



**A Petition to Revise the Critical Habitat Designation for the North Atlantic  
Right Whale (*Eubalaena glacialis*) Under the  
Endangered Species Act  
To Include Its Primary Historical Migration Corridor  
And Other Actions**

***"It Makes Sense"***



**Examination of the Historical Migration Corridor of the  
North Atlantic Right Whale in the Atlantic**

**Save Long Beach Island, Inc.  
An Organization of Concerned Citizens**

*Petitioners*

March 31, 2025

## NOTICE OF PETITION

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Save Long Beach Island, Inc. (Save LBI) is a non-profit, public interest environmental organization, dedicated to the protection of native species and their habitats through science, policy and environmental law. Save LBI has more than 10,000 members and more than 100,000 online supporters through shared groups. Save LBI, its members and supporters are concerned with the conservation of endangered species, including the North Atlantic right whale, and the effective implementation of the Endangered Species Act.

*Denise Boccia*

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Denise Boccia, Save LBI Board

March 31, 2025

*Bob Stern*

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Dr. Bob Stern, Save LBI, President

March 31, 2025

## ACTIONS REQUESTED

### **Background**

The NARW is in a critically endangered status and must migrate annually up-and-down the East Coast from feeding to calving grounds in order to survive. All efforts to date have not reversed its decline. It now faces a new threat, the noise generated from the operation of offshore wind turbines within and adjacent to its migratory paths that we show in our supporting reports will likely exceed the risks from vessel strikes and fishing gear entanglements combined.

Two critical habitat areas have been established for the NARW, one off of New England primarily for feeding purposes, and one off of Georgia and South Carolina primarily for calving purposes. But no migration critical habitat in between has been designated to provide the whale with the protections it needs to migrate from one existing critical habitat to the other, a “missing link” which obviously is equally or perhaps even more essential to its survival.

**Therefore, this petition asks that your agencies to do the following:**

**1. To Designate a Migratory Critical Habitat for the North Atlantic right whale (NARW).** In accordance with Section 4(b)(2) of the Endangered Species Act, we ask you to designate the proposed migration corridor along the East Coast for the critically endangered North Atlantic right whale (NARW) as a critical habitat. This will afford additional protection to the animal as a significant number of right whales have died within the area proposed and no measures to date have stemmed its decline (Enclosure 1).

**2. To Prohibit the Placement Offshore Wind Projects in that Critical Migratory Habitat.** At the same time, the petition and our companion Technical Report of February 15, 2025 titled the Impact of Operational Turbine Noise on the Essential Migration of the NARW (Enclosure 2 ) clearly show that the operational turbine noise from the newer, larger offshore wind turbine complexes of today is quite high and would degrade the migratory habitat to the point where it would at a minimum seriously impair, and potentially block, the essential migration of the whale. This particularly affects the female whales of reproductive capability and would jeopardize the species survival. Consequently, as an essential component of such a designation, we ask that modern wind complexes be excluded from that migratory critical habitat as well as in a surrounding buffer zone to address the elevated noise transmitted beyond the perimeter of the wind complex.

**3. To, pending your review of this petition, pause any foundation or turbine placement in any wind turbine complex within the proposed migratory critical habitat.**

The emplacement of these new large turbines and their foundations into the seabed may be irreversible. The current Outer Continental Shelf (OCS) regulations allow for them to be left or toppled in place. For the approved projects in the migratory critical habitat facing such

emplacement, no documents have been put forward demonstrating the technical feasibility of removing the towers, blades and a section of the foundation, and processing such onshore. No onshore industrial processing capability has been identified that could do such processing. No contractual arrangements or other firm commitments have been made by the companies to do the removal and processing. No cost estimates of full removal and processing have been put forward. No financial assurance is now being provided to fund such an effort. Given that, should you decide that such wind complexes should not be placed in the migratory critical habitat there may be no recourse for these projects but to leave constructed turbines in place in a non-operational state. This would pose very long-term risks to vessel navigation and sea life, provide no electric power, and serve as an epic governmental embarrassment for generations. Consequently a pause in construction is called for.

#### **4. To Establish a Fund to Defray any Future Costs that may occur due to the Migratory Critical Habitat Designation.**

We do not expect this critical habitat designation to trigger any actions impacting other uses of the sea, such as fishing and vessel navigation. As stated by NOAA in its critical habitat designations of 2016, fishing gear -and presumably other- restrictions are outside the scope of a NOAA critical habitat designation rulemaking, and are pursued separately. Any measures there still have to be evaluated independently as to their need, cost and effectiveness.

Regarding any future measures and their costs we would offer that the NARW is a national resource and treasure and that any such costs should therefore be borne out of general tax revenues. There we ask that NOAA seek funding for and include in the rulemaking provisions for determining and providing compensation to fishery or other interests for any additional costs incurred as a result of the migratory critical habitat designation.

#### **5. To Take Other Actions Consistent with the Above Including Lease Cancellations (Enclosure 3 ) and Reinitiation of the ESA Section 7(a)(2) consultation process based on the Critical Habitat Designation.**

Certain NARW protective actions would, in our view logically follow for wind turbine complexes in or near the designated migration corridor, including, in descending order of effectiveness: (1) cancellation of leased areas (2) reinitiation of the ESA Section 7(a)(2) consultation process for projects that may affect the viability of the corridor, and (3) Construction and Operations Plan (COP) and environmental impact statement (EIS) revision, as described below.

#### **6. To Reinitiate ESA Section 7(a) Consultations Now Based on Systemic Underestimates in Take Calculations for the Atlantic Shores South Project and for Other projects where the Same Calculation Methodology was Used.**

Section 50CFR§402.16 (Reinitiation of Consultation) requires federal agencies to reinitiate formal ESA Section 7(a) consultation “if new information reveals effects of the action that were not previously considered”.

Our independent analysis in **Enclosure 4** for the Atlantic Shores South project of the Level A and B take estimates for this project shows a systemic and scientifically unsupported underestimation of impact at all steps of the calculation for vessel surveys and pile driving. Take numbers for operational noise were not calculated at all. This results in Take numbers that have little relevance to what the whales will actually experience, and warrants a review of the calculations that were done and relied upon for the Biological Opinion approval. The same underestimates occur for other projects as the method of calculation has been the same throughout.

Affording the whale these additional protections is essential to its survival and we ask that you proceed with a rulemaking to do all four. We believe that the petition and the operational noise analysis contains the substantial scientific information to support such an effort.

## **7. To Temporarily Suspend all High Resolution Geophysical (HRF) Vessel Surveying in the proposed Migration Critical Habitat.**

The Save LBI Report of July, 2024 on the “Impact of Vessel Survey Noise on Marine Mammals” shows that the Take estimates for the HRG surveys have been significantly underestimated. The range for level B disturbance for the Dura Spark unit (and other comparable sparker devices) extends 1.6 miles from the vessel, not 0.1 miles that the agency has relied on for its Harassment Authorizations. A straightforward calculation of the noise exposure to a whale traveling parallel to a vessel shows that hearing loss can occur, whereas the Agency dismisses this outright. The Save LBI report also shows that the recent unprecedented number of whale deaths along the Jersey Shore were correlated with the time and location of a number of survey vessels. Therefore, pending a review of this petition and of those Take estimates as recommended in item 6 above, we ask NOAA take the common sense step of temporarily suspending all vessel surveying in the proposed migration critical habitat, whether from projects sited in or out of the proposed habitat, during the months of December through April when the right whale is migrating.

### **1. The Migratory Critical Habitat**

This document compiles research from several sources regarding the designation of the primary historical migration corridor of the North Atlantic Right Whale and the cumulative impacts of development in wind energy areas off the US mid-Atlantic. The data provided reflects years of research by others along with scientific papers and documents provided by Save LBI. ***Congressional Research Services reports, as works of the United States Government, are not subject to copyright protection in the United States. Any CRS report may be reproduced and distributed in its entirety without permission from CRS.***

This petition seeks to revise the Endangered and Threatened Species; Critical Habitat for Endangered North Atlantic Right Whale (“NARW”) - 50 CFR Part 226 [Docket No. 100217099-5999-03] RIN 0648-AY54 (M1) for the eastern population of the North Atlantic right whale (NARW) — one of the most endangered whale populations in the world today.

Specifically, this petition seeks to logically unite two existing critical habitat units (Northeast and Southeast) to include the whale’s known “historical migratory corridor” and requests consideration to put a hold on the construction and operation of the Bureau of Ocean Energy Management (BOEM) Wind Energy Areas (WEA) that overlap with geographical areas occupied by the NARW to protect the essential features necessary for migration within the primary migratory corridor.

**The establishment of a safe migration corridor for the NARW and the prohibition of wind complexes within it are essential to its survival.** No other measures, including fishing gear and vessel speed restrictions, have been effective in stemming its decline. Establishing a wind turbine free zone along the East Coast will also preserve important ocean uses such as navigation and defense, and the seafood, maritime and tourism industries.

Save LBI submits this petition pursuant to section 4 of the Endangered Species Act (ESA),(ESA; P.L. 93-205, 87 Stat. 884, 16 U.S.C. §§1531-1544) (M2) its implementing regulations, and the Administrative Procedures Act (APA) 16 U.S.C. 1533(b)(3)(D); 5 U.S.C. 553(e); 50 C.F.R. 424.14(a) (M3).

The federal agencies cannot ignore the plain language of the Endangered Species Act (“ESA”) not to exclude from their Section 7 analysis, 16 U.S.C. 1536, any known and available science regarding the impacts on the endangered species, NARW, resulting from federal actions if the law requires the conservation of the NARW to protect from extinction. **(Exhibit B: Language in the Endangered Species Act)**

**The 2016 Federal Register; Endangered and Threatened Species; Proposed Endangered Status for NARWs (M4) , noted** that “based on an analysis of the best scientific and commercial data available and after taking into consideration current population trends and abundance, demographic risk factors affecting the continued survival of the species, and ongoing conservation efforts, **it is clear that the North Atlantic right whale is in danger of extinction throughout its range** because of: (1) over utilization for commercial, recreational scientific, or educational purposes; (2) the inadequacy of existing regulatory mechanisms; and (3) other natural and manmade factors affecting its continued existence.”

As [explained](#) by NOAA Fisheries, “critical habitat does not create a closed area (M5)...” In a 1995 Supreme Court decision -- *Babbitt v. Sweet Home*, the high court decided that the definition of the term “harm” in the Endangered Species Act, goes beyond direct harm and includes changes in habitat that can cause harm. “Also, [the Court held](#) that the intent of the Act to

give broad protection to endangered species must include even actions that may have minimal or unforeseeable effects.” (M6)

As described in this petition, which utilizes the best available science published, the proposed designation is prudent, determinable, and warranted. This petition clearly outlines that a critical migratory habitat was discussed from 2009-2015 by National Marine Fisheries Services (NMFS) at length [Docket No. 100217099-5999-03]. (M1) Over the past decade, additional information has become available showing that the requested designation is the next logical step to help increase the species population, allowing it to remain viable.

The Endangered Species Act (ESA) is clear that the purpose is to not only prevent extinction, but to also encourage recovery. Under the ESA, it is the policy of Congress that all federal agencies shall seek to conserve threatened and endangered species, use their authorities in furtherance of the ESA, and cooperate with state and local agencies to resolve water resource issues in concert with conserving endangered species. Its legislative history establishes that when faced with doubt, the benefit of the doubt should go to the species. In doing so it clearly embraces the precautionary principle. The ultimate goal of the ESA is for a species to reach the point where additional protections of the ESA are no longer needed. To that end, it is imperative that the NMFS expand the NARW critical habitat, and include migratory connectors.

NARW researchers and scientists share a core view that an effective strategy must be grounded in simplicity, parity, clarity, certainty and low-risk, proven measures. The right whale’s precarious status (critical and declining precipitously) does not leave room for experimentation or chance. Designation of critical habitat raises the public’s awareness that there are special considerations that may need to be taken within the area. **Designation of critical habitat in defined areas will help ensure that the habitat is not degraded**, or, particularly in the case of the northeastern areas, that food sources are not appreciably degraded by indirect activities.

In October 2024, NOAA Fisheries estimated that there were 370 (+11 / -12) individual North Atlantic right whales alive during 2023. NOAA website states, “North Atlantic right whales primarily occur in Atlantic coastal waters on the continental shelf, although they also are known to travel far offshore, over deep water. **Their habitat and migration routes are close to major ports along the Atlantic coastline that often overlap with shipping lanes, making right whales vulnerable to collisions with vessels.** (M7)

Ocean noise from human activities such as shipping, boating, construction, and energy exploration and development has increased in the Northwest Atlantic. **Noise from these activities can interrupt the normal behavior of right whales and interfere with their communication. It may also reduce their ability to detect and avoid predators and human hazards, navigate, identify physical surroundings, find food, and find mates.**” Based on Save LBI’s research of operational noise from offshore wind turbines (Section 5.2), we agree that right whales’ normal behaviors will be adversely affected.

The proposed offshore wind energy development off the US Atlantic Ocean **adds a whole new layer of hazards to the marine mammal habitat**, including that of the endangered North Atlantic right whale which crosses through **several wind energy areas from Maine to North Carolina during its historical migration**. The cumulative wind turbine construction and operational noises of these proposed areas off the Atlantic would significantly impact the chances of survival for the species.

Based on years of NARW density studies; Roberts et al. (v-11, 2016a, 2021a, 2021b) concluded that **the right whale travels directly through the wind turbine areas off the New Jersey coast**. The Atlantic Shores project would place turbines 9 to 20 miles offshore. Other development is planned about 32 to 57 miles out, leaving a 12-mile-wide migration corridor, between 20 and 32 miles out depicted in the New Jersey Strategic Plan of July 2020. (M8)

A habitat-based cetacean density model for the U.S. Exclusive Economic Zone (EEZ) of the East Coast (eastern U.S.) and Gulf of Mexico was also developed by the Duke University Marine Geospatial Ecology Lab in 2016 (Roberts et al. 2016). These models have been subsequently updated to include more recently available data in 2017, 2018, 2019, 2020, 2022, and 2023 (Roberts et al. 2017, 2018, 2020, 2023; Curtice et al. 2019; Roberts 2022).

Collectively, these estimates are considered the best information currently available for marine mammal densities in the U.S. Atlantic. Abundance and density data maps for individual species are accessible from Duke University's Marine Geospatial Ecology Lab online mapper. (M9)

A notation on the Duke University NARW Density 12.1 Report said **“Given that explicit forecasts of future density are not yet available, managers usually opt to rely on the recent past as a proxy for the near future.”** Therefore, **“For management applications, we recommend the mean densities for the “2010-2019” era be used (Section 5.1.2), which for the months of January-April corresponds to the years 2011-2020.”** The study noted, **“In the face of high uncertainty and variability in where right whales are, the most effective mitigations may be those that apply very broadly, or do not have a spatiotemporal component at all.”** (M10)

The Impact of Operational Turbine Noise on the Essential Migration of the NARW clearly shows that the operational turbine noise from the newer, larger offshore wind turbine complexes of today is high and would degrade the migratory critical habitat to the point where it would at a minimum seriously impair and potentially block the essential migration of the whale, particularly of the female whales of reproductive capability and jeopardize the species survival. Therefore, we also seek as an essential part of a critical habitat rulemaking a prohibition against wind turbine placement in the corridor, as well as in a surrounding buffer zone to address the elevated noise transmitted beyond the perimeter of the wind complex.

We do not expect this critical habitat designation to trigger any actions impacting other uses of the sea, such as fishing and vessel navigation. Any measures there still have to be evaluated independently as to their need, cost and effectiveness. Additionally, as stated by NOAA in its critical habitat designations of 2016, fishing gear -and presumably other- restrictions are outside the scope of a NOAA critical habitat designation rulemaking, and are pursued separately.

Nevertheless, to provide support for this rulemaking, we suggest that NOAA seek funding for and include in the rulemaking provisions for compensation fishery or other interests for any additional costs incurred as a result of the migratory critical habitat designation.

The available historical migration data for the NARW has been assembled in **Table 1** of **Section 6** of this petition. The time period presented, January through April, represented the primary periods of migration.

### North Atlantic Right Whale Migratory Corridor

#### Seasonal Speed Zone Management Areas

NOAA Ruling 2008  
MARCO Maps- linear measurements

- Massachusetts shore to 70 miles
- New York shore to 48 miles
- New Jersey shore to 42 miles
- North Carolina shore to 26 miles

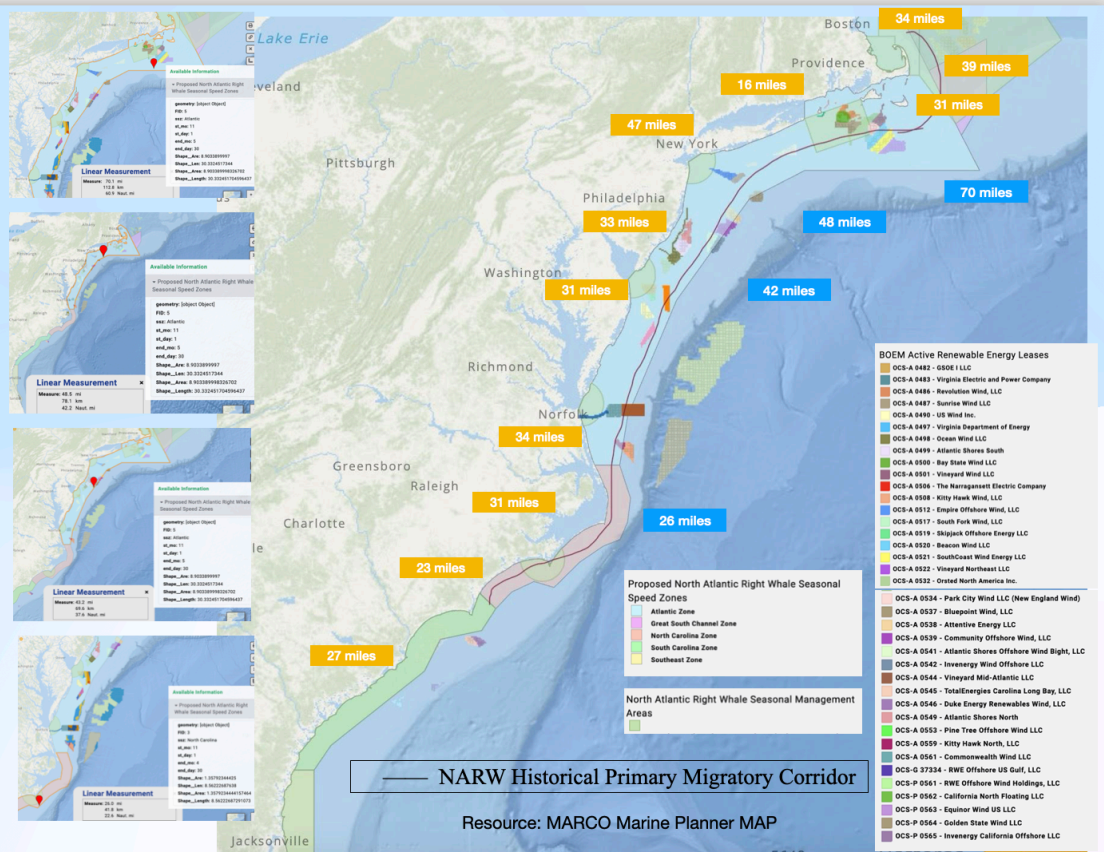
**Table 2**

Table 2 - Composite Results over Studies, Time Frame and Zones

State	Proposed Migratory Critical Habitat-Primary Inner Historical Corridor (miles offshore)
Maine	14-34
New Hampshire	6-39
Massachusetts/From Cape Cod	6-31
Rhode Island	6-16
New York/From Long Island	6-47
New Jersey/From Barrier Islands	6-33
Delaware/Maryland	10-31
Virginia	6-34
North Carolina/Mainland	6-31
South Carolina	6-23
Georgia	6-27

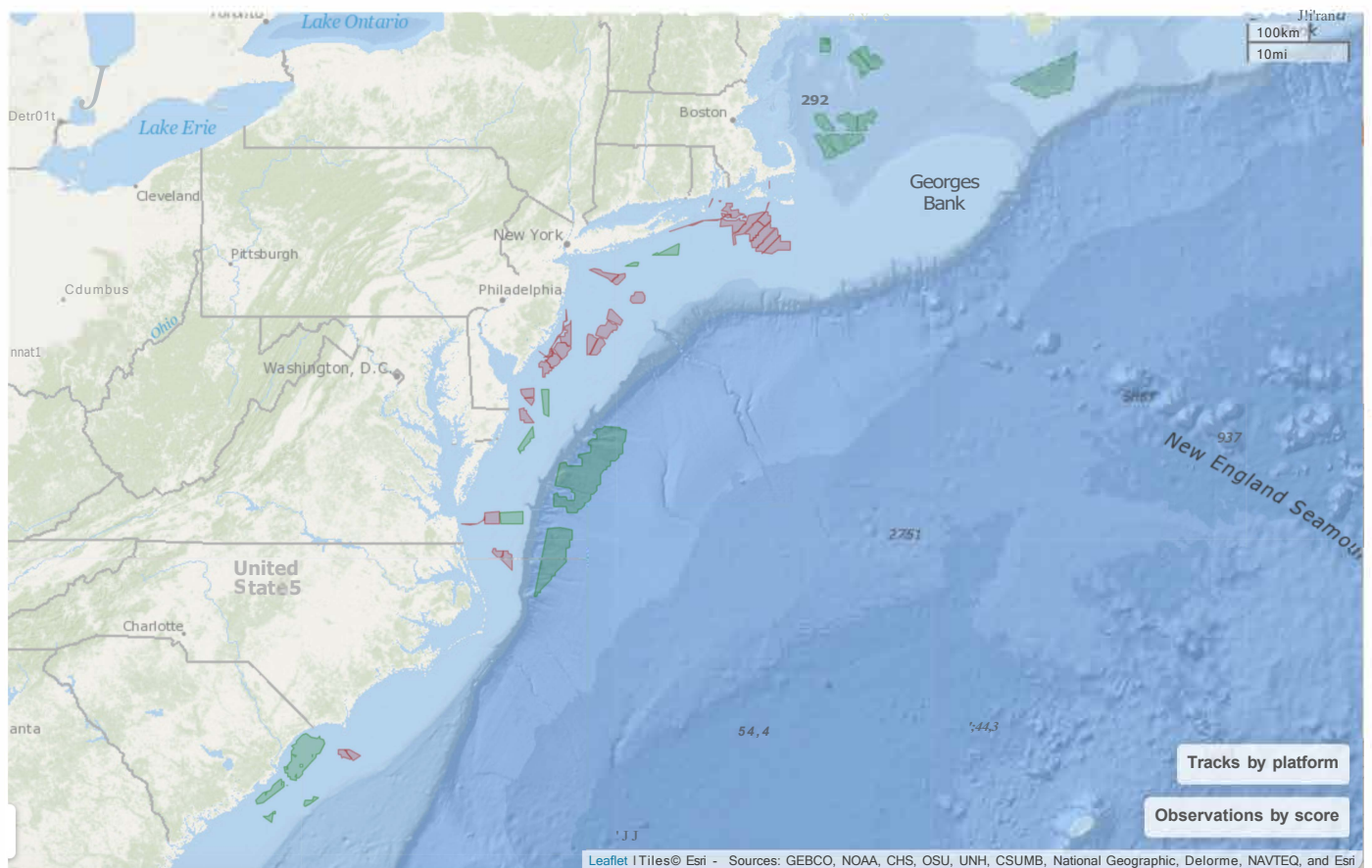
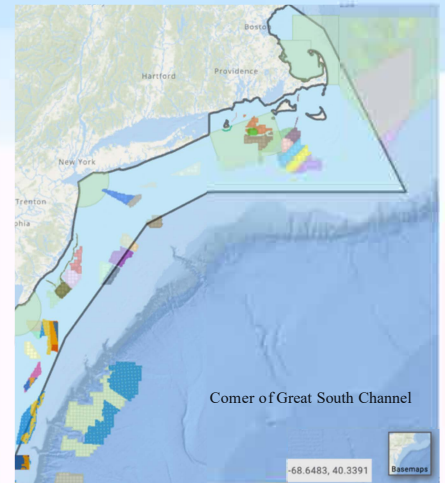
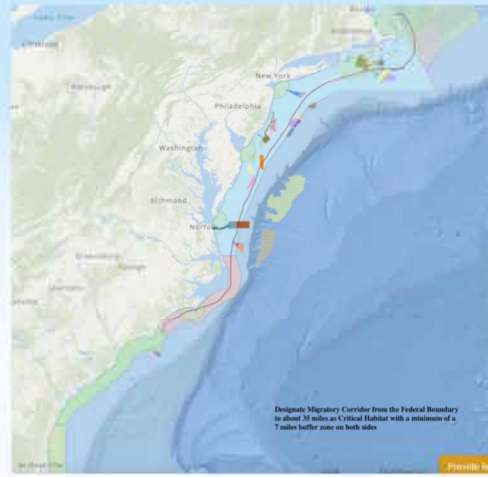
Save LBI report on operational noise- levels above 120 decibels will disturb the whales behavior; a buffer zone on both sides of the proposed critical habitat (Table 2) should be at least 7 miles turbine free

Save LBI Research Map



**The migratory corridor of the NARW represents the ecological connectivity of the endangered reproductive species. The unimpeded movement and the flow of natural processes that sustain its life should be a key factor in the conservation management of the right whale within their historical migration route.**

The waters along the migratory corridor of the mid-Atlantic from the federal boundary line out to about 35 miles (30nm, 55km) [Table 2 average], between the northern border of South Carolina (approximately 33.85° N latitude and 78.53° W longitude) northward to the southeastern corner of Cape Cod, Massachusetts (approximately 41.550 N 2 latitude, 70.00 W longitude), southeastward to the southern corner of the current Great South Channel Critical Habitat (41.0° N latitude and 69.1° W longitude) each with a buffer zone of at least 7 miles on both sides for anthropogenic noise.



**Data from the recent Duke University Version 12 NARW density report was included, but given less weight since the authors of that report have designated it as preliminary and not to be used for regulatory purposes.**

As shown in Table 1, the data lends itself to definition of an inner and an outer migratory corridor density. Offshore wind development is currently planned in both corridors. As shown in Section 5 of this petition, such development will at a minimum impede and could block the migration of the whale.

Therefore, it is essential to the conservation of the species that at least one corridor be designated as critical habitat and that offshore wind projects not be permitted in that corridor in order to preserve the whales ability to migrate and survive. Given that wind project development in the inner corridor also creates other major problems for shore communities and vessel navigation, the inner one is the preferred choice.

Based on an overall composite assembly of all the data from January through April, excluding infrequent observations, a primary inner historical migration corridor of the right whale can be defined as shown in the Table and NARW Migratory Corridor Maps below.

**Historical Inner Migration Corridor Proposed for Critical Habitat Designation**

<b>State</b>	<b>Proposed Migratory Critical Habitat-Primary Inner Historical Corridor (miles offshore )</b>
<b>Maine</b>	<b>14-34</b>
<b>New Hampshire</b>	<b>6-39</b>
<b>Massachusetts/from Cape Cod</b>	<b>6-31</b>
<b>Rhode Island</b>	<b>6-16</b>
<b>New York/from Long Island</b>	<b>6-47</b>
<b>New Jersey/from Barrier Islands</b>	<b>6-33</b>

<b>Delaware/Maryland</b>	<b>10-31</b>
<b>Virginia</b>	<b>6-34</b>
<b>North Carolina/Mainland</b>	<b>6-31</b>
<b>South Carolina</b>	<b>6-23</b>
<b>Georgia</b>	<b>6-27</b>

## **2. Prohibiting the Placement of Offshore Wind Projects in the Migratory Critical Habitat**

The petition and our companion Technical Report of February 15, 2025 titled the Impact of Operational Turbine Noise on the Essential Migration of the NARW (Enclosure 2 ) clearly shows that the operational turbine noise from the newer, larger offshore wind turbine complexes show that the noise level emanating from the larger turbines of today is quite high and that the noise from the full complex would degrade the migratory habitat to the point where it would at a minimum seriously impair, and potentially block, the essential migration of the whale, particularly of the female whales of reproductive capability and jeopardize the species survival.

Consequently, as an essential component of such a designation, we ask that modern wind complexes be excluded from that migratory critical habitat as well as in a surrounding buffer zone to address the elevated noise transmitted beyond the perimeter of the wind complex. Therefore no leases would be awarded or projects approved in that corridor.

## **3. To, Pending review of this Petition, Pause Turbine Placement in any wind turbine complex within the Proposed Migratory Critical Habitat**

The emplacement of these new large turbines and their foundations into the seabed may be irreversible. The current OCS regulations allow for them to be left or toppled in place. For the approved projects in the migratory critical habitat facing such emplacement, no documents have been put forward demonstrating the technical feasibility of removing the towers, blades and a section of the foundation, and processing such onshore. No onshore industrial processing capability has been identified that could do such processing. No contractual arrangements or other firm commitments have been made by the companies to do the removal and processing. No cost estimates of full removal and processing have been put forward. No financial assurance is now being provided to fund such an effort. Given that, should you decide that such wind complexes should not be placed in the migratory critical habitat there may be no recourse for these projects but to leave constructed turbines in place in a non-operational state. This would

pose very long-term risks to vessel navigation and sea life, provide no electric power, and serve as an epic governmental embarrassment for generations. Consequently a pause in construction is called for.

#### **4. A Fund be Established to Defray any Future Costs that May Occur due to the NARW Migratory Critical Habitat Designation**

We do not expect this critical habitat designation to trigger any actions impacting other uses of the sea, such as fishing and vessel navigation. As stated by NOAA in its critical habitat designations of 2016, fishing gear -and presumably other- restrictions are outside the scope of a NOAA critical habitat designation rulemaking, and are pursued separately. Any measures there still have to be evaluated independently as to their need, cost and effectiveness.

Regarding any future measures and their costs we would offer that the NARW is a national resource and treasure and that any such costs should therefore be borne out of general tax revenues. There we recommend that NOAA seek funding for and include in the rulemaking provisions for determining and providing compensation to fishery or other interests for any additional costs incurred as a result of the migratory critical habitat designation.

Affording the whale these additional protections is essential to its survival and we ask that you proceed with a rulemaking to do all four. We believe that the petition and the operational noise analysis contains the substantial scientific information to support such an effort.

#### **5. To Take Other Actions Consistent with the Above Including Lease Cancellations (Enclosure 3) and Reinitiation of the ESA Section 7(a)(2) Consultation Process**

Certain NARW protective actions would, in our view logically follow for wind turbine complexes in or near the designated migration corridor, including, in descending order of effectiveness: (1) cancellation of leased areas (2) reinitiation of the ESA Section 7(a)(2) consultation process for projects that may affect the viability of the corridor, and (3) Construction and Operations Plan (COP) and environmental impact statement (EIS) revision, as described below.

##### **A. Lease Area Cancellation Based on the Statutory Criteria**

The statutory requirement for lease cancellation In the Outer Continental Shelf Lands Act (OCSLA), USC §1334(a)(2) states that: “with respect to cancellation of any lease or permit--(A) that such cancellation may occur at any time, if the Secretary determines, after a hearing, that—

(i) continued activity pursuant to such lease or permit would probably cause serious harm or damage to life (including fish and other aquatic life), to property, to any mineral (in

areas leased or not leased), to the national security or defense, or to the marine, coastal, or human environment;

(ii) the threat of harm or damage will not disappear or decrease to an acceptable extent within a reasonable period of time; and

(iii) the advantages of cancellation outweigh the advantages of continuing such lease or permit in force”.

We believe that the Atlantic Shores South project meets all three statutory criteria for lease cancellation as described in more detail in Enclosure 3.

Even more to the point of this petition, the Atlantic Shores lease itself requires in Section 7: Conduct of Activities, that the Lessee must conduct, and agrees to conduct, all activities in the leased area “in a manner that”: “(b) could not cause any undue harm or damage to the environment”; and in Section 8: Violations, Suspensions, Cancellations, and Remedies, that if Lessee fails to comply with the terms of this lease, that the Lessor may exercise any of the remedies that are provided under the Act and applicable regulations, **including, without limitation**, issuance of cessation of operations orders, **suspension or cancellation** of the lease, and/or the imposition of penalties, in accordance with the Act and applicable regulations.

The petition and the ITA project application itself (see figure below in Section 6.1) clearly show that the the Atlantic Shores South and North projects have been sited entirely within the historic and primary migration corridor of the NARW off of New Jersey. As shown herein in Enclosure 2 the operational turbine noise from that placement would impair and potentially block the NARW’s migration clearly causing “undue harm or damage to the environment”, and meeting the lease criteria for lease cancellation. In such cases we would ask that the lease cancellation not await the formal designation of the corridor as critical habitat, but be pursued at this time.

## **B. Reinitiation of Section 7(a)(2) Consultation**

Under OCS regulation 50§402.16, Reinitiation of consultation, reinitiation of consultation is “required and shall be requested by the Federal agency, where discretionary Federal involvement or control over the action has been retained or is authorized by law and”.” If a new species is listed or critical habitat designated that may be affected by the identified action”.

In addition, on January 20, 2024, BOEM and NOAA Fisheries released the final joint strategy titled the BOEM and NOAA Fisheries North Atlantic Right Whale and Offshore Wind Strategy to protect and promote the recovery of endangered North Atlantic right whales while responsibly developing offshore wind energy. The document stated that:

“If new information becomes available indicating that activities previously authorized by BOEM through a plan approval (e.g., SAP, General Activities Plan [GAP], COP) are now resulting in an imminent threat of serious or irreparable harm or damage (e.g., injury or mortality) to NARWs, BSEE has the authority to suspend operations.

Likewise, BOEM may require the lessee to submit a plan revision if activities previously authorized by BOEM are resulting in **undue harm to NARWs**. The plan revision would detail new measures that will be taken to increase protection of NARWs impacted by the activities authorized under the plan approval.

BOEM will determine if the new measures are adequate and, if warranted, could then reinitiate ESA Section 7(a)(2) consultation with NOAA Fisheries prior to approving any plan revision. BOEM also will use any new information to inform future project decisions and mitigation strategies. In addition, reinitiation under Section 7 of the ESA is required when certain conditions are met (50 CFR § 402.16).”

BOEM retains discretionary authority over a project through operation by virtue of the OCS lease cancellation and suspension criteria. We believe that this petition and its supporting Reports provide the new information establishing that the new migratory habitat “may be affected” and that “undue harm” to the NARW would occur, from wind turbine complex operation in or adjacent to the migratory critical habitat, and warrants reinitiating of the ESA section 7(a)(2) consultation.

As further reason for Section 7 review reinitiation our independent analysis in Enclosure 4 herein of the Level A and B take estimates for this project shows a systemic and scientifically unsupported underestimation of impact at all steps of the calculation. This results in Take numbers that have little relevance to what the whales will actually experience, and warrants a review of the calculations that were done and relied upon for the Biological Opinion approval.

