

By Electronic Mail

May 24, 2019

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

RE: Proposed Incidental Harassment Authorization for Marine Site Characterization Activities in the OCS-A 0508 Lease Area and the Coastal Waters off North Carolina and Virginia

Dear Ms. Harrison,

On behalf of the Natural Resources Defense Council, National Wildlife Federation, Southern Environmental Law Center, North Carolina Wildlife Federation, Oceanic Preservation Society, Mass Audubon, Defenders of Wildlife, WDC North America, NY4WHALES, Gotham Whale, Ocean Conservation Research, Conservation Law Foundation, Inland Ocean Coalition, International Marine Mammal Project of the Earth Island Institute, and Sanctuary Education Advisory Specialists SEAS LLC., and our millions of members, we respectfully submit our recommendations for the National Marine Fisheries Service's ("NMFS") proposal to issue an incidental harassment authorization ("Proposed IHA") to Avangrid Renewables, LLC ("Avangrid") for marine site characterization surveys off the coast of North Carolina in the area of the Commercial Lease of Submerged Lands for Renewable Energy Development on the Outer Continental Shelf (OCS-A 0508) (the "Lease Area") and the coastal waters off North Carolina and Virginia where one or more cable route corridors will be established. *See* 84 Fed. Reg. 17,384 (April 25, 2019).

This is an exciting moment for offshore wind in North Carolina and we recognize and celebrate the contribution that Avangrid's wind project could make in providing clean energy for the state and region. We have applauded the multiple steps North Carolina has taken to address climate change and to support offshore wind and clean energy. It is our view that offshore wind energy can and must advance in an environmentally responsible manner, while also safeguarding vulnerable ocean habitat and wildlife. In addition to rich wind resources, the waters off North Carolina represent an area of outstanding marine mammal diversity, including five large and eight small cetacean species.¹ Of the five large whale species, three (fin whale, sei whale, and North Atlantic right whale) are listed as endangered under the Endangered Species Act ("ESA") and as depleted and strategic stocks under the Marine Mammal Protection Act ("MMPA"). Two small whale species (short-finned pilot whale and long-finned pilot whale) are designated as strategic stocks while the Western North Atlantic Southern Migratory Coastal stock of

¹ 84 Fed. Reg. at 17,387, Table 2.

bottlenose dolphin is designated as both a depleted and strategic stock. The following comments are intended to support Avangrid in achieving its goal to advance offshore wind in a manner sustainable for marine wildlife, and particularly marine mammals.

Our organizations have a number of concerns pertinent to NMFS' negligible impact analysis and the mitigation and monitoring requirements that will be necessary to ensure adequate mitigation measures for North Atlantic right whales and other priority species. We recommend the Proposed IHA be updated to include the following protections:

- Notwithstanding that Avangrid intends to complete its activities this summer, NMFS should impose a seasonal restriction on site assessment and characterization activities that have the potential to injure or harass the North Atlantic right whale (*i.e.*, source level >180 dB re 1 μ Pa) from November 1 to April 30 in case delays occur;
- Geophysical surveys should commence, with ramp up, during daylight hours only to maximize the probability that marine mammals are detected and confirmed clear of the exclusion zone ("EZ");
- NMFS should require that Protected Species Observers ("PSOs"), to the extent feasible, monitor an extended minimum 1,000 meter ("m") EZ for North Atlantic right whales and establish a standard 500 m EZ for other species;
- PSOs should adhere to a shift schedule of two-on/two-off to ensure no individual PSO is responsible for monitoring more than 180° of the EZ at any one time;
- A combination of visual monitoring by PSOs and passive acoustic monitoring should be used at all times that survey work is underway; and
- All vessels operating within the survey area, including support vessels, should maintain a speed of 10 knots or less during the entire survey period. If site characterization and assessment activities are delayed into the fall and winter, a 10-knot speed restriction on all project-associated vessels transiting to/from the survey area from November 1 through April 30 should also be required.
- Additionally, we object to NMFS' proposed process to consider extending any one-year IHA with a truncated 15-day comment period. As discussed below, that proposed process is contrary to the MMPA.

I. BACKGROUND

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

² 16 U.S.C. § 1361(1).

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 “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 would have only “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 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. The status of Atlantic large whales

As the agency is aware, the conservation status of the North Atlantic right whale is 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

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 16 U.S.C. §§ 1362(13), 1371(a).

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).

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.¹²

In the wake of an alarming number of detected deaths of North Atlantic right whales in 2017, NMFS declared an Unusual Mortality Event (“UME”),¹³ 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).¹⁴ Alarming, 59 minke whales have stranded between Maine and South Carolina from January 2017 to March 2019.¹⁵ 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.¹⁶ 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, 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.¹⁷ Considering the elevated level of threat to all federally protected large whale species and populations in the Atlantic, including waters of North Carolina and Virginia, 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.¹⁸

C. North Atlantic right whale seasonality and distribution off North Carolina and Virginia

¹² 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).

¹³ 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>.

¹⁴ 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>.

¹⁵ *Id.*

¹⁶ 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>.

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

¹⁸ *Id.* § 1371(a)(5)(D)(ii)(I).

North Atlantic right whales are present within and close to the Lease Area year-round; however, based on acoustic data¹⁹ and aerial surveys,²⁰ North Atlantic right whales are most consistently present within or near the Lease Area at their highest densities from November through April. This period captures both the southward migration in the fall and early winter, when pregnant females may be traveling through the area, and the northward migration in the late winter and early spring, when mothers and calves may be traveling through the Lease Area or the more coastal cable route corridor survey area.²¹ This is in line with the dates of the Seasonal Management Area (“SMA”) currently in place for Virginia from November 1 through April 30, extending 37 kilometers (“km”) offshore the entrance of Chesapeake Bay.²²

The best available scientific information therefore demonstrates that November 1 through April 30 represents the time period of highest risk to North Atlantic right whales off North Carolina and Virginia, based on 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.²³ That said, given that North Atlantic right whales were detected on approximately 10 percent of days throughout the year, there is clear need for strong and effective mitigation measures to be in place year-round.²⁴

D. The waters off North Carolina are recognized as a global hotspot of marine mammal diversity

The Lease Area is located adjacent to one of the most diverse and biologically productive marine ecosystems in the world; the Cape Hatteras Special Research Area (“CHSRA”) encompasses a 2,288

¹⁹ Hodge, K.B., *et al.* “North Atlantic right whale occurrence near wind energy areas along the mid-Atlantic US coast: implications for management.” *Endangered Species Research*, vol. 28, p. 225-234 (2015); Salisbury, D.P., Clark, C.W., and Rice, A.N. “Right whale occurrence in the coastal waters of Virginia, USA: Endangered species presence in a rapidly developing energy market.” *Marine Mammal Science*, vol. 32, p. 508-519 (2016); 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.” *Scientific Reports*, no 7, art. 13460 (2017). There is also some indication, based on acoustic data collected in close vicinity to the Lease Area and cable route corridor survey area, that right whale densities start to increase as early as October; however, the authors conclude that the November 1st through April 30th period when the majority of right whales are present (Salisbury, D.P., *et al.*, *id.*).

