

By Electronic Mail to ITP.Carduner@noaa.gov

May 30, 2019

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

RE: Comment on Takes of Marine Mammals Incidental to Construction of the Vineyard Wind Offshore Wind Project

Dear Ms. Harrison,

On behalf of the Conservation Law Foundation (“CLF”), National Wildlife Federation (“NWF”), Natural Resources Defense Council (“NRDC”), Defenders of Wildlife, Humane Society of the United States, Humane Society Legislative Fund, Whale and Dolphin Conservation, International Fund for Animal Welfare, Mass Audubon, NY4WHALES, and Inland Ocean Coalition, and our millions of members, we submit these comments to the National Marine Fisheries Service (“NMFS”) in support of a proposed incidental harassment authorization (“IHA”) for Vineyard Wind LLC during construction of its commercial energy project off the coast of Massachusetts. 84 Fed. Reg. 18346 (April 30, 2019) (hereafter “Project”).

Our letter is organized into 3 sections: (1) the background related to our support for offshore wind generally and the status of North Atlantic right whales in the Project Area; (2) our unanimous support for the protective monitoring and mitigation measures contained in this proposed IHA; and (3) our potential concerns with NMFS’s IHA analysis and renewal process going forward.

* * *

I. BACKGROUND

Our organizations are united in support of responsibly developed offshore wind energy as a critically needed climate change solution and have long advocated for policies and actions needed to bring it to scale in an environmentally protective manner. We believe Vineyard Wind’s Project in federal waters off New England will, if responsibly developed with care to avoid, minimize, and mitigate potential environmental impacts, have substantial benefits to

society in its urgent transition away from dirty, climate-altering fossil fuels to a clean energy economy. When built, this 800 MW project is expected to provide enough electricity to power approximately 400,000 homes.¹

As NMFS is aware, Vineyard Wind entered into a landmark agreement (“Agreement”) with NRDC, NWF, and CLF to deploy additional mitigation measures to protect the North Atlantic right whale during activities pertaining to the Project’s construction and operations. This landmark set of commitments to ensure the Project is built and operated in a way consistent with protection of the highly endangered North Atlantic right whale. We congratulate Vineyard Wind for these commitments, which set an important precedent for the other offshore wind projects that are also moving forward and for U.S. offshore wind development as a whole. We urge NMFS, with its obligations under Endangered Species Act (“ESA”) and Marine Mammal Protection Act (“MMPA”), to incorporate all of the protective measures called for by the Agreement into this IHA, as well as subsequent IHAs for other offshore wind projects moving forward in the U.S.

A. 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.”² 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.”³ Congress intended for NMFS to act conservatively in the face of uncertainty when authorizing activities harmful to marine species.⁴ This careful approach to management was 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.⁵

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.⁶ Harassment is any act that “has the potential to injure a marine mammal or marine mammal stock in the wild” or to

¹ See www.vineyardwind.com.

² 16 U.S.C. § 1361(1).

³ *Id.* § 1361(2); see also *Conservation Council for Hawaii v. Nat’l Marine Fisheries Serv.*, 97 F. Supp. 3d 1210, 1216 (D. Haw. 2016).

⁴ H.R. Rep. No. 92-707 (Dec. 4, 1971), as reprinted in 1972 U.S.C.C.A.N. 4144, 4148.

⁵ 16 U.S.C. § 1361(1), (3).

⁶ *Id.* §§ 1362(13), 1371(a).

“disturb a marine mammal . . . by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering.”⁷

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 will have “a negligible impact on such species or stock.”⁸ The agency must prescribe permissible methods of taking to ensure that the activity has “the least practicable adverse impact on such species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance[.]”⁹ NMFS must also establish monitoring and reporting requirements.¹⁰ 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.¹¹

B. Status of North Atlantic right whales and other large whales

The Project area is habitat for six large and six small cetacean species.¹² Of the six large whale species, four (fin whale, sei whale, sperm whale, and North Atlantic right whale) are listed as endangered under the ESA and as depleted and strategic stocks under the MMPA. Six small cetacean species are also likely to be present in the Project area, including the harbor porpoise, known to be one of the most noise-sensitive marine mammal species.

As the agency is aware, the conservation status of the North Atlantic right whale is particularly dire. Although the species has been listed as endangered under the ESA for decades, recent scientific analysis confirms that the population has been declining since 2010 due to entanglements in commercial fishing gear and ship strikes. In the last two years, at least 20 animals are known to have been killed, and the population is now estimated to be no more than 420 individuals. Moreover, 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.¹³

⁷ *Id.* § 1362(18)(A).

⁸ *Id.* § 1371(a)(5)(D)(i).

⁹ *Id.* § 1371(a)(5)(D)(ii)(I).

¹⁰ *Id.* § 1371(a)(5)(D)(ii)(III).

¹¹ *Id.* § 1371(a)(5)(D)(iii).

¹² 84 Fed. Reg. at 18,350, Table 2.

¹³ Pace III, R.M. *et al.*, “State-space mark-recapture estimates reveal a recent decline in abundance of North Atlantic right whales,” *Ecology and Evolution*, vol. 7, no. 21, pp. 8730-41 (2017); Corkeron, P., *et al.* “The recovery of North Atlantic right whales, *Eubalaena glacialis*, has been constrained by human-caused mortality.” *Royal Society Open Science*, vol 5, art. 180892 (2018).

In the wake of an alarming number of detected deaths of North Atlantic right whales in 2017, NMFS declared an Unusual Mortality Event (“UME”),¹⁴ which devotes additional federal resources to determining and—if possible—mitigating the source of excessive mortality. This designation is still in effect. Moreover, ongoing UMEs exist for the Atlantic populations of minke whales (since January 2017) and humpback whales (since January 2016).¹⁵ Alarming, 59 minke whales have stranded between Maine and South Carolina from January 2017 to March 2019.¹⁶ Elevated numbers of humpback whales have also been found stranded along the Atlantic Coast since January 2016 and, in a little over three years, 88 humpback whale mortalities have been recorded (data through February 18, 2019), with strandings occurring in every state along the East Coast.¹⁷ The declaration of these three large whale UMEs by the agency in the past few years, for which anthropogenic impacts are a significant cause of mortality, demonstrates an increasing risk to whales from human activities along the U.S. East Coast.