### **C. COP and EIS Revision**

Should this project proceed, revisions to the Construction and Operations Plan (COP) should be required to provide additional mitigating measures to reduce, to the maximum extent possible, the significant harm that would accrue to the NARW from the unfortunate project siting described above. That revision should be accompanied by a revision to the environmental impact statement.

## **6. To Reinitiate ESA Section 7(a) Consultations Now Based on Systemic Underestimates in the Take Calculations for the Atlantic Shores South Project and for Other projects where the Same Calculation Methodology was used**

Section 50CFR§402.16 (Reinitiation of Consultation) requires federal agencies to also reinitiate formal ESA Section 7(a) consultation “if new information reveals effects of the action that were not previously considered”.

Our independent analysis in **Enclosure 4** for the Atlantic Shores South project of the Level A and B take estimates for this project shows a systemic and scientifically unsupported underestimation of impact at all steps of the calculation. This results in Take numbers that have little relevance to what the whales will actually experience, and warrants a review of the calculations that were done and relied upon for the Biological Opinion approval. The same underestimates occur for other projects as the method of calculation has been the same throughout.

### **Conclusions**

The establishment of a safe migration corridor for the NARW and the prohibition of wind complexes within it are essential to its survival. No other measures, including fishing gear and vessel speed restrictions, have been effective in stemming its decline. Establishing a wind turbine free zone along the East Coast will also preserve important ocean uses such as navigation and defense, and the seafood, maritime and tourism industries.

We encourage you to embrace, take ownership of, and pursue this critical habitat designation and wind complex prohibition effort. We stand ready to work with you in a supportive and cooperative manner to accomplish both in a sensible, balanced manner.

### **Critical Habitat**

One of the ESA’s purposes is to conserve the “ecosystems upon which endangered species and threatened species depend,” which includes their habitat.<sup>104</sup> The loss or alteration of habitat is a factor for listing species.<sup>105</sup> The ESA directs the Services to designate critical habitat for listed species and requires that federal agencies not destroy or adversely modify that habitat through their actions.<sup>106</sup>

The ESA defines critical habitat to include geographic areas occupied or not occupied by the species at the time of listing.<sup>107</sup> Areas occupied by the species at the time of listing must have physical and biological features that (1) are essential to the conservation of a species and (2) may require certain management considerations or protection.<sup>108</sup> Areas not occupied by the species at the time of listing may be designated as critical habitat if the Secretary determines that such additional areas are “essential for the conservation of the species.”<sup>109</sup>

The Secretary must designate critical habitat concurrently with listing a species “to the maximum extent prudent and determinable.”<sup>114</sup> If the species’ critical habitat is not determinable at the time of listing, the Secretary may postpone designation for up to one year; after that year, the Secretary must designate critical habitat to the maximum extent prudent based on the available information.<sup>115</sup>

The Secretary may exclude any area from designation as critical habitat if the benefits of excluding the area outweigh the benefits of designating it as critical habitat, unless the best available scientific and commercial data indicate that failing to designate such area as critical habitat could result in the species’ extinction.<sup>120</sup>

104 ESA §2(c), 16 U.S.C. §1531(c).

105 D. M. Evans et al., “Species Recovery in the United States: Increasing the Effectiveness of the Endangered Species Act,” *Issues in Ecology*, vol. 20 (Winter 2016). Hereinafter cited as Evans, “Species Recovery.”

106 ESA §4(a)(3)(A), 16 U.S.C. §1533(a)(3)(A) and ESA §7(a)(2), 16 U.S.C. §1536(a)(2).

107 ESA §3(5), 16 U.S.C. §1532(5).

108 ESA §3(5), 16 U.S.C. §1532(5).

109 ESA §3(5), 16 U.S.C. §1532(5)

114 ESA §4(a)(3)(A), 16 U.S.C. §1533(a)(3)(A).

115 ESA §4(b)(6)(C), 16 U.S.C. §1533(b)(6)(C).

120 ESA §4(b)(2), 16 U.S.C. §1533(b)(2)

### **Commission for Environmental Cooperation - International Resolution**

**On January 17, 2025 COUNCIL RESOLUTION: 25-01 was signed by the Government of Canada** (M11) issuing instructions to the Secretariat of the Commission for Environmental Cooperation (CEC) regarding submission SEM 21-003 (North Atlantic right whale), which asserts that the **United States environmental authorities are failing to effectively enforce** (1) the Marine Mammal Protection Act (MMPA); (2) the Endangered Species Act (ESA); (3) the National Environmental Policy Act (NEPA), and 4) associated regulations, to protect the North Atlantic right whale (*Eubalaena glacialis*) (NARW).

### **Benefits of Designating Critical Habitat**

Designation of critical habitat may provide additional protection for listed species in the context of federal actions. Federal agencies must consider whether their actions are likely to destroy or adversely modify critical habitat under the Section 7 consultation provisions. If critical habitat were not designated, Section 7 consultations would be limited to whether actions jeopardize a species’ continued existence.

Section 3(5)(A) of the ESA defines; (ii) specific areas outside the geographical area occupied by the species at the time it is listed in accordance with the provisions of section 1533 of this title, upon a determination by the Secretary that such areas are essential for the conservation of the species. (16 U.S.C. §1532(5)(A)).

Designation of critical habitat requires the Secretary to consider what habitat is essential for conservation of the species and the economic and other effects of designating critical habitat.

The three (3) main types of habitat loss from human activities and environmental conditions caused by offshore wind development on that could adversely affect features and the ability to support conservation of the NARW are:

1. Habitat Destruction - loss of the selection of dynamic, optimal combinations of essential migratory habitat
2. Habitat Degradation - loss of the preferred ranges within the essential and historical migratory corridor
3. Habitat Fragmentation - fragmentation of large contiguous areas of the historical migratory corridor

The process of designating critical habitat might yield scientific information about the species that benefits habitat conservation and recovery planning and provides information for permitting incidental take.

Critical habitats may serve as connecting corridors between populations, areas for existing populations to expand into, or areas in which new populations may be reintroduced. In addition, unoccupied habitat might be important for species that migrate or are forced from their current habitat due to environmental changes, such as changes to climate (e.g., increased drought) or the ecosystems in which the species resides (e.g., sea level rise and saltwater intrusion).

### **Justification for Prohibition of Wind Complexes Within and Near the Migration Critical Habitat.**

Section 7(a) (1) of the Endangered Species Act requires that no authorizations be granted for any federal or federally approved activity that would jeopardize the continued existence of an endangered species. As shown below, Section 9(a)(1) of the Act and its implementing regulations ultimately require that no actions be approved that significantly modify or degrade a critical habitat to the point where it actually kills or injures marine mammals by significantly impairing an essential behavioral pattern, which includes migration.

Our second request here, to prohibit the placement of today's offshore wind projects within the proposed new migratory critical habitat is supported by our demonstration in Section 5 of this petition, our comments on the draft EIS and by the Save LBI Report on operational turbine noise showing that the underwater noise from such projects will cause both direct injury and fatality and indirect injury and fatality, depending upon where the whale tries to pass the wind complex.

As shown in those documents, the noise source level for a single large turbine of today is high. For the turbines proposed for the Atlantic Shores South project the source level is estimated

at 181 decibels based on the best available science. The presence of 200 turbines adds 23 decibels to that for an effective source level for the complex of approximately 204 decibels. The generated noise is continuous requiring that the level drop substantially to 120 decibels in order not to disturb the whale's behavior. As shown in the Save LBI Technical Report on Operational Noise Impact to the NARW the required distance to do that is from 3.7 to 12 miles from the perimeter of the project, depending upon the extent of seabed noise attenuation.

As shown in those documents, any relatively slow moving right whale attempting to migrate through within the wind complex itself would receive enough cumulative noise energy to suffer temporary or potentially permanent hearing loss resulting in direct injury or fatality.

Whales attempting to migrate through and within the distance from the complex perimeter required to reach the 120 decibel level, would try to avoid the elevated noise and have their migration behavior significantly impaired and potentially blocked. As explained in those documents, such behavioral alterations from noise levels above 120 decibels are not innocuous. It can cause masking of communications between mothers and calves, resulting in separation and calf fatality. It can cause the whale to expend more energy and/or move away from its food source resulting in debilitation, the inability to complete the migration, or ultimate fatality. Based on experimental observation it can cause the whale to surface and become more vulnerable to vessel strike. It can cause the whale to lose its navigation capability and strand onshore. It can cause the animal to become significantly stressed and harm it in ways that we do not even understand. Therefore, it is very likely that injury and fatality will occur indirectly from the disruption of the migration pattern including that to migrating females capable of reproduction and essential to the species survival.

Therefore wind complexes within or near the migratory corridor will violate both the criteria not to jeopardize the species continuing existence and the criteria not to significantly impair an essential behavioral pattern, and should be prohibited from the migration critical habitat and from a surrounding buffer zone as described in Section 5 of this petition.

### **Criteria for Prohibitions in the Migration Critical Habitat**

Section 9(a)(1) of the Endangered Species Act:(*as codified at 16 U.S.C. § 1538(a)(1)*)*defines prohibited acts as:* Prohibited acts. Except as provided in sections 6(g)(2) and 10 of this Act, with respect to any endangered species of fish or wildlife listed pursuant to section 4 of this Act, it is unlawful for any person subject to the jurisdiction of the United States to:

- (A) import any such species into, or export any such species from the United States;
- (B) take any such species within the United States or the territorial sea of the United States;**
- (C) take any such species upon the high seas;**
- (D) possess, sell, deliver, carry, transport, or ship, by any means whatsoever, any such species taken in violation of subparagraphs (B) and (C);

(E) deliver, receive, carry, transport, or ship in interstate or foreign commerce, by any means whatsoever and in the course of a commercial activity, any such species;  
(F) sell or offer for sale in interstate or foreign commerce any such species; and  
(G) violate any regulation pertaining to such species or to any threatened species of fish or wildlife listed pursuant to section 4 of this Act and promulgated by the Secretary pursuant to authority provided by this Act.

The term “take” is broadly defined in the ESA under Section 3(19) as follows: the term “take”; means to harass, **harm**, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.

In 50 C.F.R. § 17.3 (Definitions) the U.S. Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS) have interpreted "**harm**" in the definition of "take" as: “An act which **actually kills or injures wildlife**. Such act may include **significant habitat modification or degradation** where it actually kills or injures wildlife by **significantly impairing essential behavioral patterns**, including breeding, feeding, or sheltering”.

This regulation provides the basis for the interpretation of "harm" under the Endangered Species Act (ESA), and it was upheld by the U.S. Supreme Court in the landmark case *Babbitt v. Sweet Home Chapter of Communities for a Great Oregon* (1995) (M5). This interpretation ensures that actions causing **significant habitat destruction** that result in harm to species are considered a "take" under the ESA, even if the harm is **indirect**.

“Endangered” means a species is in danger of extinction through all or a significant portion of its range. “Threatened” means a species is likely to become endangered within the foreseeable future. By virtue of being listed as “endangered” or “threatened,” the ESA provides that all of these species warrant specific protections to stave off the threat of extinction. These protections include the so called “Section 7 consultation” process with NMFS that culminates with a determination as to whether the subject action would jeopardize the survival of the NARW species or result in a loss of critical habitat. That determination is to be made using the “best scientific and commercial data available.”

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## Introduction

The North Atlantic right whale is one of the largest and longest living animals on earth. Considering there are less than 370 individuals currently surviving (according to NOAA Fisheries (M5)) in its eastern population; every right whale saved is a step towards recovery, and every one lost, a step towards extinction. This is why it is critical to continue providing the species with well tailored legal protections. This is reinforced by the National Marine Fisheries Service's (NMFS) own metrics, which demonstrate that the loss of even one right whale annually is not sustainable.

This petition seeks to expand the critical habitat designation by encompassing and connecting a key reproductive point and crucial feeding grounds with its primary historical migration corridor—areas that are essential to the conservation of the species and require special management protections due to the growing threats confronting them.

On January 27, 2016, the Agency, National Marine Fisheries Service (NMFS), revised two designated Critical Habitat for NARWs ([critical habitat for North Atlantic right whales](#)) (M1), that included SMAs and DMAs from the 2008 federal register ([73 FR 60173](#), October 10, 2008 ([50 CFR 224.105](#))) (M12), and although considered, NMFS did not include a NARW Migratory Corridor at the time of the rule making. Instead, NMFS stated that, *"given that large-scale migratory movements between feeding habitat in the northeast and calving habitat in the southeast are a necessary component in the life-history of the North Atlantic right whale, we agree that facilitating successful migration by protecting the species' migratory area is a key conservation objective that could be supported by designation of critical habitat for the species."*

In 2016, NOAA Fisheries revised two areas designated as [critical habitat for North Atlantic right whales](#) (M1) These areas provide important feeding, nursery, and calving habitat:

- Off the coast of New England (foraging area)
- Off the southeast U.S. coast from Cape Fear, North Carolina, to below Cape Canaveral, Florida (calving area)

Some of the data used by the Agency in the 2016 petition to determine known occurrences of NARWs in the mid-Atlantic was based on studies from sightings while developing the rule to implement ship speed restrictions to reduce the threat of ship collisions to North Atlantic right whales ([73 FR 60173](#), October 10, 2008), Knowlton et al. (2002), Firestone et al. (2008) and Schick et al. (2009).

The Agency also noted that *"preliminary data from a telemetry project in 2014 was considered, however, determined that such data to be preliminary and did not represent the best available information present at the time of the final rule. The Agency noted it was not possible to designate migratory critical habitat at that time of the final rule."* The Agency determined that *"acoustic features of the habitat that are essential to the conservation of North*

***Atlantic right whales are currently unknown.” And, “as new information becomes available, we will take appropriate action if warranted.”***

Save LBI presents in this petition filing that data used by the Agency is outdated by at least a decade or two, and should be reviewed using the best available science studies found and published since the last rule making for critical habitat, which included material from the 2008 vessel speed restriction ruling (M12). The Agency has been afforded millions of dollars in research monies to accomplish that in order to protect and conserve the North Atlantic right whale. Although the species was listed in 1970 in the US Atlantic Ocean, critical habitat was not designated until 1994, more than 20 years after the initial listing.

**Several Research Study Examples are shown below:  
(Appendix A-M)**

1. **Virginia area** - Navy Marine Species Monitoring Program 2018-2023 titled "More than just a migration corridor; Important North Atlantic right whale surface-active behaviors observed in the western mid-Atlantic", and "North Atlantic Right Whale Sightings and Group Composition in the VA/NC Mid-Atlantic"

**Virginia area** - Posted on January 25, 2025, Jackie from NAVFAC Atlantic alerted **Mid-Atlantic Whale Monitoring Project** to right whale "chatter" on the U.S. Navy's whale monitoring buoy located approximately 35 miles east of Cape Henry. HDR-led vessel and aerial teams on their way were alerted by our aerial survey colleagues from Azura working with the NEFSC to a **group of three females** in that area - IDs will be provided pending confirmation. Whales were **located in the Dominion wind energy area**, slow traveling, and occasionally surface active with each other. Our aerial team then located **another group of approximately 7 right whales approximately 15 miles east of Cape Henry**. One suction-cup CATS tag was deployed on an adult male whale 4360 (a.k.a. Musketeer). Unfortunately, after a short amount of time the tag was knocked off by another whale. IDs for the others in that group of 7 include 3301 'Neptune' and 4523 'Beaker' as well as 4 others undergoing review.

*Understanding how NA right whales utilize the western Mid-Atlantic habitat in order to provide protective measures is a high priority for our team and for the U.S. Navy. Right whales' primary causes of death are vessel strikes and entanglement in fishing gear. **They sit low in the water, are VERY difficult to see from a boat in the best of conditions, and spend a considerable amount of time just below the surface of the water.** We urge boaters to keep a sharp lookout, keep 500 yards from them, and go slow in areas where sightings have occurred.*

*Research is led by HDR Inc., funded by United States Fleet Forces Command, and managed by Naval Facilities Engineering Systems Command (NAVFAC) Atlantic under the U.S. Navy's Marine Species Monitoring program. All scientific activities are conducted under NMFS scientific research permit #28184.*

2. **NY Bight area** - Robots4Whales autonomous platform study by Woods Hole Oceanographic Institution (WHOI) and collaborators with reference logs of Sei, Fin, Humpback and NARW detections from 2016-2024 in the NY Bight. This study includes detection logs for the entire Mid-Atlantic from Maine to North Carolina from 2016-2024 by WHOI and collaborators.

**NY Bight area** - In 2021 a group of scientists, funded by Equinor (an offshore wind developer of Empire Wind 1 and 2) were asked to research the presence of NARWs in the NY Bight; a report was published; "Acoustic presence and vocal activity of North Atlantic right whales in the New York Bight; Implications for protecting a critically endangered species in a human-dominated environment." The study shows year-round acoustic presence in the US mid-Atlantic along with newly formed southern New England foraging ground suggesting the region is more than just a migration corridor.

3. **New England area** - BOEM/Mass Clean Energy Center funded a study; a hotspot analysis of right whale movement patterns. The study area included south of Martha's Vineyard and Nantucket, Mass, USA which encompasses the Rhode Island-Massachusetts and Massachusetts wind energy areas from 2011-2019. The seasonal distribution in the wind energy areas show right whale hotspots with over 90% confidence in Spring, Summer and Winter. The study concluded that:

Conservation decisions must allow for not only the preservations, but also the recovery of the species. These decisions must be made by using the best available science, of which is constantly in motion.

Clearly, the intentions of the Endangered Species Act (ESA) are that "critical habitat" is not restricted to just the prevention of harm but includes the construct of conservation. The statutory definition incorporates the inclusion of critical habitat areas vital "to the conservation of the species and (II) which may require special management considerations or protection;" (See 16 U.S. Code § 1532) (Conservation is further defined as "...to use and the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this chapter are no longer necessary.")

The exceedingly small numbers of NARW currently swimming between survival and extinction make it imperative that all conservation measures are put into effect. Connecting critical habitat units to include the migratory corridor habitat will provide a significant level of protection essential to the survival of the species. Right whales have teetered on the brink of extinction before. Decimated by whaling, at first just offshore of Nantucket Island in the late 1600s, and then relentlessly pursued by whaling boats, the species rebounded to a small degree after an international agreement banned the hunting of the right whale in 1935. Despite that, the species faces modern-day threats that have sent its population numbers tumbling backwards. There is no disagreement that the NARW is on the brink of extinction.

The ESA allows individuals to petition for revision of critical habitat, in accordance with the Administrative Procedure Act (M5), which provides that “each agency shall give an interested person the right to petition for the issuance, amendment, or repeal of a rule.”

Marine mammal migration might be one of the great wonders of the natural world and public interest in migration and migratory species is strong. Students learn geography studying the travels of migratory species, and interact with their peers in other nations. Touring companies and town festivals profit from an ongoing fascination with the phenomenon of migration through whale watching along the East Coast. Yet numbers of many migratory species continue to decline.

These magnificent creatures undertake significant journeys along the Atlantic coast, moving between their feeding grounds of the North and their calving areas of the South. The North Atlantic right whales face numerous challenges in their migratory journey. Scientists believe that these whales rely on a combination of environmental cues, such as ocean currents and water temperatures, to navigate their routes. Unfortunately, their migration is hindered by threats like ship strikes and the proposed offshore wind development, making conservation efforts vital. By recognizing the unique migration corridor of North Atlantic right whales, we can deepen our appreciation for them and understand the importance of protecting their habitats and migratory routes.

Landsborough Thomson, an ornithologist, described “true migrations” as periodic changes in habitat that occur in alternating directions, aimed at ensuring the best possible environmental conditions consistently. The North Atlantic right whale (NARW) demonstrates an impressive ability to return to the same locations annually, showcasing their exceptional navigation skills. (M13) Save LBI is advocating for collaboration to maintain the integrity of their primary historical migratory path by removing any obstacles.

The New York Bight area acoustic study (M14) provided critical information that speed zone restrictions in seasonal management areas and dynamic management areas in the US mid-Atlantic were “*derived from incomplete data, predicated on an assumption, and did not encapsulate recent shifts in NARW distribution.*”

The Agency focused on the fact that “*right whales are vulnerable to vessel strike due to their coastal distribution and frequent occurrence at near-surface depths, and this is particularly true for females with calves. An underlying assumption of the analysis was that NARW presence in this region was solely a reflection of migrating whales. This assumption may not be accurate.*”

## **Joint NARW Strategy**

On January 20, 2024, BOEM and NOAA Fisheries released the final joint strategy (M15) to protect and promote the recovery of endangered North Atlantic right whales while responsibly developing offshore wind energy. This coordinated effort across federal government agencies and partners had three main goals 1) mitigation and decision-support tools 2) research and monitoring 3) collaboration, communication, and outreach - all identified in the “frequently asked questions” (FAQs) from the “North Atlantic Right Whale and Offshore Wind Strategy” which BOEM distributed an “Overview” flyer during the in-person open house public meeting on April 10, 2024 at the Grand Oaks Country Club, Staten Island, NY, it reads:

### **FAQ’s**

1. **Is the strategy final?** Yes, the strategy is final but will be evaluated and updated as new information becomes available.

2. **Does the strategy anticipate any new requirements on industry?** The strategy does not specifically require new measures. Instead, it provides a general description of preliminary measures that BOEM and NOAA Fisheries agree may have potential to avoid and minimize impacts to right whales from offshore wind activities.

3. **What impacts will the strategy have on current OSW projects?** The strategy is unlikely to impact currently operating OSW projects, or those under construction, given those authorizations and their included mitigation and monitoring requirements have already been issued.

4. **Could the strategy result in existing OSW leases being cancelled or reassessed?**  
We do not expect the strategy to result in the amendment or cancellation of any existing leases.

5. **Are any parts of the strategy enforceable?** No, the strategy itself is not binding on the agency or third parties, and instead provides guidelines for the development of downstream measures that may themselves be enforceable.

### **What are the potential offshore wind impacts to North Atlantic right whales?**

- **Noise Exposure:** Sound-producing activities have the potential to result in hearing impairment, masking of right whale vocal communication, physiological impacts (e.g., stress) and/or behavioral disturbance.
- **Vessel Strike:** All vessels have the potential to strike North Atlantic right whales. Offshore wind activities may displace vessels from lease areas and into areas used more frequently by right whales.

- **Entanglement:** Offshore wind activities may produce marine debris or involve accessories which may cause entanglement or displace fishing activity into right whale higher use areas.
- **Habitat Changes:** Offshore wind development may result in habitat changes that may displace whales or affect the abundance, quality, or availability of whale prey (e.g., changes in ocean circulation and mixing from in-water structures, including turbines and foundations, and impingement or entrainment of prey in cooling water intakes associated with High Voltage Direct Current cable systems) or attract predators (e.g., predators with an affinity for a new “reef structure” in the environment).

The Agencies have spent years trying to understand the North Atlantic right whale and its habitat in order to protect their existence, and yet the “action” designated by NMFS has been the implementation of speed zone restrictions (since 2008) to enforce their recovery and required protection. **It seems the NMFS intentions to protect the right whale have fallen short of any substantial reinforcements in the migratory habitat** (Appendix O : Special Management Considerations or Protections)

A study from 2008-2009, the New Jersey Department of Environmental Protection Baseline Studies Final Report Volume III: Marine Mammal and Sea Turtle Studies, prepared by Geo-Marine, Inc. dated July 2010 (M28), offered a volume of information, yet fell short on NARW research off the coast of New Jersey. Some of the citations are almost 40 years old regarding a migration pattern. Presented below are a few comments from the study; much remains the same of the historical migratory corridor today, and with new scientific research, the designation for a migratory corridor is warranted and justifiable given the proposed industrialization of the Mid-Atlantic with thousands of offshore wind turbines.

*Winter represents the time of year when North Atlantic right whale mothers and calves are found off the southeast U.S. coast (mainly off northern Florida and southern Georgia; Hamilton and Mayo 1990; Hain et al. 1992; Knowlton et al. 1992), but it is unknown where the majority of North Atlantic right whale males and females without calves spend their time during this season. Very little data are represented from the migratory corridor (i.e., the eastern U.S. coast from New Jersey to Virginia) between the southern calving grounds and the northern feeding grounds for comparison (Mead 1986; Knowlton et al. 1992; McLellan et al. 2002)*

*North Atlantic right whales are known to occur off the coast of New Jersey. New Jersey waters are within the known migratory route taken by right whales as they travel between their feeding areas in the north and their breeding/calving grounds off the southeastern U.S. Right whales were detected acoustically during February through May and August through December in the New York Bight just north of the Study Area (Biedron et al. 2009). Previous research efforts have visually recorded right whales in nearshore waters off New Jersey in spring and fall (CETAP 1982). Few sightings near Delaware Bay have been recorded in October, December, May, and July (Knowlton et al. 2002). One satellite-tagged cow and her calf were tracked from the Bay of Fundy to New Jersey and back within a six-week period in September (Knowlton et al.*

2002). Another satellite-tagged individual fed in the shelf waters east of the Study Area as it travelled south from the waters off Maine (Bowman et al. 2001). One right whale mortality incident due to entanglement was recorded off the coast of New Jersey in October (Knowlton et al. 2002).

There is little information on the geographic and temporal extent of the North Atlantic right whale's migratory corridor (Winn et al. 1986); however, our sightings data of females in the Study Area and subsequent confirmations of these same individuals in the breeding/calving grounds a month or less later indicate that the nearshore waters of New Jersey are part of the migratory corridor between feeding grounds in the northeast and breeding/calving grounds in the southeast. The cow-calf pair sighted in the Study Area in May 2008 was previously confirmed in the southeast in January and February and subsequently sighted in the Bay of Fundy in August. Our observations and acoustic detections are consistent with the known migration time periods. Between mid-January and mid-March 2009, North Atlantic right whale calls were detected on the pop-up located 21.4 km (11.6 NM) from shore. All North Atlantic right whale sightings in the Study Area were recorded within 32 km (17 NM) from shore, and high densities of endangered marine mammals were predicted throughout the Study Area between 2 and 37 km (1 and 20 NM) from shore. These distances from shore are consistent with a review of previous sightings data collected in the mid-Atlantic that found that 94% of all sightings of North Atlantic right whales were within 56 km (30 NM) from shore (Knowlton et al. 2002).

The seasonal movement patterns of North Atlantic right whales are well-defined along the U.S. Atlantic coast; however, not all individuals adhere to these patterns and the seasonal distribution of these individuals is unknown. For example, a majority of the population is not accounted for on the breeding/calving grounds during winter, and not all reproductively-active females return to these grounds each year (Kraus et al. 1986).

Right whale sightings and acoustic detections in the Study Area provide additional evidence of occurrence outside of the typical seasonal migration periods. Although actual feeding could not be confirmed during our study, the January 2009 sighting of two adult males exhibiting skim feeding behavior off Barnegat Light suggests that feeding may occur outside the typical feeding period of spring through early fall and in areas farther south than the main feeding grounds (Winn et al. 1986; Gaskin 1987; Hamilton and Mayo 1990; Gaskin 1991; Kenney et al. 1995). Acoustic detections of North Atlantic right whale calls confirm the occurrence of this species in the Study Area during all seasons with a peak number of detection days in March through June. The documented detections and sightings of North Atlantic right whales in the Study Area suggest that some individuals occur in the nearshore waters off New Jersey either transiently or regularly. Due to the low number of sightings recorded during the study period, no estimates of abundance could be generated for this species. The pooled year-round abundance of endangered marine mammals, including North Atlantic right whales, in the Study Area was three individuals **which should be considered an underestimate due to perception bias and availability bias for large whales which can make long dives**. However, based on the migratory nature of this species, a low abundance of this species could be expected

*for the Study Area, particularly if the North Atlantic right whales mainly use the nearshore waters of New Jersey as a migratory corridor and are not spending a significant amount of time in the region. This estimate is also reasonable due to the low overall abundance (438 individuals) of this stock of North Atlantic right whales (NARWC 2009). **Based on the endangered status and low overall abundance of this species, the detection of even one right whale in the Study Area is an important occurrence. We recommend the inclusion of nearshore waters off New Jersey in future North Atlantic right whale studies to better understand the importance of these waters to this species, particularly during the winter months when migrating individuals and possible feeding were documented in the Study Area.***

## **1. The Importance of North Atlantic Right Whale Critical Habitat**

### **1.1 Need for Federal Regulatory Action**

The objective of this petition is for NMFS to use the best scientific data available to designate the whale's primary historical migratory corridor as critical habitat for the North Atlantic right whale, which is listed as endangered under the ESA. The designation is designed to meet the conservation needs of the North Atlantic right whale and ultimately aid in species recovery. The ESA ([16 U.S.C. 1532\(3\)](#)) defines critical habitat as: 1. "The specific areas within the geographical area currently occupied by a species, at the time it is listed in accordance with the Act, on which are found those physical or biological features (i) essential to the conservation of the species and (ii) that may require special management considerations or protection, and; 2. **Specific areas outside the geographical area occupied by a species at the time it is listed in accordance with the provisions of [section 4 of this Act], upon a determination by the Secretary that such areas are essential for the conservation of the species.**" (50 CFR 424.02)

**Section 4(a)(1) of the ESA requires the Secretary of Commerce (Secretary) to determine whether a species is endangered or threatened because of any of the following factors: (A) the present or threatened destruction, modification or curtailment of a species' habitat or range; (B) over utilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation factors; (D) the inadequacy of existing regulatory mechanisms; (E) other natural or manmade factors affecting its continued existence.**

Areas included in the initial designation of the right whale when listed were identified primarily on the basis of use by right whales in 1973. It would take the federal agency another 20+ years before it determined critical habitat, although by law it must be decided within one year of the ESA listing. **The regulations provide NMFS with the authority to revise existing critical habitat when new data become available.**

Under the ESA, the only direct impact of a critical habitat designation is through the provisions of section 7. Section 7 applies only to actions with Federal involvement (e.g., authorized, funded, conducted), and, through the consultation process, requires modifications to those projects that would result in the destruction or adverse modification of the primary

constituent elements in designated critical habitat areas. **Indirectly, critical habitat designations also help focus Federal, state, and private conservation and management efforts in those areas. Recovery efforts may address special considerations needed in critical habitat, including conservation regulations to restrict private as well as Federal activities. A designation of critical habitat triggers an inter-agency consultation requirement designed to ensure that Federal activities avoid destruction or adverse modification of critical habitat.**

The responsibility for effectively implementing and enforcing the Endangered Species Act (ESA) falls on federal agencies, particularly regarding the conservation of the North Atlantic Right Whale (NARW). There is a pressing need to thoroughly evaluate the potential impacts of numerous offshore wind projects that are planned along the historical migratory corridor of the NARW, which stretches from Maine to North Carolina. Given the evident dangers that these whales face, it is crucial to consider the best available scientific data. NARWs do not magically transition between the two designated critical habitats; instead, they swim. Within their primary migratory corridors, federal actions, such as offshore wind development, could negatively affect the survival of the NARW. Therefore, it is vital to designate the historical migratory corridor to ensure that future federal actions do not pose risks to the whales during their migration, aggregation, and while they utilize their habitats for essential activities such as foraging, nursing, resting, and socializing.

The prior proposal to establish over 30 offshore wind facilities (OSW) in the North Atlantic would impact more than 3,500,000 acres of ocean. This initiative would involve the installation of 10,000 miles of undersea cables and approximately 3,400 massive turbines, each towering twice the height of the Washington Monument and featuring blades as long as a football field. Such large-scale developments could have significant population-level consequences for species that are already endangered and under stress. Not all the behavioral adaptations of individual animals in response to these changing environments will be beneficial; in some cases, these changes may actually threaten the survival of individuals and the stability of populations.

The North Atlantic Right Whale (NARW) habitat extends beyond just individual offshore wind (OSW) project sites; it encompasses a broader region. The influx of up to thirty new offshore wind projects threatens their habitat, which could force them to change essential behaviors, ultimately endangering their population. The NARW may not survive the impact of these developments.

The National Marine Fisheries Service (NMFS) has issued a Biological Opinion (BO) with respect to the Atlantic Shores South wind project proposed 8.4 miles off the coast of New Jersey. It concludes that, while there may be adverse impacts, they are not sufficient to kill any whales or jeopardize the continuing existence of the North Atlantic right whale (NARW). Those conclusions are based on a Biological Assessment (BA) prepared by the implementing agency, the Bureau of Ocean Energy Management (BOEM), and several noise exposure reports using opaque computer “models”.



