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April 26, 2022

Jolie Harrison
Chief, Permits and Conservation Division
Office of Protected Resources
National Marine Fisheries Service
1315 East-West Highway, F/PR1 Room 13805
Silver Spring, MD 20910

RE: Proposed Renewal of Incidental Harassment Authorization for the Taking of Marine Mammals Incidental to Ocean Wind Marine Site Characterization Surveys, New Jersey (Agency/Docket Number RTID 0648-XB898)

Dear Chief Harrison:

Clean Ocean Action (“COA”) is a regional, broad-based coalition of conservation, environmental, fishing, boating, diving, student, surfing, women’s, business, civic, and community groups with a mission to improve the water quality of the marine waters off the New Jersey/New York coast. We submit the following comments to the National Marine Fisheries Service (“NMFS”) in opposition to the renewal of an incidental harassment authorization (“IHA”) that has been requested by Ocean Wind (“the Applicant”) to incidentally “take,” “harass,” and otherwise harm marine mammals in the course of marine site characterization surveys at lease site OCS-A 0498 (Ocean Wind 1) off the New Jersey (“NJ”) coast. If approved, this IHA would allow the Applicant to harass and harm marine mammals for survey activities at this site for a second one-year term.

Section 101(a)(5)(A) of the MMPA allows citizens who engage in activities other than commercial fishing to request authorization for incidental, but not intentional, harassment of “small numbers” of marine mammals pursuant to that activity for a period of no more than five years.¹ NMFS, which has been delegated the authority to administer the relevant legal framework, may allow harassment under the MMPA only if the agency determines that the total number of authorized incidental takes during the five-year period will have a “negligible impact” on the relevant species or stock.² “Negligible impact” is, in turn, defined as an impact that is not reasonably likely or expected to “adversely affect the species or stock through effects on annual

¹ 16 U.S.C. § 1371(a)(5)(A)(i).

² *Id.* § 1371(a)(5)(A)(i)(I).

rates of recruitment or survival.”³ Finally, the applicable legal framework distinguishes between “Level A” takes and “Level B” takes. In the context of offshore wind energy development and related activities, “Level B harassment” refers to “any act of pursuit, torment, or annoyance which has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering.”⁴ “Level A” takings, on the other hand, refer to “any act of pursuit, torment, or annoyance which has the potential to injure a marine mammal or marine mammal stock in the wild.”⁵

After reviewing this application, COA urges NMFS to deny the application under consideration for three (3) reasons: first, the proposed activities will have more than a negligible impact on North Atlantic Right Whales (“NARWs”); second, the application does not account for the severity of the effects of the activities in question on the coastal migratory stock of common bottlenose dolphins in the western North Atlantic Ocean; and third, because of the critical data gap that currently exists with respect to harbor seals’ use of the survey area.

I. Inaccurate and Incomplete Analysis of Impacts on North Atlantic Right Whales

a. Inaccurate Overestimation of North Atlantic Right Whale Population

COA objects to the proposed IHA renewal’s baseline estimation that there are 368 individual NARWs remaining in the wild. This estimation is, as NMFS posits, consistent with the NARW stock assessment in the agency’s 2021 Draft Stock Assessment Report (“SAR”). The 95% confidence interval for this estimation, notably, is 356-378 individuals. This confidence interval is notable because even the lower end of this range is higher than the most recent census taken by the North Atlantic Right Whale Consortium (“the Consortium”), who announced in October 2021 that just 336 individual NARWs remain.⁶ NMFS apparently agrees with the Consortium’s assessment for most other purposes—for example, the agency’s webpage for the NARW currently reads: “The North Atlantic right whale is one of the world’s most endangered large whale species; the latest preliminary estimate suggests there are fewer than 350 remaining.”⁷

Since the proposed IHA renewal’s estimate of NARWs is based on a draft SAR that has not yet been finalized and NMFS openly defers to the Consortium’s more conservative estimate of remaining individuals in other published materials, COA objects to NMFS’s use of the 368-individual estimate in the proposed IHA renewal, especially for purposes of calculating the percentage of remaining NARWs that the Applicant may incidentally harass in the course of its marine site characterization surveys off the New Jersey coast. Even by the proposed IHA’s own math, the Applicant’s request to harass 9 NARWs amounts to 2.44% of the remaining individuals. However, when calculated using the Consortium’s estimate of 336 remaining individuals, the Applicant’s request to harass 9 NARWs proportionally rises to 2.68% of the

³ 50 C.F.R. § 18.27(c).

⁴ 16 U.S.C. § 1362(18).

⁵ *Id.*

⁶ H.M. Pettis, et al., *North Atlantic Right Whale Consortium 2021 Annual Report Card: Report to the North Atlantic Right Whale Consortium* (2022), https://www.narwc.org/uploads/1/1/6/6/116623219/2021report_cardfinal.pdf.

⁷ *North Atlantic Right Whale*, NMFS (last accessed Apr. 4, 2022), <https://www.fisheries.noaa.gov/species/north-atlantic-right-whale>.

entire species. Plus, the toll of the proposed activities on the NARW would add to the harms that the Applicant has already inflicted on the species under the terms of the original IHA. As a matter of transparency, NMFS should reject the application.

b. Inaccurate Characterization of Impacts to North Atlantic Right Whales as Negligible

Furthermore, COA objects to the conclusion that the activities covered by the proposed IHA renewal will result only in Level B harassment of NARWs, as opposed to Level A harm—i.e., physical injury or death. COA asks that NMFS not approve the renewal because the application fails to account for Level A takes that (1) are reasonably likely to occur due to the activities in question, and (2) will have more than a mere negligible impact on NARWs. In this respect, COA notes that vessel strikes pose one of the largest threats to NARWs. The only vessel strike avoidance measures included in the proposed IHA renewal are separation distances of 500 meters from North Atlantic right whales, restricted vessel speeds, and operational maneuvers.⁸ These limited and few vessel strike avoidance measures are solely directed toward the vessels supporting the Applicant's survey activities. However, the proposed activities will also increase the risk of collisions between NARWs and vessel traffic unrelated to OWED activities as both navigate around the site characterization and assessment activities in question while they occur. As such, NMFS should not approve the application under consideration.

In addition, COA objects to NMFS' determination that the underwater noise generated by the proposed activities will result only in Level B harassment of NARWs. NARWs rely on sound to breed, navigate coastlines, and find food.⁹ Anthropogenic noise interferes with their ability to eat, mate, and navigate, so it is essential to their survival that the NARWs' sounds travel the ocean undisturbed.¹⁰ NARWs have been observed increasing their call amplitude with the rise of background noise, and noise pollution has been correlated with an increase in stress-related fecal hormone metabolites.¹¹ Considered together, the cumulative amount of underwater noise allowed by the proposed IHA renewal is not just an annoyance to NARWs, but also has the potential to injure the species' stock by interfering with their ability to eat, mate, and navigate. Accordingly, COA requests that NMFS reject the Applicant's requested IHA renewal for survey activities at lease site OCS-A 0498. The application's failure to account for the Level A harms that can reasonably be expected from the activities in question warrants further explanation before it would be appropriate for NMFS to approve the requested IHA renewal. COA emphasizes that approval of the proposed IHA renewal signifies an additional year of harassment and harm that the remaining NARWs must endure after the harassment and harm they experienced under the terms of the Applicant's original IHA. As such, NMFS should deny this application.

⁸ *Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to Ocean Wind Marine Site Characterization Surveys, New Jersey*, 87 FR 21098, 21101 (Apr. 11, 2022) [hereafter "*Application*"].

⁹ See Richard Schiffman, *How Ocean Noise Pollution Wreaks Havoc on Marine Life*, YALE ENV'T 360 (Mar. 31, 2016), http://e360.yale.edu/features/how_ocean_noise_pollution_wreaks_havoc_on_marine_life.

¹⁰ *Id.*

¹¹ *North Atlantic Right Whale 5-Year Review*, NOAA FISHERIES SERV. NE. REG'L OFFICE 11-12 (Aug. 2012), http://www.nmfs.noaa.gov/pr/pdfs/species/narightwhale_5yearreview.pdf

c. Failure to Account for Cumulative Impacts to the North Atlantic Right Whale

Next, COA objects to NMFS's conclusion that the Applicant's request to harass 9 NARWs for its survey activities off the NJ coast will have a negligible impact on the species. Even when taking this claim at face value, the agency is authorizing harassment of nearly 3% of the remaining 336 NARWs within a one-year span, which is significant in and of itself. Furthermore, these takes will compound upon those that have already occurred under the terms of earlier IHAs approved for the Applicant's site characterization and assessment activities. Under the terms of previous IHAs, the Applicant has already been allowed to harass nine (9) NARWs for survey activities at this lease site.¹² Approving the proposed IHA in its current form would effectively allow the Applicant alone to incidentally harass a cumulative total of 18 NARWs—5.4% of the remaining population. Such widespread disruption of this vulnerable species through noise, vessel collisions, and other risks posed by the proposed activities will only serve to jeopardize NARW's recruitment and survival by interfering with their ability to communicate with each other, find food, and avoid threats.

On a related note, this is only one of many OWED projects for which NARW harassment has been requested, but NMFS appears to fail to account for cumulative impacts. There are also other takes of NARWs authorized for other activities in the region that must be considered as well, including activities that are simultaneously occurring for other nearby OWED lease sites. For instance, Atlantic Shores has been allowed to harass 17 NARWs in the waters off New York and New Jersey for site characterization and assessment activities since April 2020;¹³ Garden State Offshore Energy, LCC was allowed to harass 14 NARWs under an IHA issued for site assessment and characterization activities off New Jersey and Delaware issued in June 2021;¹⁴ and Orsted was recently issued an IHA permitting 37 takes of NARWs for site assessment and characterization activities in the waters between New York and Massachusetts.¹⁵ These three earlier IHAs collectively allowed OWED developers to harass more than 20% of the remaining NARW population within the last three years, and approving the Applicant's requested IHA renewal would increase this total to 24% over a four-year period.

Furthermore, this tally accounts *only* for site assessment activities, and does not consider the number of takes required for construction and operation of all of these OWED projects, which will likely require an even higher number of takes than the survey activities preceding them. This tally likewise does not account for the harassment of NARWs that have been authorized for OWED projects in other areas of the species' migratory path, such as the waters off North Carolina and Virginia, nor the takes that have been requested by OWED-related IHA applications which are still under review. Also absent from this sum are NARW takes authorized by IHAs issued to industries other than OWED. An existential threat is posed to NARWs by any obstacles that affect even one individual's survival, especially due to how uniquely endangered

¹² 86 FR 26473 (May 10, 2021), <https://www.federalregister.gov/documents/2021/05/14/2021-10236/takes-of-marine-mammals-incident-to-specified-activities-taking-marine-mammals-incident-to>.

¹³ 86 FR 21291 (Apr. 22, 2021), <https://www.federalregister.gov/documents/2021/04/22/2021-08354/takes-of-marine-mammals-incident-to-specified-activities-taking-marine-mammals-incident-to>.

¹⁴ 86 FR 33676 (June 11, 2021), <https://www.federalregister.gov/documents/2021/06/25/2021-13530/takes-of-marine-mammals-incident-to-specified-activities-taking-marine-mammals-incident-to>.