Given the highly endangered status of the North Atlantic right whale, NMFS is obligated by both the ESA and the MMPA to protect this species from additional harmful impacts of human activities. The agency is also obligated by the MMPA to consider the full range of potential impacts on all marine mammal species, including minke and humpback whales, and harbor porpoises which are highly sensitive to noise, that are known to utilize the survey area and surrounding areas before issuing an IHA with appropriate protection, mitigation, and monitoring measures. NMFS must use the best available scientific information on marine mammal presence and density, as required by law.¹⁸ Considering the elevated level of threat to all federally protected large whale species and populations in the Atlantic, including waters off Rhode Island and Massachusetts, and emerging evidence of dynamic shifts in the distribution of large whale 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.¹⁹

¹⁴ NOAA-NMFS “2017-2019 North Atlantic Right Whale Unusual Mortality Event.” Available at: <https://www.fisheries.noaa.gov/national/marine-life-distress/2017-2019-north-atlantic-right-whale-unusual-mortality-event>.

¹⁵ NOAA-NMFS, “2016-2019 Humpback whale Unusual Mortality Event along the Atlantic Coast.” Available at: <https://www.fisheries.noaa.gov/national/marine-life-distress/2016-2019-humpback-whale-unusual-mortality-event-along-atlantic-coast>; “2017-2019 Minke whale Unusual Mortality Event along the Atlantic Coast.” Available at: <https://www.fisheries.noaa.gov/national/marine-life-distress/2017-2019-minke-whale-unusual-mortality-event-along-atlantic-coast>.

¹⁶ *Id.*

¹⁷ NOAA-NMFS, “2016-2019 Humpback whale Unusual Mortality Event along the Atlantic Coast,” *supra* note 14; *see also* <https://www.newsday.com/long-island/suffolk/whale-washed-ashore-fire-island-1.18812449>.

¹⁸ 16 U.S.C. §§ 1362(19), §§ 1362(27).

¹⁹ *Id.* § 1371(a)(5)(D)(ii)(I).

II. SUPPORT FOR THE MONITORING AND MITIGATION MEASURES CONTAINED IN THE PROPOSED IHA

Our organizations support the protective mitigation and monitoring measures contained in the proposed IHA and found within the Agreement. 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.”²⁰ In light of the risks posed to the North Atlantic right whale and other endangered and/or strategic marine mammal stocks 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. Below, we highlight the beneficial and strong mitigation measures that Vineyard Wind agreed to take to protect the North Atlantic right whale, which the Agency has thoughtfully incorporated into the Proposed IHA. We also make recommendations regarding how the mitigation and monitoring measures described in the Proposed IHA could more closely align with those described in the Agreement, to ensure the species is maximally protected under the MMPA as well as the ESA.

A. Background on best management practices for North Atlantic right whales during offshore wind construction

Over a dozen wildlife conservation organizations recently endorsed 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.²¹

These BMP’s were advised by the January 23, 2019 Agreement between Vineyard Wind and CLF, NWF, and NRDC to protect critically endangered North Atlantic right whales. Under the historic agreement, Vineyard Wind agreed to institute a variety of protective measures to keep right whales safe while installing and operating turbines at its proposed 84-turbine project off the coast of Massachusetts. Among other measures, turbine construction will be curtailed in the winter and early spring when the North Atlantic right whales may be in the area, and there will be comprehensive monitoring to ensure that construction does not take place when whales are near the site. Vineyard Wind also agreed to dampen construction noise that disturbs the whales’ ability to communicate, find food, and stay on their migratory path. Critically important, the agreement also includes mandatory vessel speed limits. These right whale protections will

²⁰ *Id.* § 1371(a)(5)(D)(vi).

²¹ Available at: <https://www.nrdc.org/resources/best-management-practices-north-atlantic-right-whales-during-offshore-wind-energy>.

reduce the potential for Level A take to zero and significantly limit potential Level B take; as such, the Agreement provides an important template for other offshore wind projects.²²

The BMP's were also advised by the attached letter addressed to BOEM and NMFS and dated September 19, 2018, in which five of the world's leading scientific experts on North Atlantic right whales provide their recommendations for "adequate and effective mitigation of impacts to the North Atlantic right whale during offshore wind development and operations." In this letter, right whale scientists recommend a seasonal prohibition for the Rhode Island/ Massachusetts and Massachusetts Wind Energy Areas on pile driving from January 1 to April 30 and "if development activities absolutely cannot be avoided" the implementation of an "enhanced mitigation protocol" for pile driving during the periods of May 1 to 14 and November 1 to December 31. The enhanced mitigation protocol would be project-specific and developed through "a participatory process that includes scientists, offshore wind developers, and environmental groups" and would be reassessed every two years because right whale distribution is "known to be shifting." Further, these scientists call for the implementation of noise reduction and attenuation technologies throughout the construction period to address potential impacts of noise, which they state is "one of the primary impacts to marine mammals from offshore wind development."

As discussed below, our organizations agree that the IHA measures proposed will reduce the project related noise and help eliminate the potential risk of vessel collision, however, we do not agree with NMFS's statement that: "No serious injury or mortality of North Atlantic right whales would be expected even in the absence of the proposed mitigation measures."²³ To the contrary, the mitigation measures agreed to by Vineyard Wind, and largely incorporated into the Proposed IHA, are critical to ensuring the protection of the North Atlantic right whale during offshore wind construction.