²⁰ Mallette, S.D., *et al.*, “Occurrence of Baleen Whales along the Continental Shelf Region of the VACAPES OPAREA off southern Virginia: Final 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 48, issued to HDR, Inc., Virginia Beach, Virginia (July 2018). North Atlantic right whales were cited during the winter and spring. Available at: https://www.navy-marinespeciesmonitoring.us/files/8415/3383/3682/Mallette_et_al_2018_-_Occurrence_of_Baleen_Whales_along_the_Continental_Shelf_Region_of_the_VACAPES_OPAREA_off_southern_Virginia_-_Final_Report.pdf.

²¹ Dr. C. Good *pers. comm.* to Dr. F. Kershaw and M. Jasny, Oct. 24, 2017.

²² NOAA-NMFS, “Reducing ship strikes to North Atlantic right whales.” Available at: <http://www.nmfs.noaa.gov/pr/shipstrike/>.

²³ 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. The BMPs include criteria to define times of highest risk to North Atlantic right whales. While the BMPs focus on construction and operations, the criteria to define times of highest risk are directly transferable to inform mitigation measures for site assessment and characterization activities. Available at: <https://www.nrdc.org/resources/best-management-practices-north-atlantic-right-whales-during-offshore-wind-energy>.

²⁴ Salisbury, D.P., Clark, C.W., and Rice, A.N. “Right whale occurrence in the coastal waters of Virginia, USA: Endangered species presence in a rapidly developing energy market,” *supra* note 19.

square mile region (35°N lat., 75°W lon., 36°25'N lat., and 74°35'W lon.; Figure 1). Uniquely positioned where the warm Gulf Stream swings close to shore and meets the cool Labrador Current to the north, the waters off Cape Hatteras are a site of dynamic ocean fronts that support significant and diverse concentrations of marine life throughout the water column.²⁵ Upwelling supports an abundance of plankton, squid, and forage fish that, in turn, support the greatest known biodiversity of marine mammals and other large marine predators off the East Coast. The position of Cape Hatteras between the temperate ecosystem to the north and the subtropical ecosystem to the south also means that many species ranges have either their southern or northern terminus at the Cape.²⁶ The overlap of two different biological assemblages results in exceptionally high levels of biodiversity.

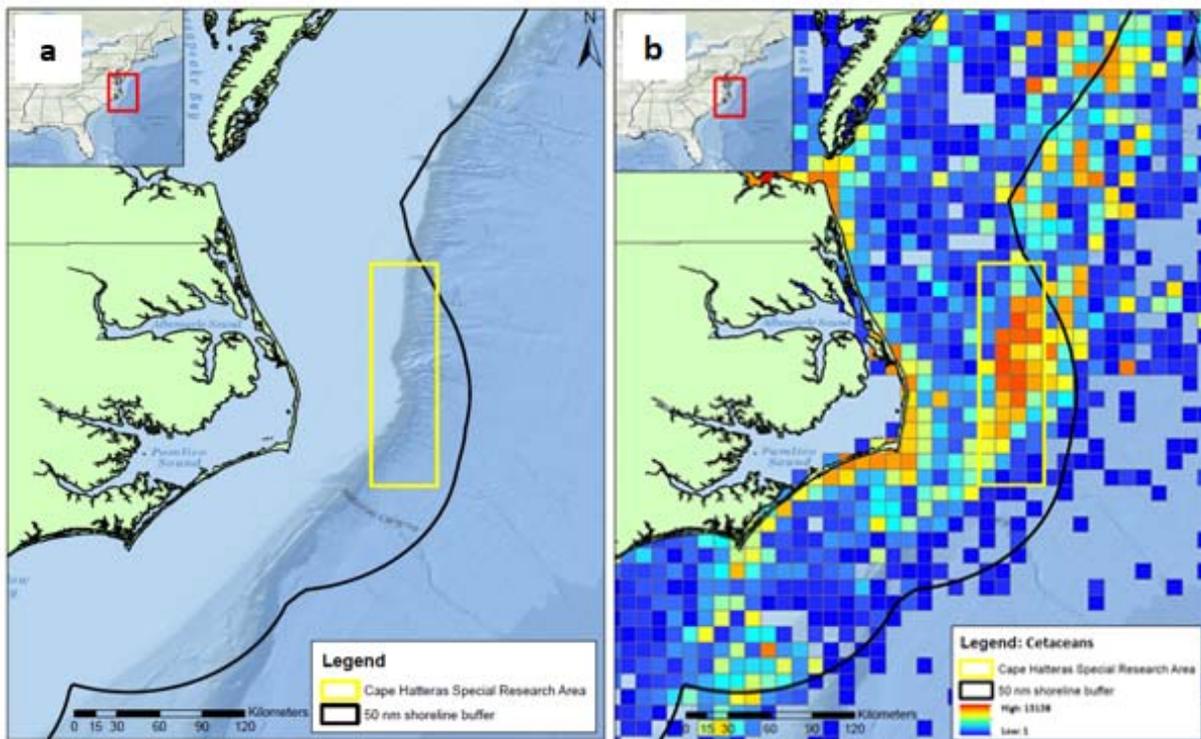


Figure 1a.) The boundaries of the Cape Hatteras Special Research Area. The Lease Area lies immediately to the west of the northwestern boundary at ~75°W; 1b.) Density of individual animals recorded in OBIS-SEAMAP for 30 species of cetaceans.²⁷ Note the relatively high densities of marine mammals occurring within the CHSRA and the cable route corridor close to the coasts of North Carolina and Virginia.

²⁵ Magnuson, J.J., et al. "Responses of Macrofauna to Short-Term Dynamics of a Gulf Stream Front on the Continental Shelf." *Coastal Upwelling*, vol. 1, p. 441-448 (1981); Atkinson, L.P., and Targett, T.E. "Upwelling along the 60-m isobath from Cape Canaveral to Cape Hatteras and its relationship to fish distribution." *Deep Sea Research Part A. Oceanographic Research Papers*, vol. 30, p. 221-226 (1983); Churchill, J.H. and Cornillon, P.C., "Gulf Stream water on the shelf and upper slope north of Cape Hatteras." *Continental Shelf Research*, vol. 11, p. 409-421 (1991).

²⁶ Schick, R.S., et al., "Community structure in pelagic marine mammals at large spatial scales." *Marine Ecology Progress Series*, vol. 434, p. 165-181 (2011); Best, B.D., et al., "Online cetacean habitat modeling system for the US east coast and Gulf of Mexico." *Endangered Species Research*, vol. 18, p. 1-15 (2012).

²⁷ Halpin, P.N., et al., "OBIS-SEAMAP: The world data for marine mammal, sea bird, and sea turtle distributions." *Oceanography*, vol. 22, p. 104-155 (2009).

The waters off Cape Hatteras have the highest marine mammal biodiversity of any area along the U.S. East Coast, and compare favorably to other locations internationally renowned for their diversity of species, including waters off Northwest Spain, Hawaii, San Diego, and Cape Cod.²⁸ 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.²⁹ 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.³⁰ The CHSRA was designated in 2009 by NMFS as a location that exhibited high fishing effort and high pilot whale bycatch rates. Considering the high levels of marine mammal diversity observed within the CHSRA, we consider these boundaries to be a helpful proxy to define the area of highest relative diversity and habitat-use for marine mammals in the region (Figure 1).