¹⁵ 87 FR 13977 (Mar. 11, 2022), <https://www.federalregister.gov/documents/2022/03/11/2022-05102/takes-of-marine-mammals-incident-to-specified-activities-taking-marine-mammals-incident-to>.

this species is and the ongoing Unusual Mortality Event (“UME”) that NARWs are experiencing.¹⁶ The scale of these impacts in the proposed IHA are excessive for even one offshore wind project, and yet this is just one of many such projects under review.

In conclusion, the proposed IHA renewal’s requested allowance of 9 Level B harassments of NARWs would adversely affect the species’ annual rates of recruitment and survival to a substantial and unacceptable degree.¹⁷ Since the activities covered by the IHA are reasonably likely to result in injury to the species as a whole, which qualifies as Level A harm, but the proposed IHA renewal’s terms do not account for any Level A takes to NARWs, it would be unacceptable for NMFS to approve the application under consideration. It is imperative that NMFS exercise its authority to protect one of the world’s most vulnerable and critically endangered species, the North Atlantic right whale, and the agency should fulfill this obligation by rejecting this IHA proposal. If NMFS does not stand to protect this species by denying this IHA, it is difficult to envision the NARW’s survival given the combined impacts, harassment, harm, and death that will befall the remaining population due to all of the OWED projects proposed in the Atlantic Ocean.

II. Excessive Impacts to Common Bottlenose Dolphins

Common bottlenose dolphins are highly social and intelligent marine mammals, and arguably the most recognized and beloved cetacean. In addition to their inherent value to the American public, these dolphins play an important role in marine ecosystems and are increasingly important drivers of economic growth for tourism and related industries in the U.S.¹⁸

Common bottlenose dolphins are found in estuarine, coastal, continental shelf, and oceanic waters of the western North Atlantic (“wNA”). Distinct stocks of common bottlenose dolphin have been identified in coastal and offshore waters off the U.S. East Coast: a smaller migratory stock present in estuarine, coastal, and shelf waters from Florida to Long Island, and a larger,

¹⁶ See 2017–2022 North Atlantic Right Whale Unusual Mortality Event, NATL. MARINE FISHERIES SERV. (Mar. 23, 2022), <https://www.fisheries.noaa.gov/national/marine-life-distress/2017-2022-north-atlantic-right-whale-unusual-mortality-event>.

¹⁷ North Atlantic right whales, INTL. FUND FOR ANIMAL WELFARE (last accessed Apr. 26, 2022), <https://www.ifaw.org/animals/north-atlantic-right-whale> (“[T]he death of even one animal can have a critical impact on the species’ survival.”); Rosalind M. Rolland, et al., *Evidence that ship noise increases stress in right whales*, 279 THE ROYAL SOCIETY 2363-368 (2012), <https://royalsocietypublishing.org/doi/epdf/10.1098/rspb.2011.2429>; *Noise Pollution May Be the Final Straw for a Critically Endangered Whale*, OCEANA (May 18, 2016), <https://ocean.org/blog/noise-pollution-may-be-final-straw-critically-endangered-whale/> (“According to Rice, dozens of studies across different species of vertebrates confirm that noise increases stress hormones, which in turn suppress the immune system. ‘If you’re really stressed out,’ he said, ‘you’re more likely to get sick.’”)

¹⁸ Susan Reverman, *Dolphin’s Ecological Importance*, SEATTLE POST-INTELLIGENCER (last accessed Apr. 5, 2022), <https://education.seattlepi.com/dolphins-ecological-importance-5511.html>; *The Economics of Marine Mammals*, MARINE MAMMAL COMMISSION (last accessed Apr. 5, 2022), <https://www.mmc.gov/priority-topics/value-marine-mammals/>.

more robust stock found further offshore in deeper waters of the continental shelf from Florida to Canada.¹⁹

The coastal stock of bottlenose dolphins in the wNA has experienced a recovery since experiencing an unusual mortality event (“UME”) in the late 1980s, but is still considered a strategic stock for purposes of the MMPA and currently numbers roughly 6,639 individuals.²⁰ Nevertheless, the application under consideration reveals the Applicant’s survey activities at this lease site will result in 1,410 Level B takes—21.24% of the total remaining stock.²¹ This projected impact to the coastal stock of wNA common bottlenose dolphins from the Applicant’s site characterization and assessment activities is particularly egregious given the 1,410 Level B takes of this stock that the Applicant has already been allowed under the previous IHA for survey activities at this lease site.²² If NMFS approves the IHA renewal now under review, the Applicant would effectively be allowed to harass a cumulative total of 42.5% of the vulnerable coastal wNA common bottlenose dolphin stock during a two-year period.

The noise, vessel collisions, and other risks posed by Applicant’s survey activities will plainly impede these dolphins’ ability to locate food, avoid predators, and communicate with other members of their pod, with serious implications for the recruitment and survival of the stock as a whole. NMFS should therefore uphold its obligation under the MMPA and deny the Applicant’s requested IHA renewal.

III. Harbor Seals – Lack of Data

While there are several species of seal that are anticipated to be impacted by offshore wind projects, New Jersey’s Department of Environmental Protection (“DEP”) has highlighted a particular lack of known information regarding the use of the Applicant’s OWED lease area by harbor seals. Frequently spotted along both the East and West Coasts of the U.S., harbor seals are known for resting on floating ice with their head and rear flippers elevated in a “banana-like” position, leading to their popularity with excited winter beach-goers.²³ Besides their wide

¹⁹ *Stock Assessment for the Common Bottlenose Dolphin (Tursiops truncatus truncatus): Western North Atlantic Northern Migratory Coastal Stock*, NATL. MARINE FISHERIES SERV. 67 (2021), https://media.fisheries.noaa.gov/2021-07/f2020_AtlGmexSARs_NmigBottlenoseDolphin.pdf?null.

²⁰ *Id.* at 68; *Glossary: Marine Mammal Protection Act*, NATL. MARINE FISHERIES SERV. (last accessed Apr. 5, 2022), <https://www.fisheries.noaa.gov/laws-and-policies/glossary-marine-mammal-protection-act#strategic-and-depleted-stocks>. “Strategic stock” is defined by the MMPA as a marine mammal stock: for which the level of direct human-caused mortality exceeds the potential biological removal level; which, based on the best available scientific information, is declining and is likely to be listed as a threatened species under the Endangered Species Act within the foreseeable future; or which is listed as a threatened or endangered species under the ESA, or is designated as depleted under the MMPA.

²¹ *Application* at 21100.

²² 86 FR 26473.

²³ *Harbor Seal*, NATL. MARINE FISHERIES SERV. (last accessed Feb. 28, 2022), <https://www.fisheries.noaa.gov/species/harbor-seal>.

recognition among the American public, harbor seals also play a major role in maintaining balance in marine food webs as well.²⁴

Despite the unique importance of this species, however, COA maintains there is not sufficient baseline information about how harbor seals use the waters at lease site OCS-A 0498 to conclude that the activities covered by the proposed IHA will have a negligible impact on harbor seals. More specifically, a COA employee recently attended a virtual event at which a DEP representative indicated that, to date, no one has tracked harbor seals to understand the species' pre-construction use of offshore wind energy lease areas off the NJ coast.²⁵ This admission strongly suggests that decisionmakers do not yet have sufficient information about the role of these lease areas in harbor seals' life-cycles to substantiate the numbers of harassments expected to occur or the conclusion that the activities covered by the proposed IHA will not rise to a Level A taking under the MMPA. NMFS should therefore reject the requested IHA. This species must be the focus of an independent baseline assessment that more thoroughly accounts for the role it plays in the ecosystem before NMFS allows the activities covered by this application to move forward.

While the above comments focus on those species to which the quantitative impacts are anticipated to be most significant, Clean Ocean Action is also deeply concerned about the wide range of marine mammal species that will be impacted by the proposed activities. The current lack of data pertaining to OWED's interactions with the marine environment gives us deep reservations about the long-term implications of these activities on other species as well, especially given the Applicant's inability to accurately calculate impacts at this time.

For the foregoing reasons, Clean Ocean Action requests that NMFS reject the IHA renewal under consideration. Should you have any questions or would like to further discuss the concerns that Clean Ocean Action has identified above, please feel free to contact us.

Respectfully submitted,


Cindy Zipf
Executive Director


Zachary Klein, Esq.
Policy Attorney

²⁴ *Seals*, INTL. FUND FOR ANIMAL WELFARE (last accessed Feb. 22, 2022), <https://www.ifaw.org/animals/seals#:~:text=As%20one%20of%20the%20keystone,%2C%20polar%20bears%2C%20and%20sharks.>

²⁵ "Science Saturday: Offshore Wind," LONG BEACH ISLAND FOUNDATION OF ARTS AND SCIENCES (Feb. 19, 2022). Specifically, the NJDEP representative identified the tracking of harbor seals off the NJ coast to understand their use of lease areas prior to the construction of offshore wind turbines as a project concept that NJDEP is currently considering.



ITP Harlacher - NOAA Service Account <itp.harlacher@noaa.gov>

Proposed Ocean Wind Vessel Survey ITA Renewal

Bob Stern <drbob232@gmail.com>
To: ITP.Harlacher@noaa.gov

Sat, Apr 16, 2022 at 5:50 AM

Ms. Jolie Harrison
Chief, Permits and Conservation Division
Office of Protected Resources,
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[1315 East-West Highway](#)
[Silver Spring, MD 20910-3225.](#)

April 16, 2022

Dear Ms. Harrison,

Save Long Beach Island Inc. is requesting a re-issuance and extension of the 15-day comment period offered regarding the renewal of Ocean Wind's vessel survey activities as proposed in the NMFS Federal register Notice of April 11, 2022.

This proposed renewal of the Ocean Wind vessel surveys raises substantial marine mammal protection issues similar to those for the Atlantic Shores project outlined in our letter to the NMFS of February 25, 2022 (attached and included here in these comments).

This renewal notice does not provide the technical data to assess key technical and scientific uncertainties such as equipment noise source levels and the noise propagation loss factor used to determine the zones exceeding noise criteria levels. As explained in our February 25th letter these are critical factors in determining affected areas, numbers of takes, and protective zones and other measures needed.

In addition, there are now new issues of cumulative impact because the Ocean Wind and Atlantic Shores surveys will be operating in the same area over similar periods of time. Therefore, the scope of the current Incidental Take Authorization (ITA) review for Ocean Wind is not complete regarding the number of vessels operating in the same area at the same time. The NMFS has been issuing ITA's for both the Ocean Wind and Atlantic Shores projects that cover the same geographical area at the same time without apparently adding and considering the take results together, which is neither scientifically nor logically appropriate.

The NMFS previously authorized survey activities for the Ocean Wind project from May 10, 2021 to May 9, 2022 in an area that overlaps much of the Atlantic Shores survey area as shown in the Exhibits in our February 25th Letter. Prior to that it had authorized survey activities for Atlantic Shores from April 20, 2021 to April 19, 2022. So, the two survey activities operated concurrently in much of the same geographical area for over 11 months. This renewal would repeat that overlap between May 10, 2022 and April 18, 2023.