B. The agency's mitigation and monitoring requirements set forth in the proposed IHA closely align with best management practices

We are encouraged that the IHA authorizes no Level A harassment take of North Atlantic right whales and that Vineyard Wind requested none "based on an expectation that any potential exposures above the Level A harassment threshold will be avoided through enhanced mitigation and monitoring measures proposed specifically to minimize potential right whale exposures."²⁴

²² The full Agreement is available at: https://www.clf.org/wp-content/uploads/2019/01/Final_VW-NGO-NARW-Agreement-012219-NGO-fully-executed.pdf.

²³ 84 Fed. Reg. 18,378.

²⁴ *Id.* at 18,371.

i. *Dates and Duration*

Seasonal Restriction: We are pleased that the IHA prohibits pile driving activities from January 1 through April 30th.²⁵ Those dates were chosen because the best scientific data available demonstrates they are the times of highest risk to North Atlantic right whales in the Project area.²⁶

While existing and potential stressors to the North Atlantic right whale must be minimized as far as possible to promote the survival and recovery of the species, it is also incumbent upon the agency to address potential impacts to other endangered and protected whale species, particularly in light of the UMEs declared for right whales, humpback whales and minke whales,²⁷ as well as the several strategic and/or depleted stocks of small cetaceans that inhabit the region.²⁸ To elucidate and balance the relative risks to other whale species, for which we still have relatively limited data, we recommend that NMFS: 1) fund analyses of recently collected sighting and acoustic data for all data-holders; and 2) continue to fund and expand surveys and studies to improve our understanding of distribution and habitat use of marine mammals off Rhode Island and Massachusetts, including the Project area, as well as the broader region, in the very near future. We praise Vineyard Wind and the agency's precautionary measures to protect the North Atlantic right whale for the time-period proposed above (*i.e.*, January 1 to April 30, and enhanced mitigation from November 1- December 31 and May 1- May 14), as based on the best available scientific information.

Temporal restriction/visibility: We are pleased to see temporal restrictions on pile driving, consistent with the Agreement, that require pile driving: (1) "will not be initiated at night, or, when the full extent of all relevant clearance zones cannot be confirmed to be clear of marine mammals, as determined by the lead PSO [Protected Species Observer] on duty;" and (2) may only continue after dark "when the driving of the same pile began during the day when clearance zones were fully visible and must proceed for human safety or installation feasibility reasons."²⁹

²⁵ *Id.* at 18,347, 18,372.

²⁶ Period of highest risk to North Atlantic right whales are defined in the BMPs 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 science at the time of development."

²⁷ NOAA-NMFS, "North Atlantic right whale Unusual Mortality Event," *supra* note 13; NOAA-NMFS, "2016-2018 Humpback whale Unusual Mortality Event along the Atlantic Coast," *supra* note 14; NOAA-NMFS, "2017-2018 Minke whale Unusual Mortality Event along the Atlantic Coast," *supra* note 14.

²⁸ 84 Fed. Reg. at 17,395.

²⁹ *Id.* at 18,374.

ii. *Noise reduction/attenuation*

Our organizations support, consistent with the Agreement, a 12 dB noise reduction target for pile driving and NMFS’s authorization of take based on Vineyard Wind making at least a 6dB reduction in pile driving noise.³⁰

iii. *Clearance Zone distances and monitoring protocol*

Consistent with the Agreement, we support the 1000 m clearance zone for North Atlantic right whales (Table 16) and the extended clearance zone of 10 km for shoulder seasons.³¹ Specifically, between May 1 and May 14, the IHA requires: “An extended clearance zone of 10 km would be established based on real-time PAM [Passive Acoustic Monitoring]. Real-time PAM would begin at least 60 minutes prior to pile driving. In addition, an aerial or vessel-based survey would be conducted across the 10 km extended clearance zone using visual PSOs to monitor for right whales.” Further, between November 1 and December 31 the IHA requires: “An extended clearance zone of 10 km . . . based on real-time PAM. Real-time PAM would begin at least 60 minutes prior to pile driving. In addition, an aerial survey may be conducted across the 10 km extended clearance zone using visual PSOs to monitor for right whales.”³² Given that right whales are known to use this area in the shoulder seasons, and potentially year round, these measures are critical.

In addition, we support the following monitoring provisions:

- “briefings for construction supervisors and crews, the marine mammal and acoustic monitoring teams, and Vineyard Wind staff prior to the start of all pile driving activity, and when new personnel join the work, in order to explain responsibilities, communication procedures, the marine mammal monitoring protocol, and operational procedures;”³³
- a real-time PAM system designed and established with detection capability extending to 10 km from the pile driving location, acoustic detections that can be classified (i.e., potentially originating from a North Atlantic right whale) within 30 minutes of the original detection, uses a PAM operator trained in identification of mysticete vocalizations, is based on a 75 percent confidence level, and requires acoustic detections be reported to NMFS;³⁴ and

³⁰ *Id.* at 18,371, 18374.

³¹ *Id.* at 18,373.

³² *Id.*

³³ *Id.* at 18,372.

³⁴ *Id.* at 18,373.