Residency intervals, within-season sightings, and documentation of feeding behaviors suggest the waters off Virginia, including the cable route corridor survey area, and perhaps the broader mid-Atlantic region, provide important seasonal foraging habitat for at least some, primarily juvenile, humpback whales.³¹ Between year sightings suggest that as many as 20 percent of identified whales occur in a relatively small study area in consecutive years.³² In addition to endangered baleen whales (*see also* Section I.B.), three strategic stocks of small cetaceans—long-finned and short-finned pilot whales, and the Western North Atlantic Southern Migratory Coastal stock of bottlenose dolphin—are found off Cape Hatteras and use habitat within the Lease Area and cable route corridor survey area. Pilot whales are vulnerable to entanglement in fishing gear. Short-finned pilot whales interact with the pelagic longline fishery for swordfish and tuna, and are the most frequently taken marine mammal in this fishery,³³ with take recently exceeding the level of potential biological removal.³⁴ Long-finned pilot whales are also at risk. Both species are afforded protections in the pelagic longline fishery through the NMFS Atlantic Pelagic Longline Take Reduction Plan.³⁵ The Western North Atlantic Southern Migratory Coastal stock of bottlenose dolphin is considered to be depleted under the MMPA due to the number of annual human-caused mortalities and previous UMEs.³⁶

²⁸ Byrd, B., *et al.*, “Strandings as indicators of marine mammal biodiversity and human interactions off the coast of North Carolina.” *Fishery Bulletin*, vol. 112, p. 1-12 (2014).

²⁹ *Id.*

³⁰ Halpin, P.N., *et al.*, “OBIS-SEAMAP: The world data for marine mammal, sea bird, and sea turtle distributions,” *supra* note 27.

³¹ Mallette, S.D., *et al.*, “Seasonality and site-fidelity of humpback whales off the mid-Atlantic region of the U.S.” Poster Presentation, Virginia Aquarium and Marine Science Center Foundation. Available at: https://www.navymarinespeciesmonitoring.us/files/5115/1941/4653/Mallette_SMM_2017_poster.pdf.

³² *Id.*

³³ Garrison, L.P., *et al.*, “Interactions between marine mammals and pelagic longline fishing gear in the U.S. Atlantic Ocean between 1992 and 2004.” *Fisheries Bulletin*, vol. 105, p. 408-417 (2007).

³⁴ Hayes, S.A., *et al.*, “U.S. Atlantic and Gulf of Mexico marine mammal stock assessments – 2016.” NOAA Technical Memorandum, NMFS-NE-241, pp. 274 (2017).

³⁵ 74 Fed. Reg. 23,349 (May 19, 2009).

³⁶ Hayes, S.A., *et al.*, “U.S. Atlantic and Gulf of Mexico marine mammal stock assessments – 2016,” *supra* note 34 at p. 110-124. Updated April 2018.

While the Lease Area lies to the west of the CHSRA and does not coincide directly with the highest relative levels of diversity and abundance of marine mammals, **it is crucial that the agency afford special attention to the general importance of the waters off North Carolina to marine mammals when permitting offshore wind development activities in this region, and requires strong mitigation measures capable of protecting multiple species in the Lease Area and cable route corridors.**

II. INCONSISTENCIES BETWEEN THE PROPOSED IHA AND THE MARINE MAMMAL PROTECTION ACT³⁷

- A. *To fulfill the statutory requirement of considering the best scientific information available, NMFS must analyze additional data sources when calculating densities of marine mammals, including the North Atlantic right whale*

For the Final IHA to be consistent with the MMPA, NMFS must base its analysis on the best available scientific information.³⁸ 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,³⁹ which was funded under the agency’s CetMap program⁴⁰ and recently updated with new modeling results.⁴¹ However, the CetMap model, as its designers admit,⁴² is limited. Most notably, in founding its density estimates entirely on shipboard and aerial line-transect surveys, the model necessarily excludes data obtained through additional sightings data, passive acoustic monitoring, and satellite telemetry.⁴³ It is our view that the density maps produced by Roberts *et al.* do not fully reflect the

³⁷ In addition to Section II, we wish to note three additional inconsistencies in NMFS’ analysis. *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 17,395: “Marine mammals are likely to avoid the HRG survey activity, especially harbor porpoises.”)), even though studies have not found avoidance behavior to be generalizable among species and contexts (*e.g.*, Miller *et al.* 2009, Pirotta *et al.* 2012) and even though such avoidance may itself constitute take under the MMPA. *Third*, the Proposed IHA does not directly account for cumulative impacts. For species as endangered as the North Atlantic right whale, repeated impacts can readily accumulate to population-level harm and therefore must be accounted for by the agency (*e.g.*, accounting for multiple wind energy projects is likely to exceed the 6% population impact threshold selected by the agency).

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

³⁹ 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.

⁴⁰ *See, https://cetsound.noaa.gov/cda-index.*

⁴¹ 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.

⁴² Roberts, J.J., *et al.*, “Habitat-based cetacean density models for the U.S. Atlantic and Gulf of Mexico,” *supra* at note 39.

⁴³ *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

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. 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 North Carolina and Virginia, providing a more accurate assessment of Level B take.⁴⁴ **It should be NMFS' top priority to consider any initial data from State monitoring efforts,⁴⁵ passive acoustic monitoring data, opportunistic marine mammal sightings data, and other data sources, and to take steps now to develop a dataset (see also recommendations in Section III.A.) that more accurately reflects marine mammal presence so that it is in hand for future IHA authorizations and other work.**

B. NMFS should not adjust take numbers for endangered whales based on mitigation measures

The agency elects to adjust 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 the implementation of a 500 m EZ for North Atlantic right whales and a 200 m EZ for fin whales that are greater than or, in the case of fin whales, equal to the calculated Level B behavioral harassment zone.⁴⁶ While we appreciate NMFS’ refusal to authorize a single Level B take for the North Atlantic right whale, as is necessary given the species’ dire conservation status, we do not share the agency’s level of confidence that it is possible to mitigate all potential for Level B harassment through the implementation of an EZ during a time of year when North Atlantic right whales are expected to be present in the Lease Area. We are equally concerned in the case of fin whales. Our reasons are twofold: (i) the agency’s reliance on a 160 dB threshold for behavioral harassment is not supported by best available scientific information (see footnote #37); and (ii) the monitoring protocols the agency prescribes for the EZ are under-protective (see Section III.D. for further discussion).

Moreover, in support of the number of takes authorized and presumed effectiveness of mitigation measure for the Avangrid project, the agency reflects on its success during previous HRG conducted off the U.S. East Coast: “Marine mammal monitoring reports submitted after the completion of HRG surveys indicated that authorized take numbers have never been exceeded.”⁴⁷ The assumption inherent in this statement is that the number and nature of takes are possible to accurately determine by what has largely been visual monitoring. Moreover, the agency is proposing to authorize solely Level B take, which is highly unlikely to be detected by visual observation. **Collectively, the agency’s assumptions regarding**

(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.

⁴⁴ 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).