Not considering these survey activities together is not only unscientific, but not consistent with the language in the marine Mammal Protection Act (MMPA). Sections 101(a)(5)(A) and (D) of the MMPA above speak to "U.S. citizens" in the plural, but a "specified geographical region" in the singular. It would seem then that both legally and logically survey activities

conducted at the same time in the same geographical region should be considered as a single ITA review.

Therefore, the NMFS needs to consolidate the Ocean Wind and Atlantic Shores survey activities into a single ITA review.

Doing so would result in a substantial number of level B takes as shown in our February 25th letter just for the Atlantic Shores component. This raises another issue regarding the continued use by NMFS of a 33 percent level B take criterion as "small numbers" and acceptable. That is inconsistent with previous case law and sensible science, particularly for the critically endangered North Atlantic right whale.

Regarding such "small numbers", the NMFS says that when the predicted number of individuals to be Level B taken is less than one-third of the species or stock abundance, the take is considered to be "small numbers". This seems extraordinarily high particularly for a critically endangered whale, and we can find no support for it in the scientific literature.

That one-third number is also inconsistent with the NRDC vs. Evans decision of October 31, 2002, where the Court found that "a definition of "small number" that permits the potential taking of as much as twelve percent of the population of a species is plainly against Congress's intent".

A reasoned presentation of impact ratings based on severity and likelihood of occurrence by Wood, Southall, and Tollit can be found in Appendix H of the Pacific Gas and Electric report titled, Central Coastal California Seismic Imaging project, May 14, 2012. That analysis leads to, in Tables 3.3 and 3.4, a high severity rating for Level B takes greater than 2.5 percent of an ESA-listed regional minimum population. Combined with either a high or medium likelihood of occurrence in Table 3.5 that results in an overall high impact rating.

The final environmental assessment of a Marine Geophysical Survey (MATRIX) by the US Geological Survey in the Northwestern Atlantic Ocean, August, 2018, suggests on page 65 that for rare species, that one percent of the population size should be considered as a take limit.

The allowed level B take percentage of 33 percent is also not consistent mathematically with the criteria of avoiding less than one serious injury, or fatality to the North Atlantic right whale as explained in our February 25th Letter. It is plausible that reactions and circumstances following a level B take could lead to instances of serious injury or fatality. Therefore, the two criteria are not mathematically independent and one needs to be consistent with the other. Allowing a 33.3 percent Level B take of the right whale population, would mean that NMFS would have to demonstrate with very high statistical confidence that no serious injury or fatality will result from all of those takes. But its own conclusions in its impact determination discussions do not have that level of confidence, but rather to only expectations and anticipations.

The NMFS has not provided any science or mathematically-based justification for its one-third number. It is inconsistent with a prior Court decision. It needs to redefine a science-based population percentage for "small numbers" based on the above considerations. In doing so, we suggest that a distinction be made between endangered and critically endangered species, and between less and more plentiful species.

The NMFS should also by now accept the fact that these surveys, especially considered together, will exceed any sensible allowed Level B Take "small numbers" percentage. Rather than struggle with implausible percentage definitions, we would suggest that NMFS implement "least practicable adverse impact" measures to restrict the surveys spatially to avoid overlap in the same time frames, and timewise to avoid any survey activity during the right whale's migration periods as explained in Section P in our February 25th letter.

These are just a few of the very substantial issues that need to be explained and carefully considered. There are others raised in our February 25th letter, The time period for comments here of 15 days is completely unreasonable to do that.

Therefore, in the interest of allowing for a reasoned ITA review, we are requesting that this Notice be reissued with the appropriate noise source data and noise propagation loss factor information, and a 30-day comment period provided for as was the case for the proposed Atlantic Shores renewal.

Sincerely,

Bob Stern

Bob Stern President
Save Long Beach Island, Inc.



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

February 25, 2022

Dear Ms. Harrison,

These comments on the proposed Incidental Take Authorization (ITA) for the Atlantic Shores Offshore Wind Marine Site Characterization Surveys off New Jersey and New York are submitted on behalf of Save Long Beach Island Inc. an organization of over twelve-hundred residents, businesses and visitors to the Island. We are not in general opposed to offshore wind energy but do seek that wherever it is pursued that it be done sensibly and in compliance with applicable environmental law.

In that vein, in our view, this take authorization as proposed does not comply with the requirements of the National Environmental Policy Act (NEPA), the Endangered Species Act (ESA) or the Marine Mammal Protection Act (MMPA) and should not be authorized, as explained below.

A. NEPA Compliance

The NMFS diminishes its NEPA obligations by suggesting that this proposed action warrants a categorical exclusion. Categorical exclusions are reserved for proposals where the environmental impacts are "clearly" insignificant. The analysis in the Federal Register document and the Atlantic Shores application, the one-hundred and fifty references cited for support, the optimistic and scientifically unsupported assumptions in the numerical calculations raised below, the numerous qualitative assumptions made by NMFS of what is likely and unlikely belie that conclusion.

Further, the conclusions regarding the impact to the right whale on page 4224, use the words "are not expected to "," unlikely" and "does not anticipate". That is not the "clearly insignificant" requirement for a NEPA categorical exclusion.

The only thing that is clear from all the material is that it is unclear what the impacts of the proposed survey activity itself will be on marine mammals, and that warrants, at a minimum, the preparation of a NEPA environmental assessment.

In addition, as discussed just below, the survey area proposed, versus all other viable areas, begins the process of prejudicing the selection of future wind energy

areas, which has far-reaching and clearly significant environmental effects. That is not the subject for a categorical exclusion level review.

B. Excessive & Prejudicial Geographical Survey Scope.

Regarding NEPA compliance, the survey areas (Exhibit A) extend far beyond the current lease area and the currently proposed cable corridors to shore (Exhibit B). It extends north of the current lease area but not south. It covers areas close to shore, but not farther out.

The Federal Register (FR) notice states that the purpose of the survey is to conduct high resolution geophysical (HRG) surveys in the lease area and along potential export cable routes (ECRs) to a landfall location in either New York and New Jersey. However, no such cable routes, potential or otherwise, have been identified in the Atlantic Shores proposal in most of the area shown for ECR South and North.

The purpose description goes on to say that the surveys are to support the siting of offshore wind project facilities including wind turbine generators, offshore substations and submarine cables, within the lease area and along export cable routes (the ECR's). We are not aware of any proposal to site additional turbines within the ECR defined areas. If that is being planned then it should have been stated clearly in the Construction and Operations Plan and the Notice of Intent to prepare the EIS, and should be part of the EIS itself proposed action. If such elements are not included in those documents, then survey activities not directly necessary for proposed action in the lease area and the two proposed landfall locations should not be pursued.

Exacerbating this problem further, the survey area is limited to north of the lease area, within approximately 23 miles of shore and close to the primary migration corridor of the North Atlantic right whale. We have documented elsewhere the significant economic impact of visible turbines on the shore economy, as well as the potential for blocking the migration of the whale from operational turbine noise permeating its corridor. No farther out areas are identified for surveying which could avoid these problems. No larger areas south of the lease area are included for study. This amplifies the concerns raised in our recent lawsuit because it prejudices the selection of future wind energy areas where turbines will eventually be placed without proper NEPA review, including public input.

Rather those locations continue to be directed towards certain areas by others without public knowledge. Our contention in the lawsuit is that the selection of wind energy areas is the most environmentally important decision to be made, and it should be preceded and supported by a regional environmental impact statement that considers all viable areas and then selects the appropriate ones. Then survey activity could proceed for the selected areas.

Therefore, pending the outcome of that lawsuit, all ongoing survey activity and proposed activity here that is not directly needed for the publicly proposed scope of the Atlantic Shores project should not be pursued. The geographic scope of the

proposed survey area should be reduced accordingly. If it is not, it also seems improper for a potential future bidder on lease areas to be doing this survey work.

C. Endangered Species Act (ESA) Compliance

Consultation under Section 7 of the ESA is required whenever a discretionary agency action “may affect” any listed species or its critical habitat, and the assessment of whether that low threshold has been satisfied must be based on the “best available” science.

The current FR notice does not mention compliance with the ESA but we assume that the NMFS is relying on the programmatic Biological Assessment and Opinion done in 2013 that it relied on in the prior take authorization. However, accordance to NMFS Technical Guidance a programmatic assessment is not meant to supplant a project specific one, but only to streamline it. In addition, it is only usable if the project stays within the design criteria of the programmatic assessment.

This proposal cannot rely on that programmatic consultation, and the Biological Assessment and Opinion done in 2013 for compliance because it is outside the project and impact envelope presented then.

That programmatic assessment does not cover the two large ECR areas, North and South. It only addresses the two new Jersey lease areas.

It uses outdated and incomplete marine mammal density data. Since 2013 significant new data has become available as discussed in the FR Notice itself on page 4214. The significant increases in density, as much as seven-fold, are shown in Table 11. It also does not show the correlation of its primary migration route of the North Atlantic right whale with the lease area. It does not have data showing the precipitous decline in the right whale population.

It only presents peak source noise levels for certain HRG survey equipment. Based on those peak values the root means square levels are likely to be lower than what is to be used in this FR Notice proposal.

Its estimation of the distance to meet the 180- and 160-dB criteria appears to use noise propagation loss factors even greater than a 20 dB propagation loss factor, which as discussed below is too optimistic and not consistent with “best available science” practice, specifically with the 15 dB factor now used by the NMFS in other recent take authorizations. Based on that, its distances to meet criteria and its Level B take estimates are also low, for the right whale, 29 per year compared to the 95 right whale takes estimated below using the Dura-Spark source level of 203 dB and the 15 dB propagation loss factor, and 340 Level B takes using the 15 dB factor and the revised noise source level for the Dura-Spark 240 unit of 211 dB.

The programmatic assessment assumes on page 165 and 166 that exclusion zones up to 200 meters (m) will be continually and perfectly maintained and no whales will get close enough to experience high noise levels above 180 dB. But, as discussed below, based on realistic noise propagation loss factors, exclusion zones need to be considerably larger than 200 m and perfect visual observation alone is not reliable, especially at night.

It assumes page 166, without citing any current scientific basis that the effects on behavior from exposure to levels above 160 dB "are generally expected" to be temporary, and that whales "have the ability to move away from the sound" which are ambiguous conclusions that cannot be relied on here.

Considering the different area to be surveyed, the different equipment noise source levels, and the new density information and noise loss factor, the proposed survey project is outside the envelope of the Programmatic Biological Assessment and Opinion and those should not be used to support this project. The NMFS should update the programmatic assessment and opinion to account for the cumulative impact of the program underway. If it does not then a project specific Biological Assessment and Biological Opinion are warranted.

D. Marine Mammal protection Act (MMPA) Compliance

The MMPA allows for the incidental "taking" of small numbers of marine mammals if it is found that such taking will have a negligible impact on the species.

"Take" is a term of art meaning, in brief, an action that captures, kills (serious injury, death), or has the potential to injure (level A) a marine mammal, or one that has the potential to disrupt its behavioral pattern (Level B). 16 U.S.C. § 1362(13), (18).

The scope of the Level A and serious injury/death analysis here is insufficient. The take numbers generated under the level B analysis are low and not justified compared to those using current scientific norms for estimating noise propagation loss. The potential for Level A takes from cumulative exposure has not been analyzed. All the pathways from Level B exposure and/or masking of communication to serious injury or death have not been analyzed. In addition, not all practicable mitigation and monitoring measures have been identified. Therefore, the conclusion regarding "negligible impact" is premature.