Research in 2023 titled “*More than just a migration corridor: Important North Atlantic right whale surface-active behaviors observed in the western Mid-Atlantic*” and “*North Atlantic Right Whale Sightings and Group Composition in the VA/NC Mid-Atlantic: 2018–2023*” revealed late spring aggregation of baleen whales in VA in May/June 2024 with at least 27 individual NARWs identified in 11 sightings from vessel and plane with 4 suction-cup tags that collected 28 hours of behavioral data, including 122 dives which supported intense foraging activity by NARWs through dense concentrations of prey. The extent of time at the surface and shallow dive behavior (video noted foraging) especially at night, puts the NARWs at risk for vessel interactions.” (Appendix I, J )

Research in 2021 titled, “*Acoustic presence and vocal activity of North Atlantic right whales in the New York Bight; Implications of protecting the critically endangered species in a human-dominated environment*” noted that buoy recordings from June 2016 to January 2020 that were acoustically analyzed using automated detection of NARW calls revealed that NARW were present from November to April each year while the Port of NY-NJ SMA was active; however, NARW were also detected when this SMA (Seasonal Management Area) was inactive in October, May, June, and July. Systemic surveys were not conducted before the US mid-Atlantic SMAs were implemented. NARW vocal activity was acoustically detected at times when aerial surveys did not detect.” (Appendix M )

Research in 2021 titled “*Residency, demographics, and movement patterns of North Atlantic right whales (Eubalaena glacialis) in an offshore wind energy development area in southern New England USA*” noted an 8 year analysis of sightings revealed that right whales have become more common in South New England waters, with sightings now documented in nearly every month of the year. Sighting rates were highest in the span from winter through early spring and some times even during the summer months (e.g. August 2019). “Prior to 2011, little was known about the use of this area by right whales. The study examined aerial survey data collected between 2011–2015 and 2017–2019 to quantify right whale distribution, residency, demography, and movements in the region. Right whale occurrence increased during the study period. Since 2017, whales have been sighted in the area nearly every month, with peak sighting rates between late winter and spring. Model outputs suggest that 23% of the species’ population is present from December through May, and the mean residence time has tripled to an average of 13 days during these months. Age and sex ratios of the individuals present in the area are similar to those of the species as a whole, with adult males the most common demographic group. Movement models showed that southern New England is an important destination for right whales, including conceptive and reproductive females, and qualitative observations included animals feeding and socializing.” (Appendix K )

Research in 2023 titled, “*Oceanographic Effects of Offshore Wind Structures and Their Potential Impacts on the North Atlantic Right Whale and Their Prey*”(M39) noted scientific overviews which confirm the residency of the NARW (after the rule making of February 26, 2016) under the following sections:

**2.2.3.2. Central Mid-Atlantic Bight-** *As sightings in the GOM and Bay of Fundy have decreased since 2010, sightings in the MAB have increased (Davis et al. 2017). NARW have been detected during PAM off Long Island and New York Harbor in the spring, fall, and winter, with the greatest presence in spring (Muirhead et al. 2018). The extended utilization of this habitat suggests that some NARWs may be resident in the New York Bight waters stretching from Cape May, NJ to Montauk, NY within the MAB year-round (Muirhead et al. 2018).*

**2.2.3.3. Southern New England-** *Southern New England is another area where NARW have been observed foraging since the utilization of historical foraging habitats decreased (Meyer-Gutbrod et al. 2022). There has been a significant increase in NARW abundance in the region and an extension in the period of occurrence (O'Brien et al. 2022). Historically, NARW presence peaked in southern New England in winter and spring (O'Brien et al. 2022), and foraging was observed in the region in early spring (Leiter et al. 2017). NARWs were once absent from June through October, but since 2017 they have been observed in low numbers in summer and fall (Meyer-Gutbrod et al. 2022; O'Brien et al. 2022; Quintana-Rizzo et al. 2021). Usage of foraging habitat in southern New England has also increased in the spring (Meyer-Gutbrod et al. 2022). This region now serves as a year-round habitat and supports a substantial proportion of the NARW population during winter and spring (Estabrook et al. 2022; O'Brien et al. 2022). Nantucket Shoals in Southern New England has been identified as a potential hotspot for NARW and is utilized by the species throughout much of the year, concentrating particularly in the winter in recent years (Quintana-Rizzo et al. 2021).*

Jason Roberts, a Research Associate at the Marine Geospatial Ecology Lab, Duke University (M16) stated at the 2024 State of the Science Workshop, July 2024, Stonybrook, NY (M17) that the “*Whale Map team has a lot of information to potentially use.*”

The Whale Map (M18) team uses Sloucum Gliders, Planes, Vessels, RPAs, Buoys and Opportunistic sightings. As science has developed, so have the sightings of NARWs over the past years across the mid-Atlantic. It clearly shows the migratory corridor being utilized by whales in ways that are essential for their survival. Roberts noted the “**Hudson Canyon area in 2024 has been a major hot spot for right whales**” and, “historically this is an unknown area, because we haven't had much sampling... so it's hard to say whether or not it's a new thing or an old thing. My own gut feeling is it's probably, mostly, maybe a new thing related to ocean graphic changes that we've been talking about so I'm highly interested in that.” He also stated, “**But, I suspect the NARW density there has never been zero, even heading into summer, July 2024, like this over the past few years. We need to incorporate acoustics.**”

## 1.2 Definition of Critical Habitat

Critical habitat is defined in Section 3 of the Endangered Species Act (ESA; 16 U.S.C. 1532(3)) as: (1) the specific areas within the geographical area occupied by a species, at the time

it is listed in accordance with the ESA, on which are found those physical or biological features (a) essential to the conservation of the species and (b) that may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by a species at the time it is listed upon a determination that such areas are essential for the conservation of the species. “Conservation” is defined in the ESA as the use of all methods and procedures which are necessary to bring any endangered or threatened species to the point at which the measures provided pursuant to the ESA are no longer necessary. In other words, conservation is synonymous with recovery in the context of the ESA, thus critical habitat designations identify habitat features necessary to recover listed species.

The Secretary may only find critical habitat “not determinable” if the agency lacks sufficient information regarding the species’ biological needs or the impacts of the designation. 50 C.F.R. § 424.12(a)(2). Additionally, the Secretary has the discretion to exclude any area from a designation if he or she determines that the benefits of exclusion outweigh the benefits of designation, based on the best available scientific and commercial data.

Any interested person may file a petition with the Secretary to add or remove a species from the ESA list or to revise critical habitat. 16 U.S.C. § 1533(b)(3)(A), (D); 50 C.F.R. § 424.14(b), (c). The Secretary must “[t]o the maximum extent practicable, within 90 days [of] receiving the petition . . . make a finding as to whether the petition presents substantial scientific information indicating that the petitioned action may be warranted.” 16 U.S.C. § 1533(b)(3)(D) (i); 50 C.F.R. § 424.14(c)(1). “Substantial information” is that “amount of information that would lead a reasonable person to believe that the measure proposed in the petition may be warranted.” *Id.* § 424.14(b)(1).

The ESA authorizes any citizen to commence suit “against the Secretary where there is alleged failure of the Secretary to perform any act or duty under section 4 which is not discretionary.” 16 U.S.C. § 1540(g)(1)(C).

To accomplish the goals of the Act, including the goal of protecting habitat, the ESA requires the Secretary to designate areas of critical habitat for each threatened species. *Id.* § 1533(a)(3)(A)(i).

The following describes regulations for designating critical habitat and defines the broader term ‘habitat’ *-as discussed in the proposed rule; if an area is occupied by the listed species, then as a matter of logic and rational inference, the area must also be “habitat” for the species.* (M19) This ruling of 12/16/2020 defined the regulation for designating critical habitat under the *Act*.

**Endangered and Threatened Wildlife and Plants; Regulations for Listing Endangered and Threatened Species and Designating Critical Habitat - rule 12/16/2020**  
**50 CFR Part 424**  
**[Docket No. FWS-HQ-ES-2020-0047, FF09E23000 FXES1111090FEDR 212; Docket No. 201210-0335] RIN 1018-BE69; 0648-BJ44**

*The Docket noted, the Act defines ‘critical habitat’ not just in terms of where a species may be found, but also in terms of which areas provide resources that further the species’ conservation. Further, we find that none of the existing definitions clearly incorporate areas that are not currently occupied by the species but that may still satisfy the requirements to be considered unoccupied critical habitat. Our definition includes unoccupied areas, and therefore complies with the intent of the Act, which requires the Secretaries to designate as critical habitat not only areas that are occupied by the species, but also those areas that are “outside the geographical area occupied by the species at the time it is listed upon a determination by the Secretary that such areas are essential for the conservation of the species” ([16 U.S.C. 1532\(3\)](#)).*

*NMFS stated, in response to these and other comments, we have revised the definition of “habitat” in this final rule. These changes are described in the preamble to this regulation and throughout this responses-to-comments section. Changes include removal of words or terms, the substitution of new wording to reduce ambiguity, and the description of intended meanings of particular words used in the final definition. For example, we removed both “depend upon” and “use,” words which generated many comments both in favor of and opposed to their inclusion, and replaced them with “necessary to support,” which describes the “resources and conditions” in question.*

*We further describe (below, in another response to comment) that our intent is for the meaning of “support” to be consistent with the purposes of the Act to recover listed species to the point at which they no longer need the protections of the Act. The “resources and conditions” in question must contribute to this outcome, at least incrementally.”*

*Other changes made to the proposed definition in light of commenters’ requests for increased clarity include the deletion of the words “attributes” and “physical places” from the final definition. “Physical places” was removed from the definition and replaced with “biotic and abiotic setting” because the substituted phrase captures a broader set of characteristics, conditions, and processes and addresses the concern raised by multiple commenters that natural spatial and temporal variations in habitat were not encompassed in the proposed definition.”*

*“Attributes” was removed in favor of the plain-language terminology “resources and conditions necessary to support one or more life processes of a species,” which is further described in a separate comment below.*

*Given the large number of comments for and against using each of the two terms—“depend upon” and “use”—in the regulatory definition of “habitat,” we have revised the final*

*definition to eliminate use of these terms altogether. Based on the public comments, we have replaced these terms with other, plain-language words that more clearly indicate the intended meaning of the term “habitat” and avoid the types of ambiguity and misinterpretations discussed by the commenters. Specifically, we have focused the definition on the abiotic and biotic setting that provides resources and conditions “necessary to support” one or more life processes of the species. What is considered “necessary to support” the species will be grounded in the best available science for the particular species and the common-sense application of ecological principles. We also find that this phrasing better demonstrates how the definition of “habitat” is inclusive of both areas that would qualify as occupied critical habitat and areas that would qualify as unoccupied critical habitat.”*

*Therefore, the term “capacity” no longer appears in the definition or raises these questions. The term “support” remains in the definition, but now appears in the first sentence. We use that term consistent with the intent of the Act—to further the conservation of listed species. Specifically, to “support” a listed species' life processes, resources and conditions must contribute, at least incrementally, to bringing the species “to the point at which the measures provided pursuant to . . . [the Act] . . . are no longer necessary” ([16 U.S.C. 1532\(3\)](#)). This approach is also consistent with our recent revisions to the procedures used to designate critical habitat ([50 CFR 424.12\(b\)\(2\)](#); [84 FR 45020](#), August 27, 2019), which specify that the Secretary must determine, in part, that there is a reasonable certainty that the area will contribute to the conservation of the species.”*

*The phrase “individuals of the species” was not intended to artificially restrict what qualifies as habitat to something less than what would be necessary to sustain the species, nor was it intended to artificially expand what qualifies as habitat to areas where, for example, only vagrant individuals are present. We agree that what qualifies as habitat for a given species should be based on the ecology of that species so that it reflects the specific relationship between the environment and individuals, populations, and the species as a whole. Because this phrase received extensive public comments indicating an unintended ambiguity, we have removed this phrase from the definition of “habitat” provided in this final rule. The final definition is instead oriented around life processes of the species and the setting that supports those life processes.*

*As noted in the preamble above, the text and logic of the statute inherently require that the definition of “habitat” must be at least as broad as the statutory definition of “critical habitat.” We have therefore created this definition to be sufficiently broad to include both occupied and unoccupied areas. As for the relationship between range and habitat, the current range of a species is the general geographic area within which a species can be found.*

***Therefore, depending on the facts surrounding a given species, the areas that constitute occupied habitat for the species are a subset of, or are the same as, its current range.***

*We proposed a regulatory definition of “habitat” as that term is used in the context of critical habitat designations under the Act. In addition to the proposed definition, we also sought comment on an alternative definition. The Act defines “critical habitat” in section 3(5)(A), establishing separate criteria depending on whether the relevant area is within or outside of the geographical area occupied by the species at the time of listing, but it does not define the broader term “habitat.” See [16 U.S.C. 1532\(5\)\(A\)](#). The Services have not previously adopted a definition of the term “habitat” through regulations or policy; rather, we have traditionally applied the criteria from the definition of “critical habitat” based on the implicit premise that any specific area satisfying that definition was habitat.*

*However, the Supreme Court recently held that an area must logically be “habitat” in order for that area to meet the narrower category of “critical habitat” as defined in the Act *Weyerhaeuser Co. v. U.S. FWS*, 139 S. Ct. 361 (2018). The Court stated: “. . . Section 4(a)(3)(A)(i) does not authorize the Secretary to designate [an] area as critical habitat unless it is also habitat for the species.” *Id.* at 368; see *id.* at 369 n.2 (“we hold that an area is eligible for designation as critical habitat under section 4(a)(3)(A)(i) only if it is habitat for the species”). Given this holding in the Supreme Court’s opinion in *Weyerhaeuser*, we are adding a regulatory definition of “habitat.”*

*Under the text and logic of the statute, the definition of “habitat” must inherently be at least as broad as the statutory definition of “critical habitat.” To give effect to all of section 3(5)(A), the definition of “habitat” we are finalizing is broad enough to include both occupied areas and unoccupied areas, because the statute defines “critical habitat” to include both occupied and unoccupied areas. 139 S. Ct. at 369 (“[h]abitat can, of course, include areas where the species does not currently live, given that the statute defines critical habitat to include unoccupied areas”).*

*For the purposes of designating critical habitat only, habitat is the abiotic and biotic setting that currently or periodically contains the resources and conditions necessary to support one or more life processes of a species.*

*By reducing the definition to a single sentence, this structure is more logical, and eliminates any apparent contradiction between the first sentence and the second sentence of both the proposed and alternative definitions on which we sought comment in the proposed rule.*

*We added an introductory phrase to the final definition (“For the purposes of designating critical habitat only”) that explicitly limits the scope of applicability to the designation of critical habitat. We added this explicit statement in response to public comments that raised concerns about the potential for the definition to apply to other sections of the Act or other Federal programs that use the term “habitat” and thus have unintended consequences on implementation of these other sections and programs. This addition provides clarity that the definition applies only to the process of designating critical habitat.*

***We replaced the phrase “physical places” with the phrase “abiotic and biotic setting.”*** *Abiotic means derived from non-living sources such as soil, water, temperature, or physical processes. Biotic means derived from living sources such as a plant community type or prey species. We intend for the word “setting” to have its common meaning, such as the time, place, and circumstances in which something occurs or develops. The addition of this phrase responds to comments that **habitat is more than simply a physical location.** As we stated in the proposed rule, we intentionally chose not to use the statutory phrase “physical or biological features” to avoid conflating the statutory language regarding occupied critical habitat with that of the broader definition of “habitat” promulgated here. **However, we consider “abiotic and biotic setting” to be inclusive of “physical or biological features.”** Additionally, it addresses the concerns raised by commenters that natural spatial and temporal variations in habitat were not encompassed in the proposed definition. Finally, this use of the phrase “abiotic and biotic setting” avoids the undefined term “attributes,” which commenters found to be vague, poorly defined, or confusing.*

Of the marine mammal species listed under the ESA, critical habitat has only been designated for the NARW and West Indian manatee. Critical habitat for the NARW was designated more than 20 years after being listed under the ESA; the marine mammal area(s) designated in 1994 were Gulf of Maine feeding areas in Cape Cod Bay, Stellwagen Bank, and the Great South Channel, as well as the nearshore calving grounds that stretch from Cape Canaveral, Florida to Cape Fear, North Carolina (50 CFR 226).

The general mid-Atlantic region and, more broadly, the North Atlantic OCS, is an important migratory corridor for NARW and other ESA-listed large whales (Hayes et al. 2020, 2022, 2023; NMFS 2024a). The NOAA Technical Memo NMFS-NE-307 (October 2023) references the map of **The North Atlantic Right Whale Major Habitat Areas** (see section 4. Geographical Area Occupied by the Species) outlining the following areas:

- US critical habitat;
- Recently discovered high-use areas;
- Primary right whale sighting locations and;
- Occasional right whale sighting locations

The migratory corridor within the ***primary right whale sighting locations, map by Brooke Hodge, Anderson Cabot Center for Ocean Life at the New England Aquarium is scaled approximately 6 to 60 miles off the coast.*** This ***primary habitat area*** must qualify as the setting that provides the resources and conditions necessary for the species’ life processes, and logically furthers the right whale’s conservation. Several published studies over the past decade found the NARW present all months of the year from Maine to Florida, and throughout its life cycle, not just seasonal. The designation of additional ‘critical habitat’ will afford broad protection to the endangered species.

## **2. Background North Atlantic Right Whale, *Eubalaena glacialis***

### **2.1 Endangered Species Listing History (see Research References; Examination of North Atlantic Right Whale from Maine to Florida; Timeline)**

The North Atlantic right whale (*Eubalaena glacialis*) is a large baleen whale. Over the last few centuries their population has declined at an alarming rate, leaving them functionally extinct in western European waters, and restricted in range from Maritime Canada and New England waters to the southeastern coast of North America.

In 1970, right whales, *Eubalaena* spp. were listed as endangered ([35 FR 18319](#); December 2, 1970). At that time, NMFS considered the northern right whale species (*Eubalaena glacialis*) to consist of two populations; one occurring in the North Atlantic Ocean and the other in the North Pacific Ocean. In 1994, NMFS designated critical habitat for the northern right whale population in the North Atlantic Ocean ([59 FR 28805](#); June 3, 1994). This critical habitat designation included portions of Cape Cod Bay and Stellwagen Bank, the Great South Channel (each off the coast of Massachusetts), and waters adjacent to the coasts of Georgia and the east coast of Florida. These areas were determined to provide critical feeding, nursery, and calving habitat for the North Atlantic population of northern right whales. This critical habitat was revised in 2006 to include two foraging areas in the North Pacific Ocean—one in the Bering Sea and one in the Gulf of Alaska ([71 FR 38277](#); July 6, 2006).

In 2006, (NMFS) published a comprehensive right whale status review, which concluded that recent genetic data provided unequivocal support to distinguish three right whale lineages as separate phylogenetic species (Rosenbaum *et al.* 2000): (1) The North Atlantic right whale (*Eubalaena glacialis*) ranging in the North Atlantic Ocean; (2) The North Pacific right whale (*Eubalaena japonica*), ranging in the North Pacific Ocean; and (3) The southern right whale (*Eubalaena australis*), historically ranging throughout the southern hemisphere's oceans. Based on these findings, NMFS published proposed and final determinations listing right whales in the North Atlantic, North Pacific, and southern hemisphere as separate endangered species under the ESA ([71 FR 77704](#), December 27, 2006; [73 FR 12024](#), March 6, 2008). In April 2008, a final critical habitat designation was published for the North Pacific right whale ([73 FR 19000](#), April 8, 2008).

On October 1, 2009, NMFS received a petition to revise the 1994 critical habitat designation for right whales in the North Atlantic. In response, pursuant to section 4(b)(3)(D), NMFS published a combined 90-day finding and 12-month determination on October 6, 2010, that the petition presented substantial scientific information indicating that the requested revision may be warranted, and NMFS issued a proposed rule to revise critical habitat for the North Atlantic right whale ([75 FR 61690](#)). As noted in that finding, the biological basis and analysis for the 1994 critical habitat designation were based on the North Atlantic population of right whales, and NMFS considered that designation to continue to apply to North Atlantic right whales after they were subsequently listed as a separate species in 2008.

On December 9, 2013, NMFS published a ruling; Endangered Fish and Wildlife; Final Rule To Remove the Sunset Provision of the Final Rule Implementing Vessel Speed Restrictions To Reduce the Threat of Ship Collisions With North Atlantic Right Whales A Rule by the [National Oceanic and Atmospheric Administration](#) on [12/09/2013](#)

On February 20, 2015, NMFS proposed to replace the 1994 critical habitat designation for the population of right whales in the North Atlantic Ocean with two new areas of critical habitat for the North Atlantic right whale. <https://www.federalregister.gov/documents/2016/01/27/2016-01633/endangered-and-threatened-species-critical-habitat-for-endangered-north-atlantic-right-whale>

Currently, the NARW is protected internationally by the International Convention for the Regulation of Whaling (ICRW), as well as domestically by both the Endangered Species Act (ESA) and the Marine Mammal Protection Act (MMPA).

With less than 370 individuals believed to be alive in 2023 (M7) every animal saved is a step towards recovery, and every animal lost, a step towards extinction. This is why it is critical to continue providing the species with well tailored legal protections. This is reinforced by the MMPA's own metrics, which demonstrate that the loss of even one animal annually is not sustainable.

The Marine Mammal Protection Act (MMPA) was enacted by Congress in recognition of the significant international importance of marine mammals, which are valued for their aesthetic, recreational, and economic contributions. This commitment to conservation was further emphasized the following year with the passage of the Endangered Species Act (ESA), aimed not only at preventing extinction but also facilitating the recovery of endangered species. The MMPA seeks to maintain marine mammal populations at sustainable levels, while the ESA focuses on restoring endangered species to a point where they no longer need protection. Together, these legislative acts reflect Congress's intention to safeguard and preserve these creatures for future generations.

The responsibility to safeguard the North Atlantic Right Whale (NARW) under the MMPA and the ESA falls solely to the National Marine Fisheries Service (NMFS). This means that NMFS is required to take action to conserve the NARW, as failing to do so would undermine their legal obligations from both the MMPA and the ESA, in addition to their ethical duty to protect this endangered marine mammal population from the threat of extinction.

Established criteria to change the listing status from “endangered” to “threatened” or remove the North Atlantic right whale from the list of threatened and endangered species under the ESA were provided in the Recovery Plan for the North Atlantic Right Whale (*Eubalaena glacialis*) (NMFS, 2005) (M20). The criteria for changing the listing status of right whales have not been met and likely will not be met for a number of years. The right whale population is chronically exposed to threats from human activities that retard its recovery. Thus, while there are a number of encouraging signs regarding the growth and productivity of this population,

given its current size and the threats to which it is exposed, the species' listing status is not likely to change in the foreseeable future.

**In July 2020, the IUCN Red List (International Union for Conservation of Nature's Red List of Threatened Species) made it official that the North Atlantic right whale (NARW) has joined a growing list of animals on the brink of extinction and is now officially classified as 'Critically Endangered.'**<sup>(M21)</sup>

## 2.2 Species Description and Life History

The Northern right whale was originally listed as endangered in 1970 under the Endangered Species Conservation Act of 1969, the precursor to the ESA of 1973 (16 U.S.C. 1531 et seq.; 35 FR 18319, December 2, 1970). Following a status review for Northern right whales, NMFS concluded in 2008 that the North Pacific right whale (*Eubalaena japonica*) and North Atlantic right whale (*Eubalaena glacialis*) should be listed separately as endangered species (73 FR 12024, March 6, 2008) under the ESA. The right whale was severely depleted by commercial whaling and, despite protection from commercial harvest since 1935, has not recovered. Following two decades of growth between 1990 and 2010, the species entered a state of decline over the past decade (Pace et al. 2017; Pace 2021), with a recent preliminary population estimate of fewer than 370 individuals remaining. Right whale abundance began to decline in 2010 due to a combination of increased human-caused mortality and decreased reproductive output (Pace et al. 2017). **The decline coincided with changes in habitat use patterns, characterized by the whales' increasing use of areas with few protections from anthropogenic harm (Davis et al. 2017; Meyer-Gutbrod and Greene 2018; Record et al. 2019).** The species' decline has been exacerbated by an ongoing Unusual Mortality Event (UME) that NMFS declared in 2017, pursuant to section 404 of the MMPA, and includes an unprecedented *51 known mortalities and serious injuries to date, impeding the species' recovery. Of the 51 mortalities and serious injuries included in the UME, 13 are attributed to unknown causes (mostly due to an inability to examine carcasses), 13 to vessel strikes, 24 to entanglements, and 1 from natural causes.*

The article, "Assessing North Atlantic right whale health: threats, and development of tools critical for conservation of the species" published February 2021 provided a review of NARW mortalities.<sup>(M22)</sup>

*Where COD (cause of death) was determined, 88% (38/43) were anthropogenic in origin. The relative threat of entanglement in commercial fishing gear increased from the previous estimate, accounting for 58% (22/38) of the anthropogenic deaths, while vessel strike accounted for 42% (16/38) of these cases. Females accounted for 66% (19/29) of known-sex adult deaths.*

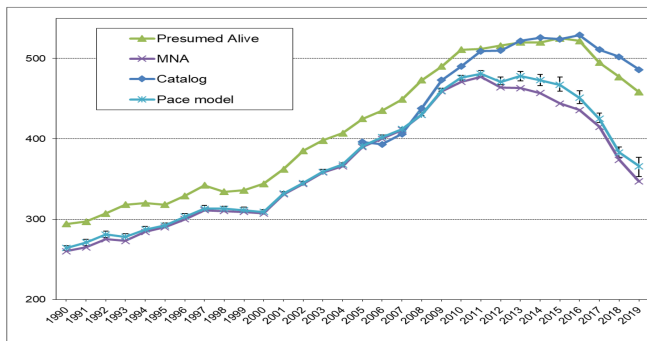
*In both studies (Moore et al. 2004, Sharp et al. 2019), juvenile and adult mortalities of NARWs from known causes were all due to anthropogenic trauma. **In the 1980s through the 2000s, deaths were overwhelmingly due to vessel strikes as animals transited either south to***

*the calving grounds or back north to feeding grounds. During this time, necropsy teams documented 3 pregnant NARWs with evidence of vessel strikes in the mid-Atlantic and southeast USA, which motivated the development of coast-wide seasonal management areas (SMAs), where most vessels >65 ft (~20 m) are required to slow to 10 knots or less at certain times of the year (when NARWs are expected to be present) as a conservation strategy (Silber et al. 2014). Diagnostic necropsies provide critical data, for maintaining an up-to-date understanding of how anthropogenic trauma on the species is changing in time and space. Without these data, the necessary ongoing optimization and evaluation of mitigation measures cannot occur.*

The NMFS website regarding the NARW UME notes from 2020 to the present date, in addition to the above COD, NOAA documented **11 right whales deaths and 3 calves presumed missing. Of these 14 NARW identities, 13 were found associated with the historical primary migratory corridor**, except for 1 calf, off the coast of Florida in 2021. In 2020, off the coast of New Jersey, within the primary migration corridor, two (2) North Atlantic right whale deaths were documented.

**As shown below, NARW population has been declining dramatically;**

**Population Decline of the North Atlantic Right Whale**



54

NMFS has determined that the Potential Biological Removal (PBR) <sub>(M23)</sub> for the species— defined by the MMPA as “the maximum number of individuals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population”— is 0.7 whales (Hayes et al. 2021). This means that for the species to recover, the population cannot sustain, on average over the course of a year, the death or serious injury of a single individual due to human causes. Observed human-caused mortality far exceeds this level and a recent assessment of total right whale mortality estimates range-wide indicates that observed deaths likely captured only about 36 percent of the actual total deaths between 1990-2017 (Pace et al. 2021). Right whale abundance will continue to decline, imperiling species recovery, unless human-caused mortality is substantially reduced in the near term. Entanglement in fishing gear and vessel strikes have been the two primary

causes of right whale mortality and serious injury, and human-caused mortality to adult females, in particular, is limiting recovery of the species (Moore et al. 2005, 2021; Corkeron et al. 2018; Hayes et al. 2021; Sharp et al. 2019). Anthropogenic trauma was the sole source of mortality for right whale adults and juveniles for which a cause of death could be determined between 2003 and 2018 (Sharp et al. 2019). This means that outside their first year of life, no right whales are observed with a natural cause of death because they succumb to anthropogenic lethalties before they can die of old age or other natural maladies.

NMFS also documented a decline in right whale calving rates which dropped from 2017 to 2020, with zero births recorded during the 2017-2018 season. The 2020-2021 calving season had the first substantial calving increase in 5 years, with 20 calves born, and the 2021-2022 calving season saw 15 births. However, estimated mortalities continue to outpace births, and best estimates indicate fewer than 100 reproductively active females remain in the population. Given the ongoing rate of human-caused mortality and serious injury, approximately 50 or more calves would need to be born per year over many years to stabilize the population decline and allow for recovery. A recent study found that right whale body length is correlated to birth interval and calves produced per potential reproductive year, with larger females exhibiting shorter inter-birth intervals and more calves produced per potential reproductive year (Stewart et al. 2022). Researchers have also identified declines in right whale body length and condition which may be driven by rapidly changing ocean conditions due to climate change, repeated and worsening entanglements, and increasing vessel traffic and vessel strikes (Knowlton et al. 2012; van der Hoop et al. 2017; Corkeron et al. 2018; Christiansen et al. 2020; Stewart et al. 2021).

These impacts may have cumulatively contributed to lower birth rates in the past decade. Efforts to reduce both entanglements and vessel strikes may increase fecundity and improve resiliency of the right whale population, thereby helping to maintain right whale population viability (Stewart et al. 2022). Right whales inhabit U.S. waters year-round but predominate during late fall through early summer. Within U.S. waters, the whales primarily forage in the greater Gulf of Maine region (NY to ME) (Pershing et al. 2009; Davies et al. 2014). The species' only known winter calving area lies off the U.S. Southeast Coast within the South Atlantic Bight between northern Florida and North Carolina (Keller et al. 2012; Gowan and Ortega-Ortiz 2014).

**The Mid-Atlantic (New York to North Carolina) serves both as a migratory habitat for right whales moving between calving areas and northern foraging grounds, as well as a foraging habitat. The whales' primary distribution includes seasonal coastal habitats characterized by extensive commercial and recreational vessel traffic.** (M24)

Right whales are vulnerable to vessel strike due to their coastal distribution and frequent occurrence at near-surface depths, and this is particularly true for females with calves. The proportion of known vessel strike events involving females, calves, and juveniles is higher than their representation in the population (NMFS 2020). Mother/calf pairs are at high risk of vessel strike because they frequently rest and nurse in nearshore habitats at or near the water surface, particularly in the Southeast calving area (Cusano et al. 2018; Dombroski et al. 2021). Calving females have the longest residence time of any demographic group on the Southeast calving ground, staying on average about three months in the region before traveling with their nursing calves to northern foraging areas (Krzystan et al. 2018).

**Right whales nurse their calves for up to a year. This promotes rapid calf growth (Fortune et al. 2012) but also places mother/calf pairs at increased risk of vessel interactions within the Southeast calving grounds and along the Mid-Atlantic and New England coasts, which are important migratory and foraging areas for right whales.**

### **3. Previous Critical Habitat Federal Rule Making**

#### **3.1 Migratory Corridor Designation Public Comments January 27, 2016**

Within the 2016 Federal Register (M1) section 3.1 Migratory Corridor Designation Comments, NMFS received 261 letters and general comments on the proposed rule and supporting analyses via Regulations.gov, letter, fax, and email. In addition, 20,826 form letters were also received via letter and email. **NMFS received 20,325 form letters from an environmental advocacy group stating their general support for the proposed designation of critical habitat and urging NMFS to include a migratory corridor in the final designation.**

The NMFS received an additional 500 form letters from a second environmental advocacy group as well as 210 (additional) form letters that contained slight variations to the main form letter. NMFS also received **two petitions from environmental advocacy groups with approximately 17,420 and 2,069 signatures, respectively stating general support for designating critical habitat and urging the inclusion of a migratory corridor.** <https://www.federalregister.gov/documents/2016/01/27/2016-01633/endangered-and-threatened-species-critical-habitat-for-endangered-north-atlantic-right-whale>

The following are just a few examples of the comments and responses noted in the Federal Register that emphasized the general support for designating critical habitat and using the inclusion of the migratory corridor, however, the NMFS' data was preliminary and did not represent the best available information present at the time of the final rule. For the reasons stated above, NMFS concluded it was not possible to designate migratory critical habitat at that time.

#### **Examples of Migratory Corridor Comments and Responses from NMFS**

**Public Comment 20:** A number of commenters stated that the agency must designate a migratory corridor for the North Atlantic right whale in the mid-Atlantic, asserting there is no other route between the southern calving and northern feeding grounds. They stated that the agency undervalued the data in the available studies and other data the agency has relied upon in other rule makings regarding protections for North Atlantic right whales. The commenters stated that the agency's summary in the proposed rule relied primarily on a single study of the broad movements of two tagged animals to conclude that not all right whales migrate within 30 miles of shore, the distance referenced in the petition to revise critical habitat. The commenters stated that the study in question (Schick *et al.* 2009) showed that while not all right whales are found

within 30 miles of the coast, the tagging data from Schick *et al.* (2009) **show that the tagged whales were primarily found within 30 miles of the coast of the mid-Atlantic** and only appeared to travel significantly farther from shore off of the Delaware Bay area toward Block Island Sound. The commenters also stated that a recently published report of the tagging of two right whales in 2014 showed a similar nearshore travel pattern, with all movements on the narrow shelf to the Chesapeake Bay and only farther offshore northward of that area where the shelf is broader.

**NMFS Response 20:** Given that large-scale migratory movements between feeding habitat in the northeast and calving habitat in the southeast are a necessary component in the life-history of the North Atlantic right whale, we agree with the commenters that facilitating successful migration by protecting the species' migratory area is a key conservation objective that could be supported by designation of critical habitat for the species. As described in the Biological Source Document, we explored the possibility of using known occurrences of North Atlantic right whales in the mid-Atlantic to identify the specific areas used for migration and essential physical and biological features in those areas. Data and information considered by NMFS included sightings data used while developing the rule to implement ship speed restrictions to reduce the threat of ship collisions to North Atlantic right whales ([73 FR 60173](#), October 10, 2008); the studies by Knowlton *et al.* (2002), and Firestone *et al.* (2008); and telemetry data and model results used in Schick *et al.* (2009).

The authors of these three publications expressed whale distribution in terms of distance from shore. For example, of the sightings used in support of the ship speed rule, **NMFS found that approximately 83 percent of all observed right whale sightings occurred within 20 nm (37 km) of the coast, and approximately 90 percent of all right whale sightings occurred within 30 nm (33 miles or 55.6 km) of the coast ([73 FR 60173](#)).** Schick *et al.* (2009) found that, based on telemetry data for two tagged whales, peak habitat suitability occurred in the range of 17 to 108 nm from shore for one tagged whale (a mother-calf pair), and for the other, peak suitability occurred in the range of 8 to 40 nm from shore for the other.

The commenter also cited the recently published report of two tagged right whales from 2014. We are aware of this three-year ongoing North Atlantic right whale telemetry project that tagged three right whales in 2014, and we did consider the preliminary results of this work. Estimated tracks of two of the whales were well publicized and made available on [www.alaskasealife.org](http://www.alaskasealife.org).

However, we are also aware that there are varying levels of error and uncertainty associated with those preliminary telemetry tracks, and the data have not been processed completely to account for those errors (thus, the Web site correctly refers to the tracks as “estimated tracks”). Further, similar to the discussion of the Schick *et al.* (2009) study above, these preliminary data do not provide us with any indication of physical or biological features essential to the conservation of right whales and whether any such features warranted any special management considerations. Therefore, we determined that those data are preliminary and do not represent the best available information present at the time of this final rule. For the reasons stated above, we conclude it is not possible to designate migratory critical habitat at this time.

**Observation 20:** Wiley Report, dated 2021, see Reference pages, clearly show NARW’s using their habitat for behaviors such as foraging, social, etc.

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**Public Comment 25:** One commenter stated that the importance of migratory corridors as a Biologically Important Area (BIA) is discussed in the Aquatic Mammals Journal Special Issue on BIAs for Cetaceans within U.S. waters. The four categories of BIAs identified in the journal articles are: Reproductive areas, feeding areas, migratory corridors, and areas in which small and resident populations are concentrated. NOAA's Cetsound Web site ( cetsound.noaa.gov) includes a CetMap module that can display Migration BIAs for numerous cetacean species, including the North Atlantic right whale. Migration BIAs cover an extensive area of the Atlantic coast from Maine to Florida. The commenter recognized that the CetMap migratory corridor was not intended as a regulatory boundary, but the absence of a migratory corridor of any size within the proposed rule means that one of the major BIA categories important for the survival of the North Atlantic right whale has been omitted.