⁴⁵ E.g., Mallette S.D., *et al.*, “Offshore energy planning for Marine Protected Species off of Virginia’s coast: A synthesis of aerial surveys in the proximity of the Virginia wind energy area, 2012-2015.” VAQF Scientific Report 2016-04 (2016). Available at: <https://www.deq.virginia.gov/Portals/0/DEQ/CoastalZoneManagement/FY14Task95-04-14.pdf>.

⁴⁶ 84 Fed. Reg. at 17,400.

⁴⁷ 84 Fed. Reg. at 17,386.

mitigation effectiveness are unfounded and cannot be used to justify any reduction in the number of takes authorized.

C. NMFS should be consistent in its acknowledgement that the use of certain HRG survey equipment can potentially result in Level A take

The use of certain HRG equipment has the potential to result in Level A take; the risk is relatively greater for species in the high-frequency hearing band, such as harbor porpoise. While the agency acknowledges this fact in its calculation of the Level A harassment zone,⁴⁸ it also discounts this possibility in other instances: for example, “Based on the frequency ranges of the potential equipment to be used in support of the HRG survey activities; the ultra-short baseline (USB) positioning system and the sub-bottom profilers (shallow and medium penetration) operate within the established marine mammal hearing ranges and have the potential to result in Level B harassment of marine mammals.”⁴⁹ The agency does not mention the *potential* for Level A take even though it later references the stranding event of 100 melon-headed whales in Madagascar in 2008 associated with the use of a 12-kHz multibeam echosounder.⁵⁰ Moreover, for previous IHA applications, the agency has, “out of an abundance of caution,” authorized Level A take for harbor porpoises.⁵¹ It is surprising, therefore, that the agency does not here elect to express the same level of caution for an area with an outstanding diversity of mid- and high-frequency hearing specialists. Also, the proposed cable route corridor surveys include shallow, coastal waters, and which may increase the likelihood of animals becoming trapped between the sound source and the shore.⁵² **The agency should acknowledge the potential for Level A take on small cetaceans and reconsider its analysis of Level A take on harbor porpoise and other acoustically sensitive species.**

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

NMFS states that it may issue a second one-year IHA for the Avangrid site characterization surveys on an expedited basis, with only 15 days allowed for public comment, should various criteria be met.⁵³ NMFS has requested comment on this proposed process as well as on the proposed IHA.

NMFS’ proposed process 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.⁵⁴ 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).⁵⁵ 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

⁴⁸ 84 Fed. Reg. at 17,398 at Table 5.

⁴⁹ 84 Fed. Reg. at 17,386.

⁵⁰ 84 Fed. Reg. at 17,395).

⁵¹ See, e.g., 83 Fed. Reg. at 22,459.

⁵² 84 Fed. Reg. at 17,395.

⁵³ 84 Fed. Reg. at 18,381.

⁵⁴ 16 U.S.C. § 1371(a)(5)(D)(i).

⁵⁵ *Id.* § 1371(a)(5)(D)(iii).

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.”⁵⁶ When NMFS adheres to this process, “the public is assured of the right to be informed of actions taken or proposed.”⁵⁷

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.⁵⁸ 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.⁵⁹

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.⁶⁰ 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.”⁶¹ 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.

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

⁵⁶ H.R. Rep. No. 92-707, at 4151 (1972), *reprinted in* 1972 U.S.C.C.A.N. 4144, 4151.

⁵⁷ *Id.* at 4146.

⁵⁸ H.R. Rep. No. 103-439, at 29 (1994).

⁵⁹ *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.”).

⁶⁰ *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”).

⁶¹ 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).

reauthorization process to become the rule rather than the exception,⁶² 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.

III. RECOMMENDATIONS FOR IMPROVED MITIGATION AND MONITORING

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.”⁶³ In light of the aforementioned inconsistencies between the agency’s analysis and the requirements of the MMPA, as well as the significant risks posed to the North Atlantic right whale and other endangered and/or strategic marine mammal stocks by the site assessment and characterization activities 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. The North Atlantic right whale population cannot withstand any additional stressors; therefore, the implementation of a robust impact avoidance, minimization, and mitigation system is essential to prevent adverse impacts of the proposed survey activities. Below, we recommend specific avoidance, mitigation, and monitoring measures intended to address these concerns.

A. *Seasonal restriction on geophysical surveys from November 1 to April 30*

As described above (*see* Section I.C.), NMFS is proposing to authorize geophysical surveys off North Carolina at a time when North Atlantic right whales may be present.⁶⁴ The survey period is intended to commence no earlier than June 1, 2019 and is anticipated to last for approximately 37 days.⁶⁵ It is therefore highly unlikely that the surveys will extent into the time period that we consider of highest risk for North Atlantic right whales (November 1 to April 30).⁶⁶ However, an end date for the surveys is not specified. As the Proposed IHA will be issued for one year, poor weather conditions or other unforeseen circumstances may delay surveys into the fall. In that case, **we recommend NMFS impose a restriction**

⁶² 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).

⁶³ 16 U.S.C. § 1371(a)(5)(D)(vi).

⁶⁴ Salisbury, D.P., Clark, C.W., and Rice, A.N. “Right whale occurrence in the coastal waters of Virginia, USA: Endangered species presence in a rapidly developing energy market,” *supra* note 19; 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* note 19.

⁶⁵ 84 Fed. Reg. at 17,385.

⁶⁶ The “Best Management Practices for North Atlantic Right Whales During Offshore Wind Energy Construction and Operations along the U.S. East Coast” published by environmental groups on March 1, 2019, define periods of “highest risk” to right whales 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.” Available at: <https://www.nrdc.org/sites/default/files/best-management-practices-north-atlantic-right-whales-during-offshore-wind-energy-construction-operations-along-us-east-coast-20190301.pdf>.

on site assessment and characterization activities that have the potential to injure or harass the North Atlantic right whale (*i.e.*, source level >180 dB re 1 μ Pa) from November 1 to April 30 off North Carolina and Virginia.⁶⁷ We also note that, as North Atlantic right whales may be present in the survey area during the summer months,⁶⁸ NMFS must ensure that adequate mitigation measures (*see* Sections III.B. through III.E. for our recommendations) are in place to protect this and other priority species throughout the year.

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,**⁶⁹ as well as the several strategic and/or depleted stocks of small cetaceans that inhabit the region (*see* Sections I.B. through I.D.). It is therefore imperative that consequences of the proposed North Atlantic right whale seasonal restriction on other endangered and protected species be fully accounted for by the agency (*e.g.*, a seasonal restriction may displace survey activities later in the year, which may increase levels of take for other species and populations, including juvenile humpback whales that show site fidelity to the survey area;⁷⁰ consideration of potential risks to other species is particularly pertinent in light of the mass stranding off Madagascar that was caused by the use of comparable HRG survey equipment).⁷¹

To elucidate and balance the relative risks to these species, for which we still have relatively limited data, **we strongly 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 North Carolina and Virginia, including the Lease Area, as well as the broader mid-Atlantic region. Only then can the most effective seasonal restrictions and mitigation measures be considered in a year-round context. In the absence of such information, we urge the agency to consider the precautionary measures for the time-period proposed above (*i.e.*, November 1 to April 30), as based on the best available scientific information.