The problems with the methodology used by NMFS in this proposal are presented first in Sections:

- D. Low Source Noise Level
- E. Inappropriate Noise Propagation Loss Factor
- F. Application of Marine Mammal Densities & Proper Delineation of the Right Whale's Migration Corridor.
- G. Need for a Cumulative Permanent Threshold Shift (PTS) Analysis

- H. Scope of Injury and Fatality Analysis.
- I. Need for a Cumulative Impact Analysis

followed by revised distance to criteria and Level A and B take estimates using appropriate noise source levels and propagation loss factors in Sections:

- J. Revised Distance to Criteria
- K. Revised Level A and B Take Estimates

which are then used then to show why the Negligible Impact Determination is flawed, and needs another look in Sections:

- L. Need for Criteria to Determine Negligible Impact to the right whale.
- M. Flaws in the Negligible Impact Determination
- N. Need for rulemaking and Letters of Authorization

followed by our recommendations in Sections:

- O. Visual Monitoring Limitations
- P. Least Practicable Adverse Impact
- Q. Conclusions & Recommendations

D. Low Source Noise Level.

The reference for the source noise level in Table 2 of 203 dB to represent the Dura-Spark 240 unit is not specified. It appears to be based on another unit, the Dura-Spark UHD, which was found in the 2021 authorization. The footnote says that the level was based on the Sig-electric 820 unit with a power level of 750 joules. But the data in the graph in Appendix A of power output versus energy in the Atlantic Shores application shows an average level of 215 dB at 750 joules for that unit, and the manufacturer presents a typical source level of 226 dB, although it is not clear whether these are root mean square (rms) levels. If they are not those numbers still point towards rms values greater than 203 dB.

The Atlantic Shores Incidental Harassment Authorization application dated December 23, 2019 shows a higher rms level specifically for the Dura-Spark 240 unit of 211.4 dB in Table 2-2. Two other references show that higher rms level. The report titled, Characteristics of Sounds Emitted during High Resolution Marine Geophysical Surveys, BOEM OCS study 2016 -044, Table 10, for 750 joules (per page 4204 of the FR notice based on Atlantic Shores previous experience with the unit) shows a rms source level of 211 dB for the Dura-Spark unit. That number is also found in the December 23, 2019 Jasco Applied Sciences Report on page 3.

As shown in the Tables 1 and 2 below, the difference in source level of 203 dB versus 211 dB has a very significant impact on the distances to meet criteria and the number of Level B takes. Absent justification for the 203 dB level, the 211 dB level is the more preferable one to use to be conservative.

E. Inappropriate Noise Propagation Loss Factor.

The use of a 20 decibel (dB) noise propagation loss factor in Table 6 for all the equipment noise source levels is not appropriate. According to a number of scientific sources, the use of a noise propagation loss coefficient of 20 dB per tenfold increase in distance represents “spherical spreading” and is only appropriate in the “near field” where the calculated horizontal distance is comparable with the water depth.

The 20 dB factor is presented without explanation in equations in various reports provided by Jasco Applied Sciences to Atlantic Shores, e.g., Distances to Acoustic Thresholds corresponding to Level B Harassment for High Resolution Geophysical Sources, December 23, 2019, Document 01875.

From Exhibit B it can be seen that water depth for much of the survey area is less than 20 m. Using a 20-meter water depth, it would be appropriate to use the 20 dB factor only out to a 20 m radius or when the difference between the noise source level and the criteria is less than 26 dB. That is not the case for the Dura-Spark, Geo-Marine, Edgetech 2000-DSS, and the Sub-Bottom Imager units.

For expected horizontal distances greater than the water depth, the use of a “practical spreading” 15 dB loss factor would be appropriate. This approach is used and described well as “common practice” in the NMFS’s own Incidental Take Authorization (ITA) by rulemaking of December 15, 2021 titled, “Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to U.S. Navy Construction at Naval Station Newport in Newport, Rhode Island”, which states,

“SOUND PROPAGATION. Transmission loss (TL) is the decrease in acoustic intensity as an acoustic pressure wave propagates out from a source. TL parameters vary with frequency, temperature, sea conditions, current, source and receiver depth, water depth, water chemistry, and bottom composition and topography. The general formula for underwater TL is:

$$TL = B * \log_{10} (R_1 / R_2),$$

Where

B = transmission loss coefficient (assumed to be 15)

R₁ = the distance of the modeled SPL from the driven pile, and

R₂ = the distance from the driven pile of the initial measurement.

This formula neglects loss due to scattering and absorption, which is assumed to be zero here. The degree to which underwater sound propagates away from a sound source is dependent on a variety of factors, most notably the water bathymetry and presence or absence of reflective or absorptive conditions, including in-water structures and sediments. Spherical spreading occurs in a perfectly unobstructed (free-field) environment not limited by depth or water surface, resulting in a 6 dB reduction in sound level for each doubling of distance from the source ($20 \cdot \log(\text{range})$). Cylindrical spreading occurs in an environment in which sound propagation is bounded by the water surface and sea bottom, resulting in a reduction of 3 dB in sound level for each doubling of distance from the source ($10 \cdot \log(\text{range})$). **As is common practice in coastal waters, here we assume practical spreading (4.5 dB reduction in sound level for each doubling of distance). Practical spreading is a compromise that is often used under conditions where water depth increases as the receiver moves away from the shoreline, resulting in an expected propagation environment that would lie between spherical and cylindrical spreading loss conditions. Practical spreading was used to determine sound propagation for this project**". Emphasis added, also note that a 4.5 dB doubling distance is equivalent to using a 15 dB loss factor, "B", in the equation above.

The same 15 dB factor was approved by NMFS in its proposal to grant a request from its parent agency, the National Oceanic and Atmospheric Administration (NOAA), for authorization to take marine mammals incidental to the NOAA port facility project in Ketchikan, Alaska as recently as December 1, 2021. It was also used to justify the "Taking of Marine Mammals Incidental to Kitty Hawk Wind Marine Site Characterization Surveys, North Carolina and Virginia" on February 8, 2022.

The use of a 20 dB factor is not consistent with the Bureau of Ocean Energy Management's (BOEMs) cited factor of 15 dB for all distances in its report titled, A parametric Analysis and sensitivity study of the acoustic propagation for renewable energy, OCS study, BOEM 2020-011, which also references NMFS's own previous recommendation in 2012 for use of a 15 dB factor.

The use of the 20 dB factor is not consistent with field measurements. A comparison of modeled transmission loss with actual measurements by Thompson et al. in the report titled, Effects of Offshore Wind Farm Noise on Marine Mammals and Fish, dated July 6, 2006, found that for frequencies less than 1000 hertz, the 15 dB loss factor was the best approximation of transmission loss for shallow North Sea and Baltic waters, and other settings comparable to this survey area.

Numerous other studies use the 15 dB factor such as the recent analysis by Stober et al. estimating larger turbine noise source levels titled, How Could Operational Underwater Sound from Future Offshore Wind Turbines Affect Marine Life, March 15, 2021, and the recent study on passive acoustic monitoring (PAM) detection probabilities titled, Pam Guard Quality Assurance Module for Marine Mammal

Detection using Passive Acoustic Monitoring, CSA Ocean sciences Inc., August, 2020.

The use of a 20 dB factor is not consistent with the method used by Tetra Tech Inc. for the Dominion Wind Energy Project as discussed in the report titled, at Underwater Acoustic Modeling Report Virginia Offshore Wind Technology Advancement project, December 2013. In that report Tetra Tech only uses the 20 dB factor out to the water depth distance which as can be seen from Exhibit B for the survey area is often less than 20 m. Tetra Tech then uses the lesser 15 dB factor from there to eight times the water depth, and beyond that uses a 10 dB factor. Using their approach, the distance to meet the 160 dB criteria for the Dura-Spark 240 unit with a 203 dB source level would increase from 141 meters to 354 meters, and with a 211 dB source to 2,234 m.

The use of the 20 dB factor is not consistent with the “worst case” formulas used by an Atlantic Shores noise specialist consultant, Pangea Subsea (Report 04563-1) in the application for incidental harassment authorization of December 15, 2021. Formulas 7 and 8 of that report only use a 20 dB coefficient from 1 m to 3.5 m, and a 10 dB coefficient beyond that. Using those formulas, the distance to reach the 160 dB level for the Dura-Spark 240 unit would be 5,677 m instead of the 141 m being used by NMFS, even just using the lower source level.

Without any explanation it seems almost arbitrary on NMFS’s part to approve the 15 dB factor for the Navy, NOAA and another wind energy company, but bless the use of the 20 dB factor here. It surely is aware of the dramatic effect that factor has on determining ensonified zones and the number of animal takes.

Using the FR Notice vessel speed, survey days and animal densities, and the stated noise source level of 203 dB for the Dura-Spark 240 Unit, the use of the more appropriate 15 dB loss factor would increase the distance to meet the 160 dB criteria from 141 m to 736 m. The now larger Zone of Influence (ZOI) would increase the annual Level B takes from 17 to 95 (See Tables 1 and 2). The use of 211 dB source level would increase the distance to meet 160 dB to 2,512 m and the number of Level B takes to 340 per year.

F. Application of Marine Mammal Densities & Proper Delineation of the Right Whale’s Migration Corridor.

In several places, the FR Notice attempts to minimize the correlation of the primary right whale’s migration corridor with the survey areas. In fact, the two are strongly related.

The survey area goes out about 23 miles. The dominant migration corridor for the right whale on an annual basis extends from approximately 20 to 32 miles offshore as shown in Exhibit C. Therefore, much of the survey area is near or adjacent to that corridor and part of the survey area even intersects with it. This has implications for impairing the migration of the whale which is of course could jeopardize its continuing existence, as discussed further in Section H.

Considering this, the statement on page 4205 extending the right whale migration area beyond the continental shelf and then comparing that huge area to the survey area is misleading.

While there may be some sparse movement farther out in May and June, most of the migration is concentrated closer in, near to, and even intersecting with the survey area in January, February, March, April, and November. See Habitat-based cetacean density models for the U.S. Atlantic and Gulf of Mexico (2015 version), Duke University, Explore Sea map Observations.

The concentration of the right whale's migration near and within the survey area is shown in Exhibit C on an annual basis and in Exhibit D for March. The NMFS large area comparison is therefore a misleading representation of the actual correlation between the migration and the proposed survey activities. It should not be used, especially in the section purporting to justify a "negligible impact" to the whale. Rather, that correlation is essential to understanding the impact of the survey on the right whale, and in estimating Level A and B takes and the impact of masking its communication. The NMFS should have provided at the outset of this analysis maps showing the whales density by month to facilitate that understanding, and delete the misleading large area comparison.

The use of averaged density numbers in the highest season is a step in the right direction towards getting conservative take estimates. However, it is unclear how the density data was used spatially in each area before a density number was averaged by season. It appears to have been averaged across an area, that should be explained.

G. Need for a Cumulative Permanent Threshold Shift (PTS) Analysis

Regarding the PTS discussion, the NMFS cannot blithely assume that an animal approaching a high noise area will simply turn away and quickly leave that area. To get there it has already been subjected to behavioral disruption levels, may be disoriented, and may be experiencing temporary threshold hearing loss.