- a minimum of two PSOs on duty at all times during pile driving activity and four PSOs stationed at the pile driving site at all times during pile driving activity...³⁵

iv. *Vessel Speed Restrictions*

Dynamic Management Areas: Our organizations were pleased to see a mandatory speed restriction for all project vessels (except for crew transfer vessels) including a requirement to travel at 10 knots (18.5 km/hr) or less during any designated Dynamic Management Area (DMA). Within a designated DMA, even crew transfer vessels must travel at 10 knots or less, unless very specific requirements are met:

North Atlantic right whales are clear of the transit route and WDA [Wind Development Area] for two consecutive days, as confirmed by vessel based surveys conducted during daylight hours and real-time PAM, or, by an aerial survey, conducted once the lead aerial observer determines adequate visibility. If confirmed clear by one of the measures above, vessels transiting within a DMA must employ at least two visual observers to monitor for North Atlantic right whales. If a North Atlantic right whale is observed within or approaching the transit route, vessels must operate at less than 10 knots until clearance of the transit route for two consecutive days is confirmed by the procedures described above.³⁶

Training of visual observers: Consistent with the Agreement, “[a]ll vessels transiting to and from the WDA and traveling over 10 knots would have a visual observer who has undergone marine mammal training stationed on the vessel. Visual observers monitoring the vessel strike avoidance zone may be third-party observers (*i.e.*, PSOs) or crew members, but crew members responsible for these duties must be provided sufficient training to distinguish marine mammals from other phenomena and broadly to identify a marine mammal as a right whale, other whale (defined in this context as sperm whales or baleen whales other than right whales), or other marine mammal.”³⁷

C. *Recommendations to strengthen mitigation and monitoring to align with best management practices to protect North Atlantic right whales*

In addition to the specific measures required and discussed above related to the proposed IHA, the Agreement contained additional measures that should be required in order to strengthen the mitigation and monitoring in this and future IHA’s, consistent with our organizations best

³⁵ *Id.* at 18,374.

³⁶ *Id.* at 18,375.

³⁷ *Id.* at 18,375.

management practices for protecting North Atlantic right whales. Several examples of measures that could enhance the mitigation are provided below:

- i. *Time taken to resume construction activities upon sighting of a North Atlantic right whale from May 1 through May 14*

Consistent with our Agreement, the proposed IHA provides that if, during the May 1-May 14 shoulder period, a right whale is detected by real-time PAM or a vessel-based or aerial surveys within 10 km of the pile driving location, pile driving will be postponed until the following day. However, the proposed IHA allows pile to resume if “a follow-up aerial or vessel-based survey could confirm the extended clearance zone is clear of right whales, as determined by the lead PSO.” As many North Atlantic right whale sightings go undetected, allowing pile driving to resume the same day is too risky.

Although criteria for determining adequate visibility are generally consistent with the Agreement (“Aerial surveys would not begin until the lead PSO on duty determines adequate visibility and at least one hour after sunrise (on days with sun glare). Vessel-based surveys would not begin until the lead PSO on duty determines there is adequate visibility”),³⁸ it is our position that between May 1 and May 14, if adequate visibility cannot be determined by the lead PSO on duty, there are no additional monitoring measures that could clear the area. The Agreement notes that Vineyard Wind has agreed to postpone all activities until the following day.

- ii. *PAM should be required for 60 minutes prior to commencement of pile driving*

We note some discrepancies/confusion regarding the period of time PAM would be used to inform visual monitoring during construction. The proposed IHA states that Vineyard Wind would utilize a PAM system to supplement visual monitoring and that it:

. . . would be monitored by a minimum of one acoustic PSO beginning at least 30 minutes prior to ramp-up of pile driving and at all times during pile driving. Acoustic PSOs would immediately communicate all detections of marine mammals to visual PSOs, including any determination regarding species identification, distance, and bearing and the degree of confidence in the determination. PAM would be used to inform visual monitoring during construction; no mitigation actions would be required on PAM detection alone. The PAM system would not be located on the pile installation vessel.

Thus, where the proposed IHA states on page 18373 that: “Prior to the start of pile driving activity, the clearance zones will be monitored for 60 minutes to ensure that they are clear of the relevant species of marine mammals,” it is unclear whether PAM is only planned for 30 mins of

³⁸ *Id.* at 18,373.

that time. This is less protective than the Agreement which calls for a 60 minute monitoring period during the green and yellow periods. Under the terms of the Agreement, the “Green” period (between May 15 – October 31) requires a comprehensive monitoring / clearance zone protocol and the “Yellow” periods (between November 1 – December 31 and May 1 – 14) require an enhanced mitigation protocol. We are unclear why PAM monitoring during the green period is not explicitly addressed in the proposed IHA until page 18376.

- iii. *PAM should trigger a shutdown when a North Atlantic right whale is acoustically detected*

The proposed IHA also states: “PAM would be used to inform visual monitoring during construction; no mitigation actions would be required on PAM detection alone.”³⁹ We view this as under-protective. Considering the challenges inherent in detecting right whales based on visual observation alone, the Agreement requires shutdown to be triggered upon the acoustic detection of a North Atlantic right whale during the yellow and green periods. The shutdown protocol should be strengthened to include acoustic detections as a shutdown-trigger in the Final IHA, reflecting the terms of the Agreement.

- iv. *From November 1 through May 14, vessels must reduce speed to 10 knots for the remainder of the day upon sighting a North Atlantic right whale*

While we appreciate that the proposed IHA requires all vessels to travel less than 10 knots within the WDA between November 1 and May 14, or implement visual surveys with at least one visual observer to monitor for North Atlantic right whales,⁴⁰ the Agreement required that vessels reduce their speed to 10 knots for the remainder of the day, and to use real-time PAM in order to more accurately detect the presence of right whales. Neither of those requirements appear to be in the proposed IHA and should be included.

- v. *PAM of vessel transits corridors must be implemented from November 1 through May 14 if vessels travel above ten knots*

In addition, the proposed IHA does not require PAM in vessel transit routes which is inconsistent with our Agreement which required its implementation from November 1 through May 14 if travelling at speeds greater than 10 knots (and no DMA).

³⁹ *Id.* at 18,377.

⁴⁰ *Id.* at 18,375.

- vi. *North Atlantic right whale sightings must be reported to NMFS within two hours.*

Finally, the Agreement contained a 2-hour reporting requirement for North Atlantic right whale sightings to NMFS, which is not included in the proposed IHA. This 2-hour reporting requirement should be included in the final IHA. We also note that any entangled right whale should be prioritized and reported as soon as feasible, not to exceed two hours.