B. Geophysical surveys should commence, with ramp-up, only during daylight hours

⁶⁷ A November 1st to April 30th seasonal restriction for pile driving and a February 1st to April 30th seasonal restriction for geophysical surveying formed a core component of a landmark agreement aimed at protecting the North Atlantic right whale from construction site assessment and characterization activities in the mid-Atlantic Wind Energy Areas that was reached between offshore wind developers and the environmental NGO community in 2012. *See* letter from J. Grybowski, F. Beinecke, J. Gordon, J. Kassel, W. L. Davis, L. Schweiger, S. Kraus, A. Sharpless, R. Middleton, A. Downes, M. Alt, and M. Brune, to Ms. M. Bornholdt, Renewable Energy Program Manager, Bureau of Ocean Energy Management, regarding “Proposed mitigation measures to protect North Atlantic right whales from site assessment and characterization activities of offshore wind energy development in the Mid-Atlantic Wind Energy Areas” (December 12, 2012).

⁶⁸ 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; 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* note 19.

⁶⁹ 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.

⁷⁰ Mallette, S.D., *et al.*, “Seasonality and site-fidelity of humpback whales off the mid-Atlantic region of the U.S.” *supra* note 31.

⁷¹ 84 Fed. Reg. at 17,395.

The effectiveness of night vision and infrared technology in detecting marine mammals, including large whales, has not yet been tested and published for this geographic region. In general, night vision equipment, relying on image intensifying technology, has not been widely used or tested for marine mammal monitoring, and is considered to be heavily affected by environmental conditions often present at sea. Infrared technology, relying on thermal differences between the target species and the environment, has shown promise for night time detection of a number of marine mammal species from vessels.⁷² However, the application of infrared technology as a mitigation tool is still in development and a number of studies have reported varying results depending on the type of equipment used, the environmental conditions, and the species in question.

The agency should review and approve night vision and infrared equipment prior to the start of surveys. In doing so, NMFS must consider the limitations of each system proposed and ensure that the detection of marine mammals is possible at distances out to and beyond the exclusion zones, in the geographic region in question, and for all relevant endangered and protected species. The reduced temperature differential between whale blow and the surrounding water expected for to occur in the mid-Atlantic, particularly during the spring and summer, in contrast to the far cooler high-latitude waters, is likely to negatively impact the detection effectiveness of infrared.⁷³ These technologies have also not been well tested for detection of North Atlantic right whales and may be relatively ineffective for detecting minke whales,⁷⁴ both species of concern in light of the current UMEs declared for the Atlantic coast. The lack of proven effectiveness of night vision and infrared technology is particularly concerning when paired with the knowledge that not all whales vocalize continuously and thus may not be able to be detected by passive acoustic monitoring alone. This effect may be exacerbated during survey periods as some species, including the North Atlantic right whale, have been observed to stop vocalizing in the presence of anthropogenic noise, consistent with an anti-predator response.⁷⁵ Thus, even a combination of night vision/infrared technology combined with passive acoustic monitoring may not be effective in monitoring the exclusion zone at night.

We recommend that geophysical surveys commence, with ramp-up, during daylight hours only to maximize the probability that North Atlantic right whales are detected and confirmed clear of the exclusion zone. The survey can then continue into nighttime hours. If a North Atlantic right whale is detected in the exclusion zone during nighttime hours and the survey is shut down, developers should be required to wait until daylight hours for ramp-up to resume. We also recommend that NMFS encourage developers to partner with scientists to collect data that would increase the understanding of the effectiveness of night vision and infrared technologies off North Carolina, Virginia, and the broader mid-Atlantic region, with a view towards greater reliance on these technologies to commence surveys during nighttime hours in the future.

⁷² Lathlean, J. and Seuront, L., "Infra-red thermography in marine ecology: methods, previous applications and future challenges," *Marine Ecology Progress Series*, vol. 514, p. 263-277 (2014).

⁷³ *Id.*

⁷⁴ Cuyler, L.C., Wiulsrød, R., and Øritsland, N.A., "Thermal IR Radiation from Free Living Whales," *Marine Mammal Science*, vol. 8, p. 120-134 (1992).

⁷⁵ See, e.g., Parks, S.E., Clark, C.W., and Tyack, P.L., "Short- and long-term changes in right whale calling behavior: the potential effects of noise on acoustic communication," *Journal of the Acoustical Society of America*, vol. 122, p. 3725-3731 (2007).

C. Minimum radii of exclusion zones should be increased and maintained throughout survey activities

The Proposed IHA specifies that marine mammal EZs will be established around HRG equipment and monitored by PSOs during HRG surveys as follows: 100 m EZ for “other large cetaceans,” i.e., humpback whale, minke whale, pilot whale, and Risso’s dolphin; 200 m EZ for sei and fin whale; and 500 m EZ for North Atlantic right whales.⁷⁶ As the agency states that a standard Level B harassment zone of 200 m radial distance from the survey equipment is being considered for all marine mammal species,⁷⁷ the proposed 100 m EZ distance for other large cetaceans is not, therefore, protective of these species from Level B harassment according to the agency’s reasoning. Moreover, the definition of EZ radii based on the acoustic thresholds laid out in the NMFS technical guidance document significantly underestimates the area in which marine mammals, including large whales, may experience noise at levels capable of causing behavioral harassment (*i.e.*, received level <160 dB).⁷⁸ Again, any potential harassment of the North Atlantic right whale is a significant concern. In addition, the agency appears to offer no protection for harbor porpoise in its EZ requirements, even though the species has been proven extremely sensitive to noise. This seems to be based on the unsupported assumption that “[m]arine mammals are likely to avoid the HRG survey, especially harbor porpoises.”⁷⁹ Moreover, the agency is therefore demonstrating inconsistency in its EZ requirements for different Lease Areas without explanation or justification.⁸⁰

NMFS should require use of sufficient monitoring practices to ensure a 500 m EZ for all marine mammals⁸¹ around all vessels conducting activities with noise levels that could result in injury or harassment to these species (based on the best available science), with the exception of dolphins that, in the determination of PSOs, are voluntarily approaching the vessel. **Additionally, PSOs should, to the extent feasible, monitor beyond the minimum 500 m EZ to an extended 1,000 m EZ for North Atlantic right whales.**⁸² NMFS should maintain protective EZs, at the minimum distances we recommend above, throughout the site assessment and characterization activities to maximize protections for North Atlantic right whales and other protected species. The EZ distance should be extended beyond these minimum distances in the case that sound source validation data support such an extension.

D. A combination of Protected Species Observers and passive acoustic monitoring must be employed at all times

⁷⁶ 84 Fed. Reg. at 17,401.

⁷⁷ *Id.*

⁷⁸ See, e.g., Wright, A.J., “Sound science: Maintaining numerical and statistical standards in the pursuit of noise exposure criteria for marine mammals.” *Frontiers in Marine Science*, vol. 2 (2015).

⁷⁹ 84 Fed. Reg. 17,395.

⁸⁰ See, e.g., 83 Fed. Reg. 19,711-19,736, which specifies: 25 m EZ for harbor porpoises; 200 m EZ for ESA-listed cetaceans, including sperm whales and mysticetes (except North Atlantic right whale); and 500 m EZ for North Atlantic right whales. No exclusion zones are warranted for non-ESA-listed marine mammals. PSOs will visually monitor and record the presence of all marine mammals within 500 meters.