Keep in mind that the whale does not know where the source is. While it appears that baleen whales have some ability to localize sounds at frequencies of a few hundred hertz, it's not clear that that is the sole driver of how they move (see W. John Richardson, Marine Mammals and Noise, 1995, Section 8.6). In any case it may take them a while to figure it out, and initially they might even move toward the noise source. A whale might even tolerate some noise to stay on its migration course. Such an animal remaining in a high noise area for only an hour could receive a cumulative sound exposure exceeding the PTS hearing loss criteria for impulsive sources of 183 dB.

Apparently one Atlantic Shore's noise consultants, Pangea-subsea, thought enough of the likelihood of a significant cumulative exposure to perform a detailed numerical analysis of a one-hour exposure to its Sub-Bottom Imager (SBI) in

Appendix C of the Atlantic Shores application. A similar analysis was done here for the Dura-Spark 240 unit.

The cumulative source sound energy level (CSEL) for an hour exposure to the Dura-Spark 240 unit was calculated at:

$$\text{CSEL} = \text{SEL} (184 \text{ dB}^*) + 10 \log_{10} (0.4 \text{ sweeps per sec}^* \times 3600 \text{ sec}) = 215.5 \text{ dB},$$

Where SEL = the source energy level.

*Jasco Applied Sciences Report, in the Atlantic Shores incidental take application for 2021, titled Distances to Acoustic Thresholds corresponding to Level A Injury for High Resolution Geophysical Sources, November 4, 2019, Document 001880, Version 2.0.

The result in Table 1 below shows that a one-hour exposure using a more realistic propagation loss factor of 15 dB requires a distance of 147 meters to avoid exceeding the 183 dB criteria.

Using the NMFS formula on page 4215 that gives a Zone of Influence (ZOI) of 16.24 km² per day. Using the FR vessel data, animal densities and the formulas on pages 4215, that larger ZOI would result in estimated take from PTS alone of 19, as shown in Table 2 below. That is clearly a significant number considering the right whale's precarious status, and does not account for serious injury or fatality from the other pathways described in Section H below. Therefore, the cumulative exposure PTS scenario cannot be dismissed, and the NMFS should do a more thorough analysis of it.

H. Scope of Injury and Fatality Analyses

A level A harassment analysis calls for an assessment of the potential to injure a marine mammal or a marine mammal stock in the wild.

A level B analysis calls for an assessment of the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including but not limited to migration, breathing, nursing, feeding, or sheltering.

Assessments where harassment and/or serious injury or death may occur require a rulemaking per CFR 216.105.

Certainly, as discussed above, permanent threshold shift (PTS) hearing loss is one path to serious injury and should be fully assessed. However, there are other paths to harm and injury, for example, from reactions to level B harassment exposures, and from masking of the whale's sound detection and communication abilities.

Such paths include causing right whales to ascend and swim just below the surface where they are more vulnerable to vessel strike, not just from survey vessels, but from other vessels as well. This behavior has in fact been demonstrated experimentally by Nowacek et al. in the paper titled, North Atlantic right Whales ignore ships but respond to alerting stimuli, The Royal Society, may 20, 2003.

Another path to injury involves separation of calves from mothers as a result of masking of their communication from elevated noise levels. Such communication can employ low-amplitude signals susceptible to masking as discussed in the report, Acoustic crypsis in communication by North Atlantic right whale mother–calf pairs on the calving grounds, Susan E. Parks, Dana A. Cusano[†], Sofie M. Van Parijs and Douglas P. Nowacek, Published:09 October 2019.

The potential for such loss of mother/calf communication was also presented in, Acoustic propagation modeling indicates vocal compensation in noise improves communication range for North Atlantic right whales, Jennifer B. Tennessen, Susan E. Parks, June 15, 2016. Using the 150 dB source level there for a whale upcall, and the 15 dB loss factor, mother/calf communications could be blocked out to a distance of 2.1 to 7.2 miles for the Dura-Spark source noise levels of 203 and 222 dB respectively.

Still another path occurs from the disruption of their migration since the primary migration corridor for the right whale is concentrated near and even intersects the survey area. That could occur from reactions to above Level B exposures and/or masking of the whale's sound capabilities.

Using the revised source levels and 15 dB propagation loss factor discussed above, a large number of level B takes, i.e., exposures above 160 dB, is predicted in Table 2. The potential for injury and to impair migration from reactions to those Level B behavioral disruptions needs to be analyzed.

The need to assess the impact on its migration from the masking of the whale's communication is equally important. The whales use sound to navigate along their migration. It also appears that their migration is aided by their capability to communicate with each other along the way.

The right whale's vocalizations are normally at the 125 dB rms level for low background noise, but can rise to 150 dB in the presence of high background noise (Parks et.al., Individual right whales call louder in environmental noise, July 7, 2010.) Using even the high 150 dB communication level, with the lower 203 dB noise source level for the Dura-Spark unit, and the 15 dB propagation loss factor above, the masking of their communication would extend about 2 miles from the survey vessel. Using the 211 dB source number, the masking would extend about 7 miles from the vessel.

The survey area extends about 3 miles into their primary 20 to 32-mile migration corridor, so when the vessel operates at the outer part, the whale's communications could be masked in 40 to 80 percent of its corridor. Vocalizations lower than 150 dB would be masked at greater distances, throughout the entire corridor.

Because these whale vocalizations are less than the 160 dB behavioral criteria, the masking of their sound capabilities extends further into their migration corridor, and

the impacts of that masking on the success or delay of their migration needs to be carefully considered, as it has direct implications on their survival as a species.

We recognize that both the MMPA statute and regulations try hard to separate serious injury and fatality from Level B harassment. But in the real whale world that distinction is not so clean, and lesser exposures can indirectly lead to worse outcomes. The NEPA also demands a full analysis of these reasonably foreseeable real-world paths and perhaps others, particularly in the case of the North Atlantic right whale where impairment, injury or death to only a few animals can spell extinction for the species.

In the Negligible Impact Analysis and Determination section, the NMFS seems to acknowledge the linkage between level B takes and an impact determination. It says that NMFS considers other factors such as the likely nature of any responses and the context of any responses, including migration. But then in that discussion it only qualitatively addresses effects on foraging and mating and calving.

Before it can reach a reasoned conclusion regarding negligible impact to the right whale, the NMFS needs to do an in-depth analysis of all the potential paths to serious injury or death, both directly and from adverse impact on its migration as a whole, from cumulative sound exposure leading to PTS, the adverse reactions from behavioral disruption identified above, and perhaps others, and from the masking of its sound capabilities.

I. Need for a Cumulative impact Assessment.

The MMPA requires that analyses be done based on the best science available. It is not scientifically credible to analyze impacts on a critically endangered whale in a piecemeal, segmented fashion. Likewise, NEPA requires analysis of cumulative impact. We recommend that all these ITA authorizations include a section on the cumulative impact of all ITA's issued and reasonably foreseeable related to the offshore wind program from Maine to Florida so that the complete impact on endangered whales can be seen.

J. Revised Distances to Criteria.

We did calculations using the vessel and density data in the FR, the noise source levels from the FR Notice and other credible sources, and the different transmission loss formulas described above, to show the strong sensitivity involved. The results are presented in Table 1 below.

Table 1, Sensitivity of Radial Criteria Distance to Source Noise Level and Propagation Loss Factor.

Equipment	Criteria	Decibels (rms)		Distance to Criteria (meters)			
		Sound Exposure Level (SEL)	Sound pressure Level (SPL)	20 dB Loss factor	15 dB Loss factor	Tetra Tech	Pangea Subsea
Dura-Spark 240	Level B, 160 dB		203	141	736	354	5,677
Dura-Spark 240	Level B, 160 dB		211 ⁽³⁾	355	2,512	2,234	35,980
Edgetech 2000-DSS	Level B, 160 dB		195	56	215	80	900
Dura-Spark 240	Level A, PTS, 1hour Imp., 183 dB	184 ⁽¹⁾	203	42	147	54	510
SBI	Level A, PTS, 1hour non-imp., 199 dB	177 ⁽²⁾	190				58

(1) Jasco Applied Sciences Report, in the Atlantic Shores incidental take application for 2021, titled Distances to Acoustic Thresholds corresponding to Level A Injury for High Resolution Geophysical Sources, November 4, 2019, Document 001880, Version 2.0.

(2) Atlantic Shores Incidental Harassment Authorization application, December 2021, Appendix C.

(3) From Characteristics of Sounds Emitted During High Resolution Marine Geophysical Surveys, BOEM OCS Study 2016 -044, Table 10, for 750 Joules (per page 4204 of the FR notice based on Atlantic Shores previous experience with the unit), and the Jasco Applied Sciences Report titled Distances to Acoustic Thresholds Corresponding to Level B Injury for High Resolution Geophysical Sources, December 23, 2019 Report, Document 01875, page 3.

The results confirm that for Level B takes, the Dura-Spark 240 unit is the controlling one, but also that a one-hour Level A cumulative exposure scenario is one to be examined, and we recommend that NMFS do such an analysis.

The Table results also demonstrate the significant sensitivity to the two noise source levels (203 and 211 dB) for the Dura-Spark unit that we found in the literature, and absent a clear justification for the lower number, we suggest that NMFS use 211 dB.

The strong sensitivity of distance to criteria from the choice of transmission loss factor and formula is also evident. The 20 dB factor is an optimistic outlier. Using the stated source level of 203 dB for the Dura-Spark 240 unit, and the more appropriate 15 dB loss factor, the radial distance required to meet the 160 dB

criteria would increase from 141 m to 736 m. Using the 15 dB factor and the higher noise source level of 211 dB, that distance would increase to 2,512 m.

We suggest that NFMS either explain what unique circumstances of this survey area warrant exclusive use of a 20 dB factor, or go back and revise its calculations using the more scientifically mainstream 15 dB factor that it has used in other recent take authorizations, including a recent one for its parent organization, NOAA.

K. Revised Level A and B Take Estimates.

The impact of the choice of source noise level and use of the 15 dB versus the 20 dB loss factor on estimated Level A and Level B takes is provided below in Table 2.

Table 2. Estimated Takes

Take Level	Criteria (dB)	Source Level, rms (dB)	Propagation Loss factor (dB)	Distance to Criteria (meters)	ZOI (km ² per day)	Estimated Takes per year
A	183, one hour, cumulative	184 SEL	15	147	16.2	19
B	160	203	20	141	15.6	17
B	160	203	15	736	82.7	95
B	160	211	15	2,512	296	340

As shown, the use of an unsupported 20 dB loss factor results in a low, Level B distance to criteria and take number. Using the stated source level of 203 dB for the Dura-Spark 240 unit, the use of a more appropriate 15 dB noise propagation loss factor would increase the number of level B takes from 17 to 95. The use of a 211 dB noise source level for the Dura-Spark 240 unit and a 15 dB propagation loss factor would increase the number of level B takes from 17 to 340.

L. Need for Criteria to Determine Negligible Impact to the right whale.

Before moving to a Negligible Impact Determination, The NMFS should provide a clear, definitive criteria to avoid jeopardizing the existence of the right whale, or causing a non-negligible impact to it, including a number for “small numbers”.