III. CONCERNS WITH NMFS'S ANALYSIS AND RENEWAL PROCESS MOVING FORWARD

A. *NMFS's IHA Analysis and the Marine Mammal Protection Act*⁴¹

The MMPA requires that NMFS base its IHA analysis on the best available scientific information.⁴² It is our position that future IHA's should fully consider the following issues.

- i. *NMFS should analyze all data sources when calculating densities of marine mammals, including the North Atlantic right whale*

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 relies on estimates of marine mammal densities derived from the habitat-based density model for the U.S. East Coast,⁴³ which was funded under the agency's CetMap program⁴⁴ and recently updated with new modeling results.⁴⁵ However, the CetMap model, as its designers admit,⁴⁶ is limited. Most notably, in founding its density estimates entirely on shipboard and aerial line-

⁴¹ In addition to the concerns outlined in Section III, we note two additional concerns. *First*, the best available science on other low- to mid-frequency sources (e.g., Nowacek et al. 2004, Kastelein et al. 2012, 2015) indicates that takes will occur with near certainty at exposure levels well below the 160 dB threshold that NMFS applies to behavioral impacts. *Second*, the agency incorrectly asserts that potential impacts of the planned surveys would likely be minimal as marine mammals would take measures to avoid the sound (i.e., by moving away from the sound source (see, e.g., 84 Fed. Reg. at 18,361: "In addition, marine mammals in the project area are expected to avoid any area that would be ensounded at sound levels high enough for the potential to result in more severe acute behavioral responses, as the offshore environment would allow marine mammals the ability to freely move to other areas without restriction."), even though studies have not found avoidance behavior to be generalizable among species and contexts (e.g., Miller et al. 2009, Pirota et al. 2012) and even though such avoidance may itself constitute take under the MMPA.

⁴² 16 U.S.C. §§ 1362(19), §§ 1362(27).

⁴³ Roberts J.J., et al., "Habitat-based cetacean density models for the U.S. Atlantic and Gulf of Mexico," *Scientific Reports*, vol. 6, p. 22615 (2016); 84 Fed. Reg. 17,399.

⁴⁴ <https://cetsound.noaa.gov/cda-index>.

⁴⁵ In the calculation of take, the agency notes that "[t]he highest seasonal density estimates during the duration of the proposed survey area were used to estimate take (i.e., summer or fall)" but later states that "[f]or both survey segments, species densities... were averaged by season (spring and summer) based on the proposed HRG survey schedule" (84 Fed. Reg. 17,399). We seek clarification from the agency in the issued IHA on the seasons that data were averaged for to estimate take.

⁴⁶ Roberts, J.J., et al., "Habitat-based cetacean density models for the U.S. Atlantic and Gulf of Mexico," *supra* at note 39.

transect surveys, the model necessarily excludes data obtained through additional sightings data, passive acoustic monitoring, and satellite telemetry.⁴⁷ As we have commented in the past, it is our view that the density maps produced by Roberts *et al.* do not fully reflect the abundance, distribution, and density of marine mammals for the U.S. East Coast and therefore should not be the only information source relied upon when estimating take.

NMFS's analysis could overlook the importance that the Project area now represents as foraging habitat for the species. For example, the agency states, "[t]here are no known foraging hotspots, or other ocean bottom structures of significant biological importance to marine mammals present in the project area."⁴⁸ In the specific context of the North Atlantic right whale, the agency notes: "Aerial surveys conducted in and near the project area from 2011-2015 documented a total of six instances of feeding behavior by NARWs (Kraus *et al.* 2016), however the area has not been identified as an important feeding area for right whales."⁴⁹ The agency therefore overlooks recent evidence that the Project area now represents a consistent area of important foraging habitat for the species as a result of recent shifts in the distribution of right whale prey species.⁵⁰ As described above, aggregations of North Atlantic right whales are observed foraging within and in close vicinity to the Project Area as late as May,⁵¹ and at least a proportion of the species is now being observed to use the waters off Rhode Island and Massachusetts throughout the summer months.⁵² This new scientific information indicates that what the agency notes as the North Atlantic right whales "strong seasonality"⁵³ is shifting in the region, and species monitoring efforts indicate that these distribution and temporal shifts in occurrence are being observed throughout much of their range.⁵⁴

⁴⁷ See, e.g., Hodge, K.B., *et al.*, "North Atlantic right whale occurrence near wind energy areas along the mid-Atlantic US coast: implications for management," *supra* note 19; Salisbury, D.P., *et al.*, "Right whale occurrence in the coastal waters of Virginia, U.S.A.: Endangered species presence in a rapidly developing energy market," *supra* note 19; Baird, R.W., *et al.*, "Spatial Use by Cuvier's Beaked Whales and Short-finned Pilot Whales Satellite Tagged off Cape Hatteras, North Carolina: 2017 Annual Progress Report." Prepared for U.S. Fleet Forces Command. Submitted to Naval Facilities Engineering Command Atlantic, Norfolk, Virginia, under Contract No. N62470-15-D-8006, Task Order 50, issued to HDR Inc., Virginia Beach, Virginia (March 2018); Mallette, S.D., *et al.*, "Occurrence of Baleen Whales along the Continental Shelf Region of the VACAPES OPAREA off southern Virginia: Final Report," *supra* note 20.

⁴⁸ 84 Fed. Reg. at 18,631.

⁴⁹ *Id.* at 18,352.

⁵⁰ Leiter, S.M., *et al.*, "North Atlantic right whale *Eubalaena glacialis* occurrence in offshore wind energy areas near Massachusetts and Rhode Island, USA," *supra*.

See, e.g., Quintana, E., "Monthly report No. 3: May 2017," Report prepared for the Massachusetts Clean Energy Center by the New England Aquarium, pp. 26 (May 15, 2017).