**NMFS Response 25:** Schick et al. (2009) provide the only unbiased data and analysis on the actual extent of movements of right whales in the Mid-Atlantic. Although we acknowledge that some portion of the right whale population is sighted transiting through the waters of the Mid-Atlantic, designating migratory critical habitat requires more than just a general understanding of where some whales may be seen transiting (see Response 20 above). The paper identified by the commenter, LaBrecque et al. (2015), which discusses a migratory corridor for right whales relies on the same studies that we analyzed in our efforts to identify essential physical and biological features associated with migratory behavior in right whales. Although the authors identify a “migratory BIA” for right whales, this paper, like the others evaluated through this rule making, do not provide us with a basis for identifying physical or biological features used by right whales to facilitate their migration.

**Observation 25:** The ESA defines critical habitat as: **Specific areas outside the geographical area occupied by a species at the time it is listed upon a determination by the Secretary that such areas are essential for the conservation of the species.**” (50 CFR 424.02)

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**Public Comment 26:** One commenter stated that the features of migratory habitat are: Shallow, minimal slope, nearshore. Another commenter stated that the primary physical features for a migratory habitat would appear to be the existence of a contiguous volume of ocean water, within an appropriate range of temperatures which provides a path through which North Atlantic right whales migrate from their foraging areas to their calving areas and return.

**NMFS Response 26:** The non-specific terms “shallow,” “minimal slope” and “nearshore” simply describe the general bathymetry of nearshore shallow continental shelf benthic habitat. The

comment did not include any data or specific information that would allow us to define the appropriate or essential values of depth or slope within right whale migratory habitat, nor are we aware of any such data. The suggestion that right whale migratory habitat appears to be the existence of a contiguous volume of ocean water, within an appropriate range of temperatures that provides a path through which North Atlantic right whales migrate from their foraging areas to their calving areas and return is also non-specific. Again, the comment did not include any additional data or information that would allow us to define an appropriate volume of water or range of water temperatures that are essential for the conservation of right whales. **What the range of temperatures that may be essential for right whale migration is unknown but is a potential focus of future research and analysis.**

**Observation 26:** The NAVY report, see reference pages, shows depth, dive, and foraging for several NARWs during an off season migration. The data highlighted the seasonal importance of southern Virginia / northern North Carolina for the NARW. An unusual aggregation observation during the off season and outside of the Seasonal Management Areas suggest current protections for NARWs in the mid-Atlantic may be insufficient.

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**Public Comment 34:** One commenter recommended that we expand the list of essential physical and biological features for North Atlantic right whales in all critical habitat areas to include the acoustic qualities that allow right whales to communicate efficiently and carry out other essential biological functions.

**NMFS Response 34:** The acoustic qualities or features of the habitat that are essential to the conservation of North Atlantic right whales are currently unknown. Clark et al. (2009) noted that specific questions and uncertainty exists regarding large whale communications and the potential for communication loss to lead to impacts to the conservation of right whales. These researchers concluded that “At present, we can only speculate because we do not know enough details about when and how whales use their calls to communicate relative to the behavioral and ecological contexts, and how reductions in these capabilities translate to biological cost.” In addition Clark et al. (2009), with regard to bioacoustic effects of ocean noise states “. . . the greatest uncertainties in our abilities to estimate the impacts of communication masking come from our ignorance of spatial and temporal scales over which animals engage in their bioacoustic activities. Very little is known about the ranges over which the large whales actually communicate . . .” Therefore, an expansion of the list of essential physical and biological features for North Atlantic right whales to include the acoustic qualities that allow them to communicate efficiently and carry out other essential biological functions is not warranted at this time. **As new information becomes available, we will take appropriate action if warranted.**

**Observation 34:** In the NY Times article dated January 22, 2019 titled; Oceans are Getting Louder, Posing Potential Threats to Marine Life - Dr. Christopher Clark, a retired senior researcher in the bioacoustics program at Cornell Lab of Ornithology, who has studied whale communication for over 40 years, described ocean noise as a “living hell” for undersea life,

which is exquisitely tuned to sound. Noise masks whale expressions between families, which can effect orientation, feeding, care of your, detection of prey and even increase aggression.

Already 80 percent of communications of some species of whales is masked by noise, according to models assessed by a team of biologists. “It’s ripping the communications system apart,” Dr. Clark said. “And every aspect of their lives is dependent on sound, including finding food.”

Loud noises can also affect behavior and even ecosystems by altering where species go. In 2008 in Canada’s Baffin Bay, seismic testing is believed to have delayed the southward migration or narwhals - whales with the long spiral tusk - until it was too late and they became trapped in sea ice. More than 1,000 died.

The exposure of marine mammals to such noise had been likened to living in a permanent construction zone. **“Sometimes listening on the headphones gives you a headache within 10 minutes,” Molly Patterson, a researcher who studies underwater sound, said in the 2016 documentary “Sonic Sea.” “You have to take the headphones off, you have to turn the volume down. The whales can’t turn the volume down.”**

### **Fishing and Critical Habitat Comments**

**Public Comment 58:** Several commenters noted that while the proposed rule does not include any new restrictions for commercial fishing commenters are concerned about the waters being proposed for designation. The commenters stated that while we have determined “current fishing practices and techniques will not affect the essential foraging features” and we do not anticipate “fishery related activities that would trigger consultation on the basis of critical habitat designation,” commenters feel it is not a guarantee. The commenters could not support a formal designation with the potential to negatively impact fishermen without concrete scientific evidence of its need.

**NMFS Response 58:** As part of its impact analysis, we concluded that commercial fishing activities, as currently conducted, are not expected to affect the essential features of right whale foraging habitat with the exception of a potential future directed copepod fishery. Gear restrictions currently in place to protect large whales, including right whales, were established by the regulations implementing the Marine Mammal Protection Act's Atlantic Large Whale Take Reduction Plan. Changes to gear restrictions are beyond the scope of this rulemaking to designate critical habitat under the ESA. The Atlantic Large Whale Take Reduction Team process is the proper venue to consider the adequacy of gear restrictions. Consequently, we are not making any changes to the current gear restrictions as part of this critical habitat rule.

**Observation 58:** If the migratory critical habitat is approved, the federal government should establish a fund to defray additional costs due to the critical habitat designation.

**Public Comment 59:** One commenter stated that Maine's lobster industry has been engaged in the Take Reduction Team process since its inception and fishermen have worked diligently over nearly two decades to implement changes in fishing practices to aid in the recovery of right whales. The commenter questioned the potential impact of new federal regulations on fishermen and doubted that the proposed designation area reflects a balanced review of the best available science, nor does it properly consider the economic impacts that will result from using an arbitrarily drawn critical habitat area that fails to exclude all areas that are not essential for conservation and recovery of the species.

**NMFS Response 59:** We have identified the areas on which are found the physical and biological features which are essential to the conservation of the species and which may require special management considerations or protections as required by the ESA. The boundaries of the proposed critical habitat encompass the essential foraging and calving features. In identifying the essential calving and foraging features and considering the economic impacts of the designation, we have used the best available data and information. See also Response to Comment 58 regarding commercial fishing.

**Observation 59:** The best available data is imperative.

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**Public Comment 60:** Multiple commenters stated that while they support the concept of expanding the existing critical habitat areas where essential to the conservation and recovery of the right whale, this support for the proposed expansion is predicated on our finding in the Section 4(b)(2) Report that neither commercial nor recreational fishery-related activities are expected to affect the essential features of right whale foraging habitat with the exception of a directed copepod fishery.

**NMFS Response 60:** See response to Comment 58.

**Observation 60:** The boating industry loves the right whale. They want to protect it. They don't want to see it become extinct. Does an industry need policies? Yes, of course, everyone needs policies, there is no question about that. But industries need **smart policies** that are going to work, and that aren't going to destroy the recreational or fishing economy. **In New Jersey, the coastal community's economy starts with fishing, the restaurants, tourism, the town itself, which ultimately relies on all the vessels. There are thriving coastal communities up and down the Atlantic coast that will be destroyed by offshore wind development.**

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**Public Comment 66:** One commenter recommended that the agency expand Seasonal Management Areas that reduce ship strikes to include all portions of the proposed critical habitat in the northeast and critical habitat in the mid-Atlantic migratory corridor out to 30 nm as well as areas in the Southeast Atlantic.

**NMFS Response 66:** The commenters assertion that the SMA boundaries be reconfigured and extended out to 30 nautical miles from shore are beyond the scope of this rulemaking as the SMA rulemaking was concerning risk reduction to large whale interactions directly with North Atlantic right whales not its habitat. The purpose of the Seasonal Management Area (SMA) program is to promote direct protection to North Atlantic right whales by reducing the likelihood of death and serious injury that may result from collisions with ships. **The SMA boundaries were based on right whale sightings not the presence of physical and biological features associated with right whale migration. The SMA program is not intended to provide protections to the essential features of right whale critical habitat.**

**Observation 66:** The survival of the NARW depends on the logical designation of the historical migratory corridor in order to protect the migration from degradation of habitat from the installation and operational noise of thousands of offshore wind turbines. **Such new information is provided below that allows delineation of a migratory and other use corridor essential to the conservation of the species.**

#### **4. Geographical Area Occupied by the Species**

##### **4.1 Occupied Habitat**

The distribution of North Atlantic right whales in the western North Atlantic Ocean ranges primarily from calving grounds in coastal waters of the southeastern United States to feeding grounds in New England waters and the Canadian Bay of Fundy, Scotian Shelf, and Gulf of St. Lawrence. The minimum number of right whales in the western North Atlantic Ocean is estimated at 370 individuals, based on a census of individual whales noted on NOAA (M7). Due to the past depletion from which they have not recovered, the continued anthropogenic threats to the species, and the whale's life history, the North Atlantic right whale is in danger of extinction throughout its range.

NMFS is required to designate critical habitat based on the best available scientific data for “specific areas outside the geographical area occupied by a species at the time it is listed upon a determination that such areas are essential for the conservation of the species.” The phrase “geographical areas occupied by a species,” which appears in the statutory definition of critical habitat (16 U.S.C. 1532(5)(A)(i)), is defined by regulation as “an area that may **generally** be delineated around a species’ occurrences, as determined by the Secretary (**i.e., range**). Such areas may include those areas used throughout all **or part of the species’ life cycle, even if not used on a regular basis (e.g., migratory corridors, seasonal habitats, and habitats used periodically, but not solely by vagrant individuals)** (50 CFR 424.02).

As [explained](#) by NOAA Fisheries, (link below) “critical habitat does not create a closed area...” However, in a 1995 Supreme Court decision -- *Babbitt v. Sweet Home*, the high court decided that the definition of the term “harm” in the Endangered Species Act, goes beyond direct harm and includes changes in habitat that can cause harm. “Also, [the Court held](#) that the intent of

the Act to give broad protection to endangered species must include even actions that may have minimal or unforeseeable effects.” <https://www.fisheries.noaa.gov/national/endangered-species-conservation/critical-habitat>

A letter (M25), dated May 13, 2022 from Sean Hayes, PhD Chief of Protected Species, NOAA NEFSC directed to Brian Hooker, Lead Biologist, BOEM, Office of Renewable Energy Programs set off alarms regarding habitat occupied areas of the NARW. This information quoted below was yet another missed opportunity by the Agencies to address critical habitat expansion for the NARW within a major habitat of aggregation.

*“The most recent right whale habitat modeling shows a considerable increase in right whale habitat use of southern New England waters during recent years (Roberts et al. 2016, Roberts 2022).*

*Right whale distribution in the southern New England region occurs in and adjacent to offshore wind energy lease areas, which they occupy throughout the year (Davis et al. 2017, Passive Acoustic Cetacean Map 2022), and it is the only known area of winter right whale foraging aggregations (Johnson et al. 2021, Quintana-Rizzo et al. 2021). Of particular importance is the area near the western edge of Nantucket Shoals, which has proven to be an important habitat for right whales and other protected species from seabirds to sea turtles (Dodge et al. 2014, White and Viet 2020, Quintana-Rizzo et al. 2021). The development of offshore wind poses risks to these species, which is magnified in southern New England waters due to species abundance and distribution. These risks occur at varying stages, including construction and development, and include increased noise, vessel traffic, habitat modifications, water withdrawals associated with certain sub- stations and resultant impingement/entrainment of zooplankton, changes in fishing effort and related potential increased entanglement risk, and oceanographic changes that may disrupt the distribution, abundance, and availability of typical right whale food (e.g. Dorrell et al 2022). The focus of this memo is on operational effects, and as such, focuses on potential oceanographic impacts driving right whale prey distribution, but also acknowledges increased risks due to increased vessel traffic and noise. However, unlike vessel traffic and noise, which can be mitigated to some extent, oceanographic impacts from installed and operating turbines cannot be mitigated for the 30-year lifespan of the project, unless they are decommissioned. Additional noise, vessel traffic, and habitat modifications due to offshore wind development will likely cause added stress that could result in additional population consequences to a species that is already experiencing rapid decline (30% in the last 10 years).*

*The presence of structures such as wind turbines are likely to result in both local and broader oceanographic effects, and may disrupt the dense aggregations and distribution of zooplankton prey through altering the strength of tidal currents and associated fronts, changes in stratification, primary production, the degree of mixing, and stratification in the water column (Chen et al. 2021, Johnson et al 2021, Christiansen et al 2022, Dorrell et al 2022). Modeling studies in this region have found changes in distribution patterns of planktonic larvae under offshore wind build-out scenarios (Johnson et al. 2021, Chen et al. 2021), suggesting similar*

*impacts could occur with right whale's zooplankton prey. The scale of impacts is difficult to predict and may vary from hundreds of meters for local individual turbine impacts (Schultze et al. 2020) to large-scale dipoles of surface elevation changes stretching hundreds of kilometers (Christiansen et al. 2022). Additionally, offshore substations pose an unknown risk related to water withdrawals and impingement/entrainment of zooplankton and other prey species"*

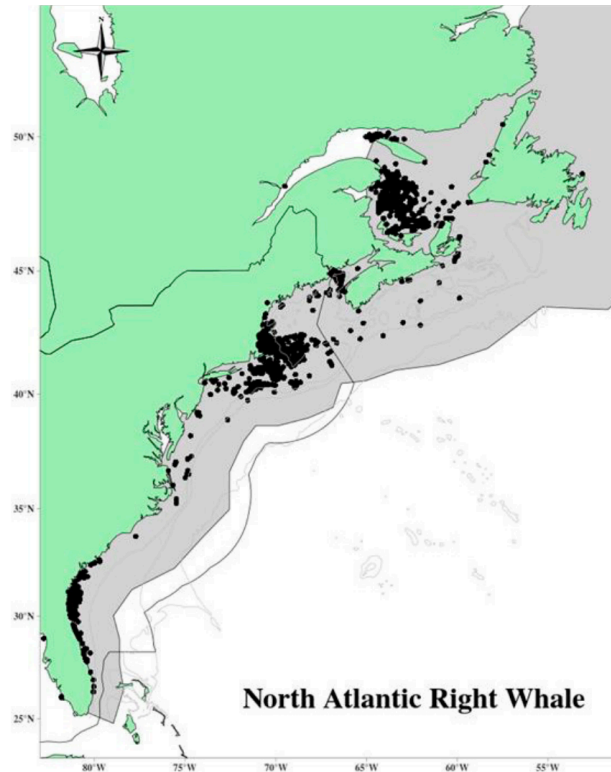
## **4.2 Baseline Oceanographic Conditions**

In a white paper study sponsored by Clean Power titled, "Oceanographic Effects of Offshore Wind Structures and Their Potential Impacts on the North Atlantic Right Whale and Their Prey", October 2023 (M26), a group of scientists outlined the potential for hydrodynamic changes due to the presence of offshore wind farms and the possibility for associated impacts on copepod prey for the NARW. The review evaluated the physical environment conditions in the coastal ocean along the U.S. East Coast Prey Distribution, and Foraging Ecology Throughout the Range of the North Atlantic Right Whale in the Mid-Atlantic under the following section:

### **2.1.1.1 Mid-Atlantic Bight (MAB)**

*The MAB extends from Cape Cod, MA to Cape Hatteras, NC, narrowing in width from 120 km (75 miles) at the northern extent to 40 km (24 miles) at the southern extent. Bathymetry is approximately parallel to the coast with the exception of the Hudson Shelf Valley and several much smaller shelf-break canyons.*

*The MAB experiences a dramatic seasonal cycle. Water is well-mixed and gradually cools through winter and spring. In late spring, cold glacial water moves down shelf and the winter/spring MAB water is isolated from a distinct surface layer by surface warming, river runoff, and weakening winds (Castelao et al. 2010; Chant et al. 2008; Miles et al. 2021). As regional stratification develops, the Mid-Atlantic Cold Pool (or simply Cold Pool, see Figure 2), a mass of deep cold water below 10°C that can span from Georges Bank to Cape Hatteras and from the coast to the 100-meter isobath, is formed (Houghton et al. 1982; Miles et al. 2021). Throughout the summer as surface heating intensifies and winds and ocean currents weaken, the thermocline strengthens and stabilizes the Cold Pool as it slowly migrates southward (Castelao et al. 2010; Lentz 2017). Persistent southwest winds that are common in the MAB during the summer can push the thin surface layer offshore, pull the Cold Pool closer to the coastline, and upwell the cold and nutrient-rich water to the surface at the shore (Glenn et al. 2004; Murphy et al. 2021). The warmest temperatures in the MAB are reached in the fall as stratification weakens due to decreased heating and increased strong wind events, ultimately breaking down into a well-mixed water column again (Castelao et al. 2010; Lentz 2017; Miles et al. 2021). The timing of the Cold Pool breakdown is highly variable and dependent on the occurrence and intensity of fall storms.*



**Figure 4.** *Habitat range (shaded in gray) of the Western Atlantic stock of North Atlantic right whales with known sightings of North Atlantic right whales (dots) from 2016 to 2020. Figure reproduced from Hayes et al. 2023.*

### **BOEM and NOAA Fisheries North Atlantic Right Whale and Offshore Wind Strategy**

On January 20, 2024, BOEM and NOAA Fisheries released the final joint strategy (M15) to protect and promote the recovery of endangered North Atlantic right whales while responsibly developing offshore wind energy.

Due to the status of NARW, science-based decision-making, and protective measures designed to ensure survival and recovery of the species must be considered in managing NARWs. The most recent stock assessment report (Hayes et al. 2023) indicates there are approximately 360 individuals and that the PBR of this population is less than one individual.

NARWs inhabit the waters of the U.S. and Canadian Atlantic, with some parts of their range designated as critical habitat under the ESA (81 FR 4838, January 27, 2016)

Within the areas proposed for OSW development in the United States, NARWs engage in migration, foraging, socializing, reproduction, calving, and resting behaviors critical to their survival (Leiter et al. 2017; Muirhead et al. 2018; Quintana-Rizzo et al. 2021; Zoidis et al. 2021)

The activities associated with OSW development would introduce or further contribute to existing stressors in the environment that affect NARWs (Daewel et al. 2022; Dorrell et al. 2022; Leiter et al. 2017; Maxwell et al. 2022; Quintana-Rizzo et al. 2021).

Effects to NARWs could result from stressors generated from a single project; there is potential for these effects to be compounded by exposure to multiple projects. NARWs migrating along the U.S. Atlantic Coast have the potential to travel near or through many currently proposed OSW developments along the Atlantic Coast. In some cases, OSW development may occur in areas that are important for NARW vital functions. For example, if the OSW development being considered in the Gulf of Maine moves forward, it would occur in designated NARW critical habitat (Leiter et al. 2017; O'Brien et al. 2022; Quintana-Rizzo et al. 2021; Stone et al. 2017).

After reviewing the best available information, if BOEM decides to initiate the planning and analysis phase for potential future leasing in areas that overlap with NARWs and their habitat, BOEM will partner with NOAA's National Centers for Coastal Ocean Sciences to use marine spatial planning approaches. The use of spatial planning tools and coordination with NOAA Fisheries will ensure best available information is incorporated into those tools (Randall et al. 2022) and supports BOEM's iterative determination of optimal locations for wind energy areas with the least impact to NARWs and their habitat.

[www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-take-authorizations-other-energy-activitiesrenewable](http://www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-take-authorizations-other-energy-activitiesrenewable)

[www.boem.gov/renewable-energy/state-activities/nmfs-esa-consultations](http://www.boem.gov/renewable-energy/state-activities/nmfs-esa-consultations)

If new information becomes available indicating that activities previously authorized by BOEM through a plan approval (e.g., SAP, General Activities Plan [GAP], COP) are now resulting in an imminent threat of serious or irreparable harm or damage (e.g., injury or mortality) to NARWs, BSEE has the authority to suspend operations.

Likewise, BOEM may require the lessee to submit a plan revision if activities previously authorized by BOEM are resulting in undue harm to NARWs. The plan revision would detail new measures that will be taken to increase protection of NARWs impacted by the activities authorized under the plan approval. BOEM will determine if the new measures are adequate and, if warranted, could then reinstate ESA Section 7(a)(2) consultation with NOAA Fisheries prior to approving any plan revision.

BOEM also will use any new information to inform future project decisions and mitigation strategies. In addition, reinstatement under Section 7 of the ESA is required when certain conditions are met (50 CFR § 402.16).

## **Record of Decision off South Carolina**

On May 24, 2007 additional Measures to Protect Right Whales in their Southeast U.S. Calving Habitat noted in its Record Of Decision that it chose to protect right whales in their core calving habitat off South Carolina “based on a re-examination of aerial survey data and predictive modeling efforts that indicate the most suitable habitat for right whales extends to 27 nm from shore [off the coast of South Carolina]. Because right whales have been detected beyond this distance from shore, we determined a 35 nm boundary would provide a sufficient buffer.” <http://sero.nmfs.noaa.gov/pr/mm/pdf/SEUS%20gillnet%20final%20rule%20-%20Signed%20DM.pdf>

**Although sighting effort tends to focus on nearshore waters, right whales do appear to preferentially use shallow, nearshore habitats during their migrations.** The reason they might favor shallow water is not entirely certain. For the northerly journey made by mothers and newborn calves, this preference may be due, in part, to the same factors that predispose them to seek shallow, coastal waters for calving. That is, shallow waters are more sheltered in the event of an encounter with a predator and the limited blubber layer of calves makes them more vulnerable to cold, such that warmer waters may be important to them. (296) Shallow waters are generally somewhat warmer than the waters further offshore as right whales move into northerly latitudes. (297)

NMFS has recognized that protecting this migratory corridor is crucial to the survival of the North Atlantic right whale. In its Final Environmental Impact Statement (“FEIS”) accompanying the rule to enact slower speeds as a collision risk reduction measure, NMFS considered and rejected an option for a continuous Seasonal Management Area (“SMA”) that would include the waters of the mid-Atlantic out to 25 nm from shore along the entire midAtlantic coast from Savannah, Georgia to Providence, Rhode Island, including Block Island Sound. (298) The continuous band of protection offered by this proposed SMA would have been in effect from October 1 to April 30. This option was contained in both Alternatives 3 and 5 in the FEIS. While it considered these alternatives to be “environmentally preferable,” (299)

NMFS did not choose either of them as a preferred alternative. Instead NMFS chose an option which it felt had a lesser economic impact. NMFS therefore left large areas of the mid-Atlantic in between port entrances unprotected by the risk-reduction measures intended to reduce right whale death. Further, NMFS opted in the final rule to extend risk reduction measures only out to 20 nm from shore. This narrower band encompasses only 87% of the sightings of migrating females and calves rather than the 94% that are out to 30 nm from shore. (300) Thus, seven percent of all sightings were outside of the area subject to seasonal management measures.

As a result, NMFS left multiple females vulnerable to death as a result of vessel collisions out of a population for which NMFS itself has found that the life of every female is vital to the recovery of the species. A recent paper by Schick et al. (2009) analyzed additional sightings and telemetry data on female right whales – including a north-to-south transit by one

satellite tracked individual, rather than just the south-to-north transit included in other analyses. (301) The study authors found some females transiting even further offshore than previously thought, with one tracked female going 37 miles offshore. The authors concluded that NMFS should re-visit its 20nm seasonal management zone width, which they believed was inadequately protective of a large number of vulnerable right whales, in favor of a 30 nm wide management area that would include a larger portion of migratory habitat and protect more mothers and calves. Because of the imperative to preserve the lives of reproductive females, and the well documented losses of exactly this demographic in the mid-Atlantic, we petition for critical habitat to include all waters along the migratory corridor of the mid-Atlantic from the shore out to 30 nautical miles, between the northern border of South Carolina (approximately 33.85° N latitude and 78.53° W longitude) northward to the southeastern corner of Cape Cod, Massachusetts (approximately 41.55° N latitude, 70.00° W longitude), southeastward to the southern corner of the current Great South Channel Critical Habitat (41.0° N latitude and 69.1° W longitude) (Figure 3).

(296) Garrison 2007 Whale Calving Habitat, *supra* note 34.

(297) See Rutgers University Website, Satellite Imagery, Sea Surface Temperature of Northeast. Available at: [http://marine.rutgers.edu/mrs/sat\\_data/?product=sst&ion=bigbight-humbs=0](http://marine.rutgers.edu/mrs/sat_data/?product=sst&ion=bigbight-humbs=0).

(298) NMFS 2008 Ship Speed EIS, *supra* note 35.

(299) *Id.* at 2-23.

(300) Knowlton et al 2002, *supra* note 282.

(301) Schick et al 2009, *supra* note 121.

The mid-Atlantic also must be protected as a critical habitat due to its essential role as a migratory corridor for pregnant females and calves. Protecting only the terminus points of right whale migration leaves their seasonal migratory route unprotected. In fact, up to one quarter of the deaths of right whales (mostly females and calves) have occurred in the migratory corridor. Without a means of safe passage to and from these areas, right whales are at risk and/or restricted in their normal behavior. Water depth is one of the most important aspects of right whale migratory habitat. Over 94% of right whales migrating between their northern feeding areas and southern calving grounds travel within 30 nm of the coast. Approximately 80% of all observations occurred in waters with depths of 27.4 meters or less and 71% were in waters of 18.3 meters or less. (312) This suggests that the primary constituent element in the migratory corridor is a water depth (i.e., quantity) of 28 meters.

(312) Firestone et al 2008, *supra* note 293.

## 5. New Threats to the North Atlantic Right Whale

### 5.1 Offshore Wind Energy Development

The Bureau of Ocean Energy Management (BOEM) is pursuing offshore wind energy development in parts of the Atlantic Outer Continental Shelf (OCS) that overlap substantially with right whale habitat and proposed Seasonal Slowdown Zones (SSZs). BOEM has approved and is planning for future development to occur within lease areas both inside and outside of named project boundaries and considers these activities to be reasonably foreseeable. All phases of wind energy development and operations are expected to contribute to vessel traffic within the proposed SSZs and broader right whale habitats within U.S. waters in the coming years. Pre-construction actions include geophysical, habitat, and biological surveys, as well as potential deployment of meteorological buoys/towers for data collection. During construction, foundation installation (including pile driving at some projects) to support wind turbine generators and electric service platforms, and installation of submarine cables, is expected. During operational and maintenance phases, anticipated activities include the use of vessels to transfer crew, equipment, and supplies for maintenance, as well as the operation of the turbines themselves.

The threat of offshore wind energy development in right whale habitat poses numerous types of risks to right whales, including direct risk from collisions and significant habitat degradation, as well as indirect threats resulting from displacement from normal habitat or effects on prey resources.

Offshore wind (OSW) energy development in key habitat areas poses significant threats. Underwater noise resulting from the vessel surveys, construction and operation of offshore wind farms will have deleterious impacts to endangered right whales.

**As shown in the Save LBI report on the vessel survey impact on the NARW**, the zone of elevated noise that will disturb whale behavior extends about 1.6 miles from the vessel source, and the vessel surveys cover a large area.

As shown in the Save LBI report on the impact of pile driving on the NARW, the relatively slow moving NARW passing by a pile driving operation within 3.7 miles of it will accumulate enough noise to suffer permanent threshold hearing loss.

As shown in the Save LBI report on the impact of operational noise on the NARW, the zone of elevated noise that will disturb whale behavior extends up to 12 miles from the project perimeter.

The Operational Noise Report is included here in Enclosure 2, the others can be made available to the Petitioned Upon Request.

Underwater noise impacts on cetaceans can also include confusion, disruption of social cohesion, separation, alteration of travel, masking vocalizations, and/or stranding. A report by the Danish Institute for Fisheries Research (2000) indicated that it “is very likely that during the construction period of both the windmills and the cable trace many of the fish species as well as

marine mammals will be disturbed.”<sup>177</sup> This same report stated that marine mammals and fish will likely disappear from the area during construction due to turbidity of the water, noise, and other sea bottom activities. Furthermore, maintenance activities may increase the risk of vessel strikes to right whales. The service and maintenance required of offshore wind farms results in a substantial increase in vessel traffic.

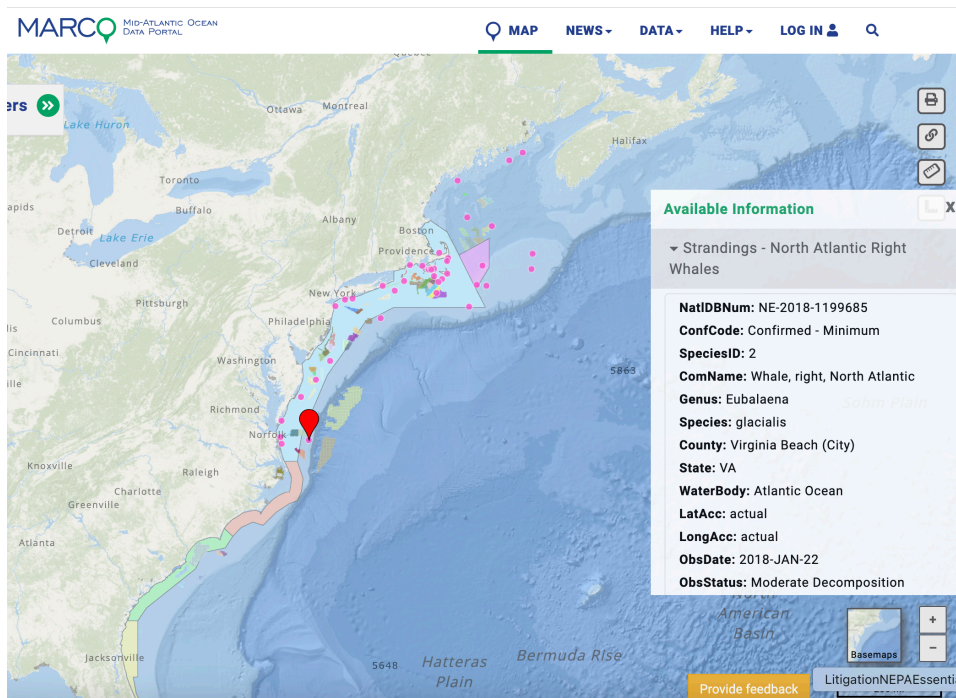
The Horns Rev wind farm, off the coast of Denmark, calculated the need for maintenance at a minimum of 150 days per year using vessels and helicopters. <sup>178</sup> It is important to consider that these trips are in addition to ongoing vessel traffic and, therefore, increase risk. <sup>177</sup> Danish Institute for Fisheries Research. 2000. Effects of marine wind farms on the distribution of fish, shellfish and marine mammals in the Horns Rev area. Report to ELSAMPORJECKT A/S. 42pp. <sup>178</sup> Noer, H., T.J. Christensen, I. Clausager & I.K. Petersen. 2000. Effects on birds of an offshore wind park at Horns Rev: Environmental impact assessment. NERI Report 2000. 112pp.

**Based on the MARCO map, up to three quarters of the deaths of right whales have occurred in the primary migratory corridor proposed for critical habitat designation here.** Without a means of safe passage to and from these areas, right whales are at risk and/or restricted in their normal behavior, especially from operational turbine noise and additional vessel traffic.

**Figure: US Mid-Atlantic Ocean Data Portal NARW Stranding 2000-2020**

Data shows **40 right whales deaths occurred (pink dots)**  
with almost **80% in the proposed migratory critical habitat corridor**

- 1. Migratory Critical Habitat North Atlantic Area = 9 right whale deaths**
- 2. Migratory Corridor Massachusetts to Virginia = 31 right whale deaths**



According to National Marine Fisheries Services, there are approximately 370 individuals remaining, including about 70 reproductively active females. Human impacts continue to threaten the survival of this species. The many individual whales involved in the UME are a significant setback to the recovery of this endangered species.

Most recently, four right whales were found within the migratory corridor, one adult male, one baby female, and two adult females which is very troublesome. The species' ability to rebound is more closely tied to the survival of females.

- 2023 - Virginia, 20yo Male #3343
- 2023 - North Carolina, Baby 2wk old under a bridge, seen swimming 1/3/23 close to shore
- 2024 - Virginia, Adult Female #1950 NAVY, mom 2024 calving season, calf not found
- 2024 - Mass, Female #5120 found near Martha's Vineyard

**The previously proposed OSW facilities in the North Atlantic, in total, will occupy over 3,500,000 acres of ocean and result in the installation of 10,000 miles of submarine cables, and 3,400 massive turbines, each standing as tall as a New York City skyscraper with blades the length of a football field. The federal government has intended for many of these OSW facilities to be online by 2030.**

**The federal government has recognized that offshore wind facilities have negative impacts, including to threatened and endangered species.** Indisputably, each OSW project will impact the marine environment and the life it supports before and during construction and throughout its operational life. **The federal government has acknowledged, for instance, that OSW facilities create underwater noise, sea floor disturbance and vessel traffic, to the extent of causing temporary and long-term impacts to the North American Right Whale.** Underwater noise can be generated before construction by seismic surveys, during construction—at excruciating levels—from pile driving the monopolies, and during operations from the structural vibration caused by the turning of the massive turbine blades. The federal government has recognized that such noise can result in “hearing impairment, the masking of vocal communication, physiological impacts (e.g., stress), and/or behavioral disturbance, as well as mortality and injury” to whales.

**The cumulative impacts of numerous offshore wind projects planned in the North Atlantic must be part of the Endangered Species Act consultation process if threatened and endangered species are to be protected from extinction.** Therefore, the designation of a migratory corridor for the NARW is warranted at this time if the critically endangered North Atlantic right whales are to survive. The scientific data documents the NARW's presence in all months of the year within major habitat areas along the coast of US Atlantic.

In the context of numerous OSW projects occurring simultaneously both close to shore and farther out (as the federal government knows to be the case here off New Jersey), the operational noise from the various projects will essentially block the migration of the NARW.

With OSW projects being developed and operated across the North Atlantic Migratory Corridor, this obstruction will occur at a number of other East Coast locations as well. The NARW habitat is not a given OSW project area, but an entire region, and the impacts are cumulative. With their habitat soon to be inundated with as many as forty-six new OSW developments, the species would have to drastically alter where they migrate, feed, breed, and care for their young to survive.

The NMFS cannot expect the NARW species to relocate farther out from their historical routes within the green line of about 56 miles to find alternative areas with the resources needed to feed and shelter as they migrate. **The NARW has stayed within that range for a reason.** They cannot be expected to find such alternative areas without experiencing fatigue, starvation, and predation.

Recently, scientists from the New England Aquarium's Anderson Cabot Center for Ocean Life have spotted over 82 unique North Atlantic right whales – including 56 in one day. These whales, representing one quarter of the entire North Atlantic right whale population, were sighted during a series of flights between the end of July and into August 2024 about 40 to 70 miles south of Long Island, New York, an area highly trafficked by vessels and an unusual feeding ground for the critically endangered species.

In a white paper study by [redacted], title the Oceanographic Effects of Offshore Wind Structures and Their Potential Impacts on the North Atlantic Right Whale and Their Prey, October 2023, section 4.1 Observational Studies and Modeling Efforts stated - ***The lack of observational studies on the U.S. East Coast represents a significant knowledge gap for our understanding of how hydrodynamic impacts of offshore wind structures may affect NARW. Given that most of the available observational studies have been conducted in Europe, a discussion topic for the Expert Workshop was how international experience and research could best be applied to predict impacts and effects on the U.S. East Coast. There was agreement among participants that while some of the general physics are similar between the U.S. East Coast and the North Sea, where many observational studies and modeling efforts have been conducted, there are still significant differences between the two locations, including bathymetry and large-scale circulation patterns. Given the identified similarities, it may be appropriate to apply certain findings from international studies related to general physics to regions of the U.S. East Coast. However, differences in the physical environment and the use of new technologies (floating vs. fixed units) and turbine designs (e.g., larger and taller turbines, different spacing, different foundation types) limit the broad applicability of study and modeling results from other locations like the North Sea to the U.S. East Coast. It was emphasized that results from international studies cannot be used as direct predictors for effects on the U.S. East Coast because of these differences.***

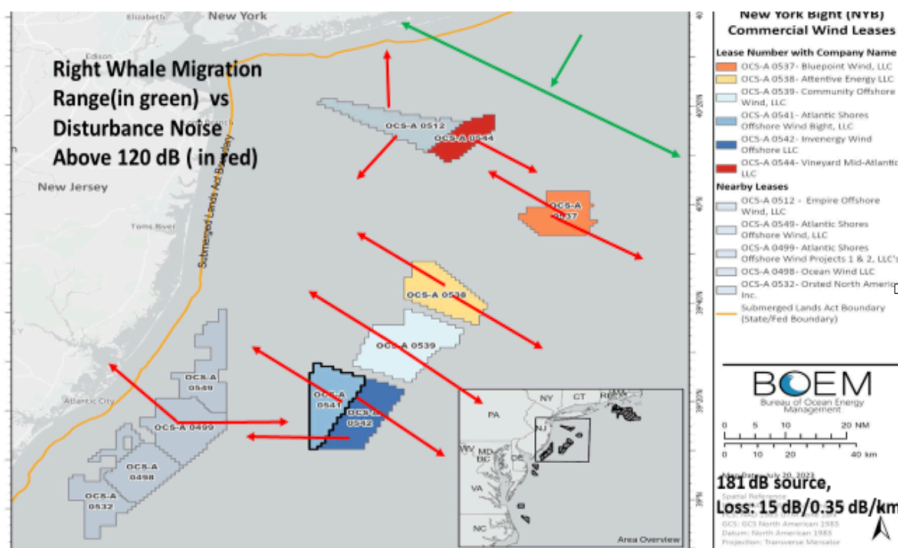
**The mid-Atlantic must also be protected as critical habitat due to its essential role as a primary historical migratory corridor for pregnant females and calves. Protecting only the terminus points of right whale migration leaves their seasonal migratory route unprotected.**

## 5.2 The Impact of Operational Turbine Noise and Pile Driving Noise

The federal government has recognized that offshore wind facilities have negative impacts, including to threatened and endangered species. Indisputably, each OSW project will impact the marine environment and the life it supports before and during construction and throughout its operational life. The federal government has acknowledged, for instance, that OSW facilities create underwater noise, sea floor disturbance and vessel traffic, to the extent of causing temporary and long-term impacts to the North American Right Whale.

However, the federal government has not properly addressed the problem of operational noise from today’s newer, very large turbines. The foundation for Save LBI’s report - “The Impact of Operational Turbine Noise on the Migration of the North Atlantic right whale” was laid out in (1) the 209 pages of comments provided on June 29, 2023 on the draft environmental impact statement for the Atlantic Shores South project, specifically on pages 5 and 33 to 57 of those comments, and (2) in Save LBI’s comments of October 31, 2023 on the National Marine Fisheries Service proposed rule with respect to the Taking of Marine Mammals Incidental (ITA rule) to the Atlantic Shores South Project with respect to the Marine Mammal Protection Act (MMPA), specifically the cover letter and Enclosure I of those comments. The points made in our Save LBI Reports, are virtually identical to those made in those comments with a few minor updates to numbers.

As shown in Save LBI’s Report on the Impact of Operation Turbine Noise on the Migration of the NARW of July, 2026, this effect is illustrated in the map below for the projects planned off New Jersey. The green line represents the main historical range of the NARW migration, although most of the migration has been within 30 nautical miles (33 miles) as cited above. The red lines show the extent of the elevated noise ranges from the various projects exceeding 120 decibels, which will disturb the whales behavior, causing it to avoid or stand off from those levels. Based on the map, it is difficult to see how the NARW can find an unobstructed path to continue its migration off New Jersey waters; and more broadly discussed how does the NARW survive without a designated migratory corridor from Maine to Florida free of wind turbine complexes.



A whale attempting to pass by the wind complex **within 2.5 miles of the perimeter** would encounter a sound pressure level of a 135 dB, which, when added to the 47.6 dB from the time of exposure, **would result in 183 dB of sound energy exposure and suffer permanent hearing loss.**

A whale attempting to go into the wind complex in between two rows of turbines spaced 0.6 nautical miles apart would encounter a sound pressure level of 181-15 log<sub>10</sub> 531 or 140 dB (seabed attenuation not a factor at these distances). Adding to that the 47.6 dB from the time of exposure results in a total cumulative energy received **of 187.6 dB which clearly exceeds the level for permanent hearing loss.**

By not protecting the NARW migration, the Secretary failed to ensure that the Atlantic Shores South project would be implemented in a manner that would **protect the environment and conserve the natural resources** of the outer Continental Shelf:

a. Under OCSLA, the Secretary of the Interior (the “Secretary”) “shall ensure that any activity under this subsection is carried out in a manner that provides for – “(B) protection of the environment; [and] “(D) conservation of the natural resources of the outer Continental Shelf. ”

b. In this case, the Atlantic Shores South project – approval of which constitutes an “activity” under OCSLA – has the potential to degrade the environment and substantially damage the natural resources of the outer Continental Shelf. Specifically, the Atlantic Shores South project, like nearly every other offshore wind facility approved or contemplated on the east coast of the United States, will be constructed and operated within waters used by the federally-listed NARW for migration, feeding, and other life cycle behaviors.

c. According to the project’s application for Incidental Take Authorization for construction and operation, its lease area intersects a critical historical migration route of the critically endangered NARW. During construction of the project, the company will engage in underwater pile driving to embed the wind turbines in the seafloor. This will generate intense noise impacts deleterious to cetaceans such as the NARW. NARWs passing within several miles of a pile driving operation can accumulate enough noise energy to suffer permanent hearing loss without necessarily being exposed to levels that disturb behavior . Alternatively, whales swimming away from the project area to avoid the pile driving noise may enter into less-preferred waters, where they will encounter a host of threats, including beach stranding and collisions with vessels and entanglement in fishing gear. Even without these threats, the energy necessary to evade the project’s construction noise will drain the whales, whose physical condition is already compromised by loss of foraging opportunities. In fact, recent studies show that NARWs, especially reproductive-age females, have sharply diminished physical fitness as compared to other whales. This has resulted in fewer calves per female and longer intervals between calf births. This trend, which the project will help to perpetuate, will cause the NARW

population, which currently rests at approximately 330 individuals, to continue its downward trajectory, leading ultimately to extinction.

d. Other construction impacts include increased risk of vessel strikes from project-related ships and personnel transfer boats transiting to, from, and through the project area, many of which will be allowed to travel in excess of 10 knots per hour. As admitted by the National Marine Fisheries Service (NMFS) in the Biological Opinion (BiOp) for the Atlantic Shores South project (and others), a vessel collision at speeds greater than 10 knots per hour will usually result in serious injury to the whale, while a collision at speeds greater than 15 knots per hour will kill the whale almost 100 percent of the time.

e. As shown graphically above, the project's adverse effects on NARW do not end with the completion of construction. In fact, the project's operational impacts will likely pose the greatest threat to NARW, as those impacts involve noise generated simultaneously from hundreds of sources (operating turbines) and will be felt for the entire 30-year life of the Atlantic Shores South facility. These operational impacts include turbine noise, which BOEM, NMFS, and the applicant continue to either miscalculate or misrepresent in their various environmental review documents. When the proper operational sound source levels attenuation values representative of the large turbines here are applied – not the incredibly optimistic and unsupported ones for small turbines used by the federal government and the applicant – it is clear that the project's operational noise will generate harassment contours of much greater size than those reported in the BiOp and the Letter of Authorization issued by NMFS under the Marine Mammal Protection Act (MMPA). As a result, NARW will be forced to swim a considerable distance away from its historical route in and near the project site to avoid the noise created by the project, day-in, day-out, requiring the whales to expend a great deal of energy and move into waters where the threat of vessel collision and fishing gear entanglement is ever-present. Exacerbating the vessel collision risk, the U.S. Coast Guard is planning a commercial vessel shipping "safety fairway" adjacent to the eastern edge of the Atlantic Shores project. The reference to "safety" is misleading, because the fairway is intended to safeguard vessel traffic flow, not whales. Vessels will be encouraged to use this "fairway" as a means of bypassing the infrastructure and related impacts associated with the Atlantic Shores South OSW project – impacts that can slow or endanger vessel transit. Thus, vessel traffic in the proposed fairway will increase, enlarging and intensifying the threat to any NARW which, in an avoidance response to the proposed OSW project, swims into the fairway. Considering other planned projects in the New York Bight area, the cumulative effect of the operational noise from all the projects may very well block the essential NARW migration.

f. Recent experiences at the recently-installed Vineyard Wind offshore wind facility in Massachusetts has revealed yet another operational impact on the marine environment that could adversely affect NARW and other marine resources: collapse and disintegration of turbine blades, the composition of which includes potentially toxic materials. If such materials were ingested by marine animals, the biological damage could be severe and long-term.

g. To compound matters, the Atlantic Shores South offshore wind facility is only one of approximately 30 such projects approved or planned for implementation along the eastern seaboard of the United States. Nearly all of these projects are located in NARW habitat, including its critical migration route. This means that the same cohort of NARW individuals that must navigate the offshore wind arrays in Maine, Massachusetts, and Rhode Island must also navigate the wind arrays off the coast of New York, New Jersey, Delaware, Maryland, Virginia, and North Carolina. The cumulative impacts of this situation on NARW have not been studied by BOEM or NMFS (or anyone else), despite the requirement to do so under the NEPA), the ESA, the MMPA, and OCSLA. However, because NARW population declines and compromised physical fitness have been well-documented, it is reasonable to assume that the adverse effects of the Atlantic Shores project, when combined with those of the other eastern seaboard offshore wind projects, will be cumulatively significant, perhaps devastating.

### 5.3. Vessel Traffic

Several reasonably foreseeable future actions or conditions have the potential to impact right whales, other large whales, other marine species, air quality and climate change, ocean noise, and socioeconomic resources, including increasing vessel traffic. Expanding vessel traffic has the potential to increase strike risks, and disturbance from ocean noise. **Increased traffic from a variety of vessel sectors is a near certainty along the U.S. east coast.** Any future wind energy development will bring increased vessel activity associated with both construction and long-term operations. As a result, maintaining the status quo and taking no action will functionally result in increased adverse impacts to right whales.

The federal government recognizes that OSW development will lead to increased vessel traffic, particularly during construction (which can last seven years or more) and during decommissioning activities. A single OSW facility can generate 3,285 annual vessel roundtrips during construction and installation.<sup>34</sup> That number decreases slightly during maintenance and operations to 2,902 annual vessel roundtrips.<sup>35</sup> During decommissioning, the annual vessel trips can be expected to increase back to 3,285 annual vessel roundtrips.<sup>36</sup> Vessel traffic “poses a high-frequency, high exposure, and collision risk to marine mammals, especially North American Right Whales, other baleen whales, and calves that spend considerably more time at/near the ocean surface.”<sup>37</sup>

<sup>34</sup> Bureau of Ocean Energy Mgmt., New York Bight Draft Programmatic Environmental Impact Statement, Vol. 1, at 3.5.6- 68 to 6-69 (Jan. 2024), <https://tinyurl.com/ProgEIS>.

<sup>35</sup> See id. at 3.5.6.-69.

<sup>36</sup> See id. at 3.5.6.-69.

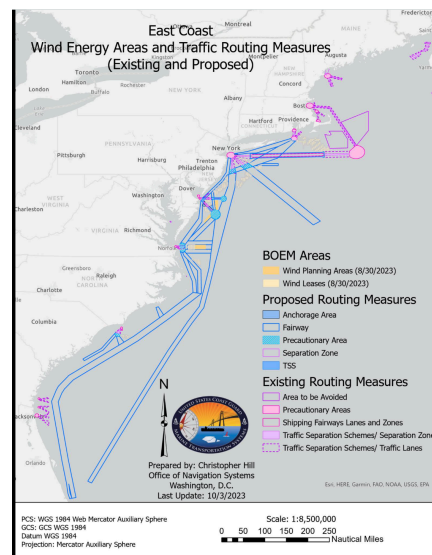
<sup>37</sup> EIS, supra n.27, at 3-84.

Underwater noise generated by human activities (e.g., shipping, resource exploration, infrastructure development) affect marine animals at multiple levels, impacting their behavior,

physiology, and survival (Duarte et al. 2021). Vessel noise (offshore and nearshore - commercial and recreational vessels), active sonar (military and research activities), seismic airguns (for oil and gas exploration and research), underwater explosives (military operations, harbor deepening, fishing deterrents, and rig removal), pile driving (impact and vibratory), renewable energy sources (e.g., wind, wave, and tidal farms), acoustic deterrents, dredging, icebreaking, drilling, and rocket launches are all examples of human-made sound that have the potential to adversely impact marine fauna acutely and/or chronically (Slabbekoorn et al. 2010; Gedamke et al. 2016).

Prior to OSW development, vessels have represented the primary source of chronic noise exposure on marine mammals. A study in Southern California found that region-wide exposure to shipping noise likely degrades the acoustic environment for baleen whales in certain areas (Redfern et al. 2017).

The proposal of over 30 offshore wind facilities (OSW) in the North Atlantic, to occupy over 3,500,000 acres of ocean **with increase vessel traffic during survey, construction and operations, will have population-level effects on an already endangered and stressed species**



Right whales are particularly vulnerable to vessel strike due to their penchant for coastal habitats and frequent occurrence at near surface depths. (M27) In some habitats, such as Cape Cod Bay, right whales often forage just below the water’s surface, rendering them hidden to mariners but vulnerable to vessel collisions (Mayo and Marx, 1990; Parks et al. 2012). Mothers with newborn calves frequently rest and nurse in nearshore habitats at or near the water surface placing them at high risk of vessel interactions on southeast calving grounds, along the mid-Atlantic migratory corridor and in New England (Cusano et al. 2018).

In the 2016 NMFS rulemaking, in response to a comment to include the migratory corridor as critical habitat along with unit 1 and unit 2, the agency responded, “***Given that large-scale migratory movements between feeding habitat in the northeast and calving habitat in the southeast are a necessary component in the life-history of the North Atlantic right whale, we agree with the commenters that facilitating successful migration by protecting the species’ migratory area is a key conservation objective that could be supported by designation of critical habitat for the species. As described in the Biological Source Document, we explored the possibility of using known occurrences of North Atlantic right whales in the mid-Atlantic to identify the specific areas used for migration and essential physical and biological features in those areas. Data and information considered by NMFS included sightings data used while developing the rule to implement ship speed restrictions to reduce the threat of ship collisions to North Atlantic right whales (73 FR 60173, October 10, 2008); the studies by, Knowlton et al. (2002), and Firestone et al. (2008); and telemetry data and model results used in Schick et al. (2009).***”

### **Oceana NARW Speed Compliance Report:**

In its detailed July 21, 2021 Report titled “Speeding Toward Extinction: Vessel Strikes Threaten North Atlantic Right Whales, Oceana found that most vessels are exceeding speed limits in areas designed to protect the critically endangered NARW. Oceana’s report analyzes vessel speeds from 2017 to 2020 in speed zones established by the NOAA along the U.S. Atlantic coast, and found non-compliance “was as high as almost 90% in mandatory speed zones, and non-cooperation was as high as almost 85% in voluntary areas”.

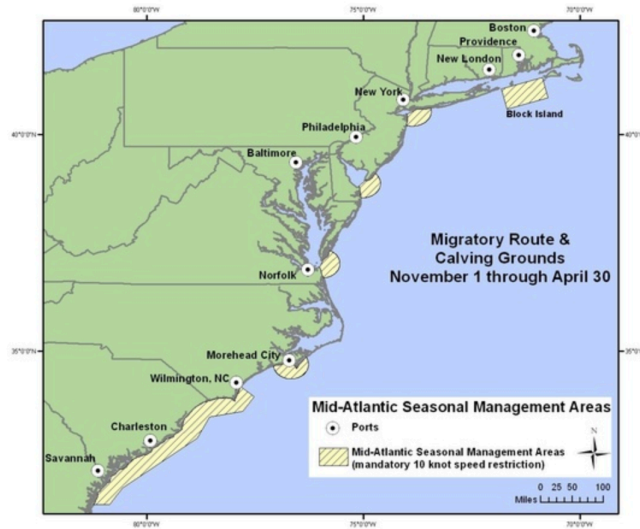
#### **The SMAs with the worst non-compliance finding over a 4 year analysis:**

- Migration Corridor: North Carolina to Georgia 87.5%
- Migration Corridor: New York / New Jersey 79.3%
- Calving and Nursery Grounds: Georgia to Florida 72.1%
- Migration Corridor: Chesapeake Bay entrance 64.2%
- Migration Corridor: Delaware Bay entrance 56.4%

#### **The DMAs non-cooperation finding in 2020:**

- Gulf of Maine: 65.3%
- Southern New England: 77.2%
- Mid-Atlantic: 79.7%

## Seasonal Management Areas - Mid-Atlantic



### **North Atlantic Right Whale (*Eubalaena glacialis*) Vessel Speed Rule Assessment June 2020 by NOAA Fisheries, Office of Protected Resources**

Since the implementation of the speed rule, vessel strikes have continued to occur along the east coast of the U.S. in habitats commonly used by right whales. (M27) The seasonality of these events (December - July) corresponds to the months when large numbers of right whales are known to be present in U.S. waters. There is no discrete spatial or temporal clustering that would indicate a new “hot zone” for vessel strikes, rather right whales continue to experience collisions in areas similar to before implementation of the speed rule. Additionally, blunt force trauma and propeller lacerations continue to cause right whale deaths and serious injuries.

The two mortalities off Cape Cod and the serious injury in Cape Cod Bay require further evaluation. The greater Cape Cod area includes major shipping lanes and is a preferred right whale habitat, particularly in winter and spring. It is also one of the most protected areas for right whales. To have had three significant collision events in this relatively small area, and within active SMAs is concerning.

Massachusetts has recently (2019) implemented a mandatory seasonal speed limit of 10-knots in Cape Cod Bay for most vessels less than 65 ft in length during the months of March and April each year. This new seasonal regulation is active during the time frame when all three of the events occurred (or likely occurred). Cape Cod may continue to require unique consideration as a region with large aggregations of right whales and reliable foraging habitats in U.S. waters.

Nearly **16 years later**, NOAA announced **their newest strategy on November 1, 2024** to protect the NARW from vessel strikes - and to us, it looks like nothing has changed but the name, same voluntary measures with the same “inactive” periods, and overburdensome regulations on the fishing industry.

**This is not an effective measure for the conservation of the NARW from extinction.** We cannot save North Atlantic right whales from impending extinction if we continue to rely on misguided and burdensome vessel speed restrictions that do not support the conservation of the NARW. The federal government is approving permits for the construction and operation of offshore wind, which will add thousands of additional vessels along the east coast, traveling to and from ports to offshore wind substations and structures on an annual basis, over the course of 30 years for each lease. We must provide a safe corridor for the NARW to migrate annually back-and-forth along the East Coast from feeding to calving grounds in order to survive.

## **6. Critical Habitat Revision for NARW Survival**

### **6.1 NARW Migratory Corridor is Critical Habitat**

As discussed above, in the context of numerous OSW projects occurring simultaneously (as the federal government knows to be the case here), the operational noise from those projects is likely to block or seriously impair the NARW migration essential to its survival.

Save LBI remains deeply concerned about the eventual loss of marine mammal acoustic habitats as a result of multiple anthropogenic noise sources from approved BOEM leases on the construction and operation of offshore wind development over large scales within the migratory corridor for extended periods of time.

Therefore, Save LBI requests that the critical habitat designation for the North Atlantic right whale be revised to include additional waters of the mid-Atlantic that can serve as a primary migratory corridor for the species as shown in Table 2 herein. This meets the ESA criteria for designation as critical habitat because it will preserve the NARW’s historical migration route essential to the conservation of the species and which may require special management considerations or protection.<sup>341</sup>

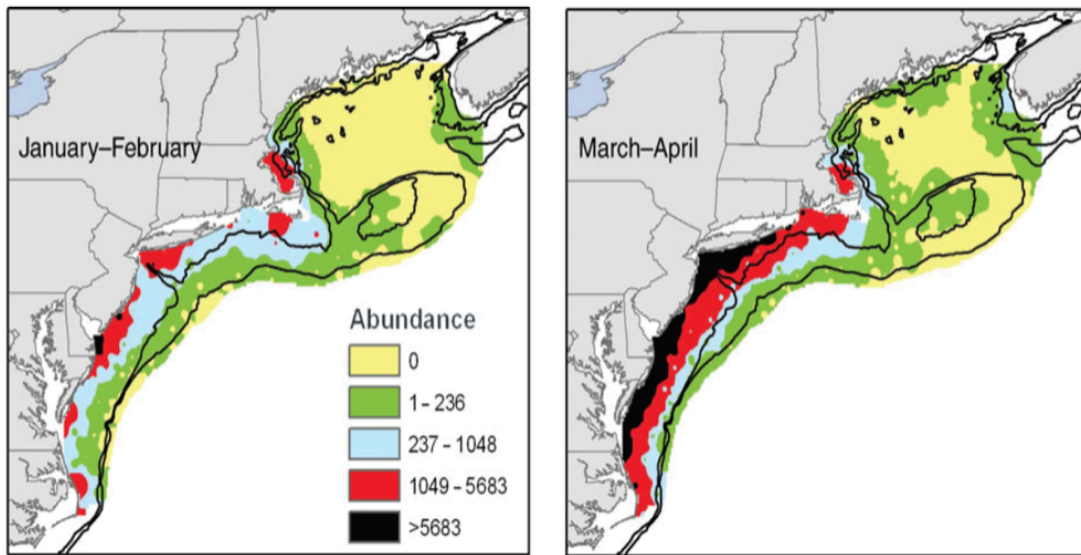
Specifically, based on Section 9 ESA requirements, given the impact of operational turbine noise on the migration of the NARW wind projects within that corridor should be prohibited.

### **The NARW Migration Route**

The presence of endangered whales in and near a wind project area poses a significant operational noise problem. The whale’s historic migration routes intersect with the elevated noise from the planned wind projects

As shown in the figures below the NARW migration has stayed within approximately 60 miles of shore with most of that occurring within 33 miles. That is probably due in part to the location of its primary food source, copepods, which is also primarily within about 35 miles of shore during the migration period, January through April, as shown in Figure below w39.

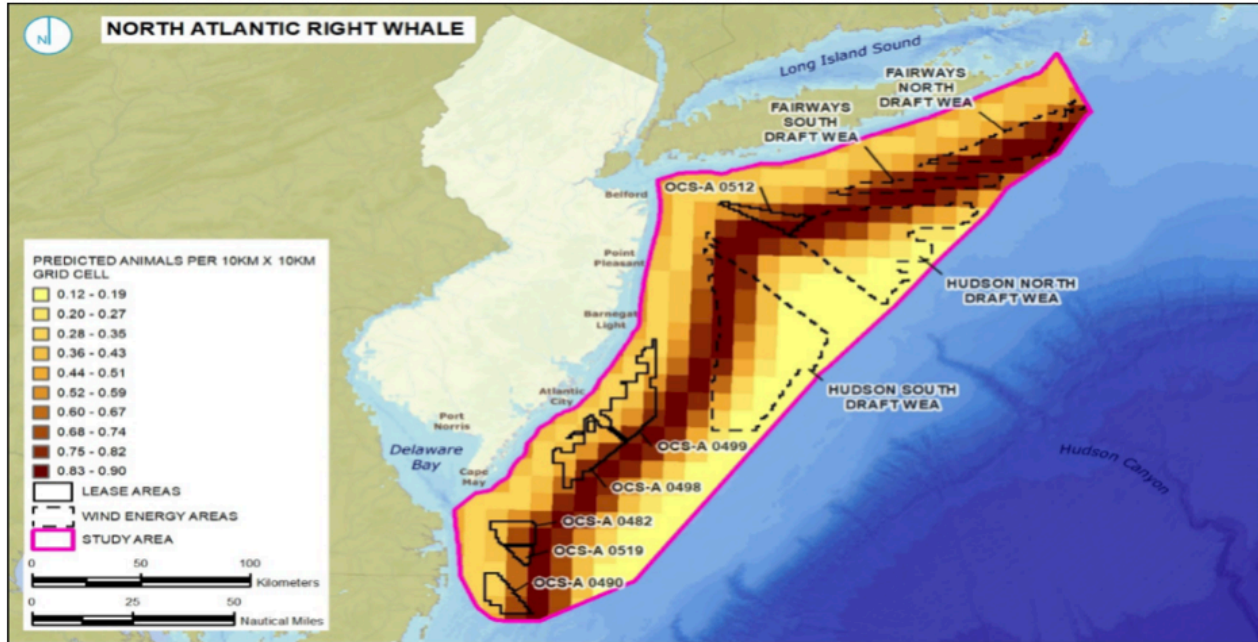
### Copepod Distribution During the NARW Migration Period



The Atlantic Shores South project would place turbines 9 to 20 miles offshore. Other development is planned about 32 to 57 miles out. One major right whale 12-mile-wide migration corridor, between 20 and 32 miles out was depicted in the New Jersey Strategic Plan of July, 2020. It showed the concentrated path below (in purple) off New Jersey intersecting with and adjacent to this wind project area (see map below) <sup>W1, W24</sup>

## Right Whale Primary Historical Migration Corridor-in purple

Source, NJ Offshore Wind Strategic Plan, Natural Resource Technical Appendix, Figure 21. Section 2.6.



The Atlantic Shores Offshore Wind project recently confirmed that the intersection of the NARW migration with the project area in its recent 2022 Construction Take Application to the NMFS <sup>W25</sup>, as shown below from Figure 9 in their Application. The density maps there, shown below, for winter shows that the migration corridor intersects the full project area and extends about 12 miles southeast of it. The density map for spring shows an even narrower migration corridor adjacent to the project area of about 5 miles.

This supports the existence of a primary historical migration corridor off the New Jersey coast from **6 to 33 miles out**.

## Right Whale Migration Routes, Atlantic Shores ITA Application

### Right Whale Migration- from Atlantic Shores Incidental Take Application for Construction

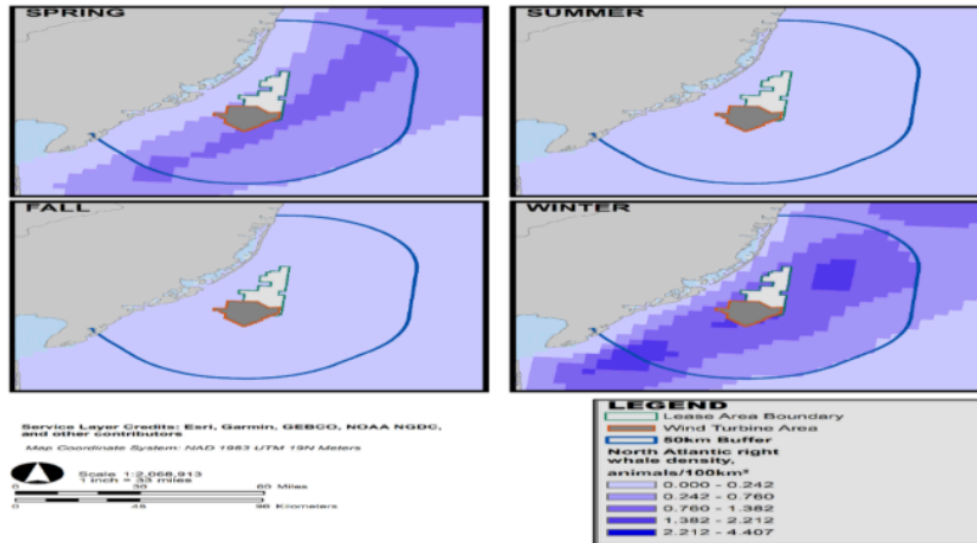


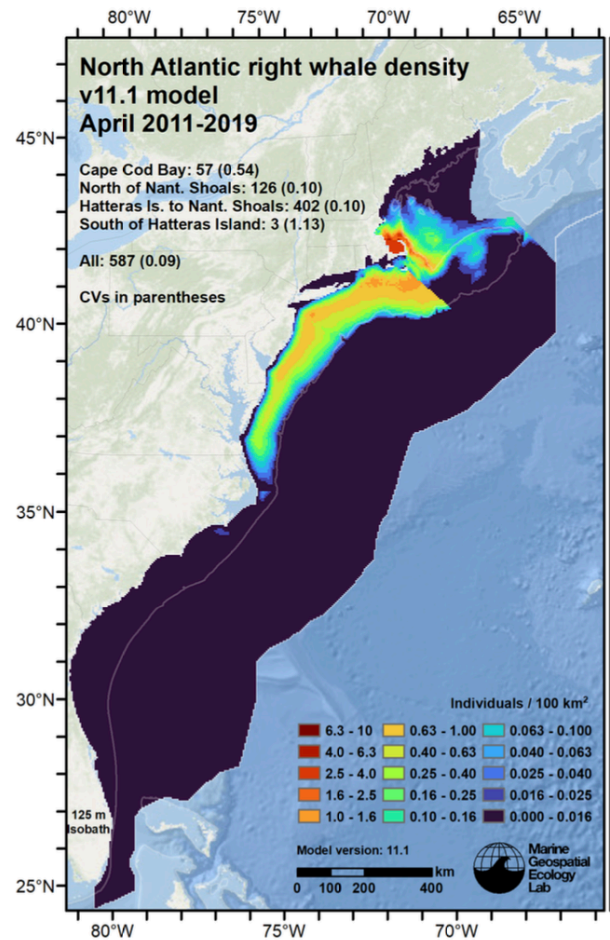
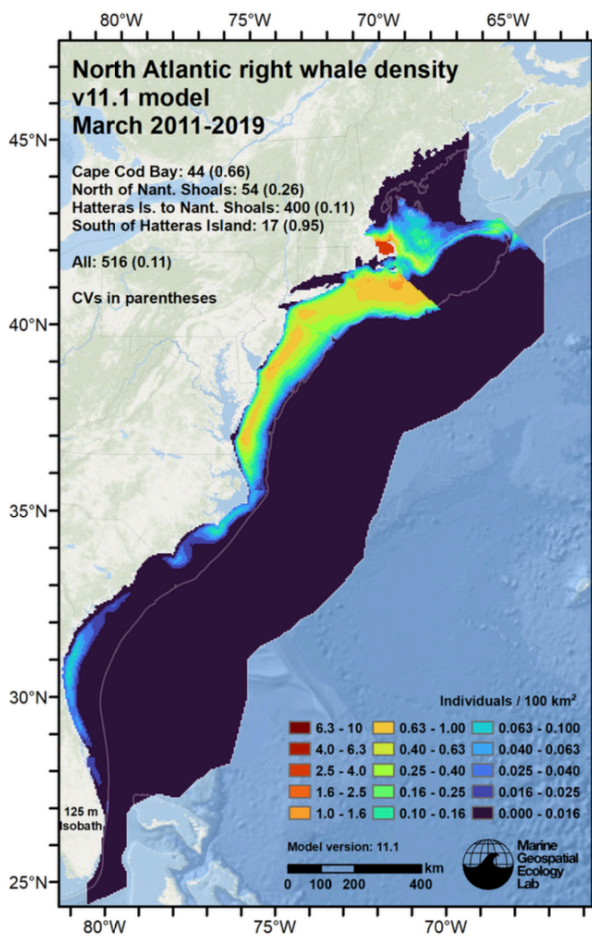
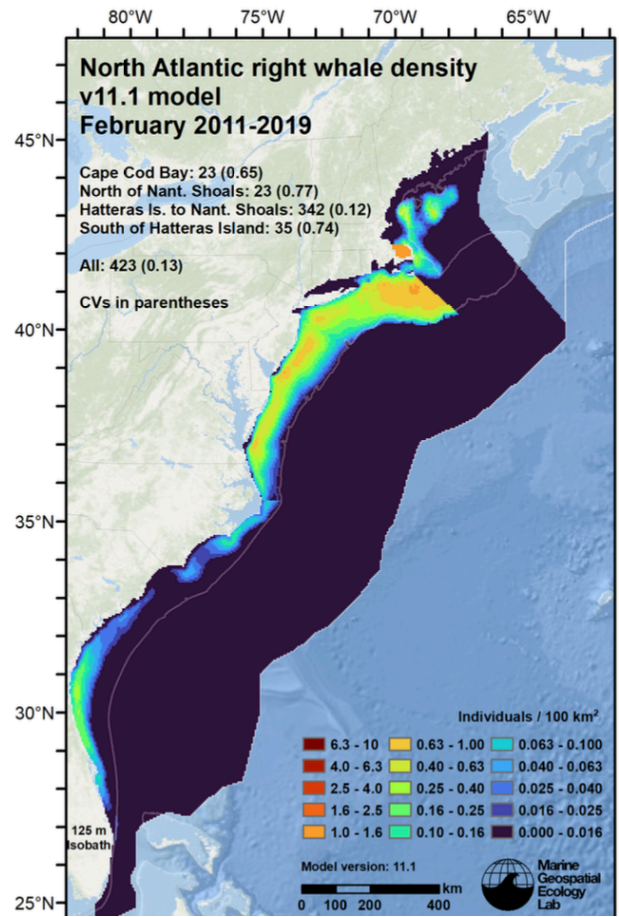
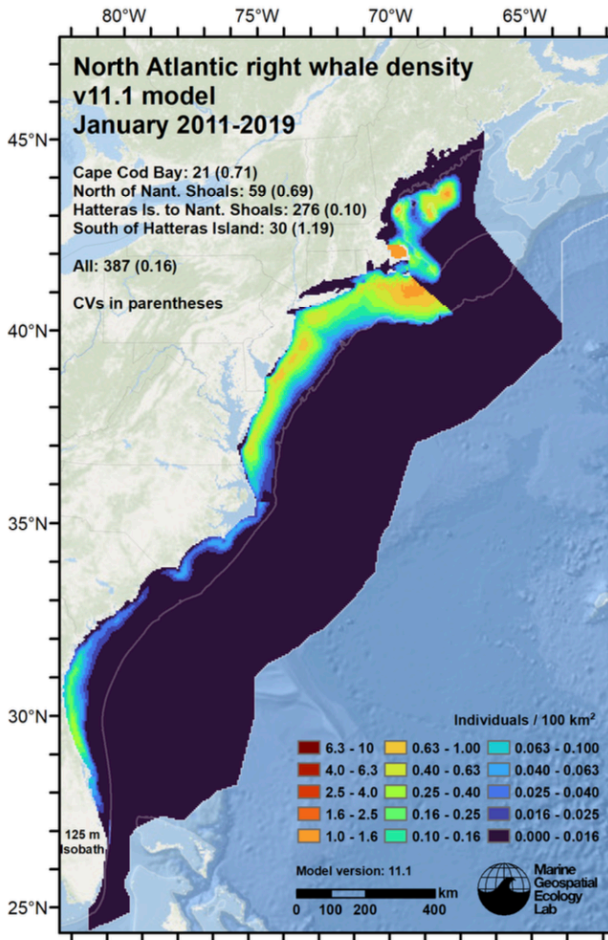
Figure 9. North Atlantic right whale maximum seasonal density from Roberts et al. (2016a, 2021a, 2021b).

**That right whale’s primary migration corridor off of New Jersey uniquely goes between two wind energy development areas—the Atlantic Shores project area and the Hudson South projects areas. Therefore, the whale would face obstruction from operational noise from both sides.**

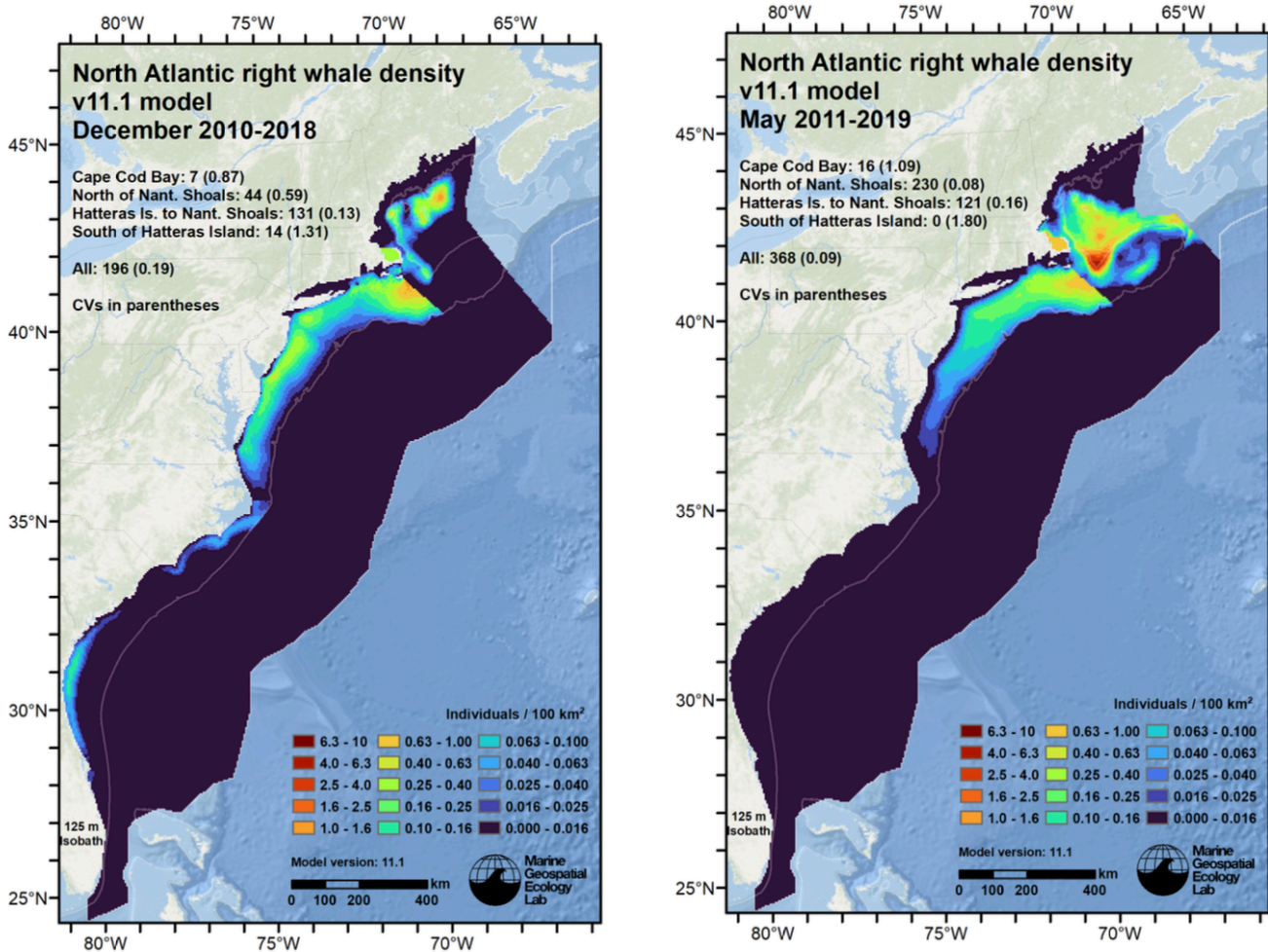
In particular, the critically endangered North Atlantic right whale has migrated within and off the Atlantic Shores South project lease area and that migration, and its continued existence is threatened by these turbines. Despite our prior comments on the NOI, and the density data recommended for use by Roberts<sup>W19</sup> that is available to show it, the DEIS *did not disclose* the presence of the right whale’s migration corridor intersecting with and adjacent to the lease area.

As far back as 2013<sup>W24</sup> the authors there recommended that a **critical habitat for the whale be designated out to 50 km (31.25 miles)**, not just based on migration but also on the right whale’s presence at other times and apparent need to feed (see Fig 2 of that report showing presence in winter and spring).

Their recommendation matches well with the inner path of the Bureau of Ocean Energy Management (BOEM) and the National Marine Fisheries Service (NMFS) Draft Strategic Plan map for January. That same Figure 2 shows right whale presence closer than 20 miles or 32 km (within, not just adjacent to the 9-20-mile-wide wind project area).



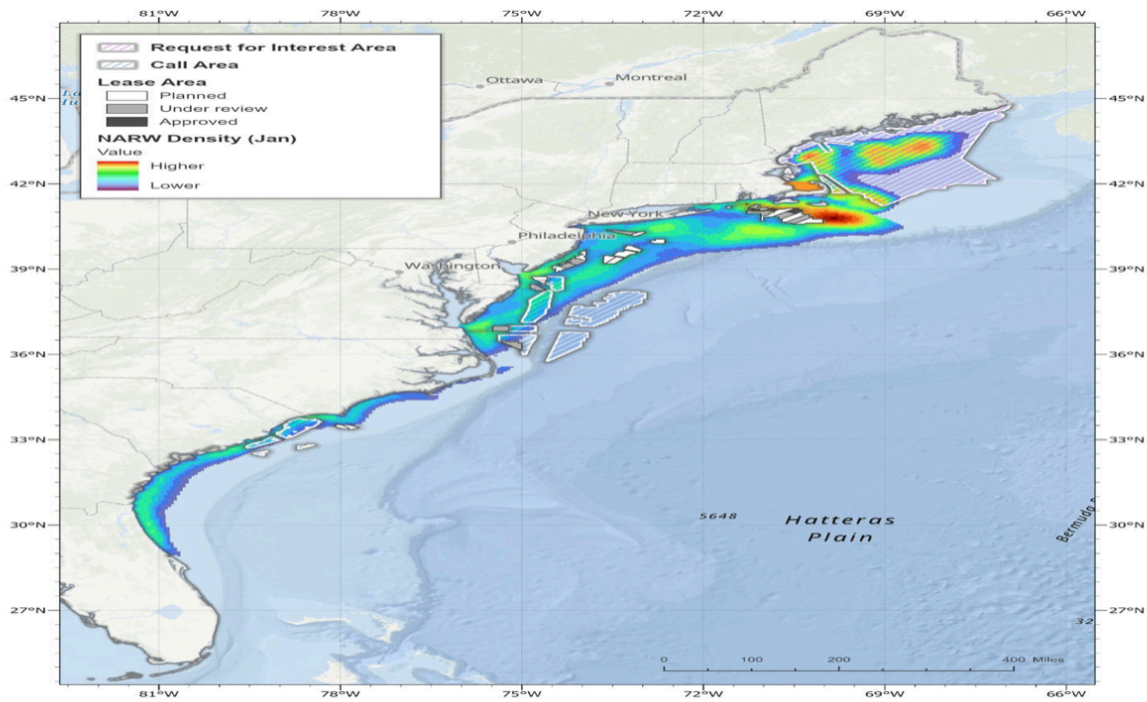
Those results are confirmed by 11 years of recordings (2004 -2014) from passive acoustic monitors along the U.S. east coast <sup>W26</sup>. **Figures 3 and 4 of that study show migration in both an inner and outer zone but with a distinct presence during the winter migration period extending to about 25 miles offshore.**



### Right Whale Migration- Intersection with Wind Energy Areas - January

Source: BOEM/NMFS Right Whale Strategy Draft Document -January Density Map

Similar intersections of the whale’s migration paths occur for other proposed wind energy projects along the east coast <sup>W29, W30, W31, W32</sup> as shown in the Figure just above which was taken from the BOEM/NMFS Right Whale Strategy Draft Document. That map shows almost all the migration being with 60 miles of shore, with a major route within about 35 miles along the entire East Coast route.

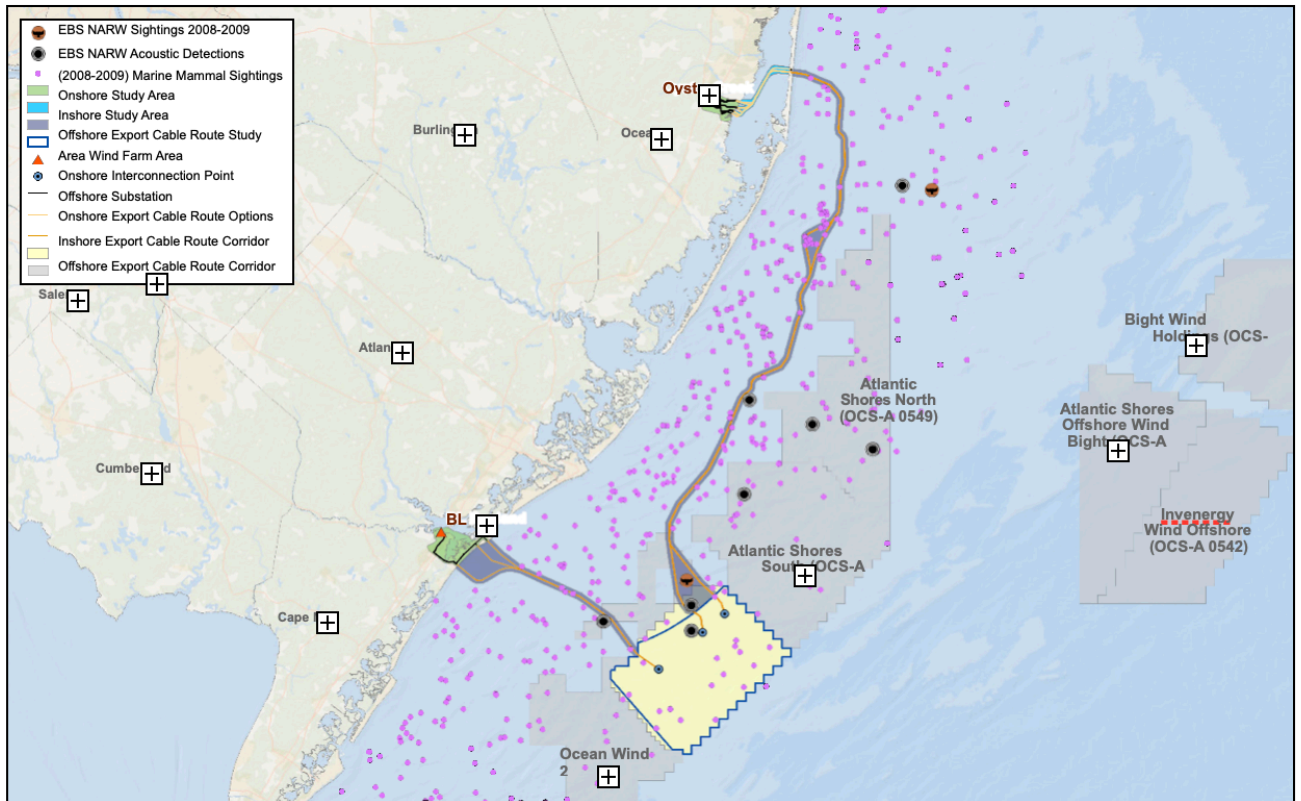


The maps below were generated and recommended for management purpose use by the Duke University laboratory using their Version 11.1 model with data gathered on right whale presence for nine years. They show higher density areas running parallel to the shore for the January through April period. These were relied on heavily in defining the historical migratory corridors reflected in Table 1.

Similar data is shown below from the Version 11.1 Duke University maps for May 2011-2019 as well as December 2010-2018. They show lower densities, but still some migration occurring especially in December.

The map just below **currently** presented on the web by the BOEM for the Ocean Wind 1 Project, just south of this project, also shows significant NARW (and other marine mammal presence) in and near this lease area, **from about 6 to 20 miles out.**

### Right Whale Presence , Ocean Wind Project , BOEM



**Roberts et al. 2024 on NARW density spatial modeling was discussed during the 2024 State of the Science Workshop at Stonybrook NY.**

2.2.4. Spatial modeling

The right whale's distribution shift, combined with life stage and regional complexity, raised fundamental challenges for the spatial model. **One problem was that the population was distributed across several marine ecosystems at the same time, with whales in different locations exhibiting different environmental preferences.** For example, whales that migrated to the warm, coastal calving grounds had different preferences than whales that overwintered in the cooler GOM. This complexity could be addressed by using spline smoothers, which allow for complex, non-linear relationships. However, the resulting multi-modal relationships would be difficult to interpret ecologically, which could impede qualitative evaluation of the models, and it was unclear whether a good result could be obtained without explicitly addressing the strong regional differences. Consequently, we split the study area into several regions (Fig. 1) within which we expected right whales to exhibit different relationships to environmental covariates and modeled each region separately (Roberts et al. 2016).

The 3 main regions of the model, the South Atlantic Bight (SAB), Mid-Atlantic Bight (MAB), and the GOM, correspond to the 3 distinct continental shelf ecosystems for which they are named plus the off- shelf waters adjacent to them. The SAB is strongly influenced by the Gulf Stream, a strong, warm, saline, subtropical, western boundary current that flows just beyond the eastern edge of the upper continental shelf (Seim et al. 2022). **Evidence suggests that right whales rarely occupy the SAB outside of the winter calving season (Davis et al. 2017, Gowan et al. 2019). To ensure the SAB model spanned only the months that right whales were present, we restricted the model to the October–May period, based on reports of sightings or acoustic detections during those months. During June–September, we assumed density in the SAB was zero. However - at the workshop, Roberts stated he suspects NARW density has never been zero.**

Jason Roberts, a Research Associate at the Marine Geospatial Ecology Lab, Duke University stated at the 2024 State of the Science Workshop, July 2024, Stonybrook, NY that the “Whale Map team has a lot of information to potentially use.”

The Whale Map team uses Sloucum Gliders, Planes, Vessels, RPAs, Buoys and Opportunistic sightings. As science has developed, so have the sightings of NARWs over the past years across the mid-Atlantic. It clearly shows the migratory corridor being utilized by whales in ways that are essential for their survival. Roberts noted the “Hudson Canyon area in 2024 has been a major **hot spot for right whales**” and, “historically this is an unknown area, because we haven't had much sampling... so it's hard to say whether or not it's a new thing or an old thing. My own gut feeling is it's probably, mostly, maybe a new thing related to ocean graphic changes that we've been talking about so I'm highly interested in that.” He stated, “**But, I suspect**

**the NARW density there has never been zero, even heading into summer, July 2024, like this over the past few years. We need to incorporate acoustics.”**

Based on a thorough review of available right whale migration density information w<sub>1</sub>, w<sub>24</sub>, w<sub>25</sub>, w<sub>27</sub>, w<sub>28</sub>, w<sub>33</sub>, w<sub>34</sub>, compiled in Table 1 and Table 2 below, migration has been observed between 6 to 86 miles, there has been no significant right whale migration beyond 86 miles, and that distance appeared only in one source for one month, March w<sub>27</sub>. **The great majority of the migration has taken place within about 56 miles of shore, the North Atlantic right whale also known as the “urban whale” because of where they spend most of their lives.**

## **The Impact on the Whales from the Operational Turbine Noise**

As shown above the operational turbine noise levels above the whale disturbance criterion of 120 dB from the Atlantic Shores project and the other planned projects farther offshore will span the entire width of the right whale’s primary historic migration routes, making it extremely difficult if not impossible for the whale to migrate through. The reaction of the whale to that noise is discussed in more detail below.

### **Paths to Harm and Fatality**

The potential for direct hearing loss, should the whale attempt to navigate within or close to the Atlantic shores project area is discussed below. But injury and fatality to marine mammals from noise can come from other ways besides hearing loss.

In the rule making for the Atlantic Shores project under the Marine Mammal protection Act the NMFS does not account for the potential for such harm and fatality from the results of Level B exposures, and therefore does not present a full and complete Level A take number. Rather, it estimates and separates Level A injury from Level B disturbance. But in both the regulatory and the real whale world that distinction is not present, and level B disturbance exposures can indirectly lead to worse injury and fatality outcomes.

Under the MMPA, a Level A incident or “take” includes any annoyance that has the “potential to injure” a marine mammal. That linkage is also presented in the December 21, 2016, NMFS interim guidance, defining the term “harass,” under the Endangered Species Act (ESA), as to “create the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering”.

Therefore, any assessment of harm and fatality should include the linkage from reactions to level B exposures to create the “potential to injure” or the “likelihood of injury” with a level of

analyses comparable to that given to direct Level A injury take from hearing loss. With the use of realistic noise source and noise transmission loss numbers, as shown above turbine operational noise above the continuous noise disturbance level will extend across all of the right whale's approximately primary 60- mile-wide migration corridor. Under the setting here of a critically endangered whale attempting to complete a migration that is essential to its survival through a No. migration corridor that could now be blocked, that "potential to injure" or to "create the likelihood of injury" certainly exists from a number of possible results of a level B exposure including:

### **A. Migration Blockage**

The most obvious serious impact to the right whale would be the blockage of its migration. Although there is debate within the scientific community as to what reactions disturbance level noise will cause, there is general consensus that most baleen whales encountering an elevated noise level will seek to avoid or standoff from it <sup>W23, W36</sup>. As shown above, such elevated levels will exist continuously from turbine operation across most, if not all, of the right whale's traditional migration corridor. Unless there is a new farther out route that the whale can and will take, wind project development in both the Atlantic Shores project area and the New York Bight areas will likely block its migration and spell its extinction.

### **B. The Masking of Whale Communications that Could Lead to Serious Injury or Death**

One path to such injury involves separation of calves from mothers as a result of the masking of their communication from elevated noise levels. Such communications 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](#)<sup>†</sup>, [Sofie M. Van Parijs](#) and [Douglas P. Nowacek](#), Published 09 October 2019.

The right whale's vocalizations are normally at the 125 dB root mean square level for low background noise, but can rise to 150 dB in the presence of high background noise (Parks et.al., The Royal Society, Individual right whales call louder in environmental noise, July 7, 2010).

The potential for loss of mother/calf communication was 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. Even with the conservative turbine noise source level of 181 dB the noise level anywhere within the turbine complex (in just a 4 -turbine array spaced a mile apart) will be greater than 141 dB. Therefore much of the whale's vocalizations in the 125 to 150 dB range will be masked there. In addition, as shown above. levels above 120 decibels will exist considerable distances from the. wind complex, masking communications there as well. Masking of its communications risks the separation of females from calves during migration <sup>W13, W14</sup> resulting in a calf fatality.

### **C. The Masking of Sounds Potentially Used by the Whale to Navigate**

The right whale's echolocation capability is unclear. But baleen whales probably do navigate by sound. Low frequency and infrasound are given off by potential obstacles, geologic formations and breaking waves. There may be several of these sounds at a given point so the whale can triangulate its position. If those signals are masked by those from offshore wind projects the whale will lose its ability to find and follow its traditional migration paths<sup>W16</sup>. That could impair or prevent its migration, and spell its extinction.

It also appears that their migration is aided by their capability to communicate with each other along the way. The the masking of those communications will further impair its migration.

### **D. Increased Risk of Vessel Strike**

A level B exposure can cause whales to ascend, and swim just below the surface where they are more susceptible to vessel strike, not just from construction-related vessels, but from other vessels as well. This behavior has 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<sup>W5</sup>.

The proposed use by the Coast Guard<sup>(BG2)</sup> of the right whale's migration corridor in between the Atlantic Shores project and the projects in the Hudson South area as a new deep draft vessel lane, and the channeling of ship traffic into it would significantly increase the risk of vessel strike once it ascends.

### **E. Stranding**

As stated above the whales navigation ability may be impaired<sup>W16</sup>, while trying to find a noise open route to continue its migration. Whales seeking to avoid the noise by going closer to shore risk stranding because, as shown in the maps above, the elevated noise levels above 120 dB from the close-in Atlantic Shores project will follow them all the way to shore, or at least to within 6 miles of shore where it has not previously migrated- see Table above.

### **F. Feeding Loss**

The right whale must have a reason for traditionally not migrating farther out than 60 miles. If that involves feeding opportunity, then that opportunity will be lost if it attempts to migrate farther out. The whale may therefore be disrupted from foraging and lose the energy it needs to complete its migration

## G. Hearing Loss

A whale would have great difficulty migrating in between the Atlantic Shores project area and the farther out lease areas because it would suffer temporary hearing and lose its ability to navigate.

Consider a whale approaching the middle of the 12-mile (19 km) wide migratory corridor between the project area and the lease area OCS A-0541 in the Hudson South area. In an effort to continue its migration, it might be unaware of or tolerate the noise disturbance and continue its 13-mile, 16-hour journey (@1.3 km/hr.) past the full 357 turbine Atlantic Shores project complex.

With an effective source level of 193 decibels centered 1.6 kilometers back from the perimeter (see Enclosure 2), the noise level in the center of that corridor would be

$$\begin{aligned}\text{Noise in corridor center} &= 193 \text{ dB} - 15 \log_{10}(1.6+9.5 \text{ Km}) - 0.35 \times 11.1 \text{ km.} \\ &= 128.4 \text{ dB.}\end{aligned}$$

But it would incur additional noise exposure during the passage of  $10 \log_{10}(16 \text{ hrs} \times 3600 \text{ sec} / \text{hr}) = 47.6 \text{ dB}$ .

**So its cumulative sound exposure level (SEL) would be 176 dB, which exceeds the NMFS sound exposure level criteria of 168 dB for temporary threshold shift hearing impairment<sup>w11</sup>.** Since the right whale is believed to navigate by reception of noise signals, this would greatly impair its ability to continue its migration.

Similar noise from the project on the opposite side of the 12-mile wide corridor, would add 3 dB to the 176 dB for a total of **179 dB, which is coming close to the 183 dB criteria for permanent hearing loss. As stated above and shown in the operational noise impact report in Enclosure 2 a whale passing the project closer to its perimeter would incur permanent hearing loss.**

## H. Stress

Reactions to above Level B noise exposures could involve stress and distress<sup>w12</sup>. An animal's perception of a threat may be sufficient to trigger stress responses consisting of some combination of behavioral responses, autonomic nervous system responses, neuroendocrine responses, or immune responses.

Autonomic nervous system responses to stress typically involve changes in heart rate, blood pressure, and gastrointestinal activity, have a relatively short duration and may or may not have a significant long-term effect on an animal's fitness.

Neuroendocrine stress responses have been implicated in failed reproduction, altered metabolism, reduced immune competence, and behavioral disturbance. During a stress reaction, if an animal does not have sufficient energy reserves to satisfy the energetic costs of a stress response, energy resources must be diverted from other normal functions, leading to a distress situation. This state of distress will last until the animal replenishes its energetic reserves sufficient to restore normal function. Studies in the Bay of Fundy found that noise reduction from reduced ship traffic was associated with decreased stress in North Atlantic right whales leading to a reasonable expectation that some of its normal functions, including its migration, could be impaired from higher level exposures.

### **The Right Whale's Precarious Status**

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

According to the International Fund for Animal Welfare <sup>W10</sup>, 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.

Clearly, 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 “jeopardize” it under the meaning of that word which is to put (someone or something) into a situation in which there is the possibility of suffering loss, harm, injury or failure.

Therefore, the only sensible and scientifically credible criterion for the NMFS to adopt for the right whale is one of zero tolerance for any fatality or serious injury during its migration from operational turbine noise. Given the noise levels and multiple opportunities for harm and fatality described above that criteria cannot be met with wind energy development in both the Atlantic Shores project area and the farther out New York Bight project areas. Either the inner or outer corridor must remain turbine free. And given the other turbine problems to shore communities with the inner corridor the choice should be obvious.

## **Conclusions Regarding NARW Migration, Harm and Fatality from Turbine Operational Noise.**

The noise levels described and shown above as the red lines in the first map for a 0.35 dB/km attenuation loss represents the most reliable estimate. It creates a “wall” of noise across the turbine complexes and the whale’s migration corridor, likely blocking it.

It will be extremely difficult for the whales to avoid that expanse of elevated noise and continue their migration. Attempting to do so could expose them to high cumulative sound exposures and hearing loss, loss of communication between and separation of females from calves, stranding, and loss of their navigational abilities.

### **Wind projects in both the close-in Atlantic Shores lease area and the Hudson South area leave no path for the right whale to migrate off New Jersey.**

Mitigating measures involving detection and turbine shut down are not viable for the large noise influence zones and electric producing operation here, leading to the need to reconsider this lease area as unsuitable for large turbine placement.

There will be a similar impact on the right whale from other projects up and down the East Coast, wherever their migration route intersects an elevated noise area, and the cumulative impact on their migration also needs to be addressed .

### **The Impact of Operational Turbine Noise on Fin and Humpback Whales.**

The DEIS mentions that fin and humpback whales frequent the area of the project, but does not present an analysis of the impact of operational turbine noise on them. That noise could force fin and Humpback whales dangerously close to shore, as summarized below, and must be addressed.

The inner side of the project area is frequented by endangered fin and humpback whales out to distances of 11.5 miles. Project area sited turbines would generate elevated noise levels above 120 dB all the way to the shore, and would force these whales towards shore to try to avoid it, potentially causing beach stranding.

Given all the above and noting that detection and shut down procedures are unreliable for the noise reduction distances and the electricity need for turbine operation here<sup>(W8)</sup>, there is no place in this lease area for turbine placement that is compatible with protecting the right whale’s migration, or preventing fin and humpback whales from being driven to shore.

## 6.2 NARW Migration Corridors from Maine to Florida

The endangered North Atlantic right whale is susceptible to increased risks associated with the developing energy market off the East Coast of the U.S.A., including increased noise exposure from shipping and energy exploration and extraction, and shipping activity. A safe corridor is needed for it to go between northern feeding and mating areas and the southern calving area.

Groups of right whales will actively socialize at the water's surface, in surface-active groups, in which mating and socialization occurs. Each fall, a subset of the population travels from northern foraging grounds to the shallow, coastal waters of their only known calving grounds along the South Atlantic Bight. Right whales most frequently give birth in the coastal waters off Georgia and Florida between December and March with mother and calves generally present in the region between November and April. Moving down the coast, as right whales do in their migration, people see increased evidence of the need for expanded critical habitat. **Right whales are known as the “Urban Whale,”** a phrase that was the title of a detailed book, published by Dr. Scott Kraus of New England Aquarium and popularized through numerous conservation campaigns.

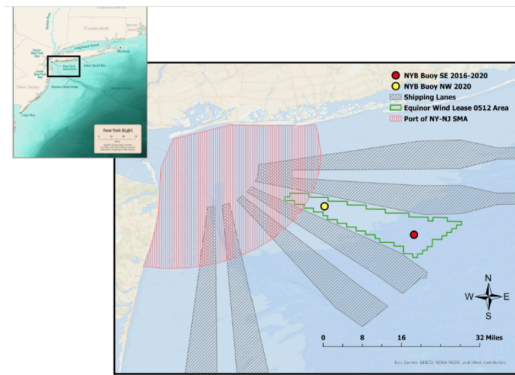
These mortalities range from Massachusetts to the Southeast United States, and include events in the Mid Atlantic region, such as New Jersey and the Carolinas. The presence of right whales in the mid-Atlantic is also acknowledged in the most recent five year review of the species that NMFS published. All this data boils down to one simple point, and that point is that right whales travel all along the coast, they are harmed by human activity all along the coast, and a well tailored critical habitat, which includes migratory corridors, could prevent these unnecessary right whale mortalities.

The potential harm to reproduction is further exacerbated by the fact that right whale calving is only known to exist in such a small area off the coast of Georgia and Florida. This is not a situation where the species has an alternative to compensate for human disruption. The protection of these calving grounds, including the protection of migratory corridors to and from the calving grounds, is essential to the continued existence of the species.

Of the marine mammal species listed under the ESA, critical habitat has only been designated for NARW and West Indian manatee. Critical habitat for NARW within the marine mammal geographic analysis area comprises the Gulf of Maine feeding areas in Cape Cod Bay, Stellwagen Bank, and the Great South Channel, as well as the nearshore calving grounds that stretch from Cape Canaveral, Florida to Cape Fear, North Carolina (50 CFR 226). However, the North Atlantic Outer Continental Shelf (OCS), is an important migratory corridor for NARW and other ESA-listed large whales (Hayes et al. 2020, 2022, 2023; NMFS 2024a).

The North Atlantic is the region extending from Virginia to Maine. See Regions, Nat'l Oceanic & Atmospheric Admin., <https://tinyurl.com/NOAAregions>

The NY/NJ Bight provides habitat for the migration of the critically endangered North Atlantic right whale every month of every year during their life cycle, not just a seasonal appearance confined to man-made boundary lines from November-April described in the Seasonal Management Areas and Dynamic Management Areas. Since 2016, the Woods Hole Oceanographic Institute offers daily trackers <http://dcs.whoi.edu/> and the photo below is the NY/NJ bight location. The research data included additional buoy areas with years worth of tracking technology for the NARW, Humpback, Sei and Fin whales.



The above graph references a buoy named Melville (SE) located 20 miles from the NY Aquarium. The research group added another buoy (NW) in 2020 to serve as an underwater listening post for whale calls. Melville reported its first discovery - a fin whale - within days of being deployed. The device reported an endangered North American right whale on Oct. 26, 2016 and endangered sei whale a few days later.

Other scientific data assembled since the original designation of critical habitat in 2016 shows clearly that a revision of the designation is necessary to provide for the survival and recovery of the species. (see Figure 3 MAP )

NMFS also recognizes the role whale avoidance technologies may one day play in preventing vessel collisions, and remains open to the future application of these technologies, if proven safe and effective. The use of onboard marine mammal observers is another strategy employed to reduce vessel strike events. For some activities and vessel types, the addition of marine mammal observers can provide an added mechanism to prevent vessel strikes in conjunction with other conservation measures; however, documented right whale vessel strikes involving vessels with trained observers demonstrate the inconsistency of this tool. <https://www.federalregister.gov/d/2022-16211/p-109>

The Mid-Atlantic region serves both as a migratory habitat for whales moving between calving areas and northern foraging grounds, as well as a foraging habitat. Right whales can be highly mobile, traveling upwards of 40 nautical miles per day, or, when engaged in certain behaviors (e.g., foraging), relatively stationary, remaining within several miles for days (Baumgartner and Mate 2005; Crowe et al. 2021). The whales' primary distribution includes seasonal coastal habitats characterized by extensive commercial and recreational vessel traffic. <https://www.federalregister.gov/d/2022-16211/p-11>

A team of researchers led by WHOI operates a fleet of PAM systems deployed on both autonomous mobile platforms and moored buoys for detecting and classifying marine mammal vocalizations, including NARW. These platforms use the Digital Acoustic Monitoring Instrument developed at WHOI (e.g., Baumgartner et al. 2019, 2021) combined with shore-based acoustic analysts to validate potential detections of NARW, and are sponsored by a number of organizations including government agencies and the offshore wind industry. The detections made using platforms in the Robots4Whales network are made available to the public through the website, <http://robots4whales.who.edu/> and detections are fed into systems such as Whale Alert. (Examples of detections see Reference pages).

The potential harm to reproduction is further exacerbated by the fact that right whale calving is only known to exist in such a small area off the coast of Georgia and Florida. This is not a situation where the species has an alternative to compensate for human disruption. The protection of these calving grounds, including the protection of migratory corridors to and from the calving grounds, is essential to the continued existence of the species.

Wherever the right whales occur, they face threats. The scientific reality of the conflict between right whales and human activities are why we must protect them with well tailored critical habitat. This designation must include migratory corridors to connect the areas right whales rely on to survive. This too is supported by the science and the logical conclusion that a failure to do so will result in lapses in protections for individuals as they migrate from one area to another.

In order to fully fulfill its legal obligations, NMFS must establish the proposed critical habitat expansion for migratory corridors. Anything less would be insufficient to fully protect the species, allowing it to survive and thrive as intended as a matter of law.

The map just below, is from the request for an incidental harassment authorization to allow the non-lethal take of marine mammals incidental to site characterization surveys (Figure 4-1) of the Atlantic Shores Lease Area (OCS-A-0499, 0541, and 0549).

The legend clearly identifies the full NARW migratory corridor which would intersect with the lease areas in the NY/NJ Bight where wind projects are being pursued.

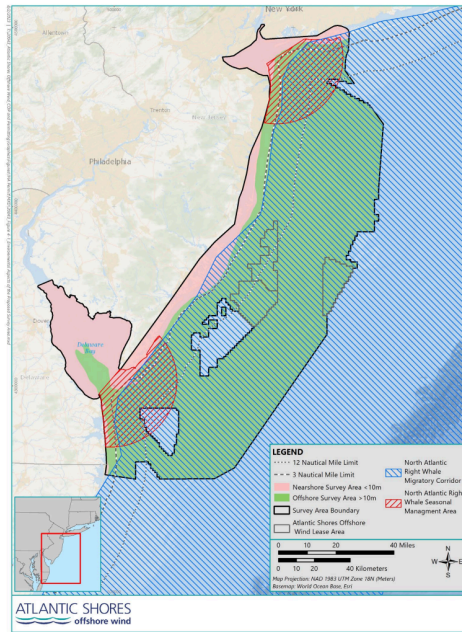


Figure 4-1 NARW Migration Corridor and Management Areas Near the Future Offshore Wind Development of Lease Areas OCS-A-0499, OCS-A 0541, OCS-A 0549

## 6.3 Defining the Primary Migration Corridors of the North Atlantic Right Whale

### Migration Paths Review Done

The migration ranges from the available studies and density data are presented below in Table 1. The time period presented, January through April, represented the primary periods of migration. The data lend itself to groupings of an inner and outer zone so it is presented that way. The last row in each State table represents the composite migration range over the full 4-month time period.

The data presented below represents only the NARW's migration paths. It does not present areas where the whale is congregating, whether for purposes of feeding, resting or calving. When one looks at the whale density maps, particularly the Duke University maps, we see two kinds of elevated density areas. The first are shaped like strips running parallel to the shore. Those can clearly be presented as migratory corridors.

Off of some places like Rhode Island and Eastern Long Island we see irregular shapes, often perpendicular to the shore, with higher densities and repeating month after month. These

areas are more indicative of places where the whales are congregating, but not necessarily migrating.

In the table below we have distinguished between those two types of areas and present only the areas that reflect migration.

**Table 1. Studies and Density Data Relevant to NARW Migration**

**Off the Maine Coast (miles)**

Time period	Inner Zone	Outer Zone	Source/Comments
Jan Feb Mar Apr	14-34 11-46 11-34 11-34	38-58	(1a) Roberts, Duke University.
Jan Feb Mar Apr	16-32 16-47 16-31 16-31	62-94 62-94	(1b) Roberts, Duke University, See Exhibits 1-8.
<b>Composite</b>	<b>14-34</b>	<b>50-94</b>	

**Off the New Hampshire Coast (miles)**

Time period	Inner Zone	Outer Zone	Source/Comments
Jan Feb Mar Apr	11-46	39-92 34-57	(1a) Roberts, Duke University.
Jan Feb Mar Apr	6-39 6-31	32-63 32-78	(1b) Roberts, Duke University, See Exhibits 1-8.
<b>Composite</b>	<b>6-39</b>	<b>32-63</b>	

**Off the Massachusetts Coast/from Cape Cod (miles)**

Time period	Inner Zone	Outer Zone	Source/Comments
Jan Feb Mar	6-24 6-23 6-34	29-48 34-57	(1a) Roberts, Duke University.
Jan Feb Mar Apr	6-23 6-31 6-31	39-62 32-62 32-62	(1b) Roberts, Duke University, See Exhibits 1-8.
<b>Composite</b>	<b>6-31</b>	<b>32-62</b>	

**Off of Rhode Island (miles)**

Time period	Inner Zone	Outer Zone	Source/Comments
Jan Feb Mar	6-10 6-11 6-17		(1a) Roberts, Duke University.
Jan Feb Mar	7-15 6-16 6-16		(1b) Roberts, Duke University, See Exhibits 1-8.
<b>Composite</b>	<b>6-16</b>		

**Off the Long Island, New York Coast (miles)**

Time Period	Inner Zone	Outer Zone	Source /Comments
Jan Feb Mar Apr	5-19 10-46 6-46 11-68	19-38 57-90 46-80 68-80	Duke University, Roberts(1a)
Jan Feb Mar April	10-47 10-47 10-47 10-47	  47-62 47-62	Duke University, Roberts (1b)
Feb March-April	Nov- 12-38 12-50	63-88* 75-100*	(2) Davis, Baumgartner * Outer presence also appears in summer and fall, indicative of feeding, not migration.
Dec-Feb March -May	5-39	39-63 **	(3) Clark, Muirhead ** two MARU units beyond 63 miles but no presence detected
Jan -April, 2022 Jan-April, 2021	16-28 5-16		(11) whalemap.org
<b>Composite</b>	<b>6-47</b>	<b>48-62</b>	

**Off the New Jersey Coast/from Barrier Islands (miles)**

Time Period	Inner Zone	Outer Zone	Source /Comments
Annual	20-32		(4) NJ Strategic Plan, based on Duke University data, see Exhibit 9.
Jan Feb Mar April	6-14 6-23	29-38 34-46 34-46, 68-74 34-51, 57-68	(1a) Roberts, Duke University
Jan Feb Mar April	7-31 7-31 7-47 16-47	32-47 32-47 48-62 48-62	(1b) Duke University
Jan -Mar Apr- Jun	6-33 10-33		(5) Atlantic Shores Project Take Application
Jan Feb Mar April	9-31 9-31 9-31 9-31		(6) Whitt
Nov-Feb Mar-April	12-25 12-21		(2) Davis, Baumgartner
Nov-March	?-33		(7) Firestone
Jan -April 2022 Jan -April 2021	8-39 11-26	50-56	(11) whale map
<b>Composite</b>	<b>6-33</b>	<b>34-62</b>	

**Off the Delaware /Maryland Coast**

Time Period	Inner Zone	Outer Zone	Source /Comments
Jan Feb Mar April	5-24 6-23 13-34 23-34	34-46 57-63 57-63	(1a) Roberts, Duke University

Jan Feb Mar April	6-23 10-31 10-31 16-31	31-47  32-47	(1b) Duke University
Nov-Feb	12-25		(2) Davis, Baumgartner
	?-33		(7) Firestone
Jan – April, 2022	11	56	(11) Whale map
<b>Composite</b>	<b>10-31</b>	<b>32-47</b>	

**Off the Virginia Coast (miles)**

Time Period	Inner Zone	Outer Zone	Source /Comments
Jan Feb Mar April	5-19 10-46 11-34 23-34	34-46	(1a) Roberts, Duke University
Jan Feb Mar	7-23 10-31 6-16		(1b) Duke University
Jan Feb Mar April		20-75 20-75 20-75 44-75	(8) Salisbury
Nov-Feb Mar-April		12-75 12-75	(2) Davis, Baumgartner
????	?-33		(7) Firestone
Jan -April, 2022 Jan- April, 2021	6-33 21-42		(11) whale map
<b>Composite</b>	<b>6-34</b>	<b>35-75</b>	

**Off the North Carolina Coast-Mainland (miles)**

Time Period	Inner Zone	Outer Zone	Source /Comments
Jan Feb Mar Apr	7-14 7-17 6-23 6-11		(1a) Roberts, Duke University
Jan Feb Mar	7-23 7-31 6-16		(1b) Duke University
Nov-Feb Mar-April	10-31	? -62	(2) Davis, Baumgartner
Nov-Feb		29-54	(9) NAVFAC Report
Dec-Mar		33-55	(10) Hodge
Jan-April, 2022 Jan-April, 2021		33-42 32-53	(11) whale map.org
<b>Composite</b>	<b>6-31</b>	<b>32-55</b>	

**Off the South Carolina Coast (miles)**

Time Period	Inner Zone	Outer Zone	Source /Comments
Jan Feb Mar Apr	7-19 7-34 6-34 6-11		(1a) Roberts, Duke University
Jan Feb Mar	7-23 10-23 7-23	24-47 24-47	(1b) Duke University
Nov-Feb Mar-April	12-25	44-75	(2) Davis, Baumgartner
Jan-April, 2022 Jan- April, 2021	5-28 11		(11) Whalemap.org
<b>Composite</b>	<b>6-23</b>	<b>24-47</b>	

**Off the Georgia Coast (miles)**

Time Period	Inner Zone	Outer Zone	Source /Comments
Jan Feb Mar	7-34 7- 34 6-34	35-46	(1a) Roberts, Duke University
Jan Feb Mar	7-16 10-23 7-23	16-47 24-47	(1b) Duke University
Nov-Feb Mar-April	12-25 20-25		(2) Davis, Baumgartner
Nov-Mar	12-16		(10) Hodge
Jan -April, 2022 Jan -April, 2021	5-28 5-16		(11) Whalemap.org
<b>Composite</b>	<b>6-27</b>	<b>28-47</b>	

**Composite Results Over Time**

In Table 2, the data of Table 1 for the inner zone was consolidated into one migratory period- January through April. The composite range for the full time frame was established by dropping outlying less seen values. The Version 12 density data from Duke University is given less weight here as the authors of that study say that it is preliminary and do not recommend it at this time for management purposes.

By necessity, some of the distances in Table 1 were taken from density maps and may not match the raw density data exactly. However, the results in Table 2 are a reasonable representation of the whale's primary historical migration corridor over a long time period.

**Table 2 - Composite Results over Studies, Time Frame and Zones**

<b>State</b>	<b>Proposed Migratory Critical Habitat-Primary Inner Historical Corridor (miles offshore )</b>
<b>Maine</b>	<b>14-34</b>
<b>New Hampshire</b>	<b>6-39</b>
<b>Massachusetts/from Cape Cod</b>	<b>6-31</b>
<b>Rhode Island</b>	<b>6-16</b>
<b>New York/from Long Island</b>	<b>6-47</b>
<b>New Jersey/from Barrier Islands</b>	<b>6-33</b>
<b>Delaware/Maryland</b>	<b>10-31</b>
<b>Virginia</b>	<b>6-34</b>
<b>North Carolina/Mainland</b>	<b>6-31</b>
<b>South Carolina</b>	<b>6-23</b>
<b>Georgia</b>	<b>6-27</b>

Conclusions:

The results shown in Table 2, and the map above present a reasonable depiction of an inner migration corridor that should be designated as critical habitat to allow the North Atlantic right whale to migrate and survive.

As shown in the accompanying Save Long Beach Island report on operational turbine noise, the noise source level from a single large turbine is high and is increased by the multiple turbines operating in the complex. Straightforward calculations show that any NARW attempting to migrate through the wind complex will accumulate enough noise energy to suffer permanent hearing loss. Therefore turbine placement within the proposed critical habitat must be prohibited, and this prohibition is supported by the language in section 9 of the ESA as described above.

In addition as shown in the Save LBI report on operational noise, noise levels above 120 decibels that will disturb the whales behavior and at a minimum impair its migration extend from 3.4 to 12 miles from the perimeter of the wind complex depending upon the seabed attenuation present. Therefore a buffer zone on both sides of the critical habitat area shown of at least 7 miles should also be created within which turbine placement should not be allowed.

## **References of Migration Paths Review**

**(1a)** North Atlantic right whale v12 model overview (Version 12 considered preliminary by Duke) Duke University Marine Geospatial Ecology Lab, Durham, NC. Habitat-based Marine Mammal Density Models for the U.S. Atlantic: Latest Versions, 2015-2022, A Collaboration Led By Marine Geospatial Ecology Laboratory / Duke University, [jason.roberts@duke.edu](mailto:jason.roberts@duke.edu), [tina.yack@duke.edu](mailto:tina.yack@duke.edu), [phalpin@duke.edu](mailto:phalpin@duke.edu). Updated June 20 2022. Version 12 - 2022-02-14 **Roberts et al. (2016a)**. Citation: Roberts JJ, Best BD, Mannocci L, Fujioka E, Halpin PN, Palka DL, Garrison LP, Mullin KD, Cole TVN, Khan CB, McLellan WM, Pabst DA, Lockhart GG (2016) Habitat-based cetacean density models for the U.S. Atlantic and Gulf of Mexico. *Scientific Reports* 6: 22615. doi: 10.1038/srep22615, **Roberts et al. (2016b)**, Citation: Roberts JJ, Mannocci L, Halpin PN (2016) Final Project Report: Marine Species Density Data Gap Assessments and Update for the AFTT Study Area, 2015-2016 (Base Year). Document version 1.0. Report prepared for Naval Facilities Engineering Command, Atlantic by the Duke University Marine Geospatial Ecology Lab, Durham, NC, **Roberts et al. (2020)** Citation: Roberts JJ, Schick RS, Halpin PN (2020) Final Project Report: Marine Species Density Data Gap Assessments and Update for the AFTT Study Area, 2018-2020 (Option Year 3). Document version 1.4. Report prepared for Naval Facilities Engineering Command, Atlantic by the Duke University Marine Geospatial Ecology Lab, Durham, NC. **Roberts et al. (2021)**. Citation: Roberts JJ, Schick RS, Halpin PN (2021) Final Project Report: Marine Species Density Data Gap Assessments and Update for the AFTT Study Area, 2020 (Option Year 4). Document version 2.2. Report prepared for Naval Facilities Engineering Command, Atlantic by the Duke University Marine Geospatial Ecology Lab, Durham, NC. **Roberts and Halpin (2022)**. Citation: Roberts JJ, Halpin PN (2021)

**(1b)** Duke University, Density of NARWs in U.S. waters, 2010-2019, Roberts et al, 2016, Roberts and Halpin 2022, from NMFS, BOEM draft NARW Strategy Document, October, 2022.

**(2)** Long-term passive acoustic recordings track the changing distribution of North Atlantic right whales (*Eubalaena glacialis*) from 2004 to 2014, [Genevieve E. Davis](#), [Mark F. Baumgartner](#), et al.

**(3)** [https://www.researchgate.net/profile/Christopher-Clark-Charles-Muirhead-10/publication/322898296\\_Seasonal\\_acoustic\\_occurrence\\_of\\_blue\\_fin\\_and\\_North\\_Atlantic\\_right\\_whales\\_in\\_the\\_New\\_York\\_Bight/links/5cdeb89ea6fdccc9ddb76764/Seasonal-acoustic-occurrence-of-blue-fin-and-North-Atlantic-right-whales-in-the-New-York-Bight.pdf](https://www.researchgate.net/profile/Christopher-Clark-Charles-Muirhead-10/publication/322898296_Seasonal_acoustic_occurrence_of_blue_fin_and_North_Atlantic_right_whales_in_the_New_York_Bight/links/5cdeb89ea6fdccc9ddb76764/Seasonal-acoustic-occurrence-of-blue-fin-and-North-Atlantic-right-whales-in-the-New-York-Bight.pdf)

**(4)** Source, NJ Offshore Wind Strategic Plan, Natural Resource Technical Appendix, Figure 21. Section 2.6.3, Cetaceans Subgroup Inputs Cetacean subgroup figures display cetacean abundance data from the MDAT mammal abundance technical report from Duke University in: MARINE-LIFE DATA AND ANALYSIS TEAM (MDAT) TECHNICAL REPORT ON THE METHODS AND DEVELOPMENT OF MARINE-LIFE DATA TO SUPPORT REGIONAL OCEAN PLANNING AND MANAGEMENT Authors: Corrie Curtice, Date published: 24 June 2019 Project manager and point of contact: Jesse Cleary, Marine Geospatial Ecology Lab, Duke University, Durham, NC 27708 em: [jesse.cleary@duke.edu](mailto:jesse.cleary@duke.edu) ph: 919-684-3660 w: [mgel.env.duke.edu](mailto:mgel.env.duke.edu) Accessible from: <http://seamap.env.duke.edu/models/MDAT/MDAT-TechnicalReport.pdf> The individual species maps represent the results of distance sampling modeling methodology applied to over 20 years of aerial and shipboard cetacean surveys, linked with remote sensing and ocean model environmental covariates. Cetacean models were created for the entire US East Coast and southeast Canada. The data was provided by the MDAT as a grid consisting of 10 km x 10 km cells.

**(5)** Atlantic Shores Offshore Wind Application for Marine Mammal Protection Act (MMPA) Rulemaking and Letter of Authorization Prepared by: JASCO Applied Sciences (USA) Inc. September 2022 Submitted to: Permits and Conservation Division, Office of Protected Resources, NOAA Fisheries, Figure 9. North Atlantic right whale maximum seasonal density from Roberts et al. (2016a, 2021a, 2021b).

(6) North Atlantic right whale distribution and seasonal occurrence in nearshore waters off New Jersey, USA, and implications for management Amy D. Whitt\*, Kathleen Dudzinski, Jennifer R. Laliberté Geo-Marine, Inc., 2201 K Avenue, Suite A2, Plano, Texas 75074, US

(7) Statistical modeling of North Atlantic right whale migration along the mid-Atlantic region of the eastern seaboard of the United States, Jeremy Firestone et al. Biological Conservation, Volume 141, Issue 1, January 2008, Pages 221-232.

(8) Right whale occurrence in the coastal waters of Virginia, U.S.A.: Endangered species presence in a rapidly developing energy market DANIEL P. SALISBURY, CHRISTOPHER W. CLARK, and AARON N. RICE, 1 Bioacoustics Research Program, Cornell Lab of Ornithology, Cornell University, Ithaca, New York 14850, U.S.A. Ab

(9) Annual Report 2015: Passive Acoustic Monitoring for North Atlantic Right Whales at Cape Hatteras, North Carolina, Using Marine Autonomous Recording Units, October 2014 – March 2015, Duke University Marine Lab, submitted to NAVFAC, February 1, 2016.

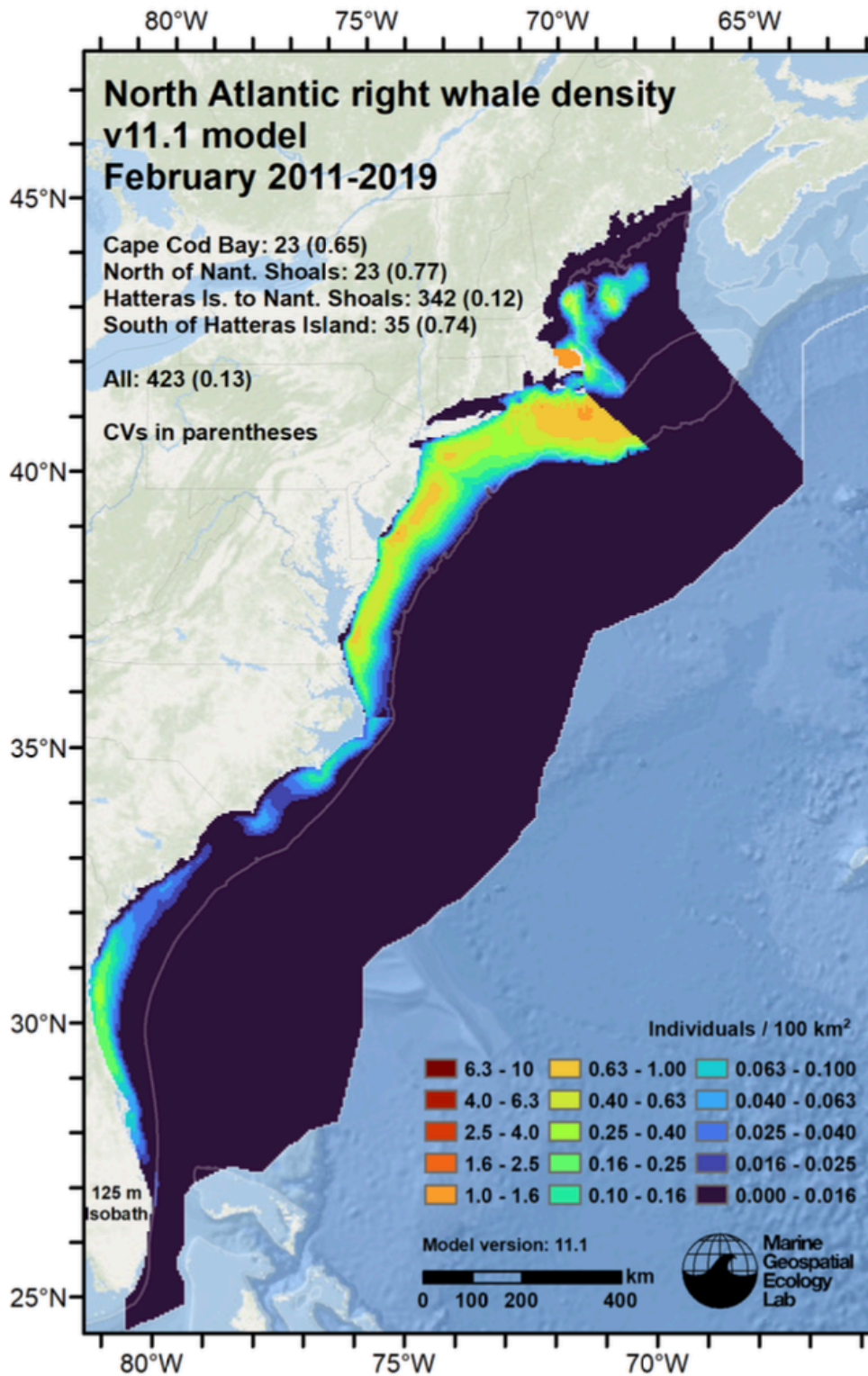
(10) North Atlantic right whale occurrence near wind energy areas along the mid-Atlantic US coast: implications for management Kristin B. Hodge<sup>1</sup>, Charles A. Muirhead<sup>1</sup>, Janelle L. Morano<sup>1</sup>,

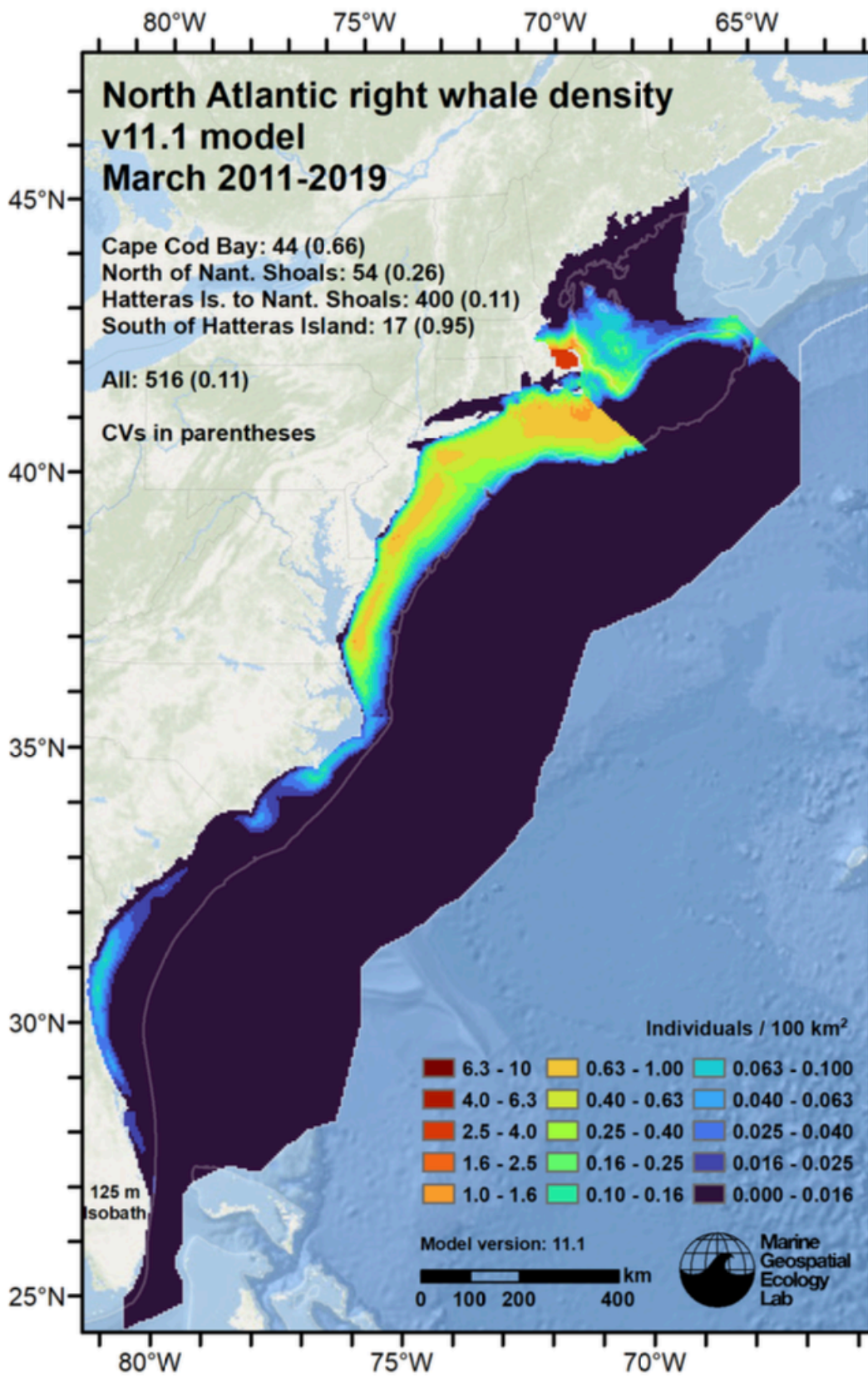
(11) Whalemap.org, confirmed sightings and acoustic detections. Johnson H, Morrison D, Taggart C (2021). Whale Map: a tool to collate and display whale survey results in near real-time. Journal of Open Source Software, 6(62), 3094, <https://joss.theoj.org/papers/10.21105/joss.03094>

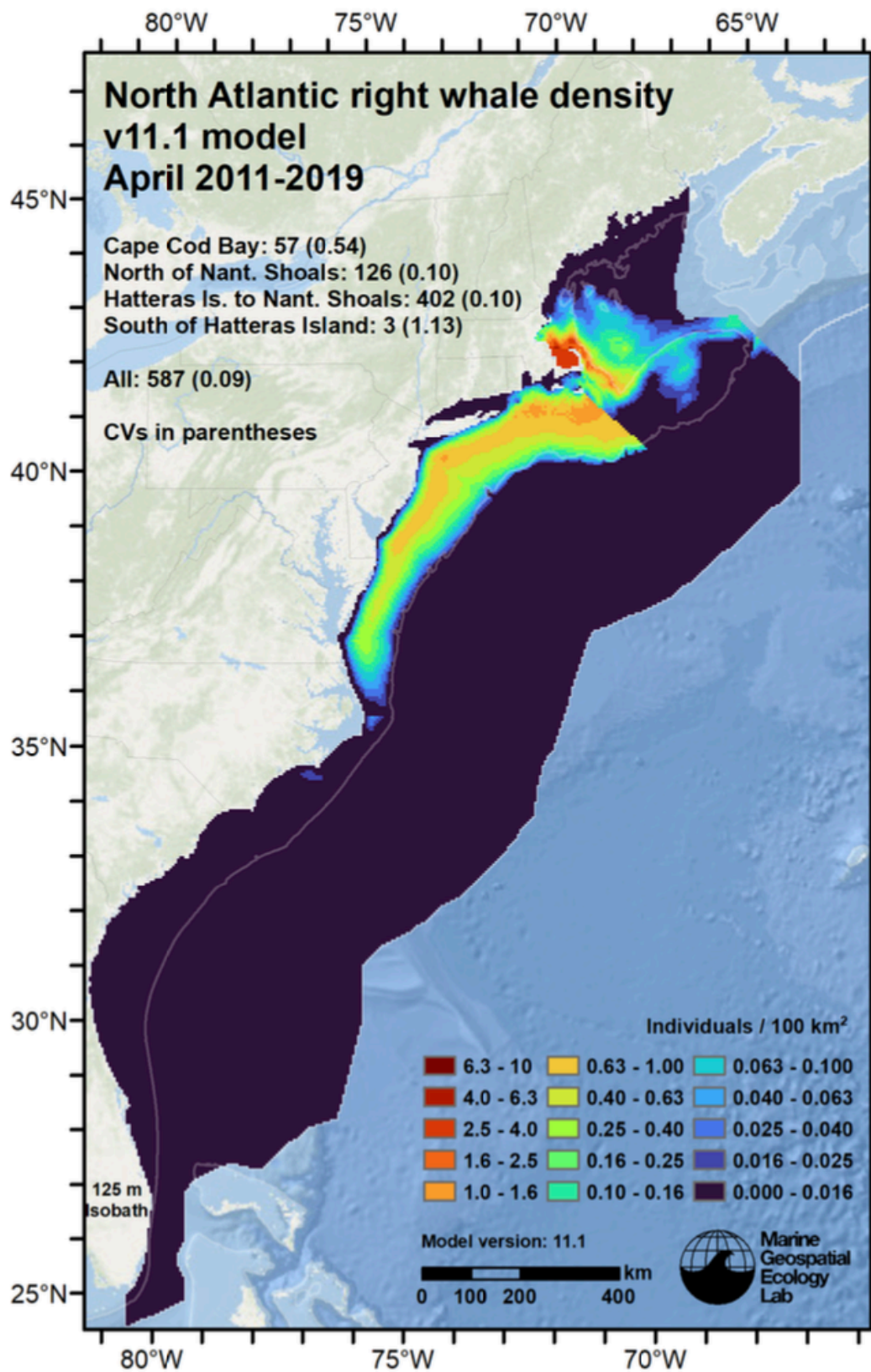
(12). Bureau of Ocean Energy Management (BOEM) Report # 5586, Investigations of the potential effects of underwater noise from petroleum industry activities on migrating gray whale behavior, phase 2 January 1984 migration, Nyack et al.

(13) Letter to President Biden from Save LBI, February 15<sup>th</sup>,2023

Exhibits 1 to 4, Density Information, Source (Reference 1b of Table 1)

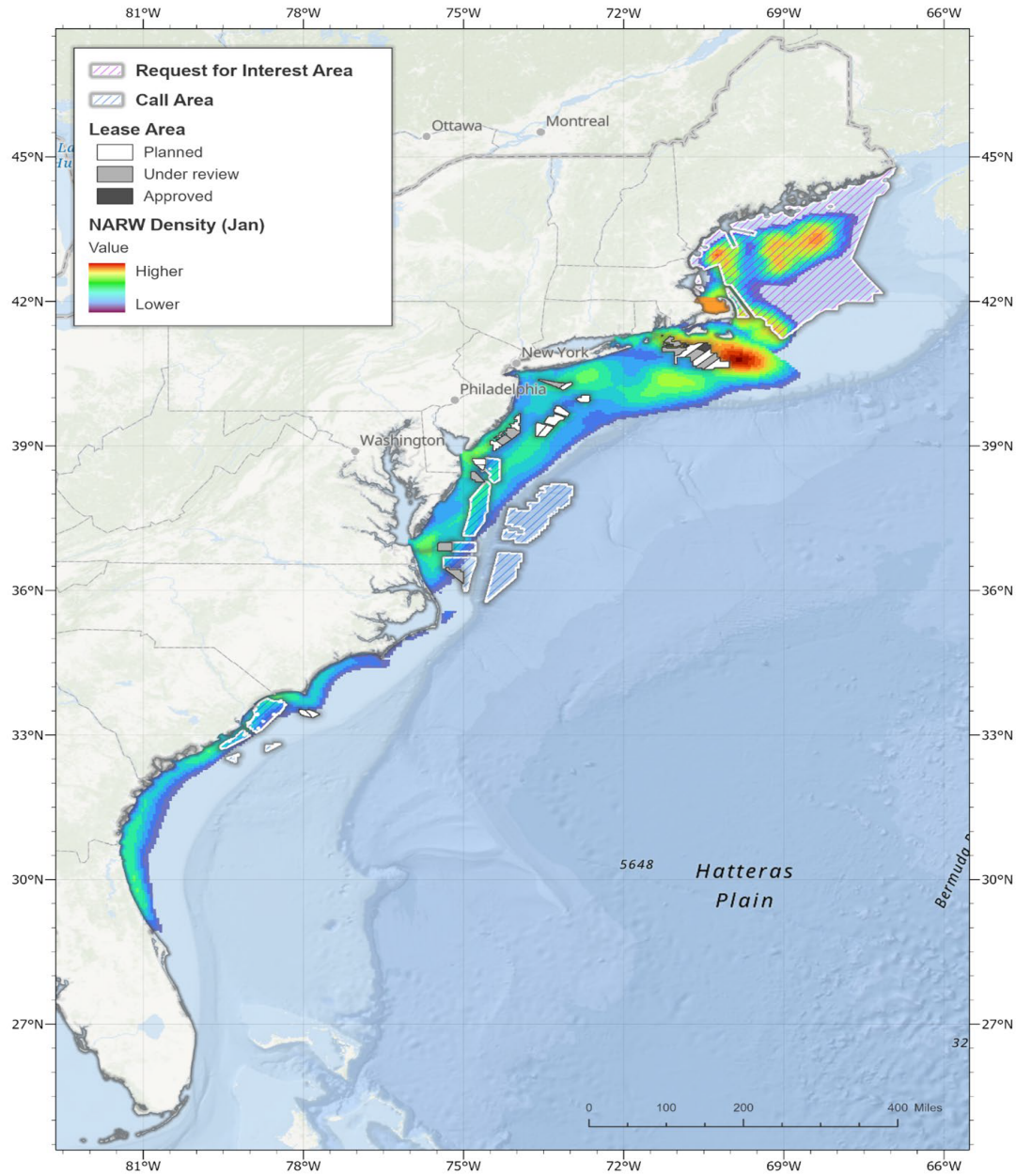




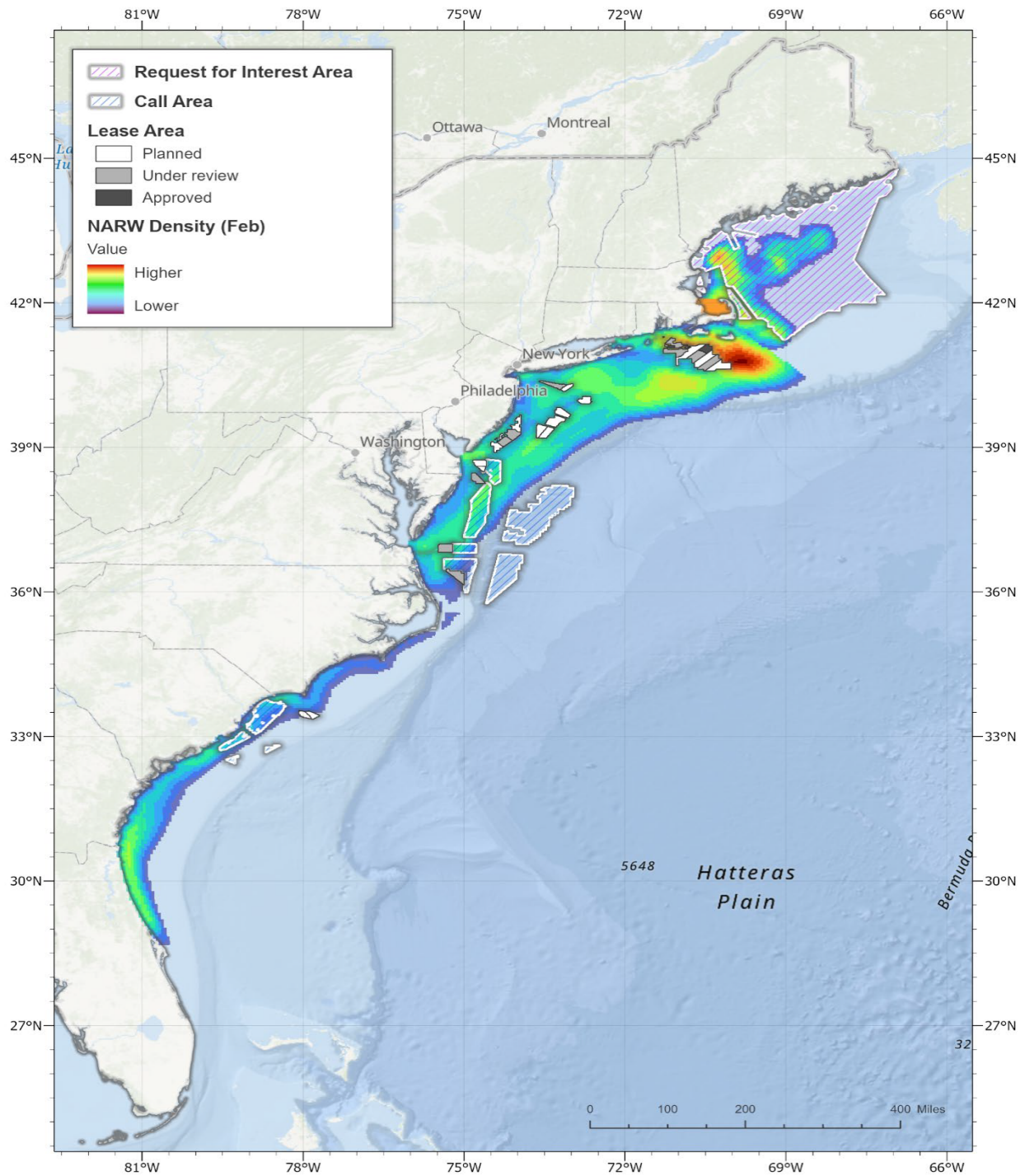


# Exhibits 5-8, Density Information From Source 1b Superimposed on Wind Energy Areas - from the Draft Joint NARW Strategy Document

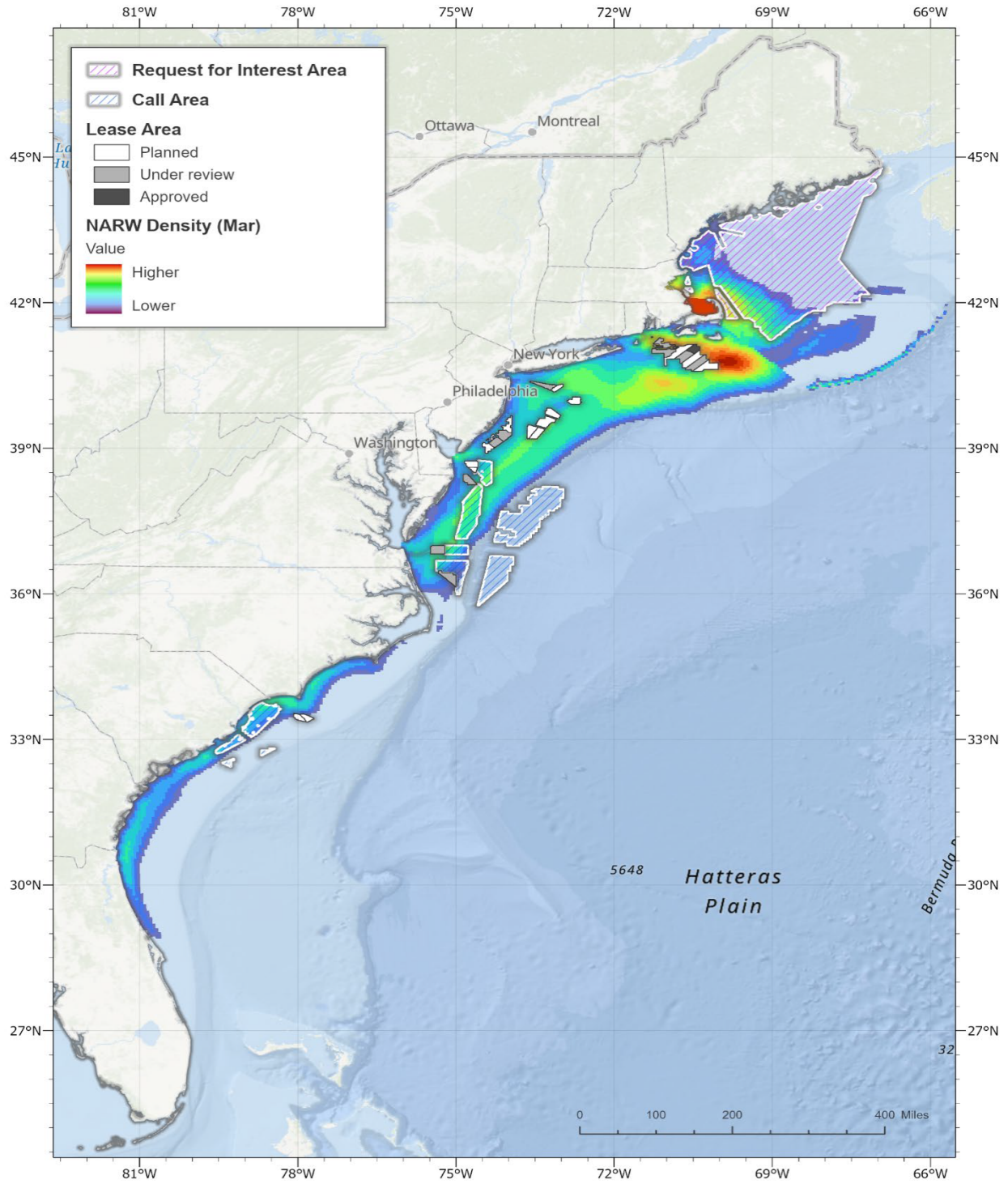
Density of NARWs in U.S. waters during the month of January (2010–2019) (Roberts et al. 2016; Roberts and Halpin 2022)



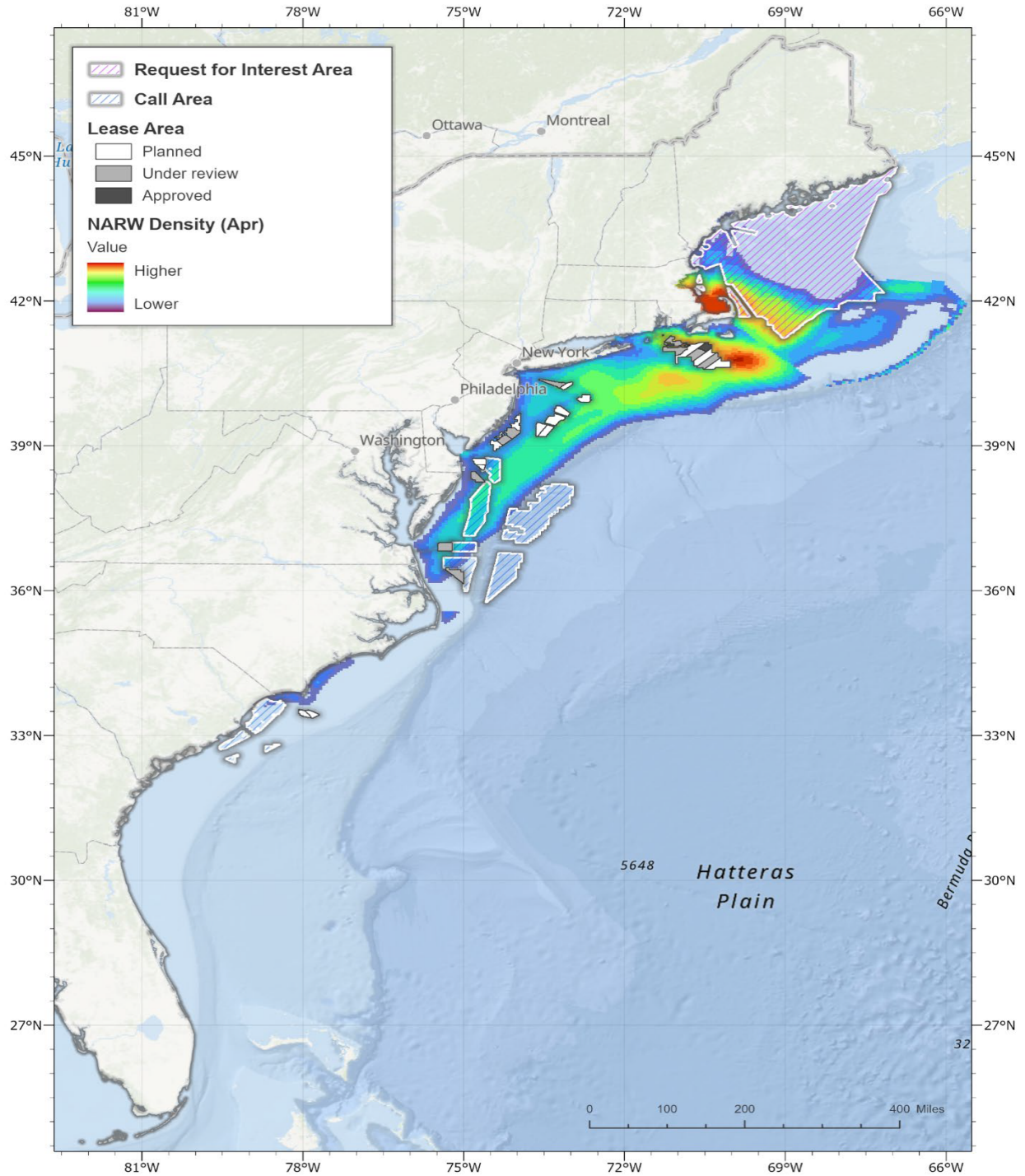
Density of NARWs in U.S. waters during the month of February (2010–2019) (Roberts et al. 2016; Roberts and Halpin 2022)



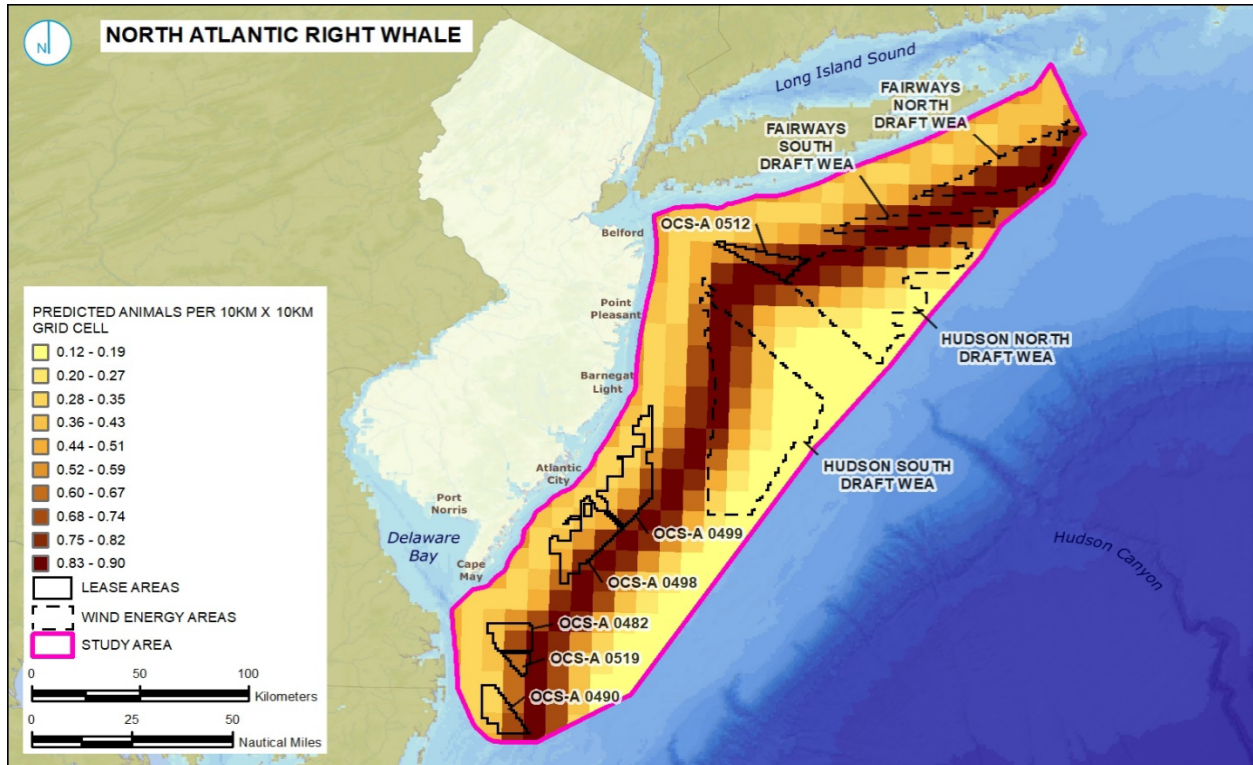
Density of NARWs in U.S. waters during the month of March (2010–2019) (Roberts et al. 2016; Roberts and Halpin 2022)



Density of NARWs in U.S. waters during the month of April (2010–2019) (Roberts et al. 2016; Roberts and Halpin 2022)



## Exhibit 9, Density Information, Source (4)



Source, NJ Offshore Wind Strategic Plan, Natural Resource Technical Appendix, Figure 21. Section 2.6

## 7. NARW PETITION CONCLUSION

With the introduction of offshore wind projects, the North Atlantic right whales historical primary migration route is no longer protected. To preserve the species, a safe corridor for its migration must be created by designating the areas shown in Table 2 along its entire route from Maine to Georgia as critical habitat.

The expansion and designation of a right whale migratory corridor as critical habitat is likely to result in significant reduction in right whale mortality during its migration. **Since right whales are continually observed between feeding grounds and calving grounds, the corridors will also protect the individuals as they engage in other behaviors essential to survival.** By contrast, if NMFS only protects small spaces that are not linked it will result in a forced lack of protection for every single individual season of its lifetime. By NMFS's own metrics, the loss of even one animal could threaten the species with extinction, so it is NMFS's duty to protect every single individual if possible.

The overwhelming North Atlantic right whale mortalities are documented in the migratory corridor off the mid-Atlantic region and the presence of right whales in the mid-Atlantic is also acknowledged in the most recent five year review of the species that NMFS published. **All this data boils down to one simple point, and that point is that right whales are harmed by human activity all along the coast, and a well tailored critical habitat, which include a migratory corridor, could prevent these unnecessary right whale mortalities.**

The ESA is clear that the purpose is to not only prevent extinction, but to also encourage recovery. **Its legislative history establishes that when faced with doubt, the benefit of the doubt should go to the species.** In doing so it clearly embraces the precautionary principle. The ultimate goal of the ESA is for a species to reach the point where the additional protections of the ESA are no longer needed. To that end, it is imperative that the NMFS expand the NARW critical habitat, and include migratory connectors.

It is true that there are times when environmental law can be a complex, cumbersome body of law to muddle through. This is not one of those times. The law is clear about the obligation that NMFS has to protect North Atlantic right whales. In order to fully fulfill its legal obligations, NMFS must establish the proposed critical habitat expansion for migratory corridors. Anything less would be insufficient to fully protect the species, allowing it to survive and thrive as intended as a matter of law.

If the recent trends presented in this petition are not sufficient to instigate meaningful change within NARW habitat, their extinction is almost certain. Save LBI agrees with Corkeron et al. (2018) that adult NARWs are not dying from geriatric conditions because they are instead suffering premature deaths due to human-induced trauma. Young whales are also dying from anthropogenic trauma at an alarming rate, further limiting the number of NARWs reaching sexual maturity and reducing the potential for population recovery. Some of the deaths caused by

human activities inflict painful acute deaths, while others are much more protracted, causing a profound amount of suffering for each affected whale.

It is essential that measures to reduce anthropogenic NARW mortality be undertaken immediately, as was previously called for nearly 8 years ago; a rule by the NOAA on January 27, 2016 for Endangered and Threatened Species; Critical Habitat for Endangered North Atlantic Right Whale that **failed to designate the critical habitat in the primary migratory corridor.**

The North Atlantic Right Whale doesn't need trophies awarded to speed reduction vessels, they need their migratory corridor from Maine to Florida off the coastal Atlantic Ocean protected from the installation of offshore wind turbine development.



Sapphire award winning companies who showed a high level of cooperation with NOAA sanctuaries vessel speed reduction program. Credit: Jess Morten/NOAA

In conclusion, we thank the National Marine Fisheries Service for their time and attention on this important issues. We strongly urge that the current critical habitat for the North Atlantic right whale be expanded to include the primary historical migratory connectors for those areas. This would not only protect the NARW but afford a similar turbine free zone for other baleen whales within the same habitats off the Mid-Atlantic.

## REFERENCES

- M1. Endangered and Threatened Species; Critical Habitat for Endangered North Atlantic Right Whale; Docket No. 100217099-5999-03] RIN 0648-AY5; 50 CFR Part 226; <https://www.federalregister.gov/documents/2016/01/27/2016-01633/endangered-and-threatened-species-critical-habitat-for-endangered-north-atlantic-right-whale>
- M2. Endangered Species Act (ESA); Pub. L. 93–205, §1, Dec. 28, 1973, 87 Stat. 884 , provided: "That this Act [enacting this chapter, amending sections 460k–1, 460l–9, 668dd, 715i, 715s, 1362, 1371, 1372, and 1402 of this title and section 136 of Title 7, Agriculture, repealing sections 668aa to 668cc–6 of this title, and enacting provisions set out as notes under this section] may be cited as the 'Endangered Species Act of 1973'."
- M3. Administrative Procedures Act (APA) 16 U.S.C. 1533(b)(3)(D); 5 U.S.C. 553(e); 50 C.F.R. 424.14(a)
- M4. Endangered and Threatened Species; Proposed Endangered Status for North Atlantic Right Whales <https://www.federalregister.gov/documents/2006/12/27/E6-22182/endangered-and-threatened-species-proposed-endangered-status-for-north-atlantic-right-whales>
- M5. NOAA Fisheries, “critical habitat does not create a closed area...” <https://www.fisheries.noaa.gov/national/endangered-species-conservation/critical-habitat>
- M6. 1995 Supreme Court decision -- Babbitt v. Sweet Home, the high court decided that the definition of the term “harm” in the Endangered Species Act. <https://www.oyez.org/cases/1994/94-859>
- M7. NOAA Fisheries website; North Atlantic whales primarily occur in Atlantic Coastal waters on the continental shelf; NOAA Fisheries estimates right whales alive 2023; <https://www.fisheries.noaa.gov/species/north-atlantic-right-whale>
- M8. New Jersey Offshore Wind Strategic Plan of July 2020. [https://www.nj.gov/bpu/pdf/Draft\\_NJ\\_OWSP\\_7-13-20\\_highres.pdf](https://www.nj.gov/bpu/pdf/Draft_NJ_OWSP_7-13-20_highres.pdf)
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Save LBI - Latest Research- <https://www.savelbi.org/>

View the Studies and evidence that Save LBI has collected and created regarding the following:

- Offshore Wind Overview
- Marine Life & Whales
- Economic Impacts
- Presentations
- Press Releases

**APPENDIX - A**

**BUOY STUDY**

**Located 20 miles southeast of Atlantic City**

Whale Deaths beginning 12/5/2022 off the coast of New Jersey were unprecedented in numbers, that continue to escalate today. The purpose of this graph is to document the number of whales in their migration habitat while vessels were engaged in seismic surveying. The correlation of whale deaths and acoustic surveying have yet to be investigated by the federal agencies in any meaningful way. We note that the BOUY deployment was sponsored by an offshore wind developer in order to avoid and mitigate, however that didn't seem to work out to well. It seems that Orsted had the BUOY, which had been monitoring marine life since 7/27/2021, turned off on 1/27/2023. In less than two months there were eight whale deaths off the coast of New Jersey

**Whale Deaths within the deployment range:**

- 12/5/22 - Keansburg, NJ
- 12/10/22 - Strathmere Beach, NJ
- 12/23/22 - Atlantic City, NJ
- 12/28/22 - Sandy Hook, NJ
- 1/7/23 - Atlantic City, NJ
- 1/12/23 - Brigantine, NJ
- 1/18/23 - Brigantine, NJ Floating
- 1/28/23 - Long Beach Island, NJ Floating

Date	Sei whale	Fin whale	Right whale	Humpback whale
<a href="#">01/26/2023</a>				
<a href="#">01/25/2023</a>				
<a href="#">01/24/2023</a>				
<a href="#">01/23/2023</a>				
<a href="#">01/22/2023</a>				
<a href="#">01/21/2023</a>				
<a href="#">01/20/2023</a>				
<a href="#">01/19/2023</a>				
<a href="#">01/18/2023</a>				
<a href="#">01/17/2023</a>				
<a href="#">01/16/2023</a>				
<a href="#">01/15/2023</a>				
<a href="#">01/14/2023</a>				
<a href="#">01/13/2023</a>				
<a href="#">01/12/2023</a>				
<a href="#">01/11/2023</a>				
<a href="#">01/10/2023</a>				
<a href="#">01/09/2023</a>				
<a href="#">01/08/2023</a>				
<a href="#">01/07/2023</a>				
<a href="#">01/06/2023</a>				
<a href="#">01/05/2023</a>				

<a href="#">01/04/2023</a>		Red		Yellow
<a href="#">01/03/2023</a>			Yellow	
<a href="#">01/02/2023</a>		Red		Yellow
<a href="#">01/01/2023</a>		Yellow		Yellow
<a href="#">12/31/2022</a>	Yellow		Red	
<a href="#">12/30/2022</a>		Red		Yellow
<a href="#">12/29/2022</a>		Red	Red	
<a href="#">12/28/2022</a>		Red	Red	Red
<a href="#">12/27/2022</a>		Red	Red	Red
<a href="#">12/26/2022</a>		Red	Yellow	Red
<a href="#">12/25/2022</a>		Red	Yellow	Red
<a href="#">12/24/2022</a>		Red	Red	
<a href="#">12/23/2022</a>		Yellow	Yellow	
<a href="#">12/22/2022</a>		Red		
<a href="#">12/21/2022</a>		Red		
<a href="#">12/20/2022</a>		Red		
<a href="#">12/19/2022</a>		Red		Red
<a href="#">12/18/2022</a>		Red		
<a href="#">12/17/2022</a>		Red		
<a href="#">12/16/2022</a>		Red		
<a href="#">12/15/2022</a>		Red		
<a href="#">12/14/2022</a>				
<a href="#">12/13/2022</a>				

<a href="#">12/12/2022</a>		Red		
<a href="#">12/11/2022</a>		Yellow		Yellow
<a href="#">12/10/2022</a>		Red	Yellow	Red
<a href="#">12/09/2022</a>		Red		
<a href="#">12/08/2022</a>			Red	
<a href="#">12/07/2022</a>		Red		Yellow
<a href="#">12/06/2022</a>		Red		
<a href="#">12/05/2022</a>		Red		
<a href="#">12/04/2022</a>				
<a href="#">12/03/2022</a>		Yellow	Yellow	Red
<a href="#">12/02/2022</a>			Yellow	
<a href="#">12/01/2022</a>				Red
<a href="#">11/30/2022</a>		Red		
<a href="#">11/29/2022</a>		Red		
<a href="#">11/28/2022</a>				
<a href="#">11/27/2022</a>		Red	Red	
<a href="#">11/26/2022</a>		Red		
<a href="#">11/25/2022</a>				
<a href="#">11/24/2022</a>		Red		
<a href="#">11/23/2022</a>		Red		
<a href="#">11/22/2022</a>				
<a href="#">11/21/2022</a>		Red		Red
<a href="#">11/20/2022</a>		Yellow		

## APPENDIX - B

### The Whales of New York Interactive Kiosk - BOUY Detection 20 miles from NY Aquarium

<https://whalesofnewyork.wcs.org/Whale-Kiosk>

In addition to the NARW, this link provides detections dating back to 2016 for Fin, Humpback, and Sei whales within the NY/NJ Bight - confirming that whale detections have never been zero. The site allows you to listen to the sounds of their calling.

#### RECENT DETECTIONS Back

Whales	12/29/2024	12/28/2024	12/27/2024	12/26/2024	12/25/2024	12/24/2024	12/23/2024	12/22/2024	12/21/2024
Fin Whale									
Humpback Whale									
North Atlantic Right Whale									
Sei Whale									

#### RECENT DETECTIONS Back

Whales	12/20/2024	12/19/2024	12/18/2024	12/17/2024	12/16/2024	12/15/2024	12/14/2024	12/13/2024	12/12/2024
Fin Whale									
Humpback Whale									
North Atlantic Right Whale									
Sei Whale									

#### RECENT DETECTIONS Back

Whales	12/11/2024	12/10/2024	12/09/2024	12/08/2024	12/07/2024	12/06/2024	12/05/2024	12/04/2024	12/03/2024
Fin Whale									
Humpback Whale									
North Atlantic Right Whale									
Sei Whale									

#### RECENT DETECTIONS Back

Whales	1/11/2025	12/10/2024	12/09/2024	01/08/2025	01/07/2025	01/06/2025	01/05/2025	01/04/2025	01/03/2025	01/02/2025	01/01/2025
Fin Whale											
Humpback Whale											
North Atlantic Right Whale											
Sei Whale											

Play



North Atlantic Right Whale  
Detected 3 Days Ago



Play



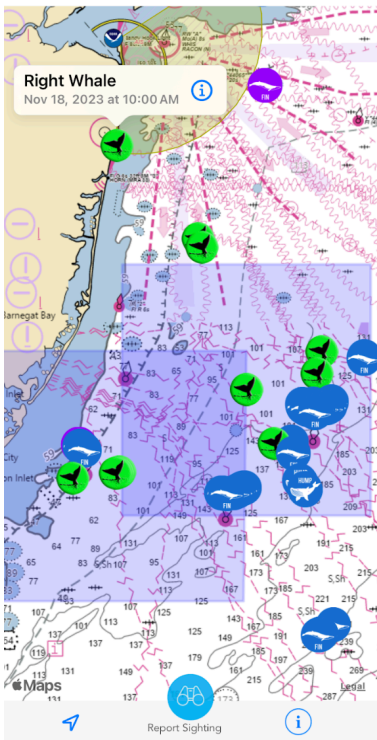
North Atlantic Right Whale  
Detected 4 Days Ago



Play

# APPENDIX - C

## Whale Alert App

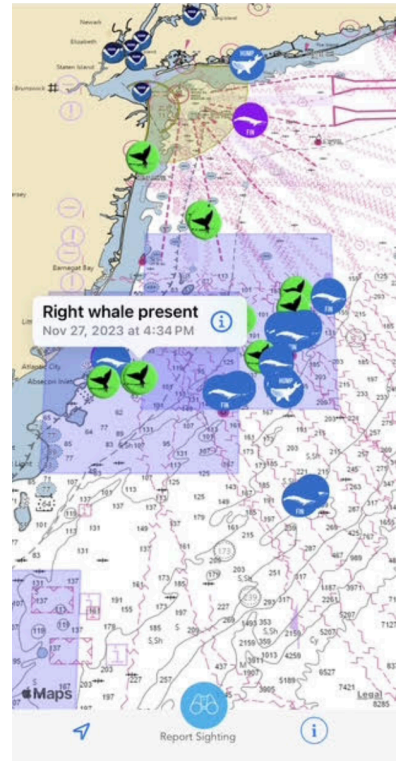


[← Whale Alert](#) **Right Whale**

### Right Whale Sighting

Sighted on 2023-11-18  
Number Sighted: 1  
Comments: From: Wind Energy (generic)  
Source: NOAA Right Whale Sighting Advisory System

Powered By: [Whale Alert](#)

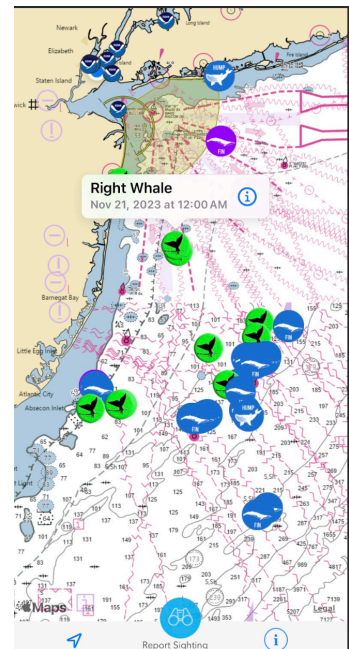
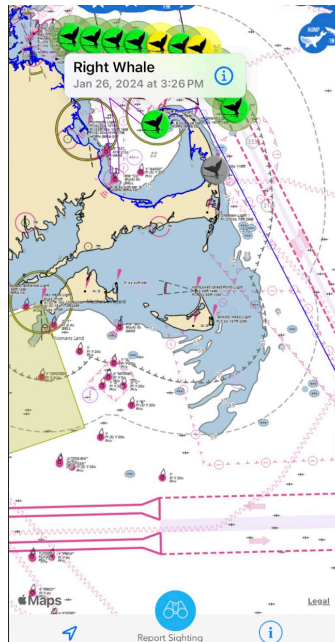
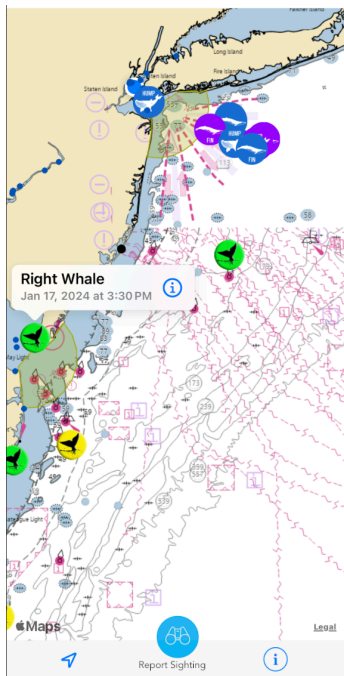


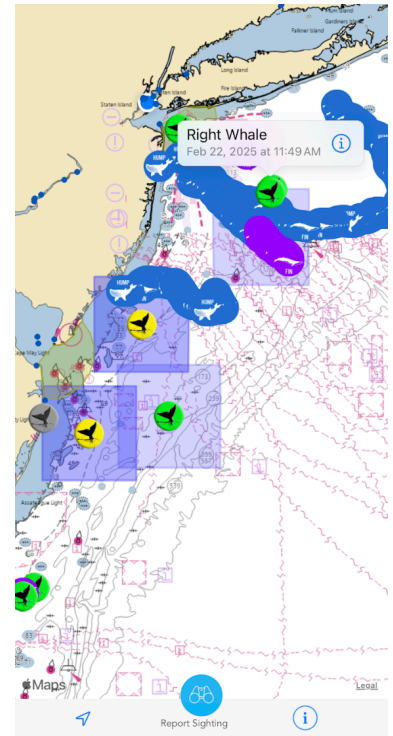
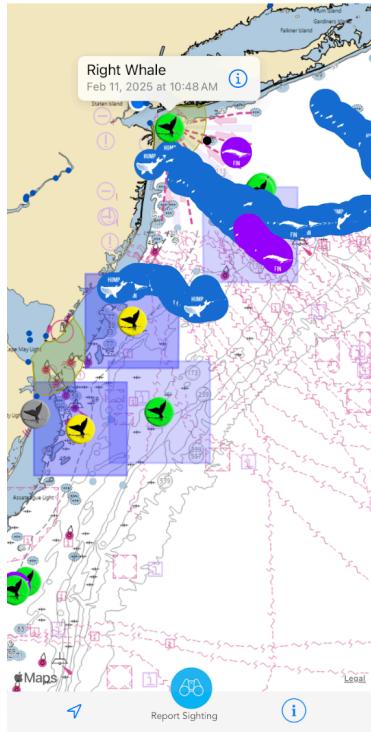
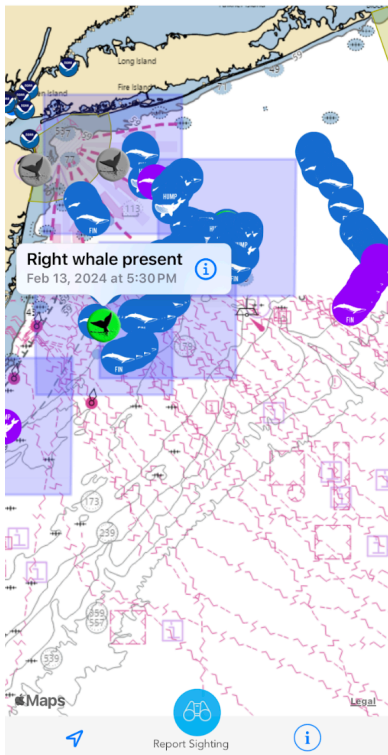
[← Back](#) **Right whale present**

### Right whale present Sighting

Sighted on 2023-11-27  
Number Sighted: 1  
Comments: Coastal New Jersey Slocum glider  
Rutgers University and Woods Hole Oceanographic Institution  
[Sensor Website](#)

Powered By: [Whale Alert](#)





< [Whale Alert](#) Right Whale

### Right Whale Sighting

Sighted on 2025-02-11  
Number Sighted: 3

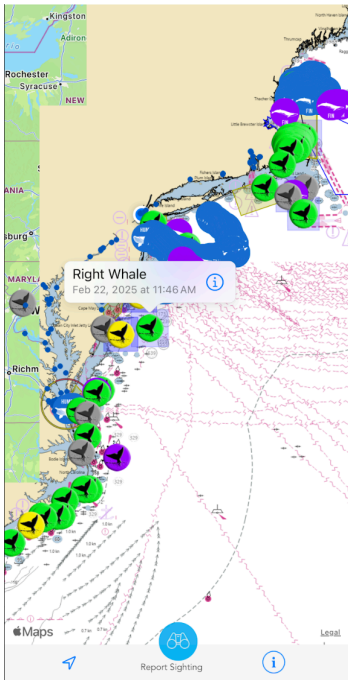
Powered By: [Whale Alert](#)

< [Whale Alert](#) Right Whale

### Right Whale Sighting

Sighted on 2025-02-22  
Number Sighted: 1  
Comments: Plane Visual Sighting  
Source: NOAA Right Whale Sighting Advisory System / WHALEMAP

Powered By: [Whale Alert](#)



### Right Whale Sighting

Sighted on 2025-02-22  
Number Sighted: 6  
Comments: Plane Visual Sighting  
Source: NOAA Right Whale Sighting Advisory System / WHALEMAP