The numbers of North Atlantic right whales are already very low at 367 animals and in steep decline- Exhibit D. There are less than 94 females of reproductive age left. The NMFS 2020 stock assessment report for the North Atlantic right whale shows an average per female productivity rate of 0.06 for the years 2013 to 2017, Figure 4. It also shows in Figure 2a an average female population of 180, leading to 11 average births per year. Table 2 of that report shows estimated human-caused fatalities at an average of 18.6 per year for that period.

According to the International Fund for Animal Welfare in its report titled, Critically Endangered North Atlantic right whales Show Dramatic Decline and are at Risk of Extinction, November 26, 2020, over the past five years from 2016 through 2020, 17 whales died on average per year from human actions. During that same period 7 whales were born on average per year.

With a human caused death rate (not including natural mortality) about twice the birth rate and a net loss of 8 to 10 whales per year, current mitigating and recovery measures are not sufficient to protect the whale, and any additional serious injury or fatality would constitute a non-negligible impact.

Supporting that, in District 4 Lodge of the International Association of Machinists v. Janet Coit, NMFS, Case No. 21-1874, the following statement appears "In 2019, the Agency (NMFS) estimated there were no more than 368 right whales left in the ocean, and the Agency has determined that no more than eight right whales, on average, can be "taken" every ten years if they are to reach their optimum sustainable population. In other words, even one additional death a year increases the odds that the right whale will go extinct".

Table 3 in the FR notice gives a number of 0.7 for the potential biological removal of the North Atlantic right whale. That is defined as the maximum number of animals not including natural mortalities that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimal sustainable population size.

Therefore, the only sensible and scientifically credible criterion for the NMFS to adopt for the right whale is one of zero instance of fatality or serious injury from survey noise, and meet that strict criterion with high statistical confidence. For level B takes alone that would mean higher than 99 percent confidence (94/95 takes) even using the lower source noise for the Dura-Spark unit. That is not achieved in the proposal here as discussed below.

M. Flaws in the Negligible Impact Determination

Based on the above higher revised take numbers in Table 2, and the need to analyze the other potential pathways to serious injury or death discussed in Section H, the current negligible impact determination regarding the right whale is flawed because;

It doesn't go far enough. As discussed just above, with respect to the right whale, almost near certainty in a prediction of not one case of serious harm or fatality is required to find a negligible population impact to the species. But throughout the impact section discussion, including that for the right whale, NMFS only reaches qualified supporting conclusions using words and phrases such as "does not anticipate", "unlikely", "expects", or "is not expected to occur ". Statements with those qualifiers do not meet the high confidence criteria of Section L.

Despite the qualifiers throughout, at the very end, the qualifiers are removed and the NMFS concludes with certainty that “any takes that occur *would not result* in population level impacts”. That final conclusion does not logically flow from the prior ones.

Regarding level B takes. On page 4210, it properly states that behavioral disturbance may include a variety of effects ranging from subtle changes of behavior to more sustained and or potentially severe reactions. But it never says what all the more sustained or potentially severe reactions might be, so it is not possible to know whether the FR notice has addressed all of them.

It dismisses Level A harassment and serious injury from PTS when in fact a plausible case can be made for the likelihood of 19 cases of PTS occurring as discussed in Section G and shown in Table 2.

It assumes that the number of level B takes is small. But that number was based on a low noise source level for the Dura-Spark unit, and a scientifically unsupported high propagation loss factor of 20 dB. Using the 15 dB loss factor the number of Level B takes jumps from 17 to 95 to 340 respectively, depending on the 203 versus 211 dB source noise level.

The number of Level B takes is now large, and the determination did not assess all of the pathways through which such a large number of level B exposures could indirectly result in serious injury and/or fatality to a single whale.

Regarding the impact on the migration itself, the FR Notice states on page 4223 that NMFS considers the context of responses, including migration, to determine impact, but there is no subsequent analysis or conclusion regarding impact on migration, through reaction to Level B exposures or masking of the whale’s sound capabilities. A recent in-depth review of behavior response studies, A systematic review on the behavioural responses of wild marine mammals to noise: The disparity between science and policy, November, 2016, identified a number of studies specifically associated with whale traveling, migrating, and directional swimming. NMFS should review those studies for applicability here and present the results.

It is also based on a number of other incorrect promises:

It implies that the impact of noise is less important by stating that vessel strikes and entanglements are the primary cause of death for the majority of road whales. That is true but it misses the point, that given that existing risk, no further risk should be presented to the whale to preserve it.

It relies on the misleading comparison described in section F above comparing the spacial extent of the sound produced from the survey to the huge area extending out on the continental shelf, without showing the relatively narrow (approximately 12 miles) dominant migration corridor for the whale, which is concentrated near the survey area, and in some places intersects with it.

If attempts to amplify that comparison by stating that the spacial extent of the sound produced by the survey would be very small, presumably referring to the 141 m radius. But as seen above that only came about by using an inappropriate sound propagation factor. Using a more realistic factor of 15 dB which the NMFS has used in other recent take authorizations, and even the lower source level, the radial distance to the Level B criteria increases five-fold.

It then goes on to say that “no ship strike is expected to occur during Atlantic Shore’s proposed activities”, based on its “vessel avoidance measures” and the low 141 m radius. But the 141 m radius has been discounted here, there is no mention of how visual observations will prevent vessel strike at night, and there was no consideration of the experimental results from noise stimuli observed by Nowacek et al., of right whales ascending and swimming just below the surface, increasing their risk of vessel strike. The latter is a particularly glaring omission since the Coast Guard has proposed to use the migration corridor area as a deep draft vessel lane.

It says that NMFSs expects that all potential level B takes would be in the form of temporary avoidance of the area. But in a migratory setting where the whale is not returning to the same area, it’s not even clear with that means.

It then says that “Level A harassment is not expected due to the small PTS zones associated with HRG equipment types proposed for use”. But the NMFS apparently never did a cumulative exposure analysis with a proper propagation loss factor for the Dura-Spark unit. The analysis above in Section G suggest that PTS Level A takes are plausible.

It discounts the impact of a “small” number of Level B takes, but again relying on the 141 m zone based on the inappropriate 20 dB propagation factor. It says on page 4225 that when the predicted number of individuals to be taken is less than one-third of the species abundance that is considered to be “small numbers”. That percentage hardly seems small to us when considering a critically endangered whale. Nevertheless, from Table 10 the stock number assumed is 367 and one-third of that is 121 takes. With the use of the 15 dB loss factor and even the low noise source level of 203 dB we estimate 95 Level B takes using the FR vessel survey and density data. With the higher noise source level for the Dura-Spark unit and potential PTS cumulative exposure takes the 121 number will be exceeded. With just the 211 dB source number the 340 predicted Level B takes alone would exceed the one-third criteria. So, it’s not clear that even a high one-third criteria for small numbers will be met here.

It assumes that above level B exposures will be a short duration and not repeated by the same animal. But that is not clear because the number of takes is now large and the whales and the survey vessels could be moving at approximately the same speed in the same direction, and encounter each other again.

It provides no assessment of the impact of communication masking on the potential separation of mothers and calves, or on the whale’s migration as a whole.

Based on the low distance to criteria and the low take numbers and questionable premises, and without analysis of all pathways to serious injury or fatality, it concludes that no population impacts will occur. But with a realistic noise propagation factor of 15 dB and even the lower 203 dB source level, the 95 estimated level B takes is now quite large, i.e., 26% of the right whale population.

With such large Level B numbers, it is plausible that some could result in reactions resulting in serious injury or even fatality. Cumulative PTS occurrences are also plausible. The whale's essential migration could also be adversely impacted by those occurrences or the masking of its sound capabilities.

There seems to be a logical inconsistency in the document regarding level B takes. On page 4210, it properly states that behavioral disturbance may include a variety of effects ranging from subtle changes of behavior to more sustained and or potentially severe reactions. It properly states that behavioral responses are highly variable, context specific, and difficult to predict. It properly points out that behavior disruption can also occur through masking of the whale's sound capabilities. Yet when it comes to the negligible impact discussion regarding the right whale on page 4224 from level B harassment, all of that potential severity, complexity and variability is dispensed with in a short discussion.

The NMFS needs to go back and do an in-depth (see, e.g., An interim framework for assessing the population consequences of disturbance, Stephanie L. King, et.al., June 30, 2015), preferably numerical analysis of the potential for serious injury or death from PTS hearing loss, reactions from the now higher above Level B exposures, and from masking of the whale's sound capabilities, not just rely on conclusory phrases and suppositions, without specific scientific support for them.

N. Need for a Rulemaking and Letters of Authorization

The MMPA, through the implementing rule CFR 216.105 requires a rulemaking "for allowed activities that may result in incidental takings of small number of marine mammals by harassment, serious injury, death, or a combination thereof". Serious injury is defined in 50 CFR 229.2 as "any injury that would likely result in mortality".

The analysis in Section G above resulting in the potential for 19 instances of PTS hearing loss constitutes serious injury. The large number of level B takes shown in Table 2 using the appropriate propagation loss factor of 15 dB, coupled with the other potential paths to harm identified in section H makes it plausible that other serious injury and/or fatalities can occur from such exposures. The impact of noise signal masking on the whale's sound capabilities and its migration needs a hard look.

Therefore, NMFSs needs to prepare a rulemaking if it is to justify marine mammal taking for this proposed survey activity.

O. Visual Monitoring Limitations

The limitations on visual detection of marine mammals has been well documented, e.g., see the World Wildlife Federation Report titled Reducing Impacts of Noise from Human Activities on Cetaceans, 2014, Section 5.

The proposal here for visual monitoring only would seem especially unreliable given that survey activities are to continue year-round and at night, and now that the need for desired exclusion zones much greater than 500 m has been identified.

The monitoring proposal also seems lax compared to the agreements that we understand was reached with respect to the Vineyard Wind project. There geophysical surveys were prohibited during certain periods of the year with high whale presence, and a passive acoustic monitoring (PAM) system was required to augment visual observation.

A two-year comparison of visual and acoustic detection in the study titled, A Comparison of Visual and Acoustic Autonomous Monitoring Methods for Investigating Temporal Variation in Occurrence of Southern Right Whales dated November, 2017, showed that a PAM system was six times more effective in identifying whale presence than visual methods.

Therefore a PAM system should be implemented here as well. In doing so however it should be recognized that the PAM systems are not perfect either, and are highly dependent on the distance from the mammal source to the receiver, and on background noise. For example, one study titled PamGuard Quality Assurance Module for Marine Mammal Detection using Passive Acoustic Monitoring dated August 2020 found that (Figure 10) the mean probability of right whale detection varied from 0.9 to 0.5 at 500 m for low and high background noise conditions respectively. At 1500 m those probabilities drop to from 0.5 to 0.03, and are subject to wide statistical variation.

Given the need for the larger than 500 m clearance zone that was identified above in Table 1, this will require a robust PAM system consisting of additional survey vessels removed from the geophysical survey source vessel to avoid masking, and mono-buoys placed strategically.

P. Least Practicable Adverse Impact

The proposed ITA does not put forth all the “means of affecting the least practicable adverse impact” as required by the MMPA. We recommend the following measures be included:

(1) Pending resolution of the 203 dB versus 211 dB noise source level for the Dura-Spark 240 unit, the desired exclusion zone should be set at the higher 2500 m, consistent with the use of the 15 dB loss factor in Table 1.