⁵² Davis, G.E., *et al.*, "Long-term passive acoustic recordings track the changing distribution of North Atlantic right whales (*Eubalaena glacialis*) from 2004 to 2014," *supra*; Kraus, S.D., *et al.*, "Northeast large pelagic survey collaborative aerial and acoustic surveys for large whales and sea turtles. Final Report," *supra*.

⁵³ 84 Fed. Reg. at 18,378.

⁵⁴ Meyer-Gutbrod, E. L., Greene, C. H., & Davies, K. T. (2018). Marine species range shifts necessitate advanced policy planning: the case of the North Atlantic right whale. *Oceanography*, 31(2), 19-23.

As a general matter, and as noted in previous comments, the agency's IHA take analyses need to be updated to reflect the best available scientific information to account for evidence supporting the importance of the waters off Massachusetts and Rhode Island as foraging habitat, and to more accurately reflect times that North Atlantic right whales are likely to be present in the area. We note that Vineyard Wind included additional, more contemporary data sources in the original IHA application that the agency chose not to incorporate into the Proposed IHA.⁵⁵ We recommend that the agency adopt Vineyard Wind's approach to using the best available scientific information and afford the same consideration to other endangered and protected marine mammal species. Integration of opportunistic and other sources of data that collect fine-scale information on factors driving marine mammal distribution with those gathered through systematic broad-scale surveys will serve to better reflect current marine mammal presence, abundance, and density off Rhode Island and Massachusetts.⁵⁶ It should be NMFS' top priority to consider any initial data from State monitoring efforts,⁵⁷ passive acoustic monitoring data, opportunistic marine mammal sightings data, and other data sources, and to take steps now to develop a dataset that more accurately reflects marine mammal presence so that it is in hand for future IHA authorizations and other work.

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

We are comfortable with the IHA's attention to vessel speed restrictions; however, it is our view that vessel collisions should be incorporated into NMFS's take analysis where agreement's like this may not be in place. Vessel collisions are a leading cause of large whale mortality⁵⁸ 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;⁵⁹ North Atlantic right whales are particularly vulnerable to vessel collisions.⁶⁰ Given the demonstrated vulnerability of large whales to vessel collisions off the east coast, it is remiss of the agency to overlook vessel collisions as a source of potential take.⁶¹ The localized elevation in vessel activity occurring during offshore wind construction naturally increases the vessel collision risk for large whales in

⁵⁵ 84 Fed. Reg. at 18,370: "Vineyard Wind reviewed monitoring data recorded during site characterization surveys in the WDA from 2016–2018 and calculated a daily sighting rate (individuals per day) for each species in each year, then multiplied the maximum sighting rate from the three years by the number of pile driving days under the Maximum Design scenario (i.e., 102 days)."

⁵⁶ See, e.g., Virgili, A., *et al.*, "Combining multiple visual surveys to model the habitat of deep-diving cetaceans at the basin scale." *Global Ecology and Biogeography*, vol. 28, p. 300 (2019).

⁵⁷ See, <http://www.masscec.com/offshore-wind-marine-wildlife-surveys>

⁵⁸ Hayes et al. 2017. North Atlantic Right Whales- Evaluating Their Recovery Challenges in 2018. NOAA Technical Memorandum NMFS-NE-247.

⁵⁹ NOAA-NMFS "2017-2019 North Atlantic Right Whale Unusual Mortality Event," *supra*; NOAA-NMFS, "2016-2019 Humpback whale Unusual Mortality Event along the Atlantic Coast," *supra*; NOAA-NMFS, "2017-2019 Minke whale Unusual Mortality Event along the Atlantic Coast," *supra*.

⁶⁰ NOAA-NMFS, Recovery plan for the North Atlantic right whale (August 2004).

⁶¹ 84 Fed. Reg. at 18346. "Description of Proposed Activity Overview ... Take of marine mammals may occur incidental to the construction of the project due to in water noise exposure resulting from pile driving activities associated with installation of WTG and ESP foundations." No details are provided with regards to vessel collisions.

the area. A collision between a whale and a vessel of any length traveling above of speed of 10 knots has a more than 60 percent probability to result in a lethal strike.⁶²

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 at relatively moderate levels of exposure. The agency implies in the Proposed IHA that all potential areas that marine mammals may be displaced to due to disturbance during construction are equally safe: “The availability 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.”⁶³ Given the presence of shipping lanes and fishing areas in the vicinity of the Project area, the risks posed should be considered.

iii. NMFS should represent increases in species abundance objectively

The agency states in the Proposed IHA: “[b]ased on the best available information, the long-term presence of the WTGs 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 acting as artificial reefs (Russell et al., 2014).”⁶⁴ 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 changes may have on the wider ecosystem. We recommend that the Final IHA and future authorizations remain objective in language used in its impacts analysis (e.g., by using terminology such as “increase,” “decrease,” and “change”).

iv. NMFS should consider the potential cumulative impacts arising from the construction of offshore wind projects

NMFS’ lack of analysis of cumulative impacts in the proposed IHA, which is essential to any negligible impact determination, represents a significant omission. In conducting this analysis, NMFS should define cumulative impacts to encompass: (i) repeated disturbance from the same activity over time and space; (ii) the interactions between different types of potential impacts; (iii) multiple wind energy development projects; and, (iv) the broader context of other ocean uses both within the leasing area and that may be encountered by transboundary and migratory species during their life cycles. The potential impacts of offshore wind development will occur in an already-compromised acoustic and otherwise affected environment. In this context, NMFS must consider the impacts of other activities and events as part of its environmental analysis,

⁶² Conn, P. B., & Silber, G. K. (2013). Vessel speed restrictions reduce risk of collision-related mortality for North Atlantic right whales. *Ecosphere*, 4(4), 1-16.

⁶³ 84 Fed. Reg. at 18,380.

