitigation measures have entirely eliminated adverse impacts to marine mammals, and neither NMFS nor BOEM should not treat that as matter of fact. It is presumptive to almost guarantee that not a single right whale will be harmed during surveys, which is what the SFW project DEIS implies.

**Mitigation Must Be Robust and Accountability Measures If Harm Exceeds Threshold Must Be Clarified**

In general, the mitigation measures presented by BOEM, developers, and in the proposed IHA need clearer explanations of what supporting data was used, i.e., how they were informed, and how their efficacy is analyzed. The actions should not be allowed to be considered mitigatory if they are still resulting in unacceptable potential population level impacts to numerous species. Additionally, we echo the Marine Mammal Commission that NMFS must ensure mitigation measures would affect the least practicable impact on the species and stocks—particularly North Atlantic right whales—during impact pile driving.

Proposed mitigation measures for the SFW facility rely heavily on visual monitoring, passive acoustic monitoring, and vessel speed restrictions. Each of these has limitations: visual monitoring cannot cover large distances or identify whales below the surface, and passive acoustic monitoring may not be fully effective within wind energy areas or during construction. If vessel speed restrictions fully eliminated the possibility of harassment or take, current management measures for existing vessel traffic would have entirely eliminated NARW ship strikes. Moreover, a commitment for OSW project vessels to comply with any dynamic management area that would apply to all vessel traffic can hardly be considered a proposed mitigation strategy; the important inquiry is the effect of increased vessel traffic at all.

The SFW project DEIS states that data gathered through mitigation efforts could be used to evaluate impacts and potentially lead to additional mitigation measures, if required.13 This optimistic statement raises a fundamental question that remains unanswered in the proposed IHA, biological opinion, and other documents: what can be done if take or harassment exceeds predicted thresholds? Can a project realistically stop mid-construction or mid-operation after taxpayers have spent billions of dollars on its development? Fisheries are subject to accountability measures by law if scientifically-based catch limits are exceeded. What accountability measures will apply to ensure that OSW developers are likewise responsible for their own impacts, and the burdens of those are not also assigned to fishermen, should they occur?

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13 South Fork Wind Farm Draft EIS, p. 3-68.
Responsible Offshore Development Alliance

Thank you for your consideration of these comments. We respectfully request careful attention to these important matters, and that any significant revisions to the proposed IHA be subject to an additional comment period. Please do not hesitate to reach out if we can provide additional information or clarification.

Sincerely,

Annie Hawkins, Executive Director
Lane Johnston, Programs Manager

Responsible Offshore Development Alliance
Comments and Information RE: Federal Register proposed incidental harassment authority (IHA) under the auspices of the Marine Mammal Protection Act (MMPA)/Endangered Species Act (ESA), Incidental to Construction of South Fork Offshore Wind Project

ATTN: Jolie Harrison, Chief Permits and Conservation Division, Office of Protected Resources NMFS

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Of first and foremost concern is the expediency under which this incidental harassment authority (IHA) is reviewed, and the general disregard for any holistic approach to marine habitat conservation. Secondly, the possibility of a one-time, one year renewal of the IHA permit, without ANY ADDITIONAL review of mitigating factors, including any cumulative impacts of any other potential BOEM energy project developments in the region, should for numerous liability concern under the Marine Mammal Protection Act (MMPA), be disavowed.

While the MMPA prohibits the “take” of marine mammals with certain exceptions inclusive of Sections 101(a)(5)(A) and (D) of the MMPA (16 U.S.C. 1361 et seq.) this proposed authorization for incidental takes, is singularly arbitrary and capacious. The consequences of marine mammal behavioral disturbance from anthropogenic sound is noted throughout the document, and subsequently without conclusive science evidence falsely determines that project mitigation measures would minimize behavioral responses. Citing (Southall et al., 2007 and Ellison et al 2012) responses of marine mammals are difficult to predict with significant biological consequences both short and long-term.