⁸¹ Letter from J. Grybowski, *et al.*, to Ms. M. Bornholdt, *supra* note 67.

⁸² As recommended by Drs. S.D. Kraus, C. Good, and H. Bailey *pers. comm.* to F. Kershaw and M. Jasny (October 24, 2017).

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 0.⁸³ Sea state has been demonstrated to have a direct effect on the siting probability of North Atlantic right whales in the Lower Bay of Fundy and in Roseway Basin of the Southwest Scotian Shelf.⁸⁴ In line with Barlow (2015),⁸⁵ 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.⁸⁶ Moreover, detectability of other marine mammals is highly dependent on the species and behavior, which has led experts to recommend a combination of monitoring methods be employed to maximize detectability.⁸⁷

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. This is a salient consideration in the evaluation of whether a species can be adequately protected by species observers alone, given the moderate Beaufort sea states in the vicinity of the Lease Area during the months when the proposed surveys would take place. Based on the data collected by the National Buoy Data Center (*see* Table 1),⁸⁸ a monthly average Beaufort sea state of 3 or 4 can be expected in close vicinity to the Lease Area, between June and December, with the highest sea states from September to December.

Table 1. Monthly average wave height for 2018 and corresponding Beaufort sea state recorded at NOAA National Data Buoy Station 44100 – Duck FRF 26m, NC (430). Data source: NOAA National Data Buoy Center (Accessed: May 20, 2019).

Month	Wave Height (m)	Beaufort Sea State
June	0.8	3
July	1.1	3-4
August	0.6	3
September	1.4	4
October	1.2	4
November	1.4	4
December	1.3	4

Given these data, observers are certain to underestimate the number of large whales in the mitigation area based on sea state alone. From the findings of Baumgartner *et al.* (2003),⁸⁹ we would expect a reduction

⁸³ 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).

⁸⁴ Baumgartner, M.F., *et al.*, “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).

⁸⁵ Barlow, J., “Inferring trackline detection probabilities, $g(0)$, for cetaceans from apparent densities in different survey conditions,” *supra* note 83.

⁸⁶ *Id.*

⁸⁷ *See, e.g.*, Verfuss, U.K., *et al.*, “Comparing methods suitable for monitoring marine mammals in low visibility conditions during seismic surveys.” *Marine Pollution Bulletin*, vol. 126, p.1-18 (2018).

⁸⁸ NOAA-NWS, “National Data Buoy Center.” Available at: <http://www.ndbc.noaa.gov/>.

⁸⁹ Baumgartner, M.F., *et al.*, “North Atlantic right whale habitat in the lower Bay of Fundy and on the SW Scotian Shelf during 1999-2001,” *supra* note 84.

in detection probability of North Atlantic right whales by up to 84.5 percent based on an average Beaufort sea state of 4, 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.

In addition to the effect of sighting conditions, studies suggest that North Atlantic right whales exhibit behaviors that reduce the likelihood that they would be detected by PSOs and therefore often go undetected by observers. For example, acoustic surveys have detected North Atlantic right whale vocal presence throughout the year and over the entire spatial extent of a study area in Massachusetts Bay,⁹⁰ even though visual surveys have rarely reported sightings of North Atlantic right whales in the winter off the coast of Massachusetts.⁹¹ In fact, aerial surveys were found to detect North Atlantic right whales on only two-thirds of the days they were acoustically detected in Cape Cod Bay, Massachusetts, from 2001 to 2005.⁹² Additionally, there is evidence that North Atlantic right whales spend significantly more time at subsurface depths (1-10 m) compared to normal surfacing periods (within 1 m of the surface) when exposed to certain types of acoustic disturbance.⁹³ These behavioral responses are likely to 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 of the year.⁹⁴

Thus, reliance on PSOs as the sole monitoring method is under-protective and should not be endorsed by the agency. Rather, **a combination of visual monitoring by PSOs and passive acoustic monitoring should be implemented 24 hours a day.** The passive acoustic protocol should be designed so the hydrophone is not masked by vessel or survey noise. We also support the inclusion of both broadband and low frequency hydrophones, which will serve to ensure that North Atlantic right whale vocalizations, as well as those of other low- and mid-frequency vocalizing species, can be detected. **Survey activity should be shut down upon the visual or acoustic detection of a North Atlantic right whale.** Acoustic detections of other species should be used to assist PSOs in their visual monitoring efforts.

The shift schedule of the NMFS-approved PSOs aboard the survey vessel should also **adjusted to a two-on two-off rotation to avoid a single PSO being responsible for monitoring more than 180° of the EZ at any given time.**

E. Vessel strike measures

⁹⁰ Morano, J.L., *et al.*, “Acoustically detected year-round presence of right whales in an urbanized migration corridor.” *Conservation Biology*, vol. 26, p. 698-707 (2012).

⁹¹ Winn, H.E., Price, C.A., and Sorenson, P.W., “The distributional biology of the right whale (*Eubalaena glacialis*) in the western North Atlantic.” *Report of the International Whaling Commission*, Special Issue, vol. 10, p. 129-138 (1986); Pittman, S., *et al.*, “Cetacean distribution and diversity.” In: Battista T., Clark R., Pittman S.(eds) *An ecological characterization of the Stellwagen Bank National Marine Sanctuary Region: oceanographic, biogeographic, and contaminants assessment*, p.264-324 (2006).

⁹² Clark, C.W., Brown, M.W., and Corkeron, P., “Visual and acoustic surveys for North Atlantic right whales, *Eubalaena glacialis*, in Cape Cod Bay, Massachusetts, 2001-2005: Management Implications.” *Marine Mammal Science*, vol. 26, p. 837-854 (2010).

⁹³ Nowacek, D.P., Johnson, M.P., and Tyack, P.L., “North Atlantic right whales (*Eubalaena glacialis*) ignore ships but respond to alerting stimuli.” *Proceedings: Biological Sciences*, vol. 271, p. 227-231 (2004).

⁹⁴ Robertson, F.C., *et al.*, “Seismic operations have variable effects on dive-cycle behavior of bowhead whales.” *Endangered Species Research*, vol. 21, p. 143-160 (2013).

Vessel collisions remain one of the leading causes of large whale injury and mortality, and are a primary driver of the existing UMEs. The number of recorded vessel collisions on large whales each year is likely to grossly underestimate the actual number of animals struck, as animals struck but not recovered, or not thoroughly examined, cannot be accounted for.⁹⁵ North Atlantic right whales are particularly prone to ship-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.⁹⁶ Some types of anthropogenic noise have been shown to induce sub-surface positioning in North Atlantic right whales, increasing the risk of ship-strike at relatively moderate levels of exposure.⁹⁷ It is possible that HRG surveys could produce the same effects, and should therefore be treated conservatively. In addition, Relatively higher densities of humpback whales are observed within the shipping lanes at the entrance of Chesapeake Bay compared to the global ocean, indicating that vessel strike is a pertinent concern for this species.⁹⁸ Indeed, increased baleen whale sightings have occurred within the Bay over recent years⁹⁹ and ship strike mortalities have also risen.¹⁰⁰ Accordingly, the agency has a responsibility to implement mitigation measures to prevent any further vessel collisions for these species, as well as for other species of large whale (*e.g.*, fin whales) that, in light of the broad distributional shifts observed for multiple species, may be at potential future risk of experiencing an UME.