- (2) The survey area be significantly reduced to only that necessary to proceed with the currently proposed Atlantic Shores project
- (3) A robust passive acoustic monitoring system (PAM) be deployed to augment human visual observation,
- (4) Survey activity be prohibited at night unless a robust PAM system is employed,
- (5) Survey activity be prohibited during the primary right whale migration months of January, February, March, April and November, and
- (6) to address vessel strike and speed, a new Annual Seasonal Management Area (SMA) be established in and adjacent to the survey area.

Q. Conclusions & Recommendations

Regarding the right whale, using the appropriate 15 dB noise propagation loss factor, a significant number of takes is predicted, as well as masking of its sound capabilities in large parts of its primary migration corridor.

To reach a negligible impact conclusion, the NMFS would have to demonstrate with very high confidence that not a single serious injury or fatality will result from direct cumulative PTS exposure, reactions to the now large number of Level B takes or from masking.

To attempt to do that would require a much more in-depth analysis of all the potential paths to serious injury or death, both directly and from adverse impact on the whale's migration as a whole, from cumulative sound exposure leading to PTS, the potential adverse reactions from behavioral disruption identified above in Section H, and perhaps others, and from the masking of the whale's sound capabilities.

However, given all the uncertainties and unknowns in the whale's responses and behavior, it's unlikely that strict conclusion could be reached with scientific credibility.

Therefore, the survey as proposed should not be authorized, but rather modified.

The only credible way to deal with this problem is through a change in the survey itself, to keep vessels and whales far away from each other, both spatially and timewise, through the measures in Section P.

At a minimum, an environmental assessment should be prepared to meet the requirements of the NEPA.

Regarding the ESA, the current proposal is outside the design envelope of the Programmatic Biological Assessment and Biological Opinion prepared in 2013. An update of the programmatic assessment and opinion or a project specific assessment and opinion is required.

Regarding the MMPA, given the potential for serious injury and fatality, the current proposal should proceed through a rulemaking as required by CFR 216.105.

Taking a step away from the criteria, formulas and uncertain human judgements, we would just offer that performing high intensity sound measurements in and near the primary migration corridor of a critically endangered whale, and during its primary migration periods, is not be a sensible thing for the federal government to authorize.

We hope that our effort to provide detailed, substantive comments and recommendations will give NMFS pause to reflect on the approach being used, not just for determining the impact from this take authorization, but also on the cumulative impact from all offshore wind program-related authorizations.

If there are any questions regarding these comments, please email them to drbob232@gmail.com or call on 917 952-5016.

Sincerely,

Bob Stern

Bob Stern, Ph.D., President
Save Long Beach Island, Inc.

Exhibit A. Proposed Survey Area

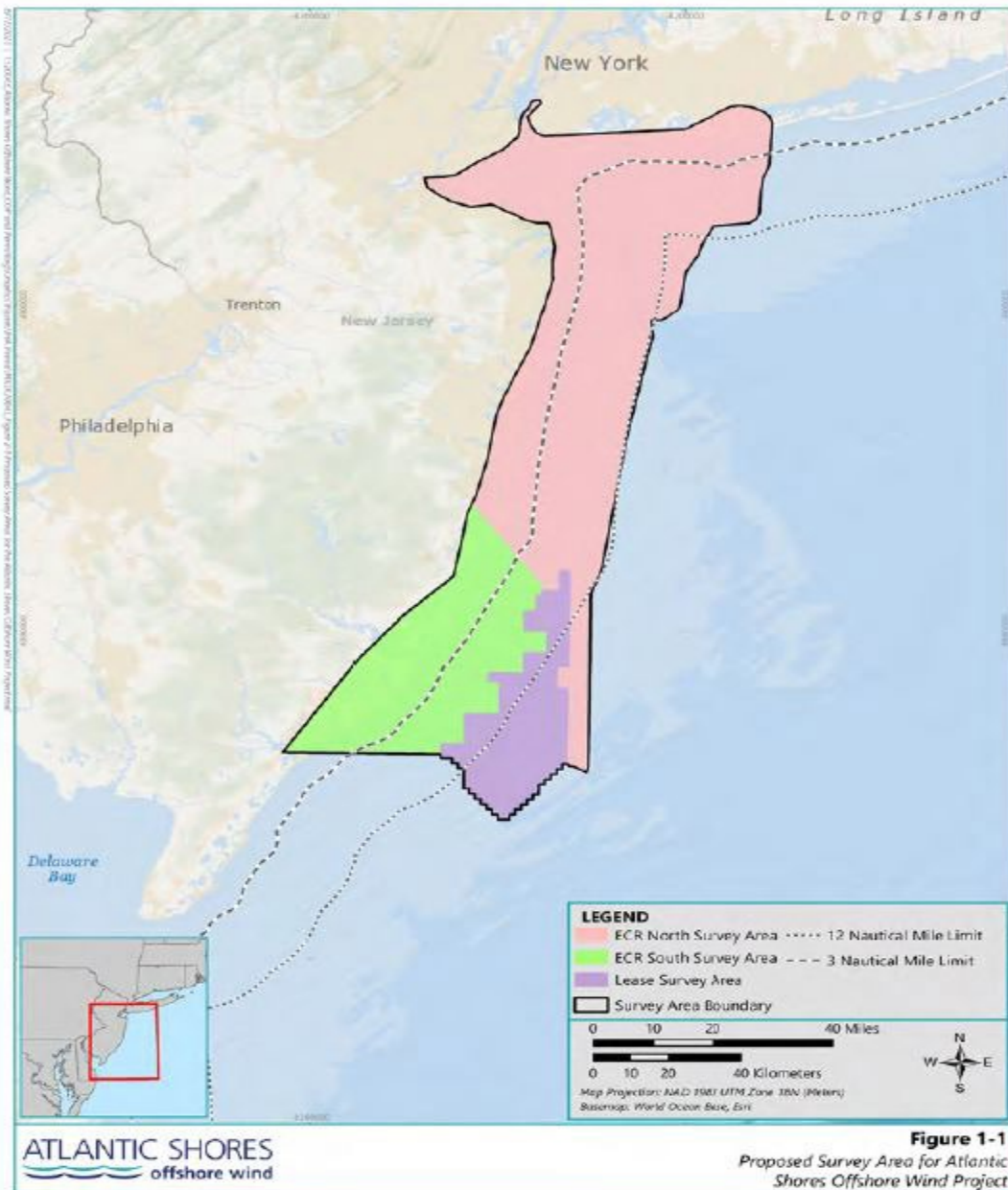


Exhibit B. Lease Area & Proposed Cable Routes

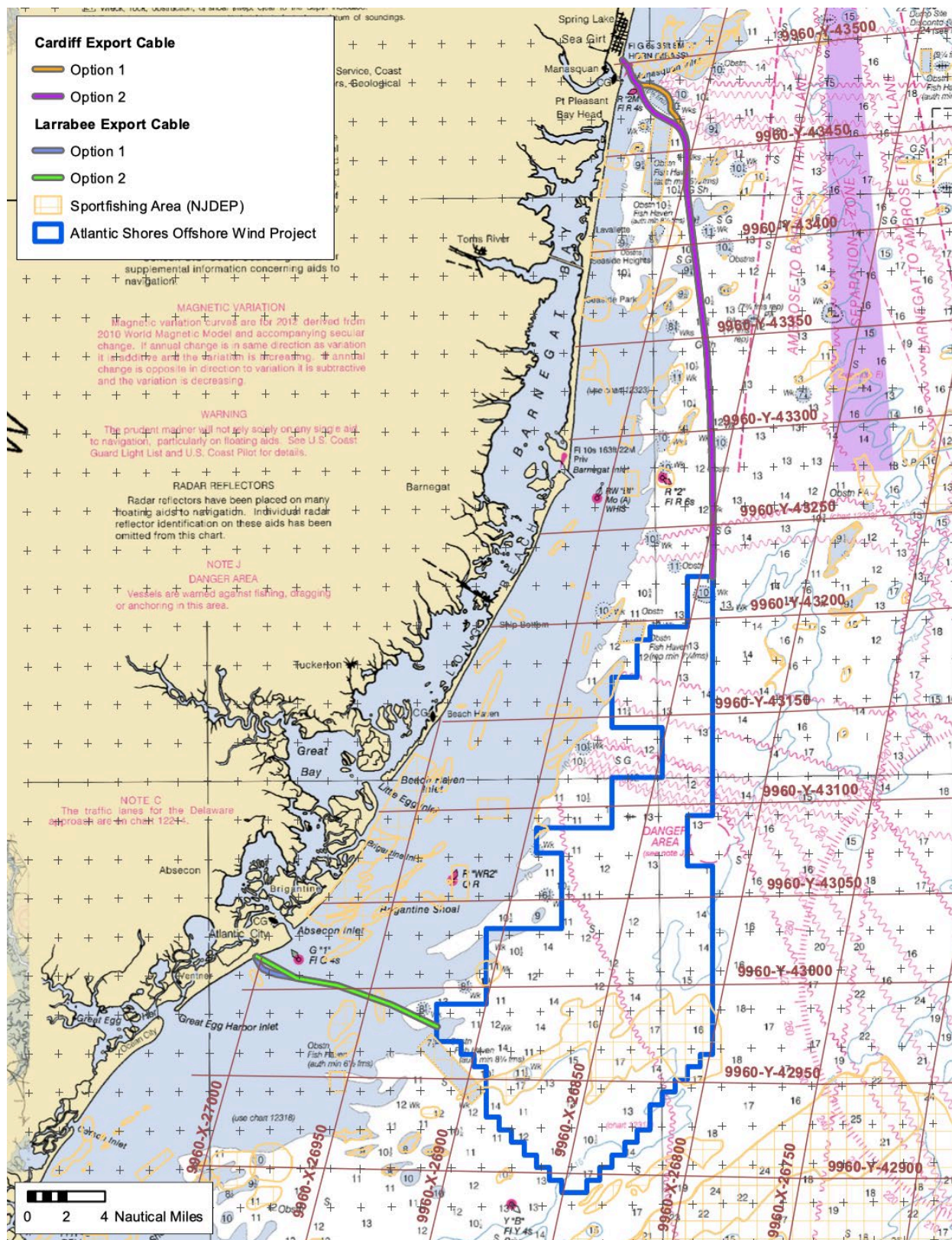
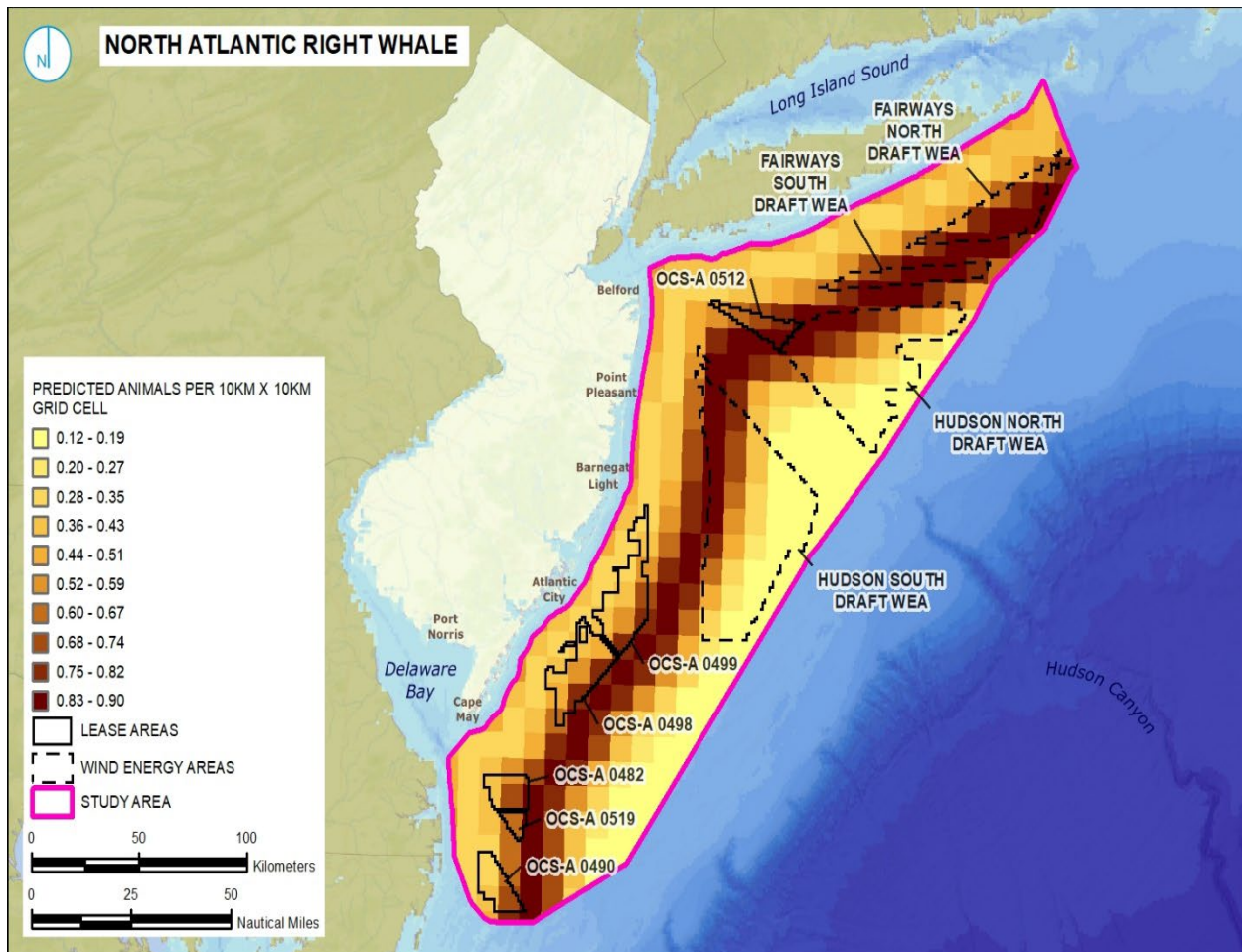


