itp Potlock - NOAA Service Account <itp.potlock@noaa.gov>

Fw: ENVIRONMENTAL REVIEW (ER) NEW POSTING NOTIFICATION: ER22/0405 - Taking Marine Mammals Incidental to the CVOW-C Wind Energy Facility Offshore of Virginia

1 message

Kopec, Brett A <bkopec@usgs.gov> Sat, Sep 17, 2022 at 2:16 PM
To: "ITP.Potlock@noaa.gov" <ITP.Potlock@noaa.gov>
Cc: "Janowicz, Jon A" <jjanowicz@usgs.gov>

Brett Kopec
USGS
Administrative Operations Assistant

From: Gordon, Alison D <agordon@usgs.gov>
Sent: Friday, September 16, 2022 3:42 PM
To: Kopec, Brett A <bkopec@usgs.gov>
Cc: Janowicz, Jon A <jjanowicz@usgs.gov>
Subject: Fw: ENVIRONMENTAL REVIEW (ER) NEW POSTING NOTIFICATION: ER22/0405 - Taking Marine Mammals Incidental to the CVOW-C Wind Energy Facility Offshore of Virginia

The USGS has no comment at this time. Thank you.

From: oepchq@ios.doi.gov <oepchq@ios.doi.gov>
Sent: Thursday, September 15, 2022 7:52 AM
To: Alam, Shawn K <Shawn_Alam@ios.doi.gov>; Braegelmann, Carol <carol_braegelmann@ios.doi.gov>; Kelly, Cheryl L <cheryl_kelly@ios.doi.gov>; Hathaway, Ryan S <ryan_hathaway@ios.doi.gov>; Wilson, Wenona B <wenona.wilson@bia.gov>; Yazzie, Harrilene J <Harrilene.Yazzie@bia.gov>; Fowler, Holly E <Holly.Fowler@boem.gov>; Wolvovsky, Eric J <Eric.Wolvovsky@boem.gov>; Creed, Jordan M <Jordan.Creed@bsee.gov>; Giordano, Juliette C <juliette.giordano@bsee.gov>; ERs, FWS HQ <FWS_HQ_ERs@fws.gov>; Runkel, Roxanne <Roxanne_Runkel@nps.gov>; Stedeford, Melissa <Melissa_Stedeford@nps.gov>; Gordon, Alison D <agordon@usgs.gov>; Janowicz, Jon A <jjanowicz@usgs.gov>; McGhee, Chester <Chester.Mcghee@bia.gov>; oepchq@ios.doi.gov <oepchq@ios.doi.gov>; Raddant, Andrew <Andrew_Raddant@ios.doi.gov>; Lazinsky, Diane <Diane_Lazinsky@ios.doi.gov>
Subject: ENVIRONMENTAL REVIEW (ER) NEW POSTING NOTIFICATION: ER22/0405 - Taking Marine Mammals Incidental to the CVOW-C Wind Energy Facility Offshore of Virginia

This e-mail alerts you to a Environmental Review (ER) request from the Office of Environmental Policy and Compliance (OEPC). This ER can be accessed here.

To access electronic ERs visit the Environmental Assignments website: https://ecl.doi.gov/ERs.cfm. For assistance, please contact the Environmental Review Team at 202-208-5464.

Comments due to Agency by: 10/17/22

itp Potlock - NOAA Service Account <itp.potlock@noaa.gov>

SELC Comments: Dominion LOA Application

1 message

Melissa Edmonds <medmonds@selcnc.org> Thu, Oct 13, 2022 at 2:44 PM
To: "ITP.Potlock@noaa.gov" <ITP.Potlock@noaa.gov>
Cc: Sierra Weaver <sweaver@selcnc.org>

Dear Ms. Harrison,

The Southern Environmental Law Center submits these comments (and attachments) on behalf of 6 conservation groups in response to the National Marine Fisheries Service's proposal to issue an five-year letter of authorization under the Marine Mammal Protection Act to Dominion Energy Virginia, for offshore wind construction activities off the coast of Virginia in the area of Commercial Lease of Submerged Lands for Renewable Energy Development on the Outer Continental Shelf (OCS-A-0483), in support of the Coastal Virginia Offshore Wind Commercial Project. We thank you for the consideration of these comments.

Sincerely,

Melissa L. Edmonds (Whaling) (she/her)

Science & Policy Analyst

medmonds@selcnc.org

Southern Environmental Law Center

601 West Rosemary Street, Suite 220

Chapel Hill, NC 27516

Office (919) 391-4099

Mobile (919) 623-5003

southernenvironment.org

2 attachments

LOA Comments - Dominion COP 2022 - 10.13.2022.pdf
293K

Att 1-5 Final.pdf
990K

SOUTHERN ENVIRONMENTAL LAW CENTER

601 West Rosemary Street, Suite 220
Chapel Hill, NC 27516

Telephone 919-967-1450
Facsimile 919-929-9421

October 13, 2022

Submitted via electronic mail

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

Re: Comments on Dominion Energy's Request for a Five-Year Letter of Authorization for Incidental Take of Marine Mammals from Offshore Wind Construction Activities Related to the CVOW-C Offshore Wind Project

Ms. Harrison,

The Southern Environmental Law Center ("SELC") submits these comments on behalf of Conservation Law Foundation, Mass Audubon, NY4WHALES, Oceana, Surfrider Foundation, and Whale and Dolphin Conservation, in response to the National Marine Fisheries Service's ("NMFS") proposal to issue an five-year letter of authorization ("LOA") under the Marine Mammal Protection Act ("MMPA") to Dominion Energy Virginia ("Dominion"), for offshore wind construction activities off the coast of Virginia in the area of Commercial Lease of Submerged Lands for Renewable Energy Development on the Outer Continental Shelf (OCS-A-0483) ("Project Area"), in support of the Coastal Virginia Offshore Wind Commercial ("CVOW-C") Project.[1]

As we establish America's important new offshore wind energy industry to transition us away from harmful fossil fuels, we must protect vulnerable marine mammals, most notably the North Atlantic right whale, in the process. As the first and largest construction of a commercial wind farm in the Mid-Atlantic, the CVOW-C project will set the standard for marine mammal protections during offshore wind development throughout the region.

Dominion proposes to conduct the following activities in support of the CVOW-C Project that would likely impact marine mammals: pile driving, site characterization surveys, export cable laying, and vessel transiting.[2] These activities are set to commence on March 4, 2024 and are planned to occur "over the course of 5 years" within the 122,799-acre Lease Area, which lies 27 miles off the coast of Virginia Beach, and the coastal waters between the Lease Area and Virginia.[3] Dominion has previously received four incidental harassment authorizations ("IHA") (with at least two modifications) for site characterization surveys in the same area, to which our groups have sent four letters in response. Those letters contain a substantial amount of

[1] Taking and Importing Marine Mammals; Taking Marine Mammals Incidental to the CVOW-C Wind Energy Facility Offshore of Virginia, 87 Fed. Reg. 56,634 (Sept. 15, 2022).
[2] *Id*. at 56,635.
[3] *Id*. at 56,634-35.

information about marine mammal presence off Virginia and likely impacts of offshore wind development, as well as specific recommendations for mitigation measures, and are accordingly attached here and incorporated by reference.[4]

A. Introduction

Our groups are united in support of responsibly developed offshore wind as a tremendous opportunity to fight the climate crisis, and we have long advocated for policies and actions needed to bring it to scale in an environmentally protective manner. Responsible development of offshore wind energy: (1) avoids, minimizes, mitigates, and monitors for adverse impacts on wildlife and habitats; (2) minimizes negative impacts on other ocean uses; (3) includes robust consultation with Native American tribes and communities; (4) meaningfully engages state and local governments and stakeholders from the outset; (5) includes comprehensive efforts to avoid negative impacts to underserved communities; and (6) uses the best available scientific and technological data to ensure science-based and stakeholder-informed decision making.

As we have urged in previous letters, protection of the critically endangered North Atlantic right whale throughout the entirety of the CVOW-C Project is of utmost concern. Right whales are rapidly declining toward extinction, with only about 336 individuals now remaining in the population.[5] The species is currently experiencing an Unusual Mortality Event ("UME")—designated by NMFS due to unsustainable levels of mortality and serious injury from vessel strikes and entanglement in fishing gear[6]—and its recovery is further hindered by underwater noise pollution and climate change-driven habitat shifts. Put simply, right whales cannot withstand further losses or additional stress if the species is to reverse its decline and eventually recover.[7]

The right whale's seriously imperiled status demands implementation of science-based, common-sense measures to safeguard this species during all stages of offshore wind development, including the construction activities currently proposed by Dominion. The direct and indirect noise impacts from pile driving and site characterization surveys, including potential

---

[4] Letter from SELC et al. to Jolie Harrison, Chief, Permits & Conservation Div., Nat'l Marine Fisheries Serv. (NMFS), Re: Comments on Draft Incidental Harassment Authorization for Site Characterization Surveys in the OCS-A-0483 Lease Area and the Coastal Waters off Virginia (July 17, 2020), Attachment 1; Letter from SELC et al. to J. Harrison, NMFS, Re: Comments on a Notice to Modify the Incidental Harassment Authorization for Marine Site Characterization Surveys in the OCS-A-0483 Lease Area and the Coastal Waters off Virginia (Nov. 25, 2020), Attachment 2; Letter from SELC et al. to J. Harrison, NMFS, Re: Comments on a Second Notice to Modify the Incidental Harassment Authorization for Marine Site Characterization Surveys in the OCS-A-0483 Lease Area and the Coastal Waters off Virginia (Mar. 25, 2021), Attachment 3; Letter from SELC et al. to J. Harrison, NMFS, Re: Comments on Draft Incidental Harassment Authorization for Site Characterization Surveys in the OCS–A–0483 Lease Area and the Coastal Waters off Virginia (May 6, 2022), Attachment 4.

[5] Heather M. Pettis et al., *North Atlantic Right Whale Consortium 2021 Annual Report Card*, N. ATL. RIGHT WHALE CONSORTIUM (Feb. 2022), *available at* https://www.narwc.org/report-cards.html, at 3.

[6] NMFS, *2017–2022 North Atlantic Right Whale Unusual Mortality Event*, https://www.fisheries noaa.gov/national/marine-life-distress/2017-2022-north-atlantic-right-whale-unusual-mortality-event.

[7] The Potential Biological Removal ("PBR") level for the species is now 0.7, meaning that not even a single individual can be lost to human activities each year if the species is to avoid extinction. *See*, *e.g.*, Sean A. Hayes et al., *U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments–2021*, NMFS (May 2022), *available at* https://www.fisheries noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports, at 23.

habitat displacement from the Project Area that may exacerbate existing threats, as well as increased risks of vessel collisions, must be fully addressed from the start. Several of our groups developed a suite of recommended mitigation measures based on the best available scientific information to ensure offshore wind advances responsibly (*see* Attachment 5).[8] These measures are fundamental to protect the right whale from the proposed activity, and may offer co-benefits to other large whale species that occur off Virginia. **We therefore urge NMFS to require these measures, or measures that would provide even stronger protection,[9] as a condition of issuance of the five-year LOA for CVOW-C, as well as other forthcoming projects**. We highlight four particularly important recommendations below.

B. Vessel Strike Avoidance Measures are Insufficient

The amount of vessel activity associated with the proposed activity is significant. Dominion's LOA Application anticipates *thousands* of trips to, from, and within the Lease Area across the five years of authorization, involving vessels of various types and sizes.[10] As discussed in our previous letters, vessel strikes remain one of the main factors driving the North Atlantic right whale to extinction. Vessel strikes also pose a significant risk to other large whale species currently experiencing UMEs, such as humpback whales and minke whales,[11] as well as endangered fin whales and sei whales. Reducing vessel speeds to no more than 10 knots is the most effective way to prevent serious injury and mortality to large whales from vessel strikes.

We appreciate that the vessel strike avoidance measures set forth in Dominion's LOA Application set a mandatory speed restriction of 10 knots for all project vessels, regardless of size, within any designated right whale Seasonal Management Area ("SMA"), Dynamic Management Area ("DMA"), or Seasonal Speed Zone ("SSZ").[12] However, these measures are still insufficient. Under the current North Atlantic Right Whale Vessel Strike Reduction Rule, a majority of the Project Area, including the entire Lease Area, is not covered by the Chesapeake SMA, leaving right whales under-protected from lethal vessel strikes during a significant portion of the activity proposed by Dominion.

We note that NMFS has proposed a new, larger "Atlantic SSZ" to replace the Chesapeake SMA, which would completely cover Dominion's Project Area from November 1-

---

[8] Conservation Law Found. et al., *Strong Mitigation Measures Are Essential to Protect the North Atlantic Right Whale during All Phases of Offshore Wind Energy Development* (Dec. 2021, updated Apr. 2022), Attachment 5.
[9] For example, technological advancements now support a minimum requirement of 15 dB noise reduction and attenuation.
[10] DOMINION ENERGY, DOMINION ENERGY COASTAL VIRGINIA OFFSHORE WIND COMMERCIAL PROJECT: REQUEST FOR RULEMAKING AND LETTER OF AUTHORIZATION (LOA) FOR TAKING OF MARINE MAMMALS INCIDENTAL TO CONSTRUCTION ACTIVITIES ON THE OUTER CONTINENTAL SHELF (OCS) WITHIN LEASE OCS-A 0483 AND THE ASSOCIATED OFFSHORE EXPORT CABLE ROUTE CORRIDOR (Aug. 2022), *available at* https://www.fisheries noaa.gov/action/incidental-take-authorization-dominion-energy-virginia-construction-coastal-virginia [hereinafter "Dominion LOA Application"], at 18, Table 7.
[11] NMFS, *2017–2022 Minke Whale Unusual Mortality Event along the Atlantic Coast* (last visited Oct. 7, 2022), https://www.fisheries noaa.gov/national/marine-life-distress/2017-2022-minke-whale-unusual-mortality-event-along-atlantic-coast; NMFS, *2016–2022 Humpback Whale Unusual Mortality Event Along the Atlantic Coast* (last visited Oct. 7, 2022), https://www.fisheries noaa.gov/national/marine-life-distress/2016-2022-humpback-whale-unusual-mortality-event-along-atlantic-coast.
[12] Dominion LOA Application at 106.

May 30, as part of a Proposed Rule to amend the Vessel Speed Rule.[13] Our groups are strongly supportive of NMFS's Proposed Rule because it is based on the best available science and would address 90 percent of known vessel strike risk to right whales from all industries.[14] However, the Proposed Rule is not yet in effect, and there is no guarantee it will be finalized as written before the LOA is issued. Moreover, even if the Atlantic SSZ is implemented as proposed, current evidence demonstrates that right whales may be at risk of lethal vessel strike year-round, outside of the November 1-May 30 season. Therefore, **we urge the agency to implement a year-round 10-knot speed restriction on all vessels permitted under this LOA**, so that the LOA protections can stand on their own irrespective of the outcome of NMFS's rulemaking. Given that any interaction between a vessel and a right whale poses an unacceptable risk of serious injury or mortality that will have population-level consequences, these protections are vital.

C. Seasonal Restrictions on Pile Driving Must be Based on the Best Available Science

We are pleased that Dominion proposes a six-month seasonal restriction on pile driving from November 1 through April 30 to minimize impacts to North Atlantic right whales.[15] We are also strongly supportive of Dominion's proposal to not conduct pile driving during nighttime hours.[16] Time and area restrictions designed to protect certain species groups and habitats are one of the most effective available means to reduce the potential impacts of noise and disturbance on marine mammals.

However, we note that the dates of the seasonal restriction may not reflect the best available scientific information about right whale presence in the Mid-Atlantic. As discussed above, the Atlantic SSZ proposed by NMFS in its Vessel Strike Reduction Proposed Rule extends from November 1 through May 30, in partial recognition of elevated right whale presence and vessel strike risk in the Mid-Atlantic during this time period. Given the extended duration and cumulative acoustic impact of the survey activities, **we urge NMFS to reevaluate the science around seasonal right whale presence and risk in the Mid-Atlantic and consider prohibiting pile driving activities from November 1 through May 30**.

Further, while NMFS must minimize existing and potential stressors to the right whale, the agency must also address potential impacts to other protected large whale and small cetacean species. It is therefore imperative that NMFS fully account for the consequences of any proposed right whale seasonal restriction on other protected species and evaluate alternative risk reduction strategies sufficiently protective of multiple species. Requiring a robust and scientifically proven near real-time monitoring and mitigation system for right whales and other endangered and protected species for use during impact pile driving and potentially other noise-generating activities would support the development of alternatives.

[13] Amendments to the North Atlantic Right Whale Vessel Strike Reduction Rule, 87 Fed. Reg. 46,921, 46,926 (Aug. 1, 2022).
[14] *Id*.
[15] Dominion LOA Application at 106.
[16] *Id.* at 112.

D. NMFS Should Not Weaken the Proposed Clearance and Exclusion Zones for Right Whales

Even with seasonal and temporal restrictions in place, it is becoming increasingly clear that there may not be a time of "low risk" for North Atlantic right whales off the coast of Virginia. The population size is now so small that even individual-level impact is cause for concern. Moreover, changes in oceanographic conditions driven by climate change are rapidly impacting the habitat use and seasonal distribution of the species. Therefore, we recommend that robust and effective clearance and exclusion zone protocols are in place to protect this species throughout the year.

Dominion's LOA Application specifies it will implement an infinitely sized clearance and exclusion zones for right whales around pile driving equipment. We are strongly supportive of these proposed zones and urge NMFS to not weaken them in any way in the Final LOA. In particular, as we have urged in the past, NMFS' reliance on a 160 dB (re 1 μPa^2s) threshold for behavioral harassment in establishing its zones is not supported by the best available scientific information and such reliance grossly underestimates Level B take. Behavioral disturbance of right whales must be minimized to the greatest extent possible if the species is to be adequately protected.

E. NMFS Should Analyze Cumulative Impacts in its Final IHA

Finally, we remain extremely concerned about the cumulative impacts of multiple phases of offshore wind energy development on North Atlantic right whales and other marine mammal species off Virginia. Since 2020, NMFS has already issued four IHAs to Dominion for site characterization activities in the same Project Area, with at least two modifications to such IHAs, and more LOAs are expected in the future for the operation of the CVOW-C Project.

Based on Dominion's own acoustic and impact analysis, marine mammals will experience *hundreds* of potential exposures to Level A harassment and *tens of thousands* of potential exposures to Level B harassment during activities related to the CVOW-C project.[17] Of particular concern, Dominion is requesting permission for one Level A harassment and dozens of Level B harassment of right whales per year from 2024-2026, potentially affecting more than 17 percent of the remaining population.[18] And as noted above, although not analyzed or authorized in the LOA process, vessel strike risk is a significant concern.

Furthermore, CVOW-C is one of 17 offshore wind projects currently being permitted off the East Coast, and new regional leasing processes are underway in the New York Bight and Central Atlantic regions. Across all of these processes, hundreds of right whales are expected to be behaviorally harassed by noise. **Therefore, in proceeding with permitting this project and all future offshore wind energy development off the East Coast, NMFS should analyze the cumulative risk to North Atlantic right whales and other marine mammal species posed by these multiple projects and leasing phases.** We also urge NMFS to factor considerations of those cumulative impacts into the mitigation measures for individual projects. Requirements that avoid and minimize risks at the outset will help ensure the industry can advance responsibly at

[17] *Id.* at 76-78, Tables 25-27.
[18] *Id.*

the scale and pace needed to meet the ambitious and necessary clean energy goals set forth by the Biden-Harris Administration.

F. Conclusion

Our organizations are excited about the contribution that the CVOW-C Project will make in providing clean energy for Virginia and the Mid-Atlantic region. Marine mammal health and habitat will continue to be threatened by changes in the ocean environment brought on by climate change, further underscoring the need to transition to clean energy. For the above reasons, however, NMFS should condition its LOA issuance on the above recommendations to ensure that that the proposed activity proceeds in a manner that is protective of vulnerable marine wildlife, particularly the critically endangered right whale.