As described in the Proposed IHA, the survey vessel(s) will maintain a speed of 4 knots during surveys. A mandatory speed limit of 10 knots is also required of all vessels, regardless of size, within mandatory SMAs (in operation from November 1 through April 30) and voluntary Dynamic Management Areas ("DMAs;" year-round) as designated by NMFS.¹⁰¹ Given that the speed of the survey vessels will fall well below 10 knots and the additional precautions taken within SMAs and DMAs, we agree with the agency that the risk of a lethal vessel collision during the surveys is relatively low. However, as serious injury or mortality can occur from a vessel traveling above 10 knots irrespective of its length,¹⁰² and since mothers and calves are likely to travel close to shore,¹⁰³ **all project vessels operating within the survey area (i.e., whether surveying or not) should maintain a speed of 10 knots or less during the entire survey period.** If, due to unforeseen circumstances, site characterization and assessment activities are delayed into the fall and winter, **a 10-knot speed restriction on all project-associated vessels transiting**

⁹⁵ Reeves, R.R., *et al.*, "Report of the North Atlantic Right Whale Program Review." 13–17 March 2006, Woods Hole, Massachusetts (2007) (prepared for the Marine Mammal Commission); Parks, S.E., *et al.*, "Dangerous dining: surface foraging of North Atlantic right whales increases risk of vessel collisions." *Biology Letters*, vol. 8, p. 57-60 (2011).

⁹⁶ NMFS, "Recovery plan for the North Atlantic right whale" (August 2004).

⁹⁷ Nowacek, D.P., *et al.*, "North Atlantic right whales (*Eubalaena glacialis*) ignore ships but respond to alerting stimuli," *supra* note 93.

⁹⁸ Mallette, S.D., *et al.*, "Seasonality and site-fidelity of humpback whales off the mid-Atlantic region of the U.S." *supra* note 31.

⁹⁹ Aschettino, J.M., *et al.*, "MidAtlantic Humpback Whale Monitoring, Virginia Beach, Virginia: 2017/18 Annual Progress Report." Draft Report. Prepared for U.S. Fleet Forces Command. Submitted to Naval Facilities Engineering Command Atlantic, Norfolk, Virginia, under Contract N62470-15-8006, Task Order 17F4013, issued to HDR, Inc., Virginia Beach, Virginia (June 2018).

¹⁰⁰ VAQF unpublished data; cited in 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.

¹⁰¹ 84 Fed. Reg. at 17,402.

¹⁰² NOAA-NMFS, "Reducing ship strikes to North Atlantic right whales," *supra* note 22.

¹⁰³ Dr. C. Good *pers. comm.*, *supra* note 21.

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to/from the survey area from November 1 through April 30 should also be required. (This measure should be considered in addition to the seasonal restriction on geophysical surveys recommended in Section III.A.).

Additionally, studies of other baleen whales indicate that noise can induce horizontal displacement.¹⁰⁴ HRG surveys may therefore push a North Atlantic right whale or other large whale species towards an area where vessels are traveling at greater speed, presenting a greater danger of vessel collision, such as the shipping lanes entering Chesapeake Bay. **Indirect ship strike risk resulting from habitat displacement should be considered in NMFS' analysis.**

IV. CONCLUSION

Thank you for considering our comments. For the above reasons, it is our view that NMFS must revise its analysis to be consistent with the agency's statutory obligations. We welcome the opportunity to meet with you, and your staff, at any time to discuss these matters.

Sincerely,

Francine Kershaw, Ph.D.
Project Scientist, Marine Mammal Protection and Oceans, Nature Program
Natural Resources Defense Council

Catherine Bowes
Program Director, Offshore Wind Energy
National Wildlife Federation

Sierra B. Weaver
Senior Attorney
Southern Environmental Law Center

Tim Gestwicki
CEO
North Carolina Wildlife Federation

Courtney S. Vail
Strategic Campaigns
Oceanic Preservation Society

¹⁰⁴ E.g., Castellote, M., Clark, C.W., and Lammers, M.O., "Acoustic and behavioural changes by fin whales (*Balaenoptera physalus*) in response to shipping and airgun noise." *Biological Conservation*, vol. 147, p. 115-122 (2012).

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Jack Clarke
Director of Public Policy
Mass Audubon

Jane P. Davenport
Senior Attorney
Defenders of Wildlife

Regina Asmutis-Silvia
Executive Director
WDC North America

William Rossiter
Vice President
NY4WHALES

Paul Sieswerda
President and CEO
Gotham Whale

Michael Stocker
Director
Ocean Conservation Research

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

Vicki Nichols Goldstein
Founder and Executive Director
Inland Ocean Coalition

Mark J. Palmer
Associate Director - USA
International Marine Mammal Project of the Earth Island Institute

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Patricia Sullivan, MS. Ed.

President and Co-Founder

Sanctuary Education Advisory Specialists SEAS, LLC.



MARINE MAMMAL COMMISSION

16 May 2019

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 Avangrid Renewables, LLC (Avangrid) under section 101(a)(5)(D) of the Marine Mammal Protection Act (the MMPA). Avangrid is seeking authorization to take small numbers of marine mammals by harassment incidental to marine site characterization surveys off the coast of North Carolina to support the development of an offshore wind project. The Commission also has reviewed the National Marine Fisheries Service's (NMFS) 25 April 2019 notice (84 Fed. Reg. 17384) requesting comments on its proposal to issue the authorization, subject to certain conditions.

Background

Avangrid is proposing to conduct high-resolution geophysical (HRG) surveys to support the siting, design, and deployment of up to three meteorological data buoys. The surveys would also be used to obtain baseline seabed/sub-surface sediment data to support the siting of a proposed wind farm. The surveys would occur during the day and at night for approximately 37 days beginning on or after 1 June 2019. HRG survey equipment proposed for use includes an ultra-short baseline (USBL) positioning system, shallow-and medium-penetration type sub-bottom profilers (SBP), a multibeam echosounder, and side-scan sonar.

NMFS preliminarily has determined that the proposed activities temporarily would modify the behavior of small numbers of nine marine mammal species. It also anticipates that any impact on the affected species and stocks would be negligible. NMFS does not anticipate any take of marine mammals by death or serious injury and believes that the potential for disturbance will be at the least practicable level because of the proposed mitigation measures. The proposed mitigation, monitoring, and reporting measures include—

- using vessel-based observers to monitor the exclusion zones¹ and the Level B harassment zone² for 30 minutes before, during, and for 30 minutes after the HRG surveys;
- using standard pre-clearance, ramp-up, and delay procedures³;
- using shutdown procedures if a marine mammal is sighted within or approaching the designated exclusion zones;
- using delay and shut-down procedures if a species for which authorization has not been granted, or if a species for which authorization has been granted but the authorized number of takes has been met, approaches or is observed within the Level B harassment zone;
- using night-vision equipment (with infrared capabilities) to detect marine mammals during nighttime operations;
- using standard vessel strike avoidance procedures during all survey activities;
- reporting injured and dead marine mammals to the Office of Protected Resources and the Southeast Regional Stranding Coordinator using NMFS's phased approach and suspending activities, if appropriate; and
- submitting field and technical reports and a final comprehensive report to NMFS.