⁶⁴ *Id.* at 18,361.

including, but not limited to, vessel collisions, bycatch and entanglement, and the potential for large-scale seismic exploration for oil and gas.⁶⁵ NMFS must not only consider past and present federal and non-federal actions, but also reasonably foreseeable future federal and non-federal actions.

The agency should expand its analysis and consider repeated exposures to the same stressor. For example, when addressing pile driving noise, the agency states that “nearly all PCoD [Population Consequences of Disturbance] studies and experts agree that infrequent exposures from a single day or less are unlikely to impact individual fitness, let alone lead to population-level effects”⁶⁶ If ideal construction conditions occur, however, pile driving (the duration of which lasts approximately six hours) may take place once, or up to twice, per day throughout the construction period (May through December) and the frequency and duration of the noise produced during construction cannot be described as “very brief.” Moreover, the geographic area that will be exposed to noise levels exceeding the Level A and Level B take thresholds is of a size greater than the distance interval between wind turbines; thus, the same area may be exposed to pile driving noise on multiple days. As such, it is possible that the same individual marine mammal may be exposed to noise on multiple days or may be displaced from a relatively large habitat area for the duration of the pile driving.⁶⁷

A similar case can be made against the agency’s dismissal of any meaningful potential effect on masking or acoustic habitat.⁶⁸ The agency states: “[w]e expect insignificant impacts from masking, and any masking event that could possibly rise to Level B harassment under the MMPA would occur concurrently within the zones of behavioral harassment already estimated for impact pile driving, and which have already been taken into account in the exposure analysis.”⁶⁹ And: “[t]he proposed activities could also affect acoustic habitat (see masking discussion above), but meaningful impacts are unlikely.”⁷⁰ As described above, the noise produced during the construction of the project will occur over a significant portion of the construction window and the agency should acknowledge this is the case (*see also* footnote 41).

⁶⁵ While the issuance of permits for seismic surveys for oil and gas development in the Mid- and South Atlantic is still pending at the time of this letter, several incidental harassment authorizations have already been issued by NMFS under the MMPA and therefore this action should be considered “reasonably foreseeable”. These surveys will result in a serious additional and long-term stressor for North Atlantic right whales throughout much of their range and would interact cumulatively with other stressors, including those potentially arising from offshore wind development.

⁶⁶ 84 Fed. Reg. at 18,378.

⁶⁷ These concerns are supported by European studies of harbor porpoise responses to pile driving. For example, a behavioral response study of harbor porpoise responses to pile driving at the Horns Rev II offshore wind farm in the Danish North Sea demonstrated that harbor porpoises did not fully return to the area in the 16 hours between subsequent pile driving events; consequently, harbor porpoise were displaced from the pile driving site during the entire five months of the construction period.⁶⁷ Displacement into potentially sub-optimal habitat for extended periods may increase the risk of population-level consequences.

⁶⁸ 84 Fed. Reg. at 18,361.

⁶⁹ *Id.*

⁷⁰ *Id.*

Further, NMFS does not consider the potential for acute synergistic effects from multiple activities taking place at one time, or from offshore wind activities in combination with other actions. For example, the agency does not consider the greater susceptibility to vessel strike of animals that have been temporarily harassed or disoriented (*e.g.*, as noted for the North Atlantic right whale in Section II.B. of this letter). Nor does NMFS consider (for example) the synergistic effects of noise with other stressors in producing or magnifying a stress-response.⁷¹

Immediately adjacent to the Vineyard Wind Project to the west are several other offshore wind projects, all moving forward through the regulatory process and expected to be built out.

The cumulative impacts to marine mammals from these offshore wind projects should be factored into the analysis.⁷² Conversely, there may be positive benefits to marine mammals that should be considered when looking at the cumulative impacts of offshore wind.

v. *The new IHA extension process does not comport with the plain language of the statute*

NMFS states that it may issue a “possible one-year renewal” on its IHA for the construction of Vineyard Wind on an expedited basis, with only 15 days allowed for public comment, should various criteria be met.⁷³ NMFS has requested comment on this proposed process.

Although this proposed renewal process appears to be a recent trend in NMFS’ proposed IHAs,⁷⁴ it does not comport with the plain language of the statute. Section 101(a)(D)(i) plainly states that incidental harassment authorizations are valid for periods of not more than one year.⁷⁵ The statute is also clear on the timing of when the agency must publish a proposed authorization (45 days after receipt of an application) and the duration of the public comment period (30 days after publication).⁷⁶ 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

⁷¹ Wright, A.J., Aguilar Soto, N., Baldwin, A.L., Bateson, M., Beale, C.M., Clark, C., Deak, T., Edwards, E.F., Fernández, A., Godinho, A., Hatch, L., Kakuschke, A., Lusseau, D., Martineau, D., Romero, L.M., Weilgart, L., Wintle, B., Notarbartolo di Sciara, G., and Martin, V., “Do marine mammals experience stress related to anthropogenic noise?” *International Journal of Comparative Psychology*, vol. 20, pp. 274-319 (2007); see also other papers published in same volume.

⁷² For further discussion, please see January 22, 2019 ENGO comments on the Vineyard Wind DEIS submitted by to BOEM electronically via www.regulations.gov (Docket ID: BOEM-2018-0069).

⁷³ 84 Fed. Reg. at 18,381.

⁷⁴ Beginning on March 7, 2019, NMFS has issued notice of this new reauthorization process for a multitude of permits. *See, e.g.*, 84 Fed. Reg. 8312 (Mar. 7, 2019); 84 Fed. Reg. 8316 (Mar. 7, 2019); 84 Fed. Reg. 11,508 (Mar. 27, 2019); 84 Fed. Reg. 13,246 (Apr. 4, 2019); 84 Fed. Reg. 14,200 (Apr. 9, 2019); 84 Fed. Reg. 15,598 (Apr. 16, 2019); 84 Fed. Reg. 17,384 (Apr. 25, 2019); 84 Fed. Reg. 17,784 (Apr. 26, 2019); 84 Fed. Reg. 17,788 (Apr. 26, 2019); 84 Fed. Reg. 18,346 (Apr. 30, 2019); 84 Fed. Reg. 18,495 (May 1, 2019); 84 Fed. Reg. 18,801 (May 2, 2019); 84 Fed. Reg. 18,809 (May 2, 2019); 84 Fed. Reg. 20,336 (May 9, 2019).