Sincerely,

Sierra B. Weaver, Senior Attorney
Coast and Wetlands Program Leader
Southern Environmental Law Center

Melissa L. Edmonds
Science & Policy Analyst
Southern Environmental Law Center

On behalf of:

Conservation Law Foundation
Erica Fuller
Senior Attorney

Mass Audubon
E. Heidi Ricci
Director of Policy and Advocacy

NY4WHALES
William Rossiter
Vice President

Oceana
Sarah Giltz, Ph.D
Marine Scientist

Surfrider Foundation
Matt Gove
Mid-Atlantic Policy Manager

Whale and Dolphin Conservation
Regina Asmutis-Silvia
Executive Director

[Attachments]

ATTACHMENT 1

SOUTHERN ENVIRONMENTAL LAW CENTER

Telephone 919-967-1450 | 601 WEST ROSEMARY STREET, SUITE 220 CHAPEL HILL, NC 27516-2356 | Facsimile 919-929-9421

July 17, 2020

Submitted via electronic mail

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: Comments on Draft Incidental Harassment Authorization for Site Characterization Surveys in the OCS–A–0483 Lease Area and the Coastal Waters off Virginia

Ms. Harrison,

The Southern Environmental Law Center ("SELC") submits these comments on behalf of Natural Resources Defense Council, National Wildlife Federation, Conservation Law Foundation, Defenders of Wildlife, Whale and Dolphin Conservation, Surfrider Foundation, the Nature Conservancy, Sierra Club Virginia Chapter, Assateague Coastal Trust, Mass Audubon, NY4WHALES, the International Marine Mammal Project of Earth Island Institute, and Inland Ocean Coalition, in response to the National Marine Fisheries Service's ("NMFS") proposal to issue an incidental harassment authorization ("IHA") to Dominion Energy Virginia ("Dominion"), for marine site characterization surveys off the coast of Virginia in the area of Commercial Lease of Submerged Lands for Renewable Energy Development on the Outer Continental Shelf (OCS–A–0483) ("the Lease Area"), and in the coastal waters off Virginia where a "cable corridor" will be established (collectively termed "Project Area"), in support of the Coastal Virginia Offshore Wind ("CVOW") Commercial Project.[1]

Dominion proposes to conduct high-resolution geophysical ("HRG") and geotechnical surveys for purposes of site characterization and project design of the CVOW Commercial Project. These activities are set to commence "as soon as possible" and will last for a period of 161 days.[2] Dominion plans to run two survey vessels concurrently within the 122,799-acre Lease Area, which lies 27 nautical miles off the coast of Virginia Beach, and along the "cable corridor" between the Lease Area and coastal Virginia.

This is an exciting moment for offshore wind in Virginia, and we recognize and celebrate the contribution that the offshore wind projects associated with these surveys could make in providing clean energy for the state and region. Once completed in 2026, Dominion's 2,640-megawatt CVOW Commercial Project would provide enough electricity to power up to 650,000

[1] Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to Marine Site Characterization Surveys Off of Coastal Virginia, 85 Fed. Reg. 36,537 (June 17, 2020).
[2] *Id*. at 36,538.

homes in Virginia.[3] It is our view that wind energy will continue to be a vital part of our nation's energy mix, and we applaud the steps Virginia is taking to address climate change and to support offshore wind and clean energy development. In addition to rich wind resources, the waters off the coast of Virginia represent an area of important marine mammal habitat. This habitat and the health of marine mammals will continue to be threatened by changes in the ocean environment brought on by climate change, further underscoring the need to transition away from reliance on fossil fuels.

It is our view that, as offshore wind energy development moves forward, it must do so in an environmentally responsible manner, safeguarding vulnerable ocean habitat and wildlife. As offshore wind is a nascent industry in the United States, there is still much to learn about how it can be developed with appropriate mitigation measures to protect local wildlife. For example, given that underwater noise pollution disrupts marine mammal communication and can potentially drive marine mammals from areas critical to their feeding and migration, the agency must be especially careful to ensure that the proposed offshore wind development activities are done with the utmost consideration for the health of marine mammals and their habitats. This is particularly true given the dire population status of the North Atlantic right whale, which was just reclassified to Critically Endangered by the International Union for Conservation of Nature ("IUCN") Red List. The protections established by the agency for this project are likely to set the standard for further offshore wind development along the Atlantic coast in the years to come. The following comments are intended to support the advancement of 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" and "least practicable impact" determinations, and accordingly urge the agency to adopt the mitigation and monitoring requirements necessary to ensure adequate protections for North Atlantic right whales and other priority species. As detailed in the comments below, we highlight the following inconsistencies between the Proposed IHA and the Marine Mammal Protection Act ("MMPA"):

- In determining take numbers, NMFS relies on incomplete estimates of marine mammal abundance, distribution, and density for the U.S. East Coast;
- NMFS underestimates take numbers based on unfounded assumptions regarding acoustic thresholds and effectiveness of mitigation and monitoring measures;
- NMFS neglects to acknowledge the potential for Level A take from survey noise and vessel strike; and
- NMFS proposes to consider extending any one-year IHA with a truncated 15-day comment period, which is plainly contrary to the MMPA.

We accordingly recommend that the mitigation and monitoring measures in the Proposed IHA be modified as follows:

- NMFS should impose a seasonal restriction on site characterization activities that have the potential to injure or harass the North Atlantic right whale (i.e., source level

[3] *Coastal Virginia Offshore Wind*, DOMINION ENERGY (last visited July 16, 2020), https://www.dominionenergy.com/company/making-energy/renewable-generation/wind/coastal-virginia-offshore-wind.

>180 dB re 1 μPa (SPL) at 1-meter frequencies between 7 and 35 kHz[4]) from November 1 through April 30, to avoid the time period that poses the highest risk for North Atlantic right whales;

- HRG 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;
- NMFS should establish a standard 500-meter exclusion zone for *all* marine mammal species around surveys with noise levels that could result in injury or harassment of marine mammals, and, to the extent feasible, an extended 1,000-meter exclusion zone for North Atlantic right whales;
- a combination of visual monitoring—by four protected species observers adhering to a two-on/two-off schedule—and passive acoustic monitoring should be used at all times that survey work is underway, and, for efforts that continue into the nighttime, night vision or infrared technology should also be used;
- shutdown requirements should not be waived for bottlenose dolphins belonging to any stock, to protect the strategic and depleted stock of Western North Atlantic Southern Migratory Coastal bottlenose dolphin; and
- all vessels operating *within* the Project Area should maintain a speed of 10 knots or less outside the period of November 1 and April 30, during which this speed limit should be extended to all vessels traveling *to and from* the Project Area. NMFS should also consider requiring that Dynamic Management Areas ("DMA") become active anytime a single North Atlantic right whale is sighted or acoustically detected.

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."[5] 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."[6] Congress intended for NMFS to act conservatively in the face of uncertainty when authorizing activities harmful to marine species.[7] 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.[8]

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

[4] As discussed in Section II.B, the best available science on other low- to mid-frequency sources indicates that Level B takes will occur with near certainty at exposure levels well below the 160 dB threshold that NMFS applies to behavioral impacts.
[5] 16 U.S.C. § 1361(1).
[6] *Id.* § 1361(2); *see also Conservation Council for Haw. v. Nat'l Marine Fisheries Serv.*, 97 F. Supp. 3d 1210, 1216 (D. Haw. 2016).
[7] H.R. Rep. No. 92-707 (Dec. 4, 1971), *as reprinted in* 1972 U.S.C.C.A.N. 4144, 4148.
[8] 16 U.S.C. § 1361(1), (3).

the high seas or in waters or on land under the jurisdiction of the United States.[9] 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."[10]

NMFS may grant exceptions to the take prohibition under the specific circumstances enumerated in the statute. 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."[11] The agency must prescribe permissible methods of take 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[.]"[12] NMFS must also establish monitoring and reporting requirements.[13] 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.[14]

B. Virginia's Marine Mammals

According to Dominion's IHA Application for site characterization activities, at least 37 marine mammal species are known to occur in the marine and coastal waters off Virginia, including seven large and 26 small cetaceans, and four pinnipeds.[15] Of these marine mammal species, five large cetaceans (fin, sei, blue, sperm, and North Atlantic right whales) are listed as endangered under the Endangered Species Act ("ESA") and as depleted and strategic stocks under the MMPA. One small cetacean species, the false killer whale, is designated as a strategic stock under the MMPA, and the Western North Atlantic Southern Migratory Coastal stock of bottlenose dolphin is designated as both a depleted and strategic stock under the MMPA. The various conservation statuses and seasonal presence of these species require particular consideration by NMFS when issuing an IHA to Dominion.

Despite what is presented in the following sections, data on seasonality and distribution of Virginia's marine mammals, as well as those occupying the broader Mid-Atlantic region, are largely lacking when compared with other regions. As such, NMFS should take steps now to develop a dataset that more accurately reflects marine mammal presence so that it is in hand for future IHAs and other regulatory steps to advance offshore wind in the Mid-Atlantic. Specifically, we recommend that NMFS: 1) fund analyses of recently collected sighting and acoustic data for all data-holders; 2) continue to fund and expand surveys and studies to improve

---

[9] *Id.* §§ 1362(13), 1371(a).
[10] *Id.* § 1362(18)(A).
[11] *Id.* § 1371(a)(5)(D)(i).
[12] *Id.* § 1371(a)(5)(D)(ii)(I).
[13] *Id.* § 1371(a)(5)(D)(ii)(III).
[14] *Id.* § 1371(a)(5)(D)(iii).
[15] DOMINION ENERGY, *Dominion Coastal Virginia Offshore Wind Commercial Project: Request for the Incidental Harassment of Marine Mammals Incidental to Survey Activities on the Outer Continental Shelf (OCS) within Lease OCS-A 0483 and the Associated Export Cable Corridor*, submitted to NMFS (May 11, 2020), https://www.fisheries noaa.gov/action/incidental-take-authorization-dominion-energy-virginia-marine-site-characterization-surveys [hereinafter "Dominion IHA Application"], at Table 3-1. Inexplicably, NMFS determines that only 16 of the 37 species are likely to be affected by the proposed activity. 85 Fed. Reg. at 36,541, Table 2. NMFS should explain why the remaining 21 species are missing from its IHA analysis.

our understanding of distribution and habitat use of marine mammals off Virginia, including within and adjacent to the Project Area, as well as throughout the broader Mid-Atlantic region, in the very near future; and 3) take a "precautionary approach" with regard to siting and mitigation when permitting offshore wind activities in areas for which species distribution data are limited. Only then can the most accurate take numbers and most effective mitigation measures be established.

i. North Atlantic Right 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 since the 1970s, recent scientific analysis confirms that the population has been declining since 2010 due to entanglements in commercial fishing gear and vessel strikes.[16] In the wake of an alarming number of human-caused deaths of North Atlantic right whales in 2017, NMFS declared an Unusual Mortality Event ("UME") under the MMPA for all U.S. waters in which right whales occur,[17] which devotes additional federal resources to determining and—if possible—mitigating the source of excessive mortality. This designation is still in effect. At least thirty-one whales are known to have been killed since 2017, and an additional ten animals have been documented with serious injuries from which they will not recover.[18] Two of the ten calves born in the latest calving season are already either confirmed or presumed dead due to vessel strikes, and their mothers have not been seen since.[19]

The loss of these forty-one animals represents roughly ten percent of the total population, which is now estimated at approximately 400 individuals.[20] Of these, no more than 95 are females of breeding age.[21] Females are more vulnerable than males to the lethal and sub-lethal effects of human activity, surviving to only 30-40 years of age with an extended inter-calf interval of approximately 10 years.[22] Furthermore, poor body condition of individuals within the population, compared with that of southern right whales, is of major concern for the future viability of the population.[23] The agency has recently named the North Atlantic right whale a "Species in the Spotlight," indicating that they are among the nine marine species most at risk of

---

[16] Richard M. Pace, III et al., *State-space mark-recapture estimates reveal a recent decline in abundance of North Atlantic right whales*, ECOLOGY & EVOLUTION (Sept. 18, 2017); Sarah M. Sharp et al., *Gross and histopathologic diagnoses from North Atlantic right whale Eubalaena glacialis mortalities between 2003 and 2018*, DISEASES OF AQUATIC ORGANISMS (June 20, 2019).

[17] *2017–2020 North Atlantic Right Whale Unusual Mortality Event*, NMFS (last visited July 10, 2020), https://www.fisheries noaa.gov/national/marine-life-distress/2017-2020-north-atlantic-right-whale-unusual-mortality-event.

[18] *Id.*

[19] *North Atlantic Right Whale Calf Injured by Vessel Strike*, NMFS (Jan. 30, 2020), https://www.fisheries noaa.gov/feature-story/north-atlantic-right-whale-calf-injured-vessel-strike; *Dead North Atlantic Right Whale Sighted off New Jersey*, NMFS (June 29, 2020), https://www.fisheries noaa.gov/feature-story/dead-north-atlantic-right-whale-sighted-new-jersey.

[20] Heather Pettis et al., *North Atlantic Right Whale Consortium 2019 Annual Report Card*, N. ATL. RIGHT WHALE CONSORTIUM (Jan. 2020), https://www narwc.org/uploads/1/1/6/6/116623219/2019reportfinal.pdf.

[21] Chris Oliver, *Immediate Action Needed to Save the North Atlantic Right Whales*, NMFS (July 3, 2019), https://www.fisheries noaa.gov/leadership-message/immediate-action-needed-save-north-atlantic-right-whales.

[22] Pace et al., *supra* note 16; Peter Corkeron et al., *The recovery of North Atlantic right whales,* Eubalaena glacialis, *has been constrained by human-caused mortality*, ROYAL SOC'Y OPEN SCI. (Nov. 7, 2018).

[23] Fredrik Christiansen et al., *Population comparison of right whale body condition reveals poor state of the North Atlantic right whale*, MARINE ECOLOGY PROGRESS SERIES (Apr. 23, 2020).

extinction in the United States.[24] And just this month, the IUCN Red List reclassified the status of the species from Endangered to Critically Endangered, one step away from Extinction.[25]

Since 2010, North Atlantic right whale distribution and habitat use have shifted in response to climate change-driven shifts in prey availability and favorable oceanographic conditions.[26] Monitoring indicates that such shifts are being observed throughout much of their range,[27] and observes right whales spending more time in the Mid-Atlantic year-round.[28] In addition, as the Proposed IHA notes, North Atlantic right whales are now more widely distributed across all Atlantic coast regions throughout winter months.[29] A recent study detected North Atlantic right whales in the waters off Virginia on approximately 10 percent of days throughout the year.[30] Further, NOAA data suggest that there is a seasonal hot spot of *Centropagidae* copepod density, on which North Atlantic right whales feed, off the coast of Virginia in the summer.[31] Scientists predict that further range shifts of this nature will occur as water temperatures continue to rise from climate change.[32]

While North Atlantic right whales are increasingly present within the Project Area year-round, they are most consistently present at their highest densities from November through April, based on acoustic data[33] and aerial surveys.[34] This period captures both the southward migration from the species' northern feeding grounds to their southern calving grounds off the Carolinas, Georgia, and Florida in the fall and early winter, when pregnant females are likely to be traveling through the Lease Area, and the northward migration in the late winter and early spring, when mothers and calves are likely to be traveling through and adjacent to the Project Area. These months of elevated occurrence are supported by the period for which NMFS scientists have identified a Biologically Important Area ("BIA") for North Atlantic right whales.[35] This

---

[24] *Endangered Species Conservation: Species in the Spotlight*, NMFS (last visited July 10, 2020), https://www.fisheries noaa.gov/topic/endangered-species-conservation#species-in-the-spotlight.

[25] *Almost a third of lemurs and North Atlantic Right Whale now Critically Endangered - IUCN Red List*, INT'L UNION FOR CONSERVATION OF NATURE (July 9, 2020), https://www.iucn.org/news/species/202007/almost-a-third-lemurs-and-north-atlantic-right-whale-now-critically-endangered-iucn-red-list.

[26] Nicholas R. Record et al., *Rapid climate-driven circulation changes threaten conservation of endangered North Atlantic right whales*, OCEANOGRAPHY (May 3, 2019).

[27] Erin L. Meyer-Gutbrod et al., *Marine species range shifts necessitate advanced policy planning: The case of the North Atlantic right whale*, OCEANOGRAPHY (June 11, 2018).

[28] Genevieve E. Davis et al., *Long-term passive acoustic recordings track the changing distribution of North Atlantic right whales (*Eubalaena glacialis*) from 2004 to 2014*, NATURE SCI. REPORTS (Oct. 18, 2017).

[29] 85 Fed. Reg. at 36,542 (citing Davis et al., *id.*).

[30] Daniel P. Salisbury et al., *Right whale occurrence in the coastal waters of Virginia, U.S.A.: Endangered species presence in a rapidly developing energy market*, MARINE MAMMAL SCI. (Oct. 15, 2015).

[31] *Ecology of the Northeast US Continental Shelf: Zooplankton*, NAT'L OCEANIC AND ATMOSPHERIC ADMIN. (last visited July 10, 2020), https://www.nefsc noaa.gov/ecosys/ecosystem-ecology/zooplankton html.

[32] Davis et al., *supra* note 28.

[33] *See id.*; *see also* Salisbury et al., *supra* note 30. There is some indication that right whale densities start to increase as early as October; however, the authors conclude that the November 1st through April 30th period is when the majority of right whales are present.

[34] Sarah D. Mallette et al., *Occurrence of Baleen Whales along the Continental Shelf Region of the VACAPES OPAREA off Southern Virginia: Final Report*, NAVAL FACILITIES ENG'G COMMAND (NAVFAC) (July 2018), https://www.navymarinespeciesmonitoring.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 (finding that North Atlantic right whales were spotted during the winter and spring).

[35] Erin LaBrecque et al., *Biologically Important Areas for cetaceans within U.S. waters—East coast region*, AQUATIC MAMMALS (Mar. 2015).

Migratory Corridor BIA covers important migratory habitat stretching from Cape Cod Bay in Massachusetts to off central Florida, extending from the coast past the continental shelf break.[36]

The best available science therefore demonstrates that November 1 through April 30 represents the time period of highest risk to North Atlantic right whales off Virginia, based on times of highest relative density of animals and times when mother-calf pairs and pregnant females are expected to be present. That said, given that North Atlantic right whales are now detected during every month of the year in the Mid-Atlantic, and that NMFS has determined the species cannot sustain the loss of a single individual, there is a clear need for strong and effective mitigation measures to be in place year-round for the CVOW Commercial Project.