Source level information

The estimated Level B harassment zone for the parametric SBP was 135 m, based on modeling. The Commission notes that the model-based estimate is much larger than the 10-m zone for parametric SBPs based on sound source measurements conducted by other operators⁴. The discrepancy between modeled and measured Level B harassment zones for the parametric SBPs raises concerns regarding the accuracy of Avangrid's estimate—concerns that could be addressed through greater transparency of information collected by industry operators regarding measured source levels and extents of the various harassment zones. The Commission encourages NMFS and industry to work together to share information obtained from sound source measurements for parametric SBPs (and other novel sources) to assist in the development of source level standards to achieve greater consistency and accuracy in estimating Level A and B harassment zones for HRG surveys.

Appropriate Level B harassment thresholds

The general Level B harassment thresholds currently relate only to impulsive and continuous sources. NMFS's characterization of the parametric SBPs and chirps as impulsive sources for the purpose of estimating the extent of the Level B harassment thresholds is incorrect. Parametric SBPs and chirps are neither impulsive nor continuous sources, rather they are non-impulsive, intermittent sources. Researchers have observed that various species of marine mammals, including harbor

¹ The proposed exclusion zones, referenced in section 4(c) of the proposed authorization, are greater than the estimated Level A harassment zones and are based on conditions in the lease issued by the Bureau of Ocean Energy Management. The exclusion zones are 500 m for North Atlantic right whales, 200 m for sei and fin whales, and 100 m for other large cetaceans.

² The Level B harassment zone is 200 m for the sparker.

³ A 30-minute clearance time will be implemented before operations commence; clearance times after a shutdown would be 15 minutes for small delphinoid cetaceans and 30 minutes for large whales.

⁴ Based on information provided by NMFS to the Commission, which is not publicly available.

porpoises, respond to sound from sources with similar characteristics⁵ at received levels below 160 dB re 1 μ Pa⁶. The Commission has noted in previous letters regarding this matter⁷ that the behavior thresholds currently used by NMFS do not reflect the current state of understanding regarding the temporal and spectral characteristics of various sound sources and their impacts on marine mammals, and that a lower, more precautionary Level B harassment threshold of 120 dB re 1 μ Pa would be more appropriate than the 160-dB re 1 μ Pa threshold. Therefore, the Commission recommends that, *until* the behavior thresholds are updated, NMFS require applicants to use the 120- rather than 160-dB re 1 μ Pa threshold for intermittent, non-impulsive sources (i.e., parametric SBPs, chirps, echosounders, and other sonars).

Proposed one-year authorization renewals

NMFS has indicated that it may issue a second one-year⁸ incidental harassment authorization renewal for this and other future authorizations if various criteria are met and after an expedited public comment period of 15 days (see 84 Fed. Reg. 17405 and the proposed authorization for details). The Commission agrees that NMFS should take appropriate steps to streamline the authorization process under section 101(a)(5)(D) of the MMPA to the extent possible. However, the Commission is concerned that the renewal process proposed in the *Federal Register* notice is inconsistent with the statutory requirements—section 101(a)(5)(D)(iii) clearly states that proposed authorizations are subject to a 30-day comment period⁹.

Another potentially significant issue with the proposed 15-day comment period is the burden that it places on reviewers, who will need to review the original authorization and supporting documentation¹⁰, the draft monitoring report(s), the renewal application or request¹¹, and the proposed authorization and then formulate comments very quickly. Depending on how frequently NMFS invokes the renewal option, how much the proposed renewal or the information on which it is based deviates from the original authorization, and how complicated the activities and the taking authorization is, those who try to comment on all proposed authorizations and renewals, such as the Commission, would be hard pressed to do so within the proposed 15-day comment period. Therefore, the Commission recommends that NMFS refrain from using the proposed renewal process for Avangrid's authorization. The renewal process should be used sparingly and selectively,

⁵ Including acoustic deterrent devices, acoustic harassment devices, pingers, echosounders, and sonars.

⁶ See Watkins and Schevill 1975, Olesiuk et al. 1995, Kastelein et al. 1997, Kastelein et al. 2000, Morton 2000, Culik et al. 2001, Kastelein et al. 2001, Carlström et al. 2002, Johnston 2002, Morton and Symonds 2002, Kastelein et al. 2005, Barlow and Cameron 2003, Kastelein et al. 2006a and b, Carretta et al. 2008, Carlström et al. 2009, Götz and Janik 2010, Lurton and DeRuiter 2011, Brandt et al. 2012 and 2013, Götz and Janik 2013, Hastie et al. 2014, Kastelein et al. 2015a and b, and Tougaard et al. 2015.

⁷ See the Commission's most recent [1 May 2019 letter](#).

⁸ NMFS informed the Commission that the renewal would be issued as a one-time opportunity, after which time a new authorization application would be required. NMFS has yet to specify this in any *Federal Register* notice detailing the new proposed renewal process but should do so.

⁹ See also the legislative history of section 101(a)(5)(D), which states "...in 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." (H.R. Rep. No. 439, 103d Cong., 2d Sess. 29 (1994)). The referenced "notice and comment requirements" specify a 30-day comment period.

¹⁰ Including the original application, hydroacoustic and marine mammal monitoring plans, take estimation spreadsheets, etc.

¹¹ Including any proposed changes or any new information.

by limiting its use only to those proposed incidental harassment authorizations that are expected to have the lowest levels of impacts to marine mammals and that require the least complex analyses. Notices for other types of activities should not even include the possibility that a renewal might be issued using the proposed foreshortened 15-day comment period. If NMFS intends to use the renewal process frequently *or* for authorizations that require a more complex review or for which much new information has been generated (e.g., multiple or extensive monitoring reports), the Commission recommends that NMFS provide the Commission and other reviewers the full 30-day comment opportunity set forth in section 101(a)(5)(D)(iii) of the MMPA.

Adequate opportunity to consider public comments

The Commission has repeatedly expressed concern over NMFS's failure to provide an adequate opportunity for public comment. The opportunity for public comment provided under section 101(a)(5)(D)(iii) of the MMPA should be a meaningful one that allows NMFS sufficient time to not only solicit public comments, but also to analyze, assess, and respond to those comments and revise, as appropriate, its proposed authorization and rationale in light of those comments. Thus, submittal of the necessary documentation by applicants and processing of applications by NMFS must be timelier, thus avoiding abbreviated timeframes in which NMFS is able to consider the comments received. In this instance, the public comment period closes on 28 May 2019, four days before Avangrid's activities are scheduled to begin. Avangrid submitted its application in October 2018, and NMFS deemed it complete in February 2019. It is unclear why NMFS did not publish the proposed authorization sooner. However, since Avangrid's activities are scheduled to begin only a few days after the comment period closes, the Commission is not convinced that NMFS has sufficient time to review the Commission's or the public's comments or to revise the proposed authorization accordingly. Therefore, the Commission recommends that, in the future, NMFS take all steps necessary to ensure that it publishes and finalizes proposed incidental harassment authorizations far enough in advance of the planned start date of the proposed activities to ensure full consideration is given to any and all comments received.

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

Sincerely,



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

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