⁷⁵ 16 U.S.C. § 1371(a)(5)(D)(i).

⁷⁶ *Id.* § 1371(a)(5)(D)(iii).

process. “As approved by the Committee, the [MMPA] involves a number of basic concepts,” one of those concepts being that “the public is invited and encouraged to participate fully in the agency decision-making process.”⁷⁷ When NMFS adheres to this process, “the public is assured of the right to be informed of actions taken or proposed.”⁷⁸

With respect to NMFS’ proposal to allow only a 15-day comment period for an application to extend the IHA by another year, the legislative history of the 1994 Amendments clearly demonstrates Congress intended NMFS to provide a full 30-day comment period in this scenario: “[I]n some instances, a request will be made for an authorization identical to one issued the previous year. In such circumstances, the Committee expects the Secretary to act expeditiously in complying with the notice and comment requirements,” specifically established by the statute.⁷⁹ Notably, NMFS supplies no legal rationale for why it is authorized to issue an identical IHA for a second year while cutting in half the comment period the statute requires. 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.⁸⁰

Nor has NMFS supplied any 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 authority to set forth a permissible interpretation of the statute that comports with the statute’s objectives.⁸¹ 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.”⁸² 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

⁷⁷ H.R. Rep. No. 92-707, at 4151 (1972), *reprinted in* 1972 U.S.C.C.A.N. 4144, 4151.

⁷⁸ *Id.* at 4146.

⁷⁹ H.R. Rep. No. 103-439, at 29 (1994).

⁸⁰ *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.”).

⁸¹ *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”).

⁸² 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).

unlawful hybrid administrative extension process, with a curtailed comment period, is consistent with both statutorily-established processes.

Providing a clear and legally adequate justification for its purported new reauthorization process is especially important in light of the burden the foreshortened comment period places on interested members of the public to review not only the original authorization and supporting documents but also the draft monitoring reports, the renewal request, and the proposed renewed authorization and then to formulate comments, all within 15 calendar days. Especially given that 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. CONCLUSION

Thank you for considering our comments. Our groups fully support the issuance of an IHA to Vineyard Wind upon inclusion of the measures in Section II C, which the company has already agreed to undertake as per the Agreement, as well as acknowledgement of the concerns raised in Section III. We welcome the opportunity to meet with you, and your staff, at any time to discuss these matters.

Sincerely,

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September, 19th, 2018

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Dear Mr. Bennett and Ms. Wieting,

We respectfully submit this letter presenting recommendations for adequate and effective mitigation of impacts to the North Atlantic right whale during offshore wind development and operations. These recommendations are based on our expertise as marine scientists working on North Atlantic right whales and marine mammal acoustics.

The most effective means of protecting North Atlantic right whales from injury and harassment from noise generated during the offshore wind construction phase is to implement a temporary prohibition on pile driving during periods of heightened vulnerability. Periods of heightened vulnerability are defined by the following criteria: (i) phases when a higher relative density of animals is present, or expected to be present, within the project site; and (ii) phases when mother-calf pairs, pregnant females, aggregations of three or more whales (including surface active groups; indicative of feeding or social behavior), or entangled animals, are, or are expected to be, present.

In line with the best available science on North Atlantic right whale distribution and abundance in the waters off Rhode Island and Massachusetts, we recommend the following seasonal prohibition on pile driving and, if development activities absolutely cannot be avoided, the implementation of an enhanced mitigation protocol during the following times for leases within the Rhode Island/Massachusetts and Massachusetts Wind Energy Areas:

- January 1st – April 30th: Prohibition on pile driving.
- May 1st – 14th and November 1st – December 31st: Enhanced mitigation protocol in place during pile-driving.

Temporary prohibitions should also be defined for all lease areas along the Atlantic coast based on the best data available for those regions. The enhanced mitigation protocol should be developed for individual offshore wind projects via a participatory process that includes scientists, offshore wind developers, and environmental groups. As North Atlantic right whale distribution is known to be shifting, we 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.

Noise reduction and attenuation technologies should also be required throughout the entire construction period to the maximum extent practicable, thereby directly addressing one of the primary impacts to marine mammals from offshore wind development.

The probability of serious injury or mortality of North Atlantic right whales significantly increases when vessels of any length are traveling at speeds greater than ten knots. Vessel-based right whale monitoring measures must be employed by the offshore wind industry, including the staffing of at least one PSO aboard industry vessels and the real-time acoustic monitoring of major vessel routes (*e.g.*, using fixed location hydrophones with real-time reporting to transiting vessels). In addition, all vessels operating within or transiting to/from lease areas are strongly urged to observe a speed restriction of ten knots during periods of time involving the confirmed presence of North Atlantic right whales or the expected presence of mother-calf pairs, pregnant females, and aggregations of three or more whales, based on best available science. A compulsory vessel speed restriction of ten knots must be required of industry vessels within any Dynamic Management Areas established by NOAA Fisheries.

We also encourage your agencies to incentivize the use of alternative vessel types by the offshore wind industry that would significantly reduce the risk to North Atlantic right whales (*e.g.*, hovercraft); the use of these vessels would significantly reduce the number of vessel speed mitigation measures presently required of the industry. Similarly, significant resources should be directed towards the research, development, and implementation of improved noise reduction and attenuation technologies for deployment during construction.

Thank you in advance for your consideration of our comments. We would be happy to meet with you or your staff to discuss our recommendations in more detail.

Sincerely,

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