FAST-41 provides and environmental review and authorization process improvement and works to improve the permitting process within the structure of existing Federal environmental reviews and authorizations, yet lacks the nuanced judicial oversight of due process required under applicable Marine Mammal Protection Act (MMPA), Endangered Species Act (ESA) or National Environmental Protection Act (NEPA) statues. FAST-41 calls for the designation of a lead Federal agency and promotes early consultation and enhanced interagency coordination by requiring the development of a project specific plan and timetable for the completion of environmental reviews and authorizations. This coordinated project plan may also include approaches and schedules for public and tribal outreach and coordination, as well as discussion of potential avoidance, minimization, and mitigation strategies. The concurrently of this IHA with the DEIS public comment for the South Fork Wind Farm disavows any realtime effectiveness of the public comment period under the National Environmental Policy Act of 1969. The bias of the DEIS is evident, supporting conclusive manifestations of minimal impacts of the project design, including the most impactful construction phase. The IHA as published in the Federal Register (Vol. 86 No. 23) would have greatly benefitted in documented scope of
General Concerns of South Fork Wind Project IHA as proposed:

1) Lack of a baseline auditory health of marine mammal, sea turtle, fin fish and invertebrates for the project area, with post-project measurable scientific data to weigh compliance of South Fork Wind LLC under the MMPA has not been quantified.

2) Scalable conservation metrics for other marine species and habitat conservation including fin-fish and sea turtle populations. BOEM under interagency directives has requested a study for sea turtle hearing capacities (2020-2022) as noted below. (Full BOEM PDF in link)

**BOEM Information Need(s):** BOEM is required to estimate potential acoustic impacts from industry sources. To do that (for any species), we start with a hearing curve (an “audiogram”). When we do not have hearing curves for particular species, we have to use what is known from surrogate species, which may be erroneous. Given the relative lack of information on hearing in turtles (Popper et al., 2014), we are forced to use such approximations; knowing hearing sensitivity for key species will allow us to better estimate acoustic impacts of BOEM-authorized activities.

**Background:** In a draft biological opinion on geological and geophysical (G&G) permitting in the Gulf of Mexico, NMFS identified a data gap regarding our knowledge of sea turtle hearing and impacts of sound: “Although all sea turtle species studied exhibit the ability to detect low-frequency sound, the potential effects of exposure to loud sounds on sea turtle biology remain largely unknown (Nelms et al., 2016)”. Relative to studies in other taxa, information on sea turtle hearing is in its infancy, as there are only published audiograms for a handful of species. An incomplete understanding of hearing sensitivity and physiological and behavioral impacts of sound across species and life stages may lead to incorrect estimates or assumptions about the magnitude of impacts from BOEM-permitted activities.


The proposed temporal construction time frame (May to November) of this IHA will greatly impact sea turtles in the project area. This lack of empirical data about their hearing sensitivity may lead to BOEM as lead agency, to provide inaccuracies in species impacts in consultations with the National Marine Fisheries Service, as defined by the Endangered Species Act of 1973 (ESA) (16 U.S.C. 1531 et seq.) The IHA mitigation for marine mammals does not protect sea turtles as they occur in the South Fork project area with Summer to Fall residency.
The FEIS for Vineyard Wind project (issued March 8, 2021), falsely concludes that BOEM has sufficient scientific data to prevent injury to sea turtles during construction of that project.

**Sea Turtles That Occur within the Regional Waters of the Western North Atlantic OCS and Project Area.**

Green Sea Turtle (North Atlantic DPS)
Kemp’s Ridley Sea Turtle
Leatherback Sea Turtle
Loggerhead Sea Turtle (Northwest Atlantic Ocean DPS)

3) Recent science on the diving capacities of marine mammals and their ability to manage gas exchange and avoidance of diving-related problems such as hypoxia, and nitrogen narcosis. This information is vital to anthropogenic stress-related events such as pile driving and the avoidance behaviors under review for this IHA. Studies for referencing and elucidation of physiological impacts of temporal closures of marine habitat due to construction of wind turbines.


Applied science to marine mammal health is necessary to reconsider the permit application as formulated and proposed. Mitigation measures as outlined, have probable cause to physiologically damage the internal organs of both critically endangered species under the protection of NOAA and NMFS.

Submitted to Public Comments under the Public Register for IHA proposed permitting of South Fork Wind Area, Federal Register Vol. 86 No. 23

Gregg W. Rosner

W. Fenwick Island DE