The identification of this heightened seasonal occurrence and risk is also consistent with the Seasonal Management Area ("SMA"), which overlaps with part of the cable corridor and applies vessel speed limits to waters extending 37 kilometers offshore from the entrance of Chesapeake Bay from November 1 through April 30 for purposes of vessel strike mitigation.[37] As discussed in more detail below (*see* Section II.C), North Atlantic right whales are particularly vulnerable to serious injury and mortality from vessel strikes. Moreover, some types of anthropogenic noise have been shown to induce near-surface positioning in North Atlantic right whales, increasing the risk of vessel strike at relatively moderate levels of exposure. Anthropogenic noise also increases stress hormones in right whales, which can impact their ability to reproduce and impair their immune systems.[38] It is possible that HRG surveys could produce the same effects, and should therefore be given proper consideration by the agency.

ii. Other Large Whales

Nearshore Mid-Atlantic waters serve as an important migratory area for humpback and endangered fin whales, while more offshore waters are important migratory grounds for minke and endangered sei whales.[39] Humpback whales are increasingly sighted year-round in the waters off Virginia, and perhaps throughout the broader Mid-Atlantic region.[40] These waters, including those within the Lease Area and cable corridor, provide important seasonal foraging habitat for humpback whales.[41] Between-year sightings suggest that as many as 20 percent of identified juvenile humpback whales occur in a relatively small study area in consecutive years.[42]

---

[36] *Id.*
[37] *Reducing Ship Strikes to North Atlantic Right Whales*, NMFS (last visited July 10, 2020), https://www.fisheries noaa.gov/national/endangered-species-conservation/reducing-ship-strikes-north-atlantic-right-whales.
[38] Rosalind M. Rolland et al., *Evidence that ship noise increases stress in right whales*. PROC. ROYAL SOC'Y B (Feb. 8, 2012).
[39] *Documenting Whale Migration off Virginia's Coast: Virginia CZM Cooperative Agreement with the Virginia Aquarium*, NOAA (2014), https://www.midatlanticocean.org/wp-content/uploads/2013/11/documenting-whale-migration-off-virginias-coast.pdf.
[40] Alyson Fleming & Jennifer Jackson, *Global Review of Humpback Whales (*Megaptera novaeangliae*)*, NMFS (Mar. 2011), https://repository.library noaa.gov/view/noaa/4489.
[41] Sarah D. Mallette et al., Seasonality and site-fidelity of humpback whales off the Mid-Atlantic region of the U.S. (2017) (poster presentation, Va. Aquarium & Marine Sci. Ctr. (VAMSC)), https://www.navymarinespeciesmonitoring.us/files/5115/1941/4653/Mallette_SMM_2017_poster.pdf.
[42] *Id.*

While not currently listed as depleted,[43] ongoing UMEs exist for the Atlantic populations of minke whales (since January 2017) and humpback whales (since January 2016). Ninety-two (92) minke whales have stranded between Maine and South Carolina from January 2017 to July 2020.[44] Some necropsies of have shown evidence of human interaction (i.e., vessel strike and entanglement), though more research is needed to determine the official causes of the UME.[45] Elevated numbers of humpback whales have also been found stranded along the Atlantic Coast since January 2016, and in a little over three years, 126 mortalities have been recorded (data through July 8, 2020), with strandings occurring in every state along the East Coast.[46] Virginia is the state with the second highest number of reported humpback strandings in the UME, likely due in part to elevated occurrences of vessel traffic in the area.[47] Indeed, NMFS' most recent Marine Mammal Stock Assessment Report shows that the majority of reported serious injury and mortality in the region were a result of vessel strikes, underscoring the risk of vessel traffic to humpback whales off the coast of Virginia.[48] The declaration of the three large whale UMEs by NMFS in the past few years, of which anthropogenic impacts may be a significant cause, demonstrates an increasing risk to large whales from human activities in this region, including those proposed by Dominion.

iii. Small Cetaceans

In addition to endangered large whales, two strategic stocks of small cetaceans—false killer whales and the Western North Atlantic Southern Migratory Coastal stock of bottlenose dolphin—are found within the Project Area. While the Western North Atlantic stock of false killer whale was designated as strategic in 2014 because of mortality from fishery bycatch, no fishery-related mortality or serious injury has been observed in the last five years, and its strategic status is currently being proposed for removal.[49] The Western North Atlantic Southern Migratory Coastal stock of bottlenose dolphin is considered to be both strategic and depleted under the MMPA due to the number of annual human-caused mortalities and previous UMEs.[50]

---

[43] While humpback whales are not considered depleted or strategic under the MMPA, there is reason to believe that they should be. According to the agency's own draft of the most recent Marine Mammal Stock Assessment Report, "[t]here is mounting evidence that humpback whales have been over PBR [Potential Biological Removal] for some time, and likely will be formally determined to be so in a future report. This is further supported by the NMFS declaration of Unusual Mortality Event No. 63.7…" *Draft Marine Mammal Stock Assessment Reports: U.S. Atlantic and Gulf of Mexico Draft Marine Mammal Stock Assessment*, NMFS (last visited July 10, 2020), https://www.fisheries noaa.gov/national/marine-mammal-protection/draft-marine-mammal-stock-assessment-reports [hereinafter "2019 Draft Marine Mammal Stock Assessment"], at 163.

[44] *2017–2020 Minke Whale Unusual Mortality Event along the Atlantic Coast*, NMFS (last visited July 16, 2020), https://www.fisheries noaa.gov/national/marine-life-distress/2017-2020-minke-whale-unusual-mortality-event-along-atlantic-coast.

[45] *Id*.

[46] *2016–2020 Humpback Whale Unusual Mortality Event Along the Atlantic Coast*, NMFS (last visited June 30, 2020), https://www fisheries.noaa.gov/national/marine-life-distress/2016-2020-humpback-whale-unusual-mortality-event-along-atlantic-coast.

[47] Jessica M. Aschettino et al., *Satellite telemetry reveals spatial overlap between vessel high-traffic areas and humpback whales (*Megaptera novaeangliae*) near the mouth of the Chesapeake Bay*, FRONTIERS IN MARINE SCI. (Mar. 12, 2020).

[48] 2019 Draft Marine Mammal Stock Assessment, *supra* note 43, at 165-182.

[49] 2019 Draft Marine Mammal Stock Assessment, *supra* note 43, at 275.

[50] Sean A. Hayes et al., *U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments – 2017*, NMFS (Sept. 2018), https://repository.library noaa.gov/view/noaa/22730, at 110-24.

The stock is commonly found in shallow waters off the Chesapeake Bay in the late summer months, but the precise boundaries of their migration vary from year to year.[51]

NMFS has identified a number of additional small cetacean species that have the highest likelihood of occurring in the Project Area and are expected to potentially be taken by the proposed activities. These include Atlantic spotted dolphins, Atlantic white-sided dolphins, common dolphins, short- and long-finned pilot whales, Western North Atlantic Offshore bottlenose dolphins, Risso's dolphins, and harbor porpoises.[52] Scientific research indicates seasonal and/or year-round presence of these species during the project period. During the warm summer months of June through August, Atlantic spotted dolphins are presumed to occupy coastal waters off Assateague, Virginia, including Chesapeake Bay.[53] From January through May, low numbers of white-sided and common dolphins are found off Virginia and the Carolinas.[54] Both species of pilot whale, the Western North Atlantic Offshore bottlenose dolphin stock, and the Risso's dolphin are more generally found further offshore along the continental shelf edge year-round,[55] yet some evidence suggests that long-finned pilot whales may move inshore during late summer and autumn months.[56] Passive acoustic monitoring regularly detects harbor porpoises from January through May off Maryland.[57]

iv. Pinnipeds

Two pinniped species of conservation concern are also found off Virginia during the project period: harbor and gray seals. While they are not listed under the ESA, nor considered strategic under the MMPA, a UME has been declared for these and two other seal species across the Northeast, extending as far south as Virginia. Due to infectious disease, 3,152 strandings have occurred since July 2018, including 10 in Virginia (data through March 13, 2020).[58] Harbor seals occur seasonally in coastal waters from southern New England to North Carolina from September through late May.[59] Seasonal distribution of gray seals in the Mid-Atlantic is less understood. Current population trends show abundance is likely increasing along the U.S. East Coast, although only strandings have been recorded off Virginia.[60]

HRG survey activities associated with marine site characterization have the potential to impact all of the above-mentioned species. Dominion's IHA Application notes: "Based on the

---

[51] *Id.*
[52] 85 Fed. Reg. at 36,541, Table 2.
[53] Gordon T. Waring et al., *U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments – 2013*, NMFS (July 2014), https://repository.library.noaa.gov/view/noaa/4757, at 166.
[54] Hayes et al., *supra* note 50, at 77, 86.
[55] Sean A. Hayes et al., *U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments – 2018*, NMFS (June 2019), https://repository.library noaa.gov/view/noaa/20611, at 74, 82; Sean A. Hayes et al., *U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments – 2016*, NMFS (June 2017), https://repository.library.noaa.gov/view/noaa/14864, at 120; Hayes et al. (2018), *supra* note 50, at 70.
[56] Randall R. Reeves et al. (eds.), NAT'L AUDUBON SOC'Y GUIDE TO MARINE MAMMALS OF THE WORLD 442 (2002).
[57] Jessica E. Wingfield et al., *Year-round spatiotemporal distribution of harbor porpoises within and around the Maryland Wind Energy Area*, PLOS ONE (May 3, 2017).
[58] *2018–2020 Pinniped Unusual Mortality Event Along the Northeast Coast*, NMFS (last visited July 8, 2020), https://www.fisheries noaa.gov/new-england-mid-atlantic/marine-life-distress/2018-2020-pinniped-unusual-mortality-event-along.
[59] Hayes et al. (2019), *supra* note 55, at 121.
[60] *Id.* at 134, 131.

frequency ranges of the potential equipment to be used in support of the HRG survey activities[,] all but [two equipment types] operate within the established marine mammal hearing ranges and have the potential to result in Level A and B harassment of marine mammals."[61] Elevated background noise can cause hearing damage, threshold shifts, masking, elevated stress, and behavioral disturbance in marine mammals, as described in the Proposed IHA.[62] The most likely and extensive effects of HRG surveys on large whales are behavioral responses, potentially resulting in the displacement of individuals out of important feeding or breeding areas or the disruption of communication important to life history functions.[63] Important here, migratory species have been known to avoid normal migratory paths when exposed to anthropogenic noise, leading to increased energy expenditure and potentially longer migratory times.[64]

II. INCONSISTENCIES BETWEEN THE PROPOSED IHA AND THE MMPA

A. NMFS Must Analyze All Data Sources When Calculating Marine Mammal Densities

In order to comply with the MMPA, NMFS must base its IHA analysis on the best available scientific information.[65] 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 produced by the Duke University Marine Geospatial Ecology Laboratory ("Roberts et al. model").[66] While the Proposed IHA notes that the Roberts et al. model has been updated to incorporate additional data sources and two more years of data,[67] it still excludes data obtained through additional sightings databases, passive acoustic monitoring, and satellite telemetry. Notably, much of the survey data used to develop the model was collected prior to 2010 and therefore do not reflect the recent shift in North Atlantic right whale distribution, including the significant shifts observed during the past three years (2017-2019).

Moreover, the Roberts et al. model does not differentiate between species of pilot whale or seal, or between stocks of bottlenose dolphin.[68] That is, while the Proposed IHA separates marine mammals by species or by stock, the same accounting is used for each, and observations do not distinguish between species or stock. To make up for the general data, NMFS authorizes the total take for each stock of both bottlenose dolphins and all pilot whale and seal species. However, the MMPA requires that the agency look at the impact to both species and marine mammal stocks to support a negligible impact finding. A record that provides "general discussions with little, if any, relevance to the population-level effects on specific species and

---

[61] Dominion IHA Application, *supra* note 15, at 7.
[62] 85 Fed. Reg. at 36,547.
[63] *See*, *e.g.*, Brandon L. Southall et al., *Marine mammal noise exposure criteria: initial scientific recommendations*, AQUATIC MAMMALS (2007).
[64] *See* Christos Kolliatsas et al., OFFSHORE RENEWABLE ENERGY: ACCELERATING THE DEPLOYMENT OF OFFSHORE WIND, TIDAL AND WAVE TECHNOLOGIES 128-29 (2012).
[65] 16 U.S.C. §§ 1362(19), §§ 1362(27).
[66] Jason J. Roberts et al., *Habitat-based cetacean density models for the U.S. Atlantic and Gulf of Mexico*, NATURE SCI. REPORTS (Mar. 3, 2016).
[67] 85 Fed. Reg. at 36,556.
[68] "[Roberts *et al.*] produced density models to genus level for *Globicephala* spp. [pilot whales] and produced a density model for bottlenose dolphins that does not differentiate between offshore and coastal stocks." *Id.* at 36542. "[Roberts *et al.*] produced density models for all seals and did not differentiate by seal species." *Id* at 36557.

stock, and to conclusory statements that no such effects are expected," is inadequate.[69] We also note that the agency omits information on the "depleted" status of the Western North Atlantic Southern Migratory Coastal stock of bottlenose dolphin in the Proposed IHA, even though this designation was included in Dominion's IHA Application.[70]

Miscalculation of take levels based on incomplete data could have serious implications for the future conservation status of these stocks. Because the density maps produced by the Roberts et al. model do not fully reflect the abundance, distribution, and density of marine mammals for the U.S. East Coast, they cannot be the only information source relied upon when estimating take. Integration of opportunistic sightings data and other sources of data that collect fine-scale information on factors driving marine mammal distribution with those gathered through systematic broad-scale surveys would better reflect current marine mammal presence, abundance, and density off Virginia, providing a more accurate assessment of Level B take.[71] Accordingly, NMFS must consider any data from State monitoring efforts,[72] passive acoustic monitoring data,[73] opportunistic marine mammal sightings,[74] and other data sources.

B. NMFS Should Not Adjust Take Numbers for Large Whales Based on Under-Protective Mitigation Measures

According to the Proposed IHA, NMFS is choosing to adjust take numbers of endangered North Atlantic right whales and all other large whales to zero, as the proposed mitigation measures are "expected to preclude potential interactions" with, and "effectively prevent Level B harassment" of, these species.[75] Furthermore, the agency asserts that the 500-m exclusion zone for North Atlantic right whales exceeds the calculated Level B behavioral harassment zone.[76] 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 exclusion zone when North Atlantic right whales may nevertheless be present in the Lease Area. We are equally concerned in the case of large whales—humpback, fin, sei, sperm, and minke whales—all of which are either endangered or of conservation concern (*see* Section I.B.ii above).

Our reasons are threefold. First, the agency's reliance on a 160 dB threshold for behavioral harassment is not supported by best available scientific information, which indicates that Level B takes occur with near certainty at exposure levels well below the 160 dB

---

[69] *Conservation Council for Haw. v. NMFS*, 97 F. Supp. 3d 1210, 1223 (D. Haw. 2015).
[70] 85 Fed. Reg. at 36,541, Table 2.
[71] *See*, *e.g.*, Auriane Virgili et al., *Combining multiple visual surveys to model the habitat of deep-diving cetaceans at the basin scale*, GLOB. ECOLOGY & BIOGEOGRAPHY (Nov. 28, 2018).
[72] *E.g.*, NOAA, *supra* note 39; Mallette et al., *supra* note 34; Sarah D. Mallette 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 (VA WEA) from 2012-2015*, VAMSC (2016), https://www.deq.virginia.gov/Portals/0/DEQ/CoastalZoneManagement/FY14Task95-04-14.pdf.
[73] *E.g.*, Davis et al., *supra* note 28; Salisbury et al., *supra* note 30.
[74] *E.g.*, *Dramatic Rescue of Endangered Whale Filmed by Fishermen*, THE TELEGRAPH (July 17, 2013), https://www.telegraph.co.uk/news/earth/wildlife/10184397/Dramatic-rescue-of-endangered-whale-filmed-by-fishermen html.
[75] 85 Fed. Reg. at 36,557.
[76] *Id.*

threshold.[77] In the most comprehensive meta-analysis of behavioral response studies conducted to date, mid-frequency cetaceans had the highest probability of low-, moderate-, and high-severity responses to mid-frequency sonar sources (whose frequencies substantially overlap with the systems used by Dominion) at received levels around 150 dB, with significant increases in probability beginning at 130 dB and some responses occurring below 110 dB.[78] Second, the agency relies on the assumption that marine mammals will take measures to avoid the sound[79] even though studies have not found avoidance behavior to be generalizable among species and contexts,[80] and even though avoidance may itself constitute take under the MMPA. Third, as discussed in Section III below, the mitigation and monitoring protocols prescribed by the agency are inadequate at protecting marine mammals and do not comply with the MMPA. In fact, the mitigation measures in the Proposed IHA are overall less protective than previous IHA authorizations for the region (*see* Section III.C), even as the conservation status of the North Atlantic right whale has worsened. Collectively, the agency's assumptions regarding acoustic thresholds and mitigation effectiveness are unfounded and cannot be used to justify any reduction in the number of takes expected.

C. NMFS Must Acknowledge that HRG Surveys and Vessel Strikes Can Result in Level A Take

The use of certain HRG survey equipment has the potential to result in Level A take, and this risk is relatively greater for species in the high-frequency hearing band, such as the harbor porpoise. The agency acknowledges this fact in its calculation of the Level A harassment zone,[81] yet discounts the possibility that Level A take will occur.[82] In fact, in previous authorizations for HRG surveys, the agency has, "out of an abundance of caution," authorized Level A take for this species and other high-frequency cetaceans.[83] It is arbitrary for the agency to impose less precautionary measures for this area that is home to a number of mid- and high-frequency hearing specialists which may be vulnerable to Level A take. Moreover, the proposed cable corridor includes shallow, coastal waters, which may increase the likelihood of animals becoming trapped between the sound source and the shore. The agency should therefore acknowledge the *potential* for Level A take from HRG surveys on small cetaceans, and

---

[77] *See*, *e.g.*, Douglas P. Nowacek et al., *North Atlantic right whales (*Eubalaena glacialis*) ignore ships but respond to alerting stimuli*, PROC. ROYAL SOC'Y B (Dec. 3, 2003); Ronald A. Kastelein et al., *Threshold received sound pressure levels of single 1-2 kHz and 6-7 kHz up-sweeps and down-sweeps causing startle responses in a harbor porpoise (*Phocoena phocoena*)*, J. ACOUSTICAL SOC'Y AM. (Mar. 2012); Ronald A. Kastelein et al., *Behavioral response of a harbor porpoise (*Phocoena phocoena*) to 25.5- to 24.5-kHz sonar down-sweeps with and without side bands*, AQUATIC MAMMALS (Nov. 19, 2015).

[78] Catalina Gomez et al., *A systematic review on the behavioural responses of wild marine mammals to noise: The disparity between science and policy*, CAN. J. ZOOLOGY (Sept. 15, 2016).

[79] *See* 85 Fed. Reg. at, *e.g.*, 36,548 ("most marine mammals would more likely avoid a loud sound source rather than swim in such close proximity as to result in TTS [Temporary Threshold Shift]").

[80] Patrick J.O. Miller et al., *Using at-sea experiments to study the effects of airguns on the foraging behavior of sperm whales in the Gulf of Mexico*, DEEP SEA RES. I, (July 2009); Enrico Pirotta et al., *Vessel noise affects beaked whale behavior: Results of a dedicated acoustic response study*, PLOS ONE (Aug. 2012).

[81] 85 Fed. Reg. at 36,554, Table 6.

[82] *Id.* ("…in consideration of the proposed mitigation measures…, the likelihood of the proposed survey resulting in take in the form of Level A harassment is considered so low as to be discountable…")

[83] *See*, *e.g.*, Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to Site Characterization Surveys Off the Coast of Massachusetts, 83 Fed. Reg. 22,443 (May 15, 2018).

reconsider its analysis of Level A take from HRG surveys on harbor porpoises and other acoustically sensitive species.

We are pleased that the Proposed IHA includes mitigation measures to avoid vessel strikes; however, it is our view that vessel impacts should also be incorporated into NMFS' take analysis. Vessel collisions are a leading cause of large whale injury and mortality and have been implicated as one of the major causes of death underlying the Atlantic large whale UMEs.[84] The number of recorded vessel collisions with large whales is likely to grossly underestimate the actual number of animals struck, as those struck but not recovered or thoroughly examined cannot be accounted for.[85] North Atlantic right whales are particularly prone to vessel strikes, given their slow speeds, overlapping range with shipping lanes, and extended time spent at or near the surface.[86] Some types of anthropogenic noise have been shown to *induce* near-surface positioning in North Atlantic right whales, increasing risk of vessel strikes.[87] It is possible that HRG surveys could produce the same effects, and should therefore be treated conservatively. The serious injury of two North Atlantic right whale calves by vessel strike this year alone, one of which resulted in documented mortality, demonstrates that vessel strikes pose an unacceptable risk to the species and can potentially occur even when very few whales are in the area.

In addition, relatively higher densities of humpback whales are found within high-traffic shipping lanes near the mouth of the Chesapeake Bay, indicating that vessel strike is a pertinent concern for this species.[88] Indeed, increased baleen whale sightings have occurred within the Bay, and have overlapped with the Project Area, over recent years[89] and vessel strike mortalities have also risen.[90] Given the demonstrated vulnerability of large whales to vessel collisions off the East Coast, and especially the mid-Atlantic, it is remiss of the agency to overlook vessel collisions as a source of potential take. The localized elevation in vessel activity occurring during marine site characterization surveys naturally increases the vessel collision risk for large whales in the area.

Our organizations understand that, based on past IHAs for marine site assessment and characterization activities, the vessels associated with the proposed activity will likely move at speeds well below 10 knots, meaning the risk of a lethal vessel collision during the surveys may be relatively low. However, the agency completely omits any information about estimated vessel speeds for the project. In the absence of such information, the agency cannot rule out the possibility that mortality or serious injury from vessel strikes could occur as a result of the proposed activity.

---

[84] *See* NMFS, *supra* notes 17, 44, 46.
[85] *See*, *e.g.*, Susan E. Parks et al., *Dangerous dining: Surface foraging of North Atlantic right whales increases risk of vessel collisions*, BIOLOGY LETTERS (Aug. 3, 2011).
[86] *See id.*
[87] Nowacek et al., *supra* note 77.
[88] *See* Mallette et al., *supra* note 41; *see also* Aschettino et al., *supra* note 47.
[89] Jessica M. Aschettino et al., *Mid-Atlantic Humpback Whale Monitoring, Virginia Beach, Virginia: 2017/18 Annual Progress Report*, NAVFAC (June 2018), https://www.navymarinespeciesmonitoring.us/files/2415/3081/8453/Aschettino_et_al._2018_-_Humpback_Whale_Tagging_2017_-_Final.pdf.
[90] Mallette et al., *supra* note 34.

In addition, as noted in the Proposed IHA, studies indicate that noise can induce flight responses, behavioral disturbances, habitat avoidance, and stress responses which reduce feeding rates and reproductive success.[91] Because of this, survey noise can induce horizontal displacement, or movement into other areas.[92] This could push a North Atlantic right whale or other large whale out of a protected area and into an area with a greater risk of vessel collision, such as the shipping lanes entering the Chesapeake Bay. Given this, indirect vessel strike risk resulting from habitat displacement should be considered in NMFS' take analysis.

D. The Proposed IHA Extension Process Does Not Comport with the Plain Language of the Statute

In addition to the Proposed IHA, NMFS requests comments on the potential one-year renewal of this Proposed IHA, on a case-by-case basis, for identical or nearly identical activities, with only an additional 15 days for public comment, should various criteria be met.[93] For several reasons, the undersigned organizations have opposed this process as contrary to law.

First, NMFS' proposal to provide one-year renewals does not comport with the plain language of the MMPA. Section 101(a)(D)(i) unambiguously states that IHAs are valid for periods of not more than one year.[94] Second, the statute is plainly 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).[95] 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, stating: "As approved by the Committee, the [MMPA] involves a number of basic concepts," one being that "the public is invited and encouraged to participate fully in the agency decision-making process."[96] When NMFS adheres to this process, "the public is assured of the right to be informed of actions taken or proposed."[97] Third, the legislative history removes any doubt that this 30-day comment period applies even in cases where the IHA is extended for another year without change.[98]

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 other than as commanded by its plain language, whether by regulation, by policy, or on a permit-by-permit basis as it purports to do here.[99] Nor has NMFS supplied a sufficient explanation for why it might assert that the statutory language of Section 101(a)(5)(D)(iii) is ambiguous, such that the agency might appropriately

---

[91] 85 Fed. Reg. at 36,549-50.
[92] *E.g.*, Manuel Castellote et al., *Acoustic and behavioural changes by fin whales (*Balaenoptera physalus*) in response to shipping and airgun noise*, BIOLOGICAL CONSERVATION (Mar. 2012).
[93] 85 Fed. Reg. at 36,562.
[94] 16 U.S.C. § 1371(a)(5)(D)(i).
[95] *Id.* § 1371(a)(5)(D)(iii).
[96] H.R. Rep. No. 92-707, at 4151 (1972), *reprinted in* 1972 U.S.C.C.A.N. 4144, 4151.
[97] *Id.* at 4146.
[98] H.R. Rep. No. 103-439, at 29 (1994). "[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."
[99] *See Chevron, U.S.A., Inc. v. Nat. Res. Def. Council (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.").

exercise its congressionally-delegated gap-filling authority to set forth a permissible interpretation of the statute that comports with the statute's objectives.[100]

Finally, NMFS' language about IHA Renewals on its website[101] does not provide a clear and legally adequate justification for its purported new reauthorization process, which allows interested members of the public only 15 calendar days to review and formulate comments. Given that this proposed change has appeared consistently in notices of draft IHAs for over a year now, NMFS apparently intends the new reauthorization process to become the rule rather than the exception. This change is not supported by law, and is further undermined by the fact that the agency has not gone through any public notice and comment or provided any rationale for its new process.

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."[102] In light of the aforementioned inconsistencies between the agency's analysis and the requirements of the MMPA, NMFS has an obligation to impose robust avoidance, mitigation, and monitoring requirements to protect Virginia's marine mammal species to the maximum extent practicable.

As noted above, the best scientific and commercial data available show that the North Atlantic right whale population cannot withstand the loss of a single individual, or any additional stressors. Any potential interruption of reproductive or migratory behavior may lead to population-level effects and is of critical concern. Given that North Atlantic right whales are present in the Project Area year-round, there is a clear need for strong mitigation measures on the activities covered by the IHA.

Our organizations agree with several of the mitigation and monitoring measures contained in the Proposed IHA. However, we believe that additional measures are necessary to more effectively avoid, minimize, and mitigate impacts to marine mammals. The current measures outlined in the Proposed IHA do not meet the standard of achieving the "least practicable adverse impact" on marine mammal populations. In the comments below, we address specific recommendations have for improving these measures. These changes are critical to ensuring the protection of the North Atlantic right whale during Dominion's proposed marine site characterization surveys.

A. Seasonal Restrictions

Dominion's proposed survey activities are intended to commence "as soon as possible" and occur 24 hours per day for approximately 161 days, utilizing two survey vessels at any one

[100] *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").
[101] *Incidental Take Authorizations Under the Marine Mammal Protection Act*, NMFS (last visited July 10, 2020), https://www.fisheries noaa.gov/permit/incidental-take-authorizations-under-marine-mammal-protection-act.
[102] 16 U.S.C. § 1371(a)(5)(D)(vi).

time.[103] This means that the proposed activities will continue well into the time period that poses the highest risk for North Atlantic right whales (i.e., November 1 to April 30). Given the extended duration and cumulative acoustic impact of the survey activities, we urge NMFS to prohibit 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 µPa (SPL) at 1-meter frequencies between 7 and 35 kHz) from November 1 to April 30.[104] These dates currently reflect both the best available scientific information on the relative density of North Atlantic right whales in the Mid-Atlantic, as well as the potential presence of pregnant females and mother-calf pairs (*see* Section I.B.i).

Time and area restrictions designed to protect certain species groups and habitats are one of the most effective available means to reduce the potential impacts of noise and disturbance on marine mammals.[105] Seasonal restrictions for pile driving and geophysical surveying formed a core component of a landmark agreement aimed at protecting the North Atlantic right whale from construction and 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.[106] That said, it is becoming increasingly clear that there may not be a time of "low risk" for this species. The population size is now so small that any individual-level impact is of great concern. Moreover, changes in oceanographic conditions driven by climate change are rapidly impacting the habitat use and seasonal distribution of the species. Therefore, we recommend that robust and effective real-time monitoring and mitigation systems are in place to protect this species throughout the year (see the following sections for specific recommendations).

While existing and potential stressors to the North Atlantic right whale must be minimized as much as possible to promote the survival and recovery of the species, it is also incumbent upon the agency to address potential impacts to other imperiled whale species, particularly in light of the UMEs declared for humpback and minke whales (*see* Section I.B.ii). It is therefore imperative that consequences of the proposed North Atlantic right whale seasonal restriction on other protected species be fully addressed by the agency through the strong and

---

[103] 85 Fed. Reg. at 36,538.

[104] Over a dozen wildlife conservation organizations have endorsed a suite of Best Management Practices ("BMP") 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. 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. Conservation L. Found. et al., *Best Management Practices for North Atlantic Right Whales During Offshore Wind Energy Construction and Operations Along the U.S. East Coast* (Mar. 1, 2019), provided as Attachment 1.

[105] *See*, *e.g.*, Tundi Agardy et al., A global scientific workshop on spatio-temporal management of noise (Workshop, Puerto Calero, Lanzarote) (June 4-6, 2007), http://www.pelagosinstitute.gr/en/pelagos/pdfs/Spatio-temporal%20management%20of%20noise.pdf; Sarah J. Dolman et al., *Technical report on effective mitigation for active sonar and beaked whales*, EUR. CETACEAN SOC'Y (Apr. 20, 2009), https://www.ascobans.org/sites/default/files/document/AC16_50_TechnicalReportSonarBeakedWhales_1.pdf; Convention on Biological Diversity, *Scientific synthesis on the impacts of underwater noise on marine and coastal biodiversity and habitats*, UNITED NATIONS (Mar. 12, 2012), https://www.ascobans.org/sites/default/files/document/AC19_4-16_CBD_SBSTTA16_SynthesisUnderwaterNoise_1.pdf.

[106] *See* Letter from Jeff Grybowski, Deepwater Wind, et al. to Maureen Bornholdt, BOEM (Dec. 12, 2012), https://www.nrdc.org/sites/default/files/oce_12121101a.pdf.

protective mitigation measures noted below (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).

B. Temporal Restrictions

Dominion proposes to conduct HRG survey activities continuously, 24 hours per day,[107] which has the potential to harass North Atlantic right whales and other marine mammals. To best minimize impacts to marine mammals, HRG surveys should only commence, with ramp-up, during daylight hours of adequate visibility to maximize the probability that North Atlantic right whales are detected and confirmed clear of the exclusion zone.[108] If the survey is begun during daylight hours, we do not oppose these activities continuing into the night; however, if the survey is shut down for any reason, developers should be required to wait until daylight hours and good visibility for surveying to resume.

Dominion has voluntarily proposed to employ additional agency-approved visual observers when HRG surveys are underway at night.[109] We do not share the agency's confidence that visual observers alone will be able to monitor the exclusion zone effectively during nighttime hours. We are deeply concerned that NMFS has proposed reliance upon visual observation as the primary means of detecting North Atlantic right whales and other marine mammals at night, while requiring neither night vision, infrared technology, nor real-time passive acoustic monitoring. This approach is wholly under-protective and places one of the world's most endangered marine species at unnecessary risk. Accordingly, NMFS must require, for efforts that continue into the nighttime, the use of night vision or infrared technology in combination with real-time passive acoustic monitoring and shutdown on acoustic detection.

We note that the effectiveness of night vision and infrared technology in detecting marine mammals in low-visibility conditions has not yet been tested and published for this region, and varying results are still being reported elsewhere.[110] This is particularly true for detecting North Atlantic right whales and minke whales,[111] both species of concern off Virginia. Recent research published this year indicates increasing promise for infrared technology as a mitigation tool, specifically at night during relatively calm conditions.[112] Accordingly, the agency should

---

[107] 85 Fed. Reg. at 36,538.

[108] Except for seasonal restrictions, which are calculated based on presence of the highly endangered North Atlantic right whale, mitigation and monitoring measures should be in place when any technologies are operating within the frequency ranges that overlap with those of low-, mid-, and high-frequency cetaceans.

[109] 85 Fed. Reg. at 36,557.

[110] In general, night vision technology has not been widely used or tested for marine mammal monitoring, and is considered to be heavily affected by environmental conditions. The use of infrared technology, relying on thermal differences between the target species and the environment, as a mitigation tool is still in development. The reduced temperature differential between whale blow and the surrounding water expected 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 in this region. *See* Justin Lathlean & Laurent Seuront, *Infrared thermography in marine ecology: Methods, previous applications and future challenges*, MARINE ECOLOGY PROGRESS SERIES (Nov. 6, 2014).

[111] Christine Cuyler et al., *Thermal infrared radiation from free living whales*, MARINE MAMMAL SCI. (Apr. 1992).

[112] Heather R. Smith et al., *A field comparison of marine mammal detections via visual, acoustic, and infrared (IR) imaging methods offshore Atlantic Canada*, MARINE POLLUTION BULL. (Mar. 13, 2020); Daniel P. Zitterbart et al., *Scaling the laws of thermal imaging–based whale detection*, J. ATMOSPHERIC & OCEANIC TECH. (May 8, 2020).

consider the limitations of these systems and ensure that the detection of marine mammals is possible at distances out to and beyond the exclusion zones in this region prior to reliance on this evolving technology. Our organizations also recommend that NMFS encourage Dominion to collaborate with scientists in collecting data that would increase the understanding of the effectiveness of night vision and infrared technologies off Virginia and the broader Mid-Atlantic region, with a view towards utilizing these technologies to commence surveys at night in the future. In sum, overall detection rates are likely to be maximized when complementary monitoring methods are used.

C. Exclusion Zone Size

The Proposed IHA specifies that the following marine mammal exclusion zones will be established around HRG equipment: 500 meters for North Atlantic right whales, and 100 meters for "large whale species" (i.e., humpback, fin, sei, sperm, and minke whales).[113] As an initial matter, our organizations are concerned that this leaves two small cetaceans of conservation concern—the false killer whale and the Western North Atlantic Southern Migratory Coastal bottlenose dolphin—without any exclusion zone protections. In addition, these measures are inconsistent with those required for similar activities in other Lease Areas, without explanation or justification. For example, during HRG surveys in the nearby Kitty Hawk Lease Area leased by Avangrid Renewables, the agency required a 200-meter exclusion zone for all large whales, including pilot whales and Risso's dolphins.[114] NMFS does not explain why, for the same activities being conducted less than 25 miles away, a smaller exclusion zone protecting fewer species is warranted. Further, the agency appears to offer no protection for harbor porpoises in its exclusion zone requirements here, even though the species has been proven extremely sensitive to noise, and similar IHAs issued in the past have implemented an exclusion zone for this species.[115] We are worried that these inconsistencies leave a number of species of conservation concern without adequate protection.

Our organizations believe that the definition of exclusion zone radii based on the acoustic thresholds laid out in the NMFS technical guidance document significantly underestimates the area in which marine mammals may experience noise at levels capable of causing behavioral harassment. Any potential harassment of the North Atlantic right whale is of particular concern. We therefore urge a clearance zone of 500 meters in all directions for *all* marine mammals around vessels conducting activities with noise levels that could result in injury or harassment to these species,[116] and, to the extent feasible, 1,000 meters for North Atlantic right whales.

D. Exclusion Zone Monitoring

NMFS proposes to require that the exclusion zones be monitored by visual observation alone, through the use of only one visual observer during daytime operations and two visual

[113] 85 Fed. Reg. at 36,557.
[114] Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to Site Characterization Surveys off the Coast of North Carolina, 84 Fed. Reg. 17,384 (Apr. 25, 2019).
[115] *See*, *e.g.*, Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to Marine Site Characterization Surveys Off of Rhode Island and Massachusetts, 83 Fed. Reg. 19,711 (May 4, 2018) (implementing a 25-m exclusion zone for harbor porpoises).
[116] Letter from J. Grybowski et al. to M. Bornholdt, *supra* note 104.

observers at night.[117] First and foremost, it is our view that a minimum of four protected species observers on duty, adhering to a two-on/two-off shift schedule, is needed to avoid a single observer being responsible for visually monitoring more than 180° of the exclusion zone at any given time.

Furthermore, visual observations are not enough. To maximize the probability of detection of marine mammals, experts say that comprehensive exclusion zone monitoring is essential.[118] One reason for this is because detectability of marine mammals is highly dependent on the species and behavior. Of particular concern, studies suggest that North Atlantic right whales exhibit behaviors that reduce the likelihood of detection by visual observers and thus often go undetected. 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,[119] even though visual surveys have rarely reported sightings of North Atlantic right whales in the winter off the coast of Massachusetts.[120] 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.[121] Additionally, there is evidence that North Atlantic right whales stop vocalizing in the presence of anthropogenic noise,[122] or spend significantly more time at subsurface depths (i.e., 1-10 meters) compared to normal surfacing depths (i.e., within 1 meter of the surface),[123] when exposed to certain types of acoustic disturbance. These behavioral responses are likely to be heightened when whales are in the proximity of the acoustic disturbance from geophysical surveying, meaning that animals may be less detectable by visual observers during the project period relative to other times.[124]

In addition, there are sighting condition limitations that must be taken into consideration. For even the most conspicuous large whale species, studies demonstrate that increasing Beaufort Sea State reduces the probability of detecting large whales. Estimates of relative detection probability under a Beaufort Sea State of 6 is less than half that for a Beaufort Sea State of 0.[125] Of particular concern, sea state has been demonstrated to have a direct effect on the sighting probability of North Atlantic right whales in the Lower Bay of Fundy and in Roseway Basin of

---

[117] 85 Fed. Reg. at 36,557.

[118] *See*, *e.g.*, Ursula K. Verfuss et al., *Comparing methods suitable for monitoring marine mammals in low visibility conditions during seismic surveys*, MARINE POLLUTION BULL. (Jan. 2018).

[119] Janelle L. Morano et al., *Acoustically detected year-round presence of right whales in an urbanized migration corridor*, CONSERVATION BIOLOGY (May 23, 2012).

[120] Howard E. Winn et al., *The distributional biology of the right whale (Eubalaena glacialis) in the western North Atlantic*, INT'L WHALING COMM'N (Jan. 1, 1986); Simon Pittman et al., *Cetacean distribution and diversity*, *in* AN ECOLOGICAL CHARACTERIZATION OF THE STELLWAGEN BANK NATIONAL MARINE SANCTUARY REGION, pp. 264-324 (Tim Battista et al. eds., 2006).

[121] Christopher W. Clark et al., *Visual and acoustic surveys for North Atlantic right whales,* Eubalaena glacialis*, in Cape Cod Bay, Massachusetts, 2001-2005: Management implications*, MARINE MAMMAL SCI. (May 9, 2010)

[122] *See*, *e.g.*, Susan E. Parks et al., *Short- and long-term changes in right whale calling behavior: The potential effects of noise on acoustic communication*, J. ACOUSTICAL SOC'Y AM. (Jan. 31, 2008).

[123] Nowacek et al., *supra* note 77.

[124] Frances C. Robertson et al., *Seismic operations have variable effects on dive-cycle behavior of bowhead whales*, ENDANGERED SPECIES RES. (Aug. 13, 2013).

[125] 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. Jay Barlow, *Inferring trackline detection probabilities, g(0), for cetaceans from apparent densities in different survey conditions*, MARINE MAMMAL SCI. (Jan. 4, 2015).

the Southwest Scotian Shelf.[126] Based on the data collected by the National Buoy Data Center, a monthly average Beaufort Sea State of 3 or 4 can be expected in close vicinity to the Lease Area year-round (*see* Table 1).[127] This is a salient consideration in the evaluation of whether a large whale can be accurately detected by visual observers alone. Based on the findings of Baumgartner et al. (2003), we would expect a reduction in detection probability of North Atlantic right whales by up to 84.5 percent under a Beaufort Sea State of 4, relative to ideal sighting conditions (i.e., Beaufort Sea State of 0).[128] Even under ideal sighting conditions, the detectability of large whales is likely to be significantly less than 100 percent given availability and perception biases other than those involving sea state.

Table 1. Monthly average wave height and corresponding Beaufort Sea State recorded at NOAA National Data Buoy Station 44099 – Cape Henry, VA (147) in 2019.
(Data source: NOAA National Data Buoy Center, accessed July 9, 2020)

Month	Wave Height (m)	Beaufort Sea State
Jan	0.9	4
Feb	1.0	4
Mar	1.1	4
Apr	1.1	4
May	0.9	3
Jun	0.8	3
Jul	0.7	3
Aug	0.8	3
Sep	1.2	4
Oct	1.3	4
Nov	1.3	4
Dec	1.1	4

Thus, reliance on a single visual observer as the sole monitoring method is under-protective and should not be endorsed by the agency. Rather, a combination of (at a minimum) visual monitoring and passive acoustic monitoring should be implemented 24 hours a day.[129] Real-time passive acoustic monitoring should be undertaken in a manner that avoids masking of the North Atlantic right whale vocalizations by vessel noise, including by use of a system that is independent from the survey vessel if necessary. Research has demonstrated that passive acoustic monitoring can provide a two- to ten-fold increase in the number of days that North Atlantic right whales are detected relative to visual methodologies.[130] Aerial surveys would also

[126] Mark F. Baumgartner 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 (Dec. 15, 2003).
[127] *See* Online Database, *National Data Buoy Center*, NOAA (last visited July 8, 2020), http://www ndbc noaa.gov/.
[128] Baumgartner et al., *supra* note 126.
[129] We also support the inclusion of both broadband and low frequency hydrophones, which will ensure that vocalizations of North Atlantic right whales and other low- and mid-frequency vocalizing species can be detected.
[130] Melissa S. Soldevilla et al., *Passive acoustic monitoring on the North Atlantic right whale calving grounds*, ENDANGERED SPECIES RES. (Sept. 10, 2014). It is important to note that passive acoustic monitoring, while capable of significantly increasing detection rates, is not independently capable of detecting all whales in an area, for three reasons: 1) not all individuals continually vocalize, 2) individuals may stop vocalizing in the presence of noise (*see*

provide a useful supplement to increase detection probability. Detection of a North Atlantic right whale or any other marine mammal by any of these methods should trigger a shutdown or delay in the same way a visual detection would.

E. Shutdown Protocol

We support the Proposed IHA's requirement for a 30-minute pre-clearance period (with ramp-up), and to immediately shut down survey activity upon the observation of a marine mammal.[131] Given that North Atlantic right whales and other large whales of conservation concern are known to use the areas within and around Project Area year-round, these measures are critical. We do not, however, agree with the proposal to waive this shutdown requirement for certain species of small delphinid.[132] We are particularly concerned that this exemption will leave the Western North Atlantic Southern Migratory Coastal stock of bottlenose dolphin, which is designated as both a depleted and a strategic stock, without adequate shutdown protections. NMFS should therefore remove *both* stocks of bottlenose dolphin from this exemption (as a protected species observer will not be able to distinguish between the two stocks of bottlenose dolphin present in this area).

F. Vessel Speed Limits

As discussed in Section II.C above, vessel collisions remain one of the leading causes of large whale injury and mortality, particularly for North Atlantic right whales, and are a primary driver of the existing humpback and minke whale UMEs. 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 may be at potential future risk of experiencing an UME.

Our organizations support a mandatory speed restriction of 10 knots for all project vessels within any designated SMA or DMA for North Atlantic right whales.[133] The SMA located at the mouth of the Chesapeake Bay partially overlaps the cable corridor, and encompasses the time period during which the highest risk of North Atlantic right whale presence exists (*see* Section I.B.i). However, the recent death of a North Atlantic right whale calf off New Jersey[134] indicates how even single or pairs of animals are at risk of vessel strike year-round. Although the mother-calf pair had been sighted and acoustically detected, no voluntary vessel speed reduction areas were triggered under current DMA regulations. In light of this tragic event, a sighting of three or more North Atlantic right whales may be too high of a bar to trigger a DMA. NMFS should consider requiring DMAs in every instance that a single North Atlantic right whale is sighted or acoustically detected, not just aggregations of three or more whales.

Parks et al. *supra* note 122); or 3) vocalizations may change during certain life history stages. *See* Susan E. Parks et al., *Acoustic crypsis in communication by North Atlantic right whale mother-calf pairs on the calving grounds*, BIOLOGY LETTERS (Oct. 9, 2019); Susan E. Parks et al., *North Atlantic right whale (*Eubalaena glacialis*) acoustic behavior on the calving grounds*, J. ACOUSTICAL SOC'Y AM. (July 10, 2019). As such, passive acoustic monitoring must be used in combination with other detection methods for mitigation purposes.

[131] 85 Fed. Reg. at 36,558.

[132] *Id.*

[133] *Id.*

[134] *See* NMFS, *supra* note 19.

We support the additional monitoring measures in place, including the presence of vessel-based observers and protocol for slowing down, stopping, and/or distancing vessels from detected marine mammals.[135] However, the proposed measures would allow project vessels to travel at speeds greater than 10 knots at all other times, unless "mother/calf pairs, pods, or large assemblages of cetaceans are observed near a vessel."[136] This is insufficient. Research shows that 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.[137] This risk is likely higher for calves and juveniles. Our organizations therefore urge the agency to impose a 10-knot speed limit on all vessels, including survey and support vessels, operating *within* the Project Area during the entire survey period. The same speed restriction should be extended to all project-associated vessels transiting *to and from* the Project Area from November 1 through April 30, to avoid collisions with North Atlantic right whales.[138] Given that North Atlantic right whales may be in the Project Area year-round (*see* Section I.B.i), and that pregnant mothers and calves are likely to travel close to shore, these added protections are vital. Additionally, passive acoustic monitoring should be employed in all vessel transit lanes, to supplement the efforts of observers in visually detecting marine mammals.

IV. CONCLUSION

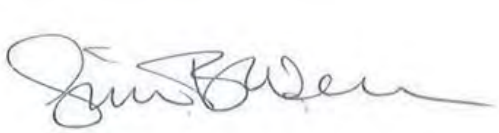
Our organizations are excited about the contribution that the CVOW Commercial Project will make in providing clean energy for the state and region. Marine mammal health and habitat will continue to be threatened by changes in the ocean environment brought on by climate change, further underscoring the need to transition to clean energy. For the above reasons, however, NMFS must revise its analysis to be consistent with the agency's statutory obligations. Considering the elevated level of threat to all federally protected marine mammal species and populations in the mid-Atlantic, including the critically endangered North Atlantic right whale, and emerging evidence of dynamic shifts in the distribution of large whale habitat, NMFS must ensure that any potential stressors posed by the proposed activity are mitigated to effectuate the least practicable impact on affected species and stocks. It is our view that offshore wind projects can and must move forward in a manner that is protective of vulnerable marine wildlife. To that end, it is crucial that the agency afford special attention to the importance of the waters off Virginia to marine mammals when permitting offshore wind development activities in this region.

Thank you for your consideration of these comments.

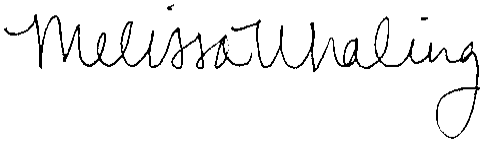
Sincerely,

---

[135] 85 Fed. Reg. at 36,558.
[136] *Id.*
[137] Paul B. Conn & Gregory K. Silber, *Vessel speed restrictions reduce risk of collision-related mortality for North Atlantic right whales*, ECOSPHERE (Apr. 2013).
[138] This measure should be considered in addition to the seasonal restriction on geophysical surveys recommended in Section III.A of this letter.



Sierra B. Weaver, Senior Attorney
Southern Environmental Law Center



Melissa L. Whaling, Science & Policy Associate
Southern Environmental Law Center

On behalf of:

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

National Wildlife Federation
Catherine Bowes
Director, Offshore Wind Energy Program

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

Defenders of Wildlife
Jane Davenport
Senior Attorney

Whale and Dolphin Conservation
Colleen Weiler
Jessica Rekos Fellow

Surfrider Foundation
Matt Gove
Mid-Atlantic Policy Manager

The Nature Conservancy
Kate Wilke
Mid-Atlantic Fisheries Scientist

Sierra Club, Virginia Chapter
Eileen Woll
Director, Offshore Energy Program

Assateague Coastal Trust
Kathy Phillips
Executive Director & Coastkeeper

[signature page continues]

Mass Audubon
E. Heidi Ricci
Acting Director of Advocacy

NY4WHALES
William Rossiter
Vice President

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

Inland Ocean Coalition
Vicki Nichols Goldstein
Founder & Executive Director

[Attachment]

ATTACHMENT 2

SOUTHERN ENVIRONMENTAL LAW CENTER

Telephone 919-967-1450 | 601 WEST ROSEMARY STREET, SUITE 220 CHAPEL HILL, NC 27516-2356 | Facsimile 919-929-9421

November 25, 2020

Submitted via electronic mail

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: Comments on a Notice to Modify the Incidental Harassment Authorization for Marine Site Characterization Surveys in the OCS–A–0483 Lease Area and the Coastal Waters off Virginia

Ms. Harrison,

The Southern Environmental Law Center ("SELC") submits these comments on behalf of Conservation Law Foundation, Defenders of Wildlife, Natural Resources Defense Council, Whale and Dolphin Conservation, Sierra Club Virginia Chapter, Assateague Coastal Trust, Inland Ocean Coalition, the International Marine Mammal Project of Earth Island Institute, and NY4WHALES, in response to the National Marine Fisheries Service's ("NMFS") proposal to modify an incidental harassment authorization ("IHA") originally issued to Dominion Energy Virginia ("Dominion") on September 8, 2020, for high-resolution geophysical ("HRG") surveys off the coast of Virginia in the area of Commercial Lease of Submerged Lands for Renewable Energy Development on the Outer Continental Shelf (OCS–A–0483) and in the coastal waters off Virginia ("Project Area"), in support of the Coastal Virginia Offshore Wind Commercial Project.[1] Our organizations highlighted the numerous deficiencies with the Draft IHA in comments submitted to the agency on July 17, 2020, which are attached and incorporated by reference here.[2]

Our organizations are profoundly concerned about NFMS' authorization for Dominion to incidentally harass roughly *90 times* more Atlantic spotted dolphin than were previously authorized earlier this fall. The agency's updated Level B take limit—a staggering 2,427 animals, up from merely 27 animals—represents about 5% of the total population and is more than 750% greater than the potential biological removal for the population.[3] This change runs contrary to the conservation mandate of the Marine Mammal Protection Act ("MMPA").

[1] Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to Marine Site Characterization Surveys Off of Coastal Virginia, 85 Fed. Reg. 71,881 (Nov. 12, 2020).
[2] Letter from SELC et al. to Jolie Harrison, Chief, Permits & Conservation Div., Nat'l Marine Fisheries Serv. (NMFS) (July 17, 2020) [hereinafter "Draft IHA Comments"], provided as Attachment 1.
[3] *See* Sean A. Hayes et al., *U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments – 2019*, NMFS (July 2020), *available at* https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports-region, at 232.

The MMPA requires that NMFS, in authorizing harm, meet a number of basic, protective standards: that only "small numbers" of marine mammals will be taken, that the impacts on those species and populations will be "negligible," and that, through mitigation, the "least practicable adverse impact" on marine mammals and their habitat is achieved.[4] At every step, the agency must use the "best scientific evidence available."[5] The proposed modification falls short of these standards for a number of reasons.

First, the agency's interpretation of "small numbers" is contrary to the purpose of the MMPA. The MMPA allows NMFS to authorize takes of "small numbers" of marine mammals under certain conditions.[6] The statute does not define this term, but the "small numbers" requirement is distinct from the agency's "negligible impact" analysis.[7] Here, the agency proposes to take "small numbers of spotted dolphins relative to the population size (less than 5 percent), as take that is less than one third of the species or stock abundance is considered by NMFS to be small numbers."[8] Yet this fails to consider the unique conservation status of individual populations. Rather than apply a 30% ceiling for all species, NMFS should revisit its "small numbers" interpretation to consider whether the specific take percentage for Atlantic spotted dolphin will ensure that population levels are maintained at or restored to healthy population numbers.[9]

Second, NMFS' updated negligible impact analysis consists of mere conclusory statements which underestimate the potential impacts of HRG surveys on small cetaceans like the Atlantic spotted dolphin. The MMPA authorizes NMFS to issue an IHA only if the agency finds that the authorized harassment caused by a "specified activity" will have a "negligible impact" on marine mammals.[10] Here, NMFS argues that because "no new information" suggests that the previous negligible impact finding for Atlantic spotted dolphin should change, the proposed 90-fold increase in takes will have a negligible impact on the stock.[11] The agency supports this finding with the fact that harassment is expected to be of "lower severity, predominantly in the form of avoidance of the sound source and potential occasional interruption of foraging."[12] Such a cursory analysis is wholly inadequate in light of the magnitude of the change in take levels Dominion is requesting. In fact, the existing science indicates that Atlantic

[4] 16 U.S.C. § 1371(a)(5)(D).
[5] *See, e.g.*, 16 U.S.C. § 1373(a).
[6] 16 U.S.C. § 1371(a)(5)(D)(i).
[7] *See, e.g.*, *Ctr. for Biological Diversity v. Salazar*, 695 F.3d 893, 903-04 (9th Cir. 2012).
[8] 85 Fed. Reg. at 71,885.
[9] H.R. Rep. No. 103-439, at 22, 1994 WL 93670 (Mar. 21, 1994); *see Native Vill. of Chickaloon v. Nat'l Marine Fisheries Serv.*, 947 F. Supp. 2d 1031, 1052–53 (D. Alaska 2013) (upholding agency's "small numbers" determination where the agency did not "categorically establish 10% as a small number; rather, it determined, through consideration of the available data, that 10% was a small number in the specific context of the Cook Inlet beluga whale and the nature of the proposed activity").
[10] 16 U.S.C. § 1371(a)(5)(D)(i). To make a finding of "negligible impact" under its regulations, NMFS must determine that the authorized harassment "cannot be reasonably expected to, and is not reasonably likely to, adversely affect" annual rates of recruitment or survival in any marine mammal species or population. 50 C.F.R. § 216.103.
[11] 85 Fed. Reg. at 71,885.
[12] *Id.*

spotted dolphin, a particularly acoustically sensitive species,[13] have the potential to be displaced,[14] shift their behavioral state,[15] and stop or alter vocalizations[16] in response to a variety of anthropogenic noises, with potentially adverse energetic effects even from minor changes.[17]

Furthermore, our organizations would like to reiterate that the agency's reliance on a 160 dB threshold for behavioral harassment is not supported by best available scientific information (which indicates that Level B takes occur with near certainty at levels well below this threshold), as discussed in our Draft IHA Comments.[18] Reliance on such an outdated, incorrect threshold further underestimates impacts and results in an inaccurate negligible impact analysis.

Finally, as described in our Draft IHA Comments, we do not agree that the mitigation measures in the IHA—which remain unchanged despite the significant modification in take numbers—are adequately protective of Virginia's marine mammals.[19] 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] We once again urge the agency, especially in light of the higher-than-expected detections of Atlantic spotted dolphin in the Project Area, to modify Dominion's IHA as follows:

- HRG surveys should commence, with ramp-up, during daylight hours only, to maximize the chance that marine mammals are detected and confirmed clear of the exclusion zone;
- NMFS should establish a standard 500-meter exclusion zone for all marine mammal species around survey vessels; and
- a combination of visual monitoring—by four protected species observers adhering to a two-on/two-off schedule—and passive acoustic monitoring should be used at all times that survey work is underway, and, for efforts that continue into the nighttime, night vision or infrared technology should also be used.

Our organizations would also like to restate the recommendations in our Draft IHA Comments which focused on the need for stronger mitigation measures for North Atlantic right

---

[13] Caroline R. Weir, *Overt responses of humpback whales (*Megaptera novaeangliae*), sperm whales (*Physeter microcephalus*), and Atlantic spotted dolphins (*Stenella frontalis*) to seismic exploration off Angola*, AQUATIC MAMMALS (2008) (pronounced response of Atlantic spotted dolphin to airgun noise).

[14] Carolyn J. Stone & Mark L. Tasker, *The effects of seismic airguns on cetaceans in UK waters*, J. CETACEAN RESEARCH & MGMT. (Dec. 2005) (showing, in the presence seismic vessels, more pronounced displacement in small odontocetes than in larger cetaceans).

[15] Howard Gray & Koen Van Waerebeek, *Postural instability and akinesia in a pantropical spotted dolphin,* Stenella attenuata*, in proximity to operating airguns of a geophysical seismic vessel*, J. NATURE CONSERVATION (Dec. 2011) (observing severe injury or impaired neurological function in spotted dolphin exposed to airgun noise).

[16] Marc O. Lammers et al., *Acoustic monitoring of dolphin occurrence and activity in a MINEX training range*, PROCEEDINGS OF MEETINGS ON ACOUSTICS (July 10, 2016) (demonstrating repeated cessation of dolphin calls around Navy training with low-weight explosives).

[17] Terrie M. Williams et al., *Swimming and diving energetics in dolphins: A stroke-by-stroke analysis for predicting the cost of flight responses in wild odontocetes*, J. EXPERIMENTAL BIOLOGY (Jan. 7, 2017); Marla M. Holt et al., *Vocal performance affects metabolic rate in dolphins: Implications for animals communicating in noisy environments*, J. EXPERIMENTAL BIOLOGY (Mar. 30, 2015).

[18] *See* Draft IHA Comments at 11-12.

[19] *See id.* at 15-22.

[20] 16 U.S.C. § 1371(a)(5)(D)(vi).

whales. In light of updated North Atlantic right whale population numbers released last month, which put the population size at 356 individuals,[21] and given that whales are present in the Project Area year-round, we reiterate the need for strong mitigation measures on the activities covered by Dominion's IHA. In addition to the above measures, our organizations once again urge NMFS to:

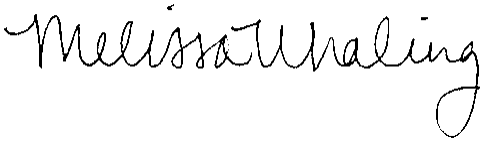
- impose a seasonal restriction on HRG surveys that have the potential to injure or harass the North Atlantic right whale from November 1 through April 30, to avoid the time period that poses the highest risk for the population;
- establish, to the extent feasible, an extended 1,000-meter exclusion zone for North Atlantic right whales around survey vessels; and
- require that all vessels operating traveling *to and from* the Project Area maintain a speed of 10 knots or less throughout the survey period.[22] NMFS should also consider requiring that Dynamic Management Areas become active anytime a single North Atlantic right whale is sighted or acoustically detected.

NMFS is charged under the MMPA with prioritizing the protection of marine mammals. For the above reasons, the agency must withdraw its proposed IHA modification and revise its analysis to be consistent with the agency's statutory obligations. Considering the elevated level of threat to all federally protected marine mammal species and populations in the mid-Atlantic, NMFS must ensure that any potential stressors posed by the proposed activity are mitigated to effectuate the least practicable impact on affected species and stocks.

Thank you for your consideration of these comments.

Sincerely,

Sierra B. Weaver, Senior Attorney
Southern Environmental Law Center



Melissa L. Whaling, Science & Policy Associate
Southern Environmental Law Center

[signature page follows]

[21] *Right Whale Consortium: Only 356 North Atlantic Right Whales Survive*, DEFS. OF WILDLIFE (Oct. 30, 2020), https://defenders.org/newsroom/right-whale-consortium-only-356-north-atlantic-right-whales-survive.

[22] We note that this measure is stronger than what our organizations previously requested in our Draft IHA Comments, which would have required all vessels operating *within* the Project Area to maintain a speed of 10 knots or less outside the period of November 1 and April 30, during which this speed limit would have been extended to all vessels traveling *to and from* the Project Area. We are strengthening this recommended measure given the declining population status of the North Atlantic right whale.

On behalf of:

Conservation Law Foundation
Erica Fuller
Senior Attorney

Defenders of Wildlife
Jane Davenport
Senior Attorney

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

Whale and Dolphin Conservation
Colleen Weiler
Jessica Rekos Fellow

Sierra Club, Virginia Chapter
Eileen Woll
Director, Offshore Energy Program

Assateague Coastal Trust
Kathy Phillips
Executive Director & Coastkeeper

Inland Ocean Coalition
Vicki Nichols Goldstein
Founder & Executive Director

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

NY4WHALES
William Rossiter
Vice President

[Attachment]

ATTACHMENT 3

SOUTHERN ENVIRONMENTAL LAW CENTER

Telephone 919-967-1450 | 601 WEST ROSEMARY STREET, SUITE 220 CHAPEL HILL, NC 27516-2356 | Facsimile 919-929-9421

March 25, 2021

Submitted via electronic mail

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: Comments on a Second Notice to Modify the Incidental Harassment Authorization for Marine Site Characterization Surveys in the OCS–A–0483 Lease Area and the Coastal Waters off Virginia

Ms. Harrison,

The Southern Environmental Law Center ("SELC") submits these comments on behalf of Conservation Law Foundation, Defenders of Wildlife, National Wildlife Federation, Natural Resources Defense Council, Whale and Dolphin Conservation, Surfrider Foundation, Sierra Club Virginia Chapter, Mass Audubon, Assateague Coastal Trust, Inland Ocean Coalition, the International Marine Mammal Project of Earth Island Institute, and NY4WHALES, in response to the National Marine Fisheries Service's ("NMFS") proposal to modify for a second time an incidental harassment authorization ("IHA") originally issued to Dominion Energy Virginia ("Dominion"), for high-resolution geophysical ("HRG") surveys off the coast of Virginia in the area of Commercial Lease of Submerged Lands for Renewable Energy Development on the Outer Continental Shelf (OCS–A–0483) and in the coastal waters off Virginia ("Project Area"), in support of the Coastal Virginia Offshore Wind Commercial Project.[1]

NMFS first issued the IHA to Dominion on August 28, 2020.[2] NMFS then modified the IHA on December 17, 2020 to allow a staggering increase in the take limit for Atlantic spotted dolphin.[3] Our organizations highlighted the numerous deficiencies in both the original Draft IHA and in NMFS's initial modification of the IHA, in comments that we submitted to the agency on July 17, 2020 and November 25, 2020, respectively. Both comment letters are attached and incorporated by reference here.[4] Now, the agency is proposing to once again

[1] Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to Marine Site Characterization Surveys Off of Coastal Virginia, 86 Fed. Reg. 13,695 (Mar. 10, 2021).
[2] Takes of Marine Mammals Incidental To Specified Activities; Taking Marine Mammals Incidental to Marine Site Characterization Surveys Off of Coastal Virginia, 85 Fed. Reg. 55,415 (Sept. 8, 2020).
[3] Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to Marine Site Characterization Surveys Off of Coastal Virginia, 85 Fed. Reg. 81,879 (Dec. 17, 2020).
[4] Letter from SELC et al. to Jolie Harrison, Chief, Permits & Conservation Div., Nat'l Marine Fisheries Serv. (NMFS) (July 17, 2020) [hereinafter "Draft IHA Comments"], provided as Attachment 1; Letter from SELC et al. to J. Harrison, NMFS (Nov. 25, 2020), provided as Attachment 2.

modify the same IHA to allow Dominion to incidentally harass roughly *ten times* more common dolphin than NMFS previously authorized in August 2020.

Our organizations are profoundly concerned about NMFS's pattern of modifying the IHA to allow Dominion to harass more and more marine mammals, simply due to higher-than-expected presence in the Project Area. NMFS's proposed increase of Dominion's Level B take limit from 68 to 668 common dolphins[5] is contrary to the conservation mandate of the Marine Mammal Protection Act ("MMPA"), for the same reasons as those set forth in our comments on the initial modification. Moreover, NMFS's willingness to repeatedly increase the take limits is particularly disturbing in light of the worsening conservation status of a number of marine mammal species found off Virginia's coast—including the critically endangered North Atlantic right whale—and in light of the significant number and scope of marine site characterization surveys for offshore wind activities on the East Coast that NMFS has already permitted and will continue to review in the future.

The MMPA requires that NMFS, in authorizing harm, must meet a number of basic, protective standards: that only "small numbers" of marine mammals will be taken; that the impacts on those species and populations will be "negligible"; and that the methods of take and mitigation will ensure that the activity will have the "least practicable impact" on marine mammals and their habitat.[6] At every step, the agency must use the "best scientific evidence available."[7] Once again, the proposed modification falls far short of these standards.

A. NMFS's Modification Fails to Meet the MMPA's Basic Protective Standards

First, under the MMPA, NMFS may authorize the take of "small numbers" of marine mammals under certain conditions.[8] While the statute does not define "small numbers," the agency's interpretation of the term cannot be reconciled with the MMPA's purpose. NMFS arbitrarily considers the take of one-third of a population to be the dividing line between "small numbers" that can be authorized under an IHA and those that cannot.[9] Moreover, NMFS applies the one-third interpretation across the board to all species. In this instance, NMFS explains that because the take of common dolphins "relative to the population size (less than one percent)…is less than one third of the species or stock abundance," NMFS considers the proposed take "to be small numbers."[10] In applying this arbitrary number, NMFS fails to take into account the unique conservation status of individual populations, the nature of the proposed activity, and the potential cumulative impacts. Rather than relying on an arbitrary threshold, NMFS instead should consider all available data pertaining to a species and the proposed activity to determine whether the proposed level of take (in this case, of the common dolphin) will ensure that population levels are maintained at, or restored to, healthy population numbers.[11]

---

[5] 86 Fed. Reg. at 13,699.
[6] 16 U.S.C. § 1371(a)(5)(D).
[7] *See, e.g., id.* § 1373(a).
[8] *Id.* § 1371(a)(5)(D)(i).
[9] 86 Fed. Reg. at 13,699.
[10] *Id.*
[11] H.R. Rep. No. 103-439, at 22, 1994 WL 93670 (Mar. 21, 1994); *see Native Vill. of Chickaloon v. NMFS*, 947 F. Supp. 2d 1031, 1052–53 (D. Alaska 2013) (upholding agency's "small numbers" determination where the agency did not "categorically establish 10% as a small number; rather, it determined, through consideration of the available

Second, under the MMPA, NMFS may issue an IHA only if it finds that the authorized harassment caused by a "specified activity" will have a "negligible impact" on marine mammals.[12] Here, in conducting its negligible impact analysis, NMFS's simply hangs its hat upon the conclusory statements of earlier findings and thus likewise underestimates the potential impacts of HRG surveys on the common dolphin. NMFS claims that, because "no new information" suggests that the previous negligible impact finding for common dolphin is incorrect, the proposed 10-fold increase in authorized take will also have only a negligible impact on the stock.[13] Such circular reasoning is unsupported by any facts. Moreover, the agency asserts, as it did in the initial IHA modification, that harassment is expected to be of "lower severity, predominantly in the form of avoidance of the sound source and potential occasional interruption of foraging[14]—repeating verbatim the same rationale that NMFS used to justify the first IHA modification regarding the Atlantic spotted dolphin.[15] In light of the magnitude of the change in take levels that Dominion is requesting, NMFS must undertake a rigorous analysis of the potential impacts on the common dolphin and other small cetaceans. In fact, as we pointed out in our November 25, 2020 comments, the existing science indicates that delphinids, a particularly acoustically sensitive group of species that includes common dolphins, have the potential to be displaced,[16] shift their behavioral state,[17] and stop or alter vocalizations[18] in response to a variety of anthropogenic noises, with potentially adverse energetic effects even from minor changes.[19]

In addition, we reiterate that the agency's reliance on a 160-dB threshold for behavioral harassment is not supported by the best available scientific information. Instead, the science

---

data, that 10% was a small number in the specific context of the Cook Inlet beluga whale and the nature of the proposed activity").

[12] 16 U.S.C. § 1371(a)(5)(D)(i). To make a finding of "negligible impact" under its regulations, NMFS must determine that the authorized harassment "cannot be reasonably expected to, and is not reasonably likely to, adversely affect" annual rates of recruitment or survival in any marine mammal species or population. 50 C.F.R. § 216.103.

[13] 86 Fed. Reg. at 13,699.

[14] *Id.*

[15] Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to Marine Site Characterization Surveys Off of Coastal Virginia, 85 Fed. Reg. 71,881, 71,885 (Nov. 12, 2020).

[16] Carolyn J. Stone & Mark L. Tasker, *The effects of seismic airguns on cetaceans in UK waters*, J. CETACEAN RESEARCH & MGMT. (Dec. 2005) (showing, in the presence of seismic vessels, more pronounced displacement in small odontocetes than in larger cetaceans); John C. Goold, *Acoustic assessment of populations of common dolphin* Delphinus delphis *in conjunction with seismic surveying*, J. MARINE BIOLOGICAL ASS'N U.K. (1996) (identifying an apparent avoidance zone of one kilometer for common dolphin around airguns).

[17] Ann Weaver, *An ethology of adaptation: Dolphins stop feeding but continue socializing in construction-degraded habitat*, FRONTIERS MARINE SCI. (Mar. 18, 2021) (showing significant decreases in the numbers of foraging dolphins in the presence of construction noise); Howard Gray & Koen Van Waerebeek, *Postural instability and akinesia in a pantropical spotted dolphin,* Stenella attenuata*, in proximity to operating airguns of a geophysical seismic vessel*, J. NATURE CONSERVATION (Dec. 2011) (observing severe injury or impaired neurological function in spotted dolphin exposed to airgun noise).

[18] Marc O. Lammers et al., *Acoustic monitoring of dolphin occurrence and activity in a MINEX training range*, PROCEEDINGS OF MEETINGS ON ACOUSTICS (July 10, 2016) (demonstrating repeated cessation of dolphin calls around Navy training with low-weight explosives).

[19] Terrie M. Williams et al., *Swimming and diving energetics in dolphins: A stroke-by-stroke analysis for predicting the cost of flight responses in wild odontocetes*, J. EXPERIMENTAL BIOLOGY (Jan. 7, 2017); Marla M. Holt et al., *Vocal performance affects metabolic rate in dolphins: Implications for animals communicating in noisy environments*, J. EXPERIMENTAL BIOLOGY (Mar. 30, 2015).

indicates that Level B takes occur with near certainty at levels well below this threshold, as discussed in more detail in our Draft IHA Comments.[20] By relying on such an outdated, incorrect threshold, NMFS has further underestimated impacts to marine mammals, resulting in a negligible impact analysis that is arbitrary and inaccurate.

B. The Mitigation Measures Found in the IHA Remain Under-Protective

Finally, 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 their habitat and establish additional "requirements pertaining to the monitoring and reporting of such taking."[21] As set forth in our comments on both the draft IHA and the initial IHA modification, the mitigation measures in the IHA are not adequately protective of Virginia's marine mammals and cannot satisfy the statutory standard.[22] Further, despite already authorizing one significant modification to the allowable take limits and now proposing yet another, the mitigation measures remain unchanged. We once again urge the agency, especially in light of the higher-than-expected detections of common dolphin and Atlantic spotted dolphin in the Project Area, to modify Dominion's IHA as follows:

- **NMFS should establish a standard 500-meter exclusion zone for all marine mammal species around survey vessels.** It is unacceptable that, even after authorizing one—and now proposing to authorize a second—significant increase in take levels for dolphins, the agency is still choosing to leave small cetaceans without *any* exclusion zone protections in the IHA. The one-kilometer avoidance zone for common dolphins observed by Goold (1996) in the presence of anthropogenic noise further illustrates that the lack of exclusion zone measures for delphinids found in the IHA is wholly under-protective.
- **HRG surveys should commence, with ramp-up, during daylight hours only, and should be both visually and acoustically monitored (i.e., through passive acoustic monitoring). For efforts that continue into the nighttime, night-vision or infrared monitoring should also be used.** That common dolphins appear to be attracted to the artificial lighting from Dominion's HRG vessels after dusk, and thereby may be exposing themselves to Level B take during nighttime hours,[23] underscores the need for both diel restrictions as well as mixed-method monitoring efforts after dark.

We also remain deeply concerned that the IHA will put North Atlantic right whales at unacceptable risk. As NMFS is aware, the population, which stands at an estimated mere 356 individuals as of the end of 2019, cannot sustain the loss of even one individual.[24] The extreme vulnerability of the species is also underscored by the tragic loss of four calves in the last two

---

[20] *See* Draft IHA Comments at 11-12.
[21] 16 U.S.C. § 1371(a)(5)(A)(i)(II).
[22] *See* Draft IHA Comments at 15-22.
[23] 86 Fed. Reg. at 13696 (hypothesizing that the observed bowriding of common dolphins may be due to "an enhanced feeding opportunity provided (after dusk) by the lighted vessels").
[24] Heather M. Pettis et al., *North Atlantic Right Whale Consortium 2020 Annual Report Card*, N. ATL. RIGHT WHALE CONSORTIUM (Jan. 2021), https://www.narwc.org/uploads/1/1/6/6/116623219/2020narwcreport_cardfinal.pdf. *See also* Scott D. Kraus, Presentation to the North Atlantic Right Whale Consortium Meeting (Oct. 2020) (establishing a potential biological removal of 0.7).

calving seasons, three of which were killed by vessel strike.[25] Moreover, Dominion has observed right whales in the Project Area at least *seven* times since the beginning of the survey period.[26] These facts compel the need for strong mitigation measures for activities covered by Dominion's IHA. **In addition to the measures discussed above, our organizations once again urge NMFS to:**

- Impose a seasonal restriction on HRG surveys that have the potential to injure or harass the North Atlantic right whale, extending from November 1 through April 30, to avoid the time period that poses the highest risk for the population;
- In lieu of the standard 500-meter exclusion zone described above, establish, to the extent feasible, an extended 1,000-meter exclusion zone for North Atlantic right whales around survey vessels;
- Require that all vessels traveling *to and from* the Project Area maintain a speed of 10 knots or less throughout the survey period; and
- Require that Dynamic Management Areas become active anytime a single North Atlantic right whale is sighted or acoustically detected.

We also highlight the agency's own recent findings about the risk of vessel strikes on the East Coast—one of two main factors preventing recovery of right whales. Vessel strikes stemming from Dominion's activities pose a serious threat to right whales. In fact, NMFS's recent Vessel Speed Rule Assessment found that current vessel speed restrictions—the very same measures that the IHA relies upon to minimize incidental take of right whales from vessel strikes—are *under-protective* and must be strengthened to further reduce this risk to the species.[27] As a result, NMFS's reliance on outdated, inadequately protective vessel speed measures for Dominion's survey activities violates the agency's obligation to ensure the "least practicable adverse impact" on Virginia's marine mammals.[28] NMFS must modify the vessel strike mitigation measures in the IHA accordingly.

C. Conclusion

NMFS, in authorizing the dramatic increase in take of Atlantic spotted dolphin under Dominion's IHA, and in proposing now to authorize a significant increase in take of the common

---

[25] *First Known North Atlantic Right Whale Calf of the Season Washes Up Dead off North Carolina*, NMFS (Nov. 23, 2020), https://www fisheries.noaa.gov/feature-story/first-known-north-atlantic-right-whale-calf-season-washes-dead-north-carolina; *Dead North Atlantic Right Whale Sighted off New Jersey*, NMFS (June 29, 2020), https://www.fisheries noaa.gov/feature-story/dead-north-atlantic-right-whale-sighted-new-jersey; *North Atlantic Right Whale Calf Injured by Vessel Strike*, NMFS (Jan. 30, 2020), https://www.fisheries noaa.gov/feature-story/north-atlantic-right-whale-calf-injured-vessel-strike; *North Atlantic Right Whale Calf Stranded Dead in Florida*, NMFS (Feb. 14, 2021), https://www.fisheries noaa.gov/feature-story/north-atlantic-right-whale-calf-stranded-dead-florida.

[26] Jason Ericson, CVOW Environmental Briefing (Public Presentation), DOMINION ENERGY (Mar. 8, 2021), https://vimeo.com/521412682/51db2f7046. *See also Fantastic video of an encounter with North Atlantic right whales off the coast of Virginia Beach*, U.S. NAVY (Jan 27, 2021), https://www.navymarinespeciesmonitoring.us/blog/fantastic-video-encounter-north-atlantic-right-whales-coast-virginia-beach/.

[27] *See generally* NMFS, *North Atlantic Right Whale (*Eubalaena glacialis*) Vessel Speed Rule Assessment* (June 2020), *available at* https://www fisheries.noaa.gov/national/endangered-species-conservation/reducing-vessel-strikes-north-atlantic-right-whales.

[28] 16 U.S.C. § 1371(a)(5)(A)(i)(II).

dolphin, has failed to discharge its responsibilities under the MMPA to protect marine mammals. Indeed, the agency's acquiescence to Dominion's requests to modify the IHA—without undertaking any objective analysis of the impacts of such changes—paints a disturbing picture for the future of offshore wind permitting on the East Coast and its impacts on marine mammals. For all of the above reasons, the agency must withdraw its proposed IHA modification and revise its analysis, consistent with the agency's statutory obligations of ensuring that any potential stressors posed by the proposed activity are mitigated and that the project will have the least practicable adverse impact on affected species.

In closing, we urge NMFS under the new administration to reconsider its current IHA process so as to properly reflect the requirements under the MMPA. Given the emerging threats to, and declining status of, a number of federally protected marine mammal species and populations in the mid-Atlantic, we believe that such overhaul is vital.

Thank you for your consideration of these comments.

Sincerely,

Sierra B. Weaver, Senior Attorney
Southern Environmental Law Center

Melissa L. Whaling, Science & Policy Associate
Southern Environmental Law Center

On behalf of:

Conservation Law Foundation
Erica Fuller
Senior Attorney

Defenders of Wildlife
Jane Davenport
Senior Attorney

National Wildlife Federation
Jim Murphy
Director, Legal Advocacy

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

[*signature page continues*]

Whale and Dolphin Conservation
Colleen Weiler
Jessica Rekos Fellow

Surfrider Foundation
Matt Gove
Mid-Atlantic Policy Manager

Mass Audubon
E. Heidi Ricci
Director of Policy

Sierra Club, Virginia Chapter
Eileen Woll
Director, Offshore Energy Program

Assateague Coastal Trust
Kathy Phillips
Executive Director & Coastkeeper

Inland Ocean Coalition
Vicki Nichols Goldstein
Founder & Executive Director

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

NY4WHALES
William Rossiter
Vice President

[Attachments]

ATTACHMENT 4

SOUTHERN ENVIRONMENTAL LAW CENTER

601 West Rosemary Street, Suite 220
Chapel Hill, NC 27516

Telephone 919-967-1450
Facsimile 919-929-9421

May 6, 2022

Submitted via electronic mail

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

Re: Comments on Draft Incidental Harassment Authorization for Site Characterization Surveys in the OCS–A–0483 Lease Area and the Coastal Waters off Virginia

Ms. Harrison,

The Southern Environmental Law Center ("SELC") submits these comments on behalf of Conservation Law Foundation, Defenders of Wildlife, National Wildlife Federation, Whale and Dolphin Conservation, Surfrider Foundation, Sierra Club Virginia Chapter, Mass Audubon, and the International Marine Mammal Project of Earth Island Institute, in response to the National Marine Fisheries Service's ("NMFS") proposal to issue an incidental harassment authorization ("IHA") under the Marine Mammal Protection Act ("MMPA") to Dominion Energy Virginia ("Dominion"), for marine site characterization surveys off the coast of Virginia in the area of Commercial Lease of Submerged Lands for Renewable Energy Development on the Outer Continental Shelf (OCS–A–0483), and along an offshore export cable corridor (collectively termed "Project Area"), in support of the Coastal Virginia Offshore Wind Commercial ("CVOW-C") Project.[1]

Dominion proposes to continue ongoing work involving high-resolution geophysical ("HRG") surveys in support of the CVOW-C Project.[2] These activities are set to commence "upon receipt of an IHA" and may last for up to 244 days.[3] Dominion plans to run up to four survey vessels concurrently within the 122,799-acre Lease Area, which lies 27 miles off the coast of Virginia Beach, and along an offshore export cable corridor between the Lease Area and coastal Virginia.[4] Dominion has previously received three IHAs (with at least two modifications) for the same activities in the same area, to which our groups have sent three letters in response.[5]

[1] Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to Marine Site Characterization Surveys Off of Coastal Virginia, 87 Fed. Reg. 19,864 (Apr. 6, 2022).
[2] *Id*. at 19,865.
[3] *Id*.
[4] *Id.* at 19,865-66.
[5] Letter from SELC et al. to Jolie Harrison, Chief, Permits & Conservation Div., Nat'l Marine Fisheries Serv. (NMFS), Re: Comments on Draft Incidental Harassment Authorization for Site Characterization Surveys in the OCS-A-0483 Lease Area and the Coastal Waters off Virginia (July 17, 2020), Attachment 1; Letter from SELC et

Despite our urging, NMFS has made no meaningful improvements to the IHAs it has issued. This is particularly concerning given the potential for cumulative impacts associated with repeatedly issuing similar IHAs. In addition, these activities fall within a 2021 "Programmatic Informal Consultation" under the Endangered Species Act ("ESA") that our groups have argued is critically flawed, relying on grossly outdated scientific information about the North Atlantic right whale and failing to include mitigation measures that meet the ESA's requirements.[6] Given that many of the same shortcomings we have previously identified exist in the Proposed IHA, we attach and incorporate these letters by reference. For the reasons identified below and in those letters, NMFS should reinitiate consultation under the ESA and revise its Proposed IHA to ensure that that the proposed activity proceeds in a manner that is protective of vulnerable marine wildlife, particularly the right whale.

A. Introduction

Our groups are united in support of responsibly developed offshore wind as a tremendous opportunity to fight the climate crisis, and we have long advocated for policies and actions needed to bring it to scale in an environmentally protective manner. Responsible development of offshore wind energy: (1) avoids, minimizes, mitigates, and monitors for adverse impacts on wildlife and habitats; (2) minimizes negative impacts on other ocean uses; (3) includes robust consultation with Native American tribes and communities; (4) meaningfully engages state and local governments and stakeholders from the outset; (5) includes comprehensive efforts to avoid negative impacts to underserved communities; and (6) uses the best available scientific and technological data to ensure science-based and stakeholder-informed decision making.

As we have urged in previous letters, protection of the critically endangered North Atlantic right whale throughout the entirety of the CVOW-C Project is of utmost concern. Right whales are rapidly declining towards extinction, with only about 336 individuals now remaining in the population.[7] The species is currently experiencing unsustainable levels of mortality and serious injury from vessel strikes and entanglement in fishing gear,[8] and its recovery is further hindered by underwater noise pollution and climate change-driven habitat shifts. Put simply, right whales cannot withstand further losses or additional stress if the species is to reverse its decline and eventually recover.[9]

---

al. to J. Harrison, NMFS, Re: Comments on a Notice to Modify the Incidental Harassment Authorization for Marine Site Characterization Surveys in the OCS-A-0483 Lease Area and the Coastal Waters off Virginia (Nov. 25, 2020), Attachment 2; Letter from SELC et al. to J. Harrison, NMFS, Re: Comments on a Second Notice to Modify the Incidental Harassment Authorization for Marine Site Characterization Surveys in the OCS-A-0483 Lease Area and the Coastal Waters off Virginia (Mar. 25, 2021), Attachment 3.

[6] Letter from Defs. of Wildlife et al. to Amanda Lefton, Dir., Bureau of Ocean Energy Mgmt., & Janet Coit, Assistant Adm'r, NMFS, Re: BOEM and NMFS Must Reinitiate Consultation on the Effects of Site Assessment Characterization Activities for Offshore Wind Energy on North Atlantic Right Whales (Jan. 20, 2022), Attachment 4.

[7] Heather M. Pettis et al., *North Atlantic Right Whale Consortium 2021 Annual Report Card*, N. ATL. RIGHT WHALE CONSORTIUM (Feb. 2022), at 3.

[8] NMFS, *2017–2022 North Atlantic Right Whale Unusual Mortality Event*, https://www.fisheries.noaa.gov/national/marine-life-distress/2017-2022-north-atlantic-right-whale-unusual-mortality-event.

[9] The Potential Biological Removal ("PBR") level for the species is now 0.7, meaning that not even a single individual can be lost to human activities each year if the species is to avoid extinction. *See*, *e.g.*, Scott D. Kraus, Presentation to the North Atlantic Right Whale Consortium Meeting (Oct. 2020) (establishing a PBR of 0.7).

The right whale's seriously imperiled status demands implementation of science-based, common-sense measures to safeguard this species during all stages of offshore wind development, including the site assessment activities currently proposed by Dominion. The increased risks of vessel collisions and direct and indirect noise impacts, including potential habitat displacement from the Project Area that may exacerbate existing threats, must be fully addressed from the start. Several of the undersigned groups have urged NMFS to reinitiate its critically flawed "Programmatic Informal Consultation" under the ESA, which covers the proposed activity, because it relies on grossly outdated scientific information about the right whale and fails to include mitigation measures that meet the ESA's requirements. **We urge NMFS to reinitiate its consultation under the ESA and instead require the measures found in Attachment 5 in its Final IHA**.[10] This suite of avoidance and mitigation measures are based on the best available scientific information, are fundamental to protect the right whale from the proposed activity, and may offer co-benefits to other large whale species that occur off Virginia. We highlight four particularly important recommendations below.

B. NMFS Should Strengthen its Vessel Strike Avoidance Measures in the Final IHA

As discussed in our previous letters, vessel strikes remain one of the main factors driving the North Atlantic right whale to extinction. The amount of vessel activity associated with the proposed activity is significant. Dominion estimates a total of up to 244 total survey days, during which survey vessels (up to four at a time) will each travel 36 miles per day within the Project Area, not including the up to 27-mile round trip distance each way to and from the Lease Area.[11] This adds up to a maximum of 488 total vessel trips and almost 22,000 miles traveled in and around the Project Area over the course of a year.[12]

The vessel strike avoidance measures set forth in NMFS's Proposed IHA, while an improvement from previous IHAs, are still insufficient. We appreciate a mandatory speed restriction of 10 knots for all project vessels, regardless of size, within any designated North Atlantic right whale Seasonal Management Area or Dynamic Management Area.[13] However, current evidence demonstrates that right whales may be at risk of lethal vessel strike outside of these areas year-round, and any interaction between a vessel and a right whale poses an unacceptable risk of serious injury or mortality that will have population-level consequences. Reducing speeds to no more than 10 knots for *all project vessels* is the most effective way to prevent serious injury and mortality to large whales from vessel strikes. **We therefore urge the agency to implement a year-round 10-knot speed restriction on all vessels permitted under this IHA, including vessels operating within and transiting to and from the Project Area.**

[10] Conservation Law Found. et al., *Strong Mitigation Measures Are Essential to Protect the North Atlantic Right Whale during All Phases of Offshore Wind Energy Development* (Dec. 2021, updated Apr. 2022), Attachment 5.
[11] 87 Fed. Reg. at 19,865.
[12] 244 survey days x 2 transit trips = 488 total vessel trips. (36 survey miles + 54 transit miles) x 244 survey days = 21,960 total miles traveled. Each day that a survey vessel is operating counts as a single survey day. For example, two survey vessels operating on the same day count as two survey days.
[13] 87 Fed. Reg. at 19,879.

C. NMFS Should Implement Seasonal and Temporal Restrictions on Activities in the Final IHA

Dominion's proposed survey activities are intended to commence "as soon as possible" and occur for up to 244 survey days, utilizing up to four survey vessels at any one time.[14] This means that the proposed activities will continue well into the time period that poses the highest risk for North Atlantic right whales (i.e., November 1 to April 30), having the potential to harass individuals, including vulnerable mothers and calves. Time and area restrictions designed to protect certain species groups and habitats are one of the most effective available means to reduce the potential impacts of noise and disturbance on marine mammals. Indeed, Dominion acknowledges as much through its proposal to implement a 10-knot speed limit for all project vessels during the Chesapeake SMA during this time.

Given the extended duration and cumulative acoustic impact of the survey activities, **we urge NMFS to prohibit site characterization activities that have the potential to injure or harass the right whale (defined throughout this letter as source levels at frequencies between 7 and 35 kHz) from November 1 to April 30**. These dates currently reflect both the best available scientific information on the relative density of right whales in the Mid-Atlantic, as well as the potential presence of pregnant females and mother-calf pairs.

In addition, Dominion proposes to conduct HRG survey activities continuously, 24 hours per day, including during the night and during periods of low visibility (i.e., rain, fog, etc.).[15] Based on the limitations of currently available monitoring technologies, the detection probability of right whales and other marine mammals during such conditions may be significantly reduced relative to clear visibility conditions. **Site characterization activities should therefore not be initiated within 1.5 hours of civil sunset or in times of low visibility when the visual clearance and exclusion zones cannot be visually monitored.**

D. NMFS Should Strengthen its Clearance and Exclusion Zones in the Final IHA

Even with seasonal and temporal restrictions in place, it is becoming increasingly clear that there may not be a time of "low risk" for North Atlantic right whales. The population size is now so small that even individual-level impact is cause for concern. Moreover, changes in oceanographic conditions driven by climate change are rapidly impacting the habitat use and seasonal distribution of the species. Therefore, we recommend that robust and effective clearance and exclusion zone protocols are in place to protect this species throughout the year.

The Proposed IHA specifies that the following marine mammal exclusion zones will be established around HRG equipment: 500 meters for ESA-listed marine mammals, and 100 meters for all other marine mammals.[16] NMFS' reliance on a 160 dB (re 1 μPa^2s) threshold for behavioral harassment in establishing these zones is not supported by the best available scientific information and such reliance grossly underestimates Level B take.[17] As previously noted, behavioral disturbance of right whales must be minimized to the greatest extent possible if the

[14] *Id.* at 19,865.
[15] *Id*.
[16] *Id.* at 19,878.
[17] *See*, *e.g.*, Catalina Gomez et al., *A systematic review on the behavioural responses of wild marine mammals to noise: The disparity between science and policy*, CAN. J. ZOOLOGY (Nov. 2, 2016).

species is to be adequately protected. **Thus, for site characterization activities that have the potential to injure or harass the right whale, the following minimum Clearance and Exclusion Zone distances should be required**:

1. A visual clearance and exclusion zone of at least 1,000 m for North Atlantic right whales and 500 m for all large whale species around each vessel conducting activities with noise levels that could harass large whales; and
2. An acoustic clearance and exclusion zone of at least 1,000 m for right whales around each vessel conducting activities with noise levels that could harass right whales.

E. NMFS Should Analyze Cumulative Impacts in its Final IHA.

Finally, we remain extremely concerned about the cumulative impacts of multiple phases of offshore wind energy development on North Atlantic right whales and other marine mammal species off Virginia. Since 2020, NMFS has already issued three IHAs to Dominion for the same activities in the same Project Area, with at least two modifications to such IHAs,[18] and even more IHAs are expected in the future for the construction of the CVOW-C Project. Furthermore, CVOW-C is one of 17 offshore wind projects currently being permitted off the East Coast, and new regional leasing processes are underway in the New York Bight, Central Atlantic, and Southeast regions. Across all of these processes, hundreds of right whales are expected to be behaviorally harassed by noise. Although not analyzed in the IHA process, vessel strike risk is also a significant concern.

Therefore, in proceeding with permitting this project and all future offshore wind energy development off the East Coast, NMFS should analyze the cumulative risk to North Atlantic right whales and other marine mammal species posed by these multiple projects and leasing phases. We also urge NMFS to factor considerations of those cumulative impacts into the mitigation measures for individual projects. Requirements that avoid and minimize risks at the outset will help ensure the industry can advance responsibly at the scale and pace needed to meet the ambitious and necessary clean energy goals set forth by the Biden-Harris Administration.

F. Conclusion

Our organizations are excited about the contribution that the CVOW-C Project will make in providing clean energy for Virginia and the Mid-Atlantic region. Marine mammal health and habitat will continue to be threatened by changes in the ocean environment brought on by climate change, further underscoring the need to transition to clean energy. For the above reasons, however, NMFS should reinitiate consultation under the ESA and revise its IHA to ensure that that the proposed activity proceeds in a manner that is protective of vulnerable marine wildlife, particularly the critically endangered North Atlantic right whale.

Sincerely,

[18] 87 Fed. Reg. at 19,865.

Sierra B. Weaver, Senior Attorney
Southern Environmental Law Center

Melissa L. Edmonds, Science & Policy Analyst
Southern Environmental Law Center

On behalf of:

Conservation Law Foundation
Erica Fuller
Senior Attorney

Defenders of Wildlife
Jane Davenport
Senior Attorney

National Wildlife Federation
Jim Murphy
Director, Legal Advocacy

Whale and Dolphin Conservation
Colleen Weiler
Jessica Rekos Fellow

Sierra Club, Virginia Chapter
Eileen Woll
Director, Offshore Energy Program

Mass Audubon
E. Heidi Ricci
Director of Policy & Advocacy

Surfrider Foundation
Matt Gove
Mid-Atlantic Policy Manager

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

[Attachments]

ATTACHMENT 5

Conservation Law Foundation ♦ Defenders of Wildlife ♦ National Wildlife Federation
NY4WHALES ♦ Natural Resources Defense Council ♦ Oceana ♦ Southern Environmental Law Center
Whale and Dolphin Conservation

Strong Mitigation Measures Are Essential to Protect the North Atlantic Right Whale During All Phases of Offshore Wind Energy Development

Table of Contents

Introduction ***1***

Section 1. Mitigation recommendations during site assessment and characterization ***3***

Section 2: Mitigation recommendations for pile-driven foundations ***6***

Section 3: Mitigation recommendations for gravity-based and suction bucket foundations ***9***

Introduction

With an estimated 336 individuals remaining in 2020,[1] the North Atlantic right whale is in dire straits. Extremely vulnerable to vessel strikes, entanglement in fishing gear, and underwater noise pollution, malnourished and fighting to adapt to climate change, the species cannot withstand further losses or any additional stress.[2] As we establish America's important new offshore wind energy industry to transition us away from harmful fossil fuels, we must follow the principles of the mitigation hierarchy and avoid, minimize, and mitigate any impacts to this species.[3]

The seriously imperiled status of the North Atlantic right whale demands the implementation of the most stringent measures to safeguard this species during site assessment, construction, operations, and decommissioning of offshore wind energy projects. Risks from vessel collision and direct and indirect noise impacts on right whales, including potential habitat displacement that may exacerbate existing threats, need to be fully addressed from the start. Strong right whale protections are required to fulfill federal legal requirements for protecting marine mammals and endangered species[4] and will ensure we can achieve the administration's commitment to deploy 30 GW of offshore wind energy by 2030 while protecting biodiversity, cultural resources, and ocean uses.[5]

Several science-based solutions and new technologies are now available to avoid or minimize the potential noise and vessel impacts stemming from offshore wind energy development:

---

[1] New England Aquarium, "Population of North Atlantic right whales continues its downward trajectory." Press release (Oct. 25, 2021). https://www.neaq.org/about-us/news-media/press-kit/press-releases/population-of-north-atlantic-right-whales-continues-its-downward-trajectory/.

[2] NOAA Fisheries, "2017-2021 North Atlantic right whale Unusual Mortality Event." https://www.fisheries.noaa.gov/national/marine-life-distress/2017-2021-north-atlantic-right-whale-unusual-mortality-event.

[3] *See*, *e.g.*, CSBI (2015). "A cross-sector guide for implementing the mitigation hierarchy." Prepared by the Biodiversity Consultancy on behalf of IPIECA, ICMM and the Equator Principles Association: Cambridge UK. http://www.csbi.org.uk/wp-content/uploads/2017/10/CSBI-Mitigation-Hierarchy-Guide.pdf.

[4] All marine mammals are protected under the Marine Mammal Protection Act and strong protections for other endangered and at-risk marine mammal species, including those currently experiencing Unusual Mortality Events (including humpback whales and minke whales), as well as species highly sensitive to noise (*e.g.*, harbor porpoise), are also essential.

[5] The White House, "Briefing Room FACT SHEET: Biden Administration Jumpstarts Offshore Wind Energy Projects to Create Jobs." https://www.whitehouse.gov/briefing-room/statements-releases/2021/03/29/fact-sheet-biden-administration-jumpstarts-offshore-wind-energy-projects-to-create-jobs/.

- *Noise*: Quieter foundation technologies such as gravity-based or suction bucket (or "caisson") foundations eliminate the need for pile driving and thus one of the most impactful offshore wind activities on right whales and other marine life. We urge the use of quieter foundations during offshore wind energy project installation and stress the importance of providing full consideration, when feasible, to selecting these options as the preferred alternative. If pile driving must occur, effective noise reduction and attenuation technologies are commercially available[6] and near real-time monitoring technologies that can be used to trigger mitigation measures are being tested or are already being used by other sectors.[7] Pending further study, we also recommend the use of direct drive turbines as opposed to turbines with a gear box, as direct drive turbines may emit lower noise levels[8] and reduce the risk of behavioral disturbance or habitat displacement of North Atlantic right whales and other species during the operation phase of development.[9]

- *Vessels*: Science is unequivocal on the value of vessel speed restrictions in reducing mortalities of right whales (and other large marine fauna) from vessel collisions.[10] Service operating vessels that host construction workers and technicians for multiple days at sea reduce the pressure on limited transit times between the port and the lease area and can help developers meet speed requirements.

The mitigation measures presented in this document are based on best available scientific information and are needed to ensure offshore wind advances responsibly. These fundamental requirements are necessary to protect the critically endangered North Atlantic right whale from potential impacts posed by offshore wind energy development. Measures that offer co-benefits to other large whale species are also noted. These recommendations may change as new scientific and/or technological advancements occur, and additional recommendations may be developed for other marine species. The measures are designed to first avoid, and then minimize and mitigate potential impacts during the site assessment and characterization, construction, and operation phases.[11] Mitigation measures for the repowering and decommissioning phases of offshore wind energy development will be developed, as needed.

We present two sets of mitigation recommendations for the construction period: one set for pile-driven foundations that includes seasonal restrictions, a prohibition on pile driving at night, requirements for noise reduction technologies, and large monitoring zones (section 2), and a more limited set for quieter gravity-based and suction bucket foundations (section 3).

---

[6] *See*, *e.g.*, "AdBm Noise Mitigation System." AdBm Technologies. https://adbmtech.com/

[7] *See*, *e.g.*, Coutinho, R.W. and Boukerche, A. (2021). "North Atlantic Right Whales Preservation: A New Challenge for Internet of Underwater Things and Smart Ocean-Based Systems." *IEEE Instrumentation & Measurement Magazine*, 24(3), 61-67; Kowarski, K.A., Gaudet, B.J., Cole, A.J., Maxner, E.E., Turner, S.P., Martin, S.B., Johnson, H.D. and Moloney, J.E. (2020). "Near real-time marine mammal monitoring from gliders: Practical challenges, system development, and management implications." *The Journal of the Acoustical Society of America*, 148(3), 1215-1230; Johnson, H., Morrison, D. and Taggart, C. (2021). "WhaleMap: a tool to collate and display whale survey results in near real-time." *Journal of Open Source Software*, 6(62), 3094; Vickers, W., Milner, B., Risch, D., & Lee, R. (2021). "Robust North Atlantic right whale detection using deep learning models for denoising." *Journal of the Acoustical Society of America*, 149, 3797**.**

[8] Stöber, U. and Thomsen, F. (2021). "How could operation sound from future offshore wind turbines impacts marine life?" *The Journal of the Acoustical Society of America*, 149, 1791.

[9] While gravity-based and suction bucket foundations avoid the impacts of pile driving noise, their installation is not necessarily noise free, and the potential use of dynamic positioning systems and other noise related to installation vessels may still lead to some level of behavioral disturbance. As gravity-based and suction bucket foundations are new technologies in the U.S., it will be important to monitor the levels of noise emitted during installation at the source and model the level of potential noise exposure to large whales and other marine mammals, to inform the most appropriate mitigation approaches for future offshore wind energy projects for which these foundation types are used.

[10] A reduction in vessel speed has been successful in reducing collision risk and is the preferred measure to implement when vessels cannot be re-routed. Schoeman, R.P., Patterson-Abrolat, C. and Plön, S. (2020). "A global review of vessel collisions with marine animals." *Frontiers in Marine Science*, 7, 292.

[11] This document should be considered together with other ENGO recommendations on how to advance offshore wind energy development in a responsible manner, including the importance selecting sites that offer the least environmental impact.

Section 1. Mitigation recommendations during site assessment and characterization

i. Prohibit site assessment and site characterization activities during times of highest risk:

1. Site assessment and characterization activities involving high resolution geophysical survey equipment with noise levels that could injure or harass large whales (defined throughout this section as: source levels at frequencies between 7 and 35 kHz) should not occur during periods of highest risk to North Atlantic right whales. These periods are defined as times of highest relative density of animals during foraging and 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. Time periods must be defined based on the best available scientific information.
2. If a near real-time monitoring system and mitigation protocol for North Atlantic right whales and other large whale species is developed and scientifically validated, the system and protocol may be used to dynamically manage the timing of site assessment and characterization activities to ensure those activities are undertaken during times of lowest risk for all relevant large whale species. The development of such a protocol is particularly important where foraging aggregations of other large whale species are observed coincident with the times that pile driving would most likely be undertaken based on times of lower relative risk to North Atlantic right whales.

ii. Require diel restrictions on site assessment and characterization activities:

1. Site assessment and characterization activities must not be initiated within 1.5 hours of civil sunset or in times of low visibility when the visual "clearance zone" and "exclusion zone" (as defined below) cannot be visually monitored, as determined by the lead Protected Species Observer (PSO)[12] on duty.

iii. Require the following clearance zone and exclusion zone distances prior to activities known to injure or harass large whales:

1. A visual clearance zone and exclusion zone of at least 500 m for all large whale species and 1,000 m for North Atlantic right whales must be established around each vessel conducting activities with noise levels that could result in injury or harassment to large whales.
2. An acoustic clearance zone and exclusion zone of at least 1,000 m must be established for North Atlantic right whales around each vessel conducting activities with noise levels that could result in injury or harassment to large whales.
3. If a large whale is detected within the 1000 m clearance zone but the species cannot be identified, it must be assumed to be a North Atlantic right whale.

iv. Require shutdown of activities if a large whale is detected visually or acoustically:

1. If a North Atlantic right whale or other large whale species is visually or acoustically detected within the relevant clearance zone, site assessment and characterization activities with noise levels that could result in injury or harassment to large whales must not be initiated.
2. If a North Atlantic right whale or other large whale species is visually detected within the visual exclusion zone, site assessment and characterization activities with noise levels that could result in injury or harassment to large whales must be halted.
3. If a North Atlantic right whale is acoustically detected within the acoustic exclusion zone, site assessment and characterization activities with noise levels that could result in injury or harassment to large whales must be halted.

[12] The term "PSO" refers to an individual with a current NOAA Fisheries approval letter as a Protected Species Observer

4. Once halted, site assessment and characterization activities may resume following the methods set forth in subsection (v) and after the lead PSO confirms no North Atlantic right whales or other large whale species have been detected within the relevant acoustic and visual clearance zones.

v. Require robust monitoring protocols during pre-clearance and when site assessment and characterization activities are underway:

1. Monitoring of the acoustic clearance zone must be undertaken using near real-time passive acoustic monitoring (PAM)[13] and must be undertaken from a vessel other than the survey vessel, or from a stationary unit, to avoid the hydrophone being masked by the survey vessel or development-related noise.
2. Monitoring of the visual clearance zone must be undertaken by vessel-based PSOs stationed on the survey vessel to enable monitoring of the entire 1,000 m clearance zone for North Atlantic right whales and other large whale species. On each vessel, there must be a minimum of four PSOs following a two-on, two-off rotation, each responsible for scanning no more than 180° of the horizon.
3. Acoustic and visual monitoring must be required, and monitoring must begin at least 30 minutes prior to the commencement or re-initiation of site assessment and characterization activity and must be conducted throughout the duration of activity.

vi. Require mandatory vessel speed restrictions:

1. All Project-associated vessels must adhere to a 10-knot speed restriction at all times except for reasons of safety, and in all places except in limited circumstances where the best available scientific information demonstrates that whales do not occur in the area.
2. Project proponents may develop, in consultation with National Oceanic and Atmospheric Administration (NOAA) Fisheries, an "Adaptive Plan" that modifies these vessel speed restrictions. However, the monitoring methods that inform the Adaptive Plan must be proven effective using vessels traveling 10 knots or less and following a scientific study design. If the resulting Adaptive Plan is scientifically proven[14] to be equally or more effective than a 10-knot speed restriction, the Adaptive Plan could be used as an alternative to a 10-knot speed restriction.

vii. Implement other vessel-related measures:

1. All personnel working offshore must receive training on observing and identifying North Atlantic right whales and other large whale species.
2. Vessels must maintain a separation distances of 500 m for North Atlantic right whales, and 100 m for other large whale species, maintain a vigilant watch for North Atlantic right whales and other large whale species, and slow down or maneuver their vessels as appropriate to avoid a potential interaction with a North Atlantic right whale or other large whale species.
3. All vessels responsible for crew transport should use thermal detection systems to supplement visual monitoring of marine mammals.

viii. Require underwater noise reduction to the fullest extent feasible:

1. The impacts of underwater noise must be minimized to the fullest extent feasible, including through the use of technically and commercially feasible and effective noise reduction and attenuation measures. For example, project proponents should select and operate sub-bottom

[13] Throughout this document "PAM" refers to a real-time passive acoustic monitoring system, with equipment bandwidth sufficient to detect the presence of vocalizing North Atlantic right whales and/or if available at the time of construction other similar high performance sound monitoring systems and arrays).

[14] *I.e.*, *via* a peer-reviewed scientific study.

profiling systems at power settings that achieve the lowest practicable source level for the objective.

ix. Require mandatory reporting of all North Atlantic right whale and other large whale detections:

1. Project proponents must report all visual observations and acoustic detections of North Atlantic right whales to NOAA Fisheries or the United States Coast Guard *as soon as possible and no later than the end of the PSO shift*. We note that, in some cases, such as with the use of near real-time autonomous buoy systems, the detections will be reported automatically on a pre-set cycle.
2. Project proponents must immediately report an entangled or dead North Atlantic right whale or other large whale species to NOAA Fisheries, the Marine Animal Response Team (1-800-900-3622) or the United States Coast Guard immediately via one of several available systems (e.g., phone, app, radio). Methods of reporting are expected to advance and streamline in the coming years, and projects should commit to supporting and participating in these efforts.
3. Quarterly reports of PSO sightings data must be made publicly available to inform marine mammal science and protection.

Section 2: Mitigation recommendations for pile-driven foundations

i. Prohibit pile driving during times of highest risk *(North Atlantic right whales only)*:

1. Pile driving must not occur during periods of highest risk to North Atlantic right whales, defined as times of highest relative density of animals during foraging and 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. Time periods must be defined based on the best available scientific information.
2. If a near real-time monitoring system and mitigation protocol for North Atlantic right whales and other large whale species is developed and scientifically validated, the system and protocol may be used to dynamically manage the timing of pile driving and other construction activities to ensure those activities are undertaken during times of lowest risk for all relevant large whale species. The development of such a protocol is particularly important where foraging aggregations of other large whale species are observed coincident with the times that pile driving would most likely be undertaken based on times of lower relative risk to North Atlantic right whales.

ii. Restrict pile driving activity at night and during periods of low visibility *(all large whale species)*:

1. Pile driving must not be initiated within 1.5 hours of civil sunset or in times of low visibility when the visual "clearance zone" and "exclusion zone" (as hereinafter defined) cannot be visually monitored, as determined by the lead PSO on duty.
2. Pile driving may continue after dark only if the activity commenced during daylight hours and must proceed for human safety or installation feasibility reasons,[15] and if required night-time monitoring protocols are followed (see subsection (v)).

iii. Require underwater noise reduction levels based on best commercially available technology *(all large whale species)*:

1. A combination of near field[16] and far field noise mitigation,[17] and/or a combination system[18] expected to achieve at least 15dB (re: 1µPa^{2}s) reduction of Sound Exposure Level (SEL)[19] from pile

[15] Throughout this document, "installation feasibility" refers to ensuring that the pile installation event results in a usable foundation for the wind turbine (i.*e.,* foundation installed to the target penetration depth without refusal and with a horizontal foundation/tower interface flange). In the event that pile driving has already started and nightfall occurs, the lead engineer on duty will make a determination through the following evaluation: 1) Use the site-specific soil data on the pile location and the real-time hammer log information to judge whether a stoppage would risk causing piling refusal at re-start of piling; and 2) Check that the pile penetration is deep enough to secure pile stability in the interim situation, taking into account weather statistics for the relevant season and the current weather forecast. Such determinations by the lead engineer (or their alternate) on duty will be made for each pile location as the installation progresses and not for the site as a whole. This information will be included in the reporting for the project.

[16] *E.g.*, reduced blow resonant panel noise abatement system (*e.g.*, AdBm Noise Mitigation System. https://adbmtech.com/), hydrosound damper (*e.g.*, OffNoise-Solutions Hydro-Sound-Damper-System (HSD-System). https://www.offnoise-solutions.com/), isolation casing (Noise Mitigation Screen (NMS)), and dewatered cofferdam (*see* Koschinski, S. and Lüdemann. K. (2020). "Noise mitigation for the construction of increasingly large offshore wind turbines: Technical options for complying with noise limits." Report commissioned by the Federal Agency for Nature Conservation, Isle of Vilm, Germany. https://tethys.pnnl.gov/publications/noise-mitigation-construction-increasingly-large-offshore-wind-turbines).

[17] *E.g.*, single bubble curtain.

[18] *E.g.*, double bubble curtain.

[19] Sound Exposure Level (SEL) is defined following Bellmann et al. (2020) at 31-32. Bellmann M. A., Brinkmann J., May A., Wendt T., Gerlach S. & Remmers P. (2020) "Underwater noise during the impulse pile-driving procedure: Influencing factors on pile-driving noise and technical possibilities to comply with noise mitigation values." Supported by the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (Bundesministerium für Umwelt, Naturschutz und nukleare Sicherheit (BMU)), FKZ UM16 881500. Commissioned and managed by the Federal Maritime and Hydrographic Agency (Bundesamt für Seeschifffahrt und Hydrographie (BSH)), Order No. 10036866. Edited by the itap GmbH. https://www.itap.de/media/experience_report_underwater_era-report.pdf.

driving operations, including pile strikes, compressors, and operations vessels engaged in construction, must be used.[20] At minimum, a 10 dB (re: 1µPa^{2}s) reduction of SEL must be attained.
2. Field measurements must be conducted on the first pile installed and data must be collected from a random sample of piles throughout the construction period. We do not support field testing using unmitigated piles.
3. Sound source validation reports of field measurements must be evaluated by both BOEM and NOAA Fisheries prior to additional piles being installed and be made publicly available.

iv. Require the following clearance zone distances prior to pile driving and exclusion zone distances during pile driving (for a minimum of 10-12 dB noise reduction *(see subsection (iii)); North Atlantic right whales only)*:

1. A visual clearance zone and exclusion zone must extend at minimum 5,000 m in all directions from the location of the driven pile.
2. An acoustic clearance zone must extend at minimum 5,000 m in all directions from the location of the driven pile.
3. An acoustic exclusion zone must extend at minimum 2,000 m in all directions from the location of the driven pile.
4. Clearance and exclusion zone distances for other large whale species must be designed in a manner that eliminates Level A take and minimizes behavioral harassment to the full extent practicable.

v. Require shutdown of activities if a large whale is detected visually or acoustically (for a minimum of 10-12 dB noise reduction *(see subsection (iii)); North Atlantic right whales only)*:

1. Pile driving must not be initiated when monitoring methods defined in subsection (vi) result in either an acoustic detection within the acoustic clearance zone or a visual detection within the visual clearance zone of one or more North Atlantic right whales.
2. Pile driving must not be initiated or, if already underway, must be shut down, unless continued pile driving activities are necessary for reasons of human safety or installation feasibility, when monitoring methods defined in subsection (vi) result in acoustic detection within the acoustic exclusion zone or a visual detection within the visual exclusion zone of one or more North Atlantic right whales.
3. Pile driving must be shut down, unless continued pile driving activities are necessary for reasons of human safety or installation feasibility, if a North Atlantic right whale is visually detected by PSOs at any distance from the pile.
4. Once halted, pile driving may resume only after using the methods set forth in subsection (vi) and the lead PSO confirms no North Atlantic right whales or other large species have been detected within the relevant acoustic and visual clearance zones.

vi. Require robust near real-time monitoring protocols during pre-clearance and when pile driving activity is underway *(all large whale species)*:

1. Monitoring of the acoustic clearance and exclusion zone must be undertaken using near real-time PAM, assuming a detection range of at least 10,000 m, and must be undertaken from a vessel other than the pile driving vessel, or from a stationary unit, to avoid the hydrophone being masked by the pile driving vessel or development-related noise.

[20] Taking, as a baseline, projections from prior noise measurements of unmitigated piles from Europe and North America. We note that combination systems using best available technology have achieved noise reduction levels 20 dB or more in the field. The goal should be to achieve the greatest noise reduction level possible, in line with the principles of the mitigation hierarchy. Greater noise reduction levels could also provide more flexibility for developers. *See* Bellmann et al. (2020) at Table 4 (p. 106). https://www.itap.de/media/experience_report_underwater_era-report.pdf.

2. Monitoring of the visual clearance and exclusion zones must be undertaken by vessel based PSOs stationed at the pile driving site and on additional vessels circling the pile driving site, as needed. On each vessel, there must be a minimum of four PSOs following a two-on, two-off rotation, each responsible for scanning no more than 180° of the horizon per pile driving location. Additional vessels must survey the clearance and exclusion zones at speeds of 10 knots or less.
3. Acoustic and visual monitoring must begin at least 60 minutes prior to the commencement or re-initiation of pile driving and must be conducted throughout the duration of pile driving activity. Visual monitoring must continue until 30 minutes after cessation of pile driving.
4. Infrared technology must be used to support visual monitoring during any pile driving activities that extend into periods of darkness.
5. Additional observers and monitoring technologies (e.g., infrared, drones, hydrophones) must be deployed, as needed, to ensure the ability to monitor the established clearance and exclusion zones, including during periods of darkness or poor visibility.

vii. Require mandatory vessel speed restrictions *(all large whale species)*:

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

viii. Implement other vessel-related measures *(all large whale species)*:

1. All personnel working offshore must receive training on observing and identifying North Atlantic right whales and other large whale species.
2. Vessels must maintain a separation distance of 500 m for North Atlantic right whales and 100 m for other large whale species, maintain a vigilant watch for North Atlantic right whales and other large whale species, and slow down or maneuver their vessels as appropriate to avoid a potential interaction with a North Atlantic right whale or other large whale species.
3. All vessels responsible for crew transport (i.e., service operating vessels) should use automated thermal detection systems to assist monitoring efforts while vessels are in transit, maintaining a speed of 10 knots.

ix. Require mandatory reporting of all North Atlantic right whale and other large whale detections:

1. Project proponents must report all visual observations and acoustic detections of North Atlantic right whales to NOAA Fisheries or the United States Coast Guard *as soon as possible and no later than the end of the PSO shift*. We note that, in some cases, such as with the use of near real-time autonomous buoy systems, the detections will be reported automatically on a pre-set cycle.
2. Projects must immediately report an entangled or dead North Atlantic right whale or other large whale species to NOAA Fisheries, the Marine Animal Response Team (1-800-900-3622), or the United States Coast Guard immediately via one of several available systems (e.g., phone, app, radio). Methods of reporting are expected to advance and streamline in the coming years, and BOEM should require projects to commit to supporting and participating in these efforts.
3. Quarterly reports of PSO sightings data must be made publicly available to inform marine mammal science and protection.

Section 3: Mitigation recommendations for gravity-based and suction bucket foundations

As stated above, quieter gravity-based and suction bucket foundations offer significant environmental benefits over pile driven foundations, require decreased noise mitigation and monitoring measures, and may enable flexibility in construction timing. The installation of quieter foundations may still pose some disruption to North Atlantic right whales and the risk of vessel strike remains. We offer the following recommendations out of full precaution for the species, until we can monitor the installation process and better understand the potential risk.

i. Require clearance zone and exclusion zone distances that will eliminate Level A take and minimize behavioral harassment:

1. Clearance and exclusion zone distances for North Atlantic right whales and other large whale species must be designed to eliminate Level A take and minimize behavioral harassment to the full extent practicable during the installation of gravity-based or suction bucket foundations, considering noise levels expected to be generated during installation.

ii. Require shutdown of activities if a large whale is detected visually or acoustically:

1. Installation of gravity-based and suction bucket foundations must not be initiated when the application of monitoring methods defined in subsection (iii) results in a detection of a North Atlantic right whale or other large whale species within the relevant clearance zone (as defined based on noise levels expected during installation; see subsection (i)).
2. Installation of gravity-based and suction bucket foundations must be halted, unless continued installation activities are necessary for reasons of human safety or installation feasibility, when the application of monitoring methods defined in subsection (iii) results in a detection of a North Atlantic right whale or other large whale species within the relevant exclusion zone (as defined based on noise levels expected during installation; see subsection (i)).
3. Once halted, installation may resume after use of the methods set forth in subsection (iii) and the lead PSO confirms no North Atlantic right whales or other large species have been detected within the relevant clearance zones.

iii. Require robust near real-time monitoring protocols during clearance and installation:

1. Monitoring of the clearance and exclusion zones must be undertaken using near real-time PAM from a vessel other than the installation vessel, or from a stationary unit, to avoid the hydrophone being masked by installation-related noise.
2. Monitoring of the clearance and exclusion zone must be undertaken by vessel based PSOs stationed at the installation site. On each vessel, there must be a minimum of four PSOs following a two-on, two-off rotation, each responsible for scanning no more than 180° of the horizon per gravity-based or suction bucket foundation installation location.
3. Acoustic and visual monitoring must be required, and monitoring must begin at least 60 minutes prior to the commencement or installation activity and must be conducted throughout the duration of installation. Visual monitoring must continue until 30 minutes after installation.
4. Additional observers and monitoring technologies (e.g., infrared, drones, hydrophones) must be deployed, as needed, to ensure the ability to monitor the established clearance and exclusion zones, including during periods of darkness or poor visibility.

iv. Require mandatory vessel speed restrictions:

1. All Project-associated vessels must adhere to a 10-knot speed restriction at all times except in limited circumstances where the best available scientific information demonstrates that whales do not occur in the area.
2. Project proponents may develop, in consultation with NOAA Fisheries, an "Adaptive Plan" that modifies these vessel speed restrictions. However, the monitoring methods that inform the Adaptive Plan must be proven effective using vessels traveling 10 knots or less and following a scientific study design. If the resulting Adaptive Plan is scientifically proven[21] to be equally or more effective than a 10-knot speed restriction, the Adaptive Plan could be used as an alternative to a 10-knot speed restriction.

v. Implement other vessel-related measures:

1. All personnel working offshore must receive training on observing and identifying North Atlantic right whales and other large whale species.
2. Vessels must maintain a separation distances of at least 500 m for North Atlantic right whales and 100 m for other large whale species. They must maintain a vigilant watch for North Atlantic right whales and other large whale species, and slow down or maneuver their vessels as appropriate to avoid any potential interaction with them.
3. All vessels responsible for crew transport (i.e., service operating vessels) should use automated thermal detection systems to assist monitoring efforts while vessels are in transit, maintaining a speed of 10 knots.

vi. Require mandatory reporting of all North Atlantic right whale and other large whale detections:

1. Project proponents must report all visual observations and acoustic detections of North Atlantic right whales to NOAA Fisheries or the United States Coast Guard as soon as possible and no later than the end of the PSO shift. We note that, in some cases, such as with the use of near real-time autonomous buoy systems, the detections will be reported automatically on a preset cycle.
2. Project proponents must immediately report an entangled or dead North Atlantic right whale or other large whale species to NOAA Fisheries, the Marine Animal Response Team (1-800-900- 3622), or the United States Coast Guard immediately via one of several available systems (e.g., phone, app, radio). Methods of reporting are expected to advance and streamline in the coming years, and agencies should require projects to commit to supporting and participating in these efforts.
3. Quarterly reports of PSO sightings data must be made publicly available to inform marine mammal science and protection.

[21] *I.e.*, *via* a peer-reviewed scientific study.