Exhibit C. Right Whale Migration Density-Annual Basis



Key Points: The annual abundance of the NARW is highest in the study area at depth contours between 30 and 40 meters, at up to 0.9 animals per 100 km². Areas that are shallower (as well as much deeper) than this range show less relative density, including significant portions of existing wind lease areas and WEAs. The NARW high abundance areas are present in all lease areas and draft WEAs but do not exceed 0.9 individuals per 100 km².

Source, NJ Offshore Wind Strategic Plan, Natural Resource Technical Appendix, Figure 21.

Exhibit D. Right Whale Migration Density for March

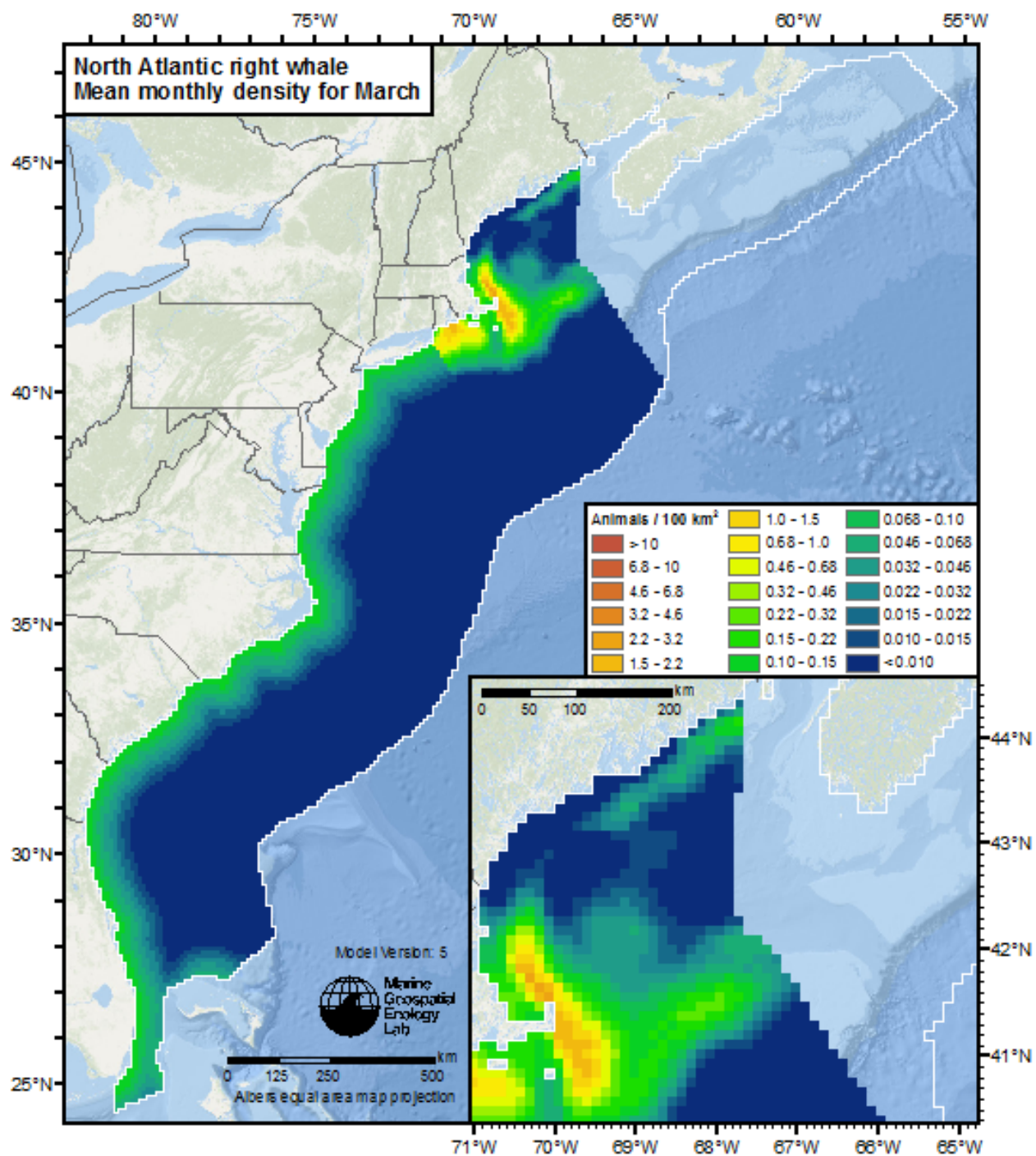
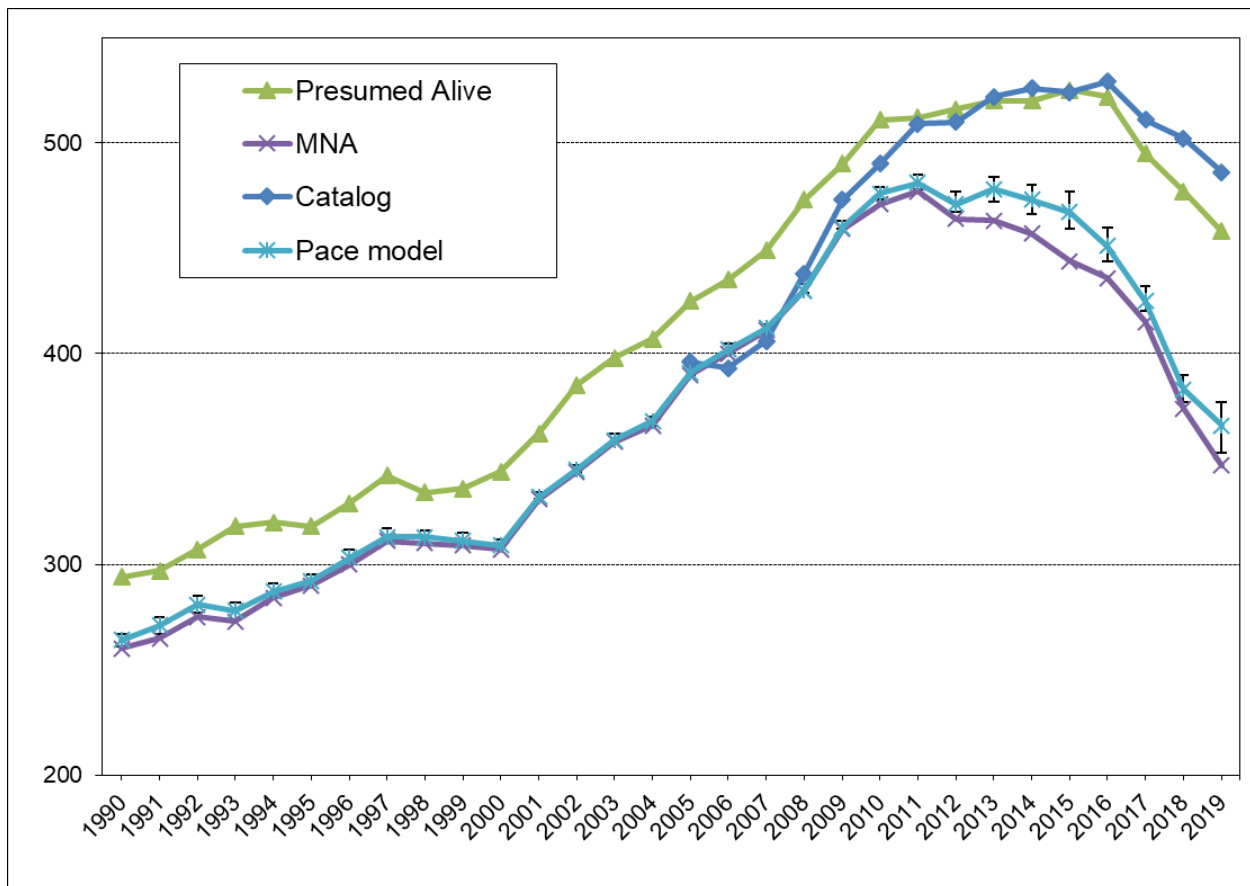


Exhibit E. North Atlantic Right Whale Population Trend



Source, North Atlantic Right Whale Consortium 2020 Annual Report Card Pettis, H.M. 1, Pace, R.M. III2, Hamilton, P.K.1. MNA=minimum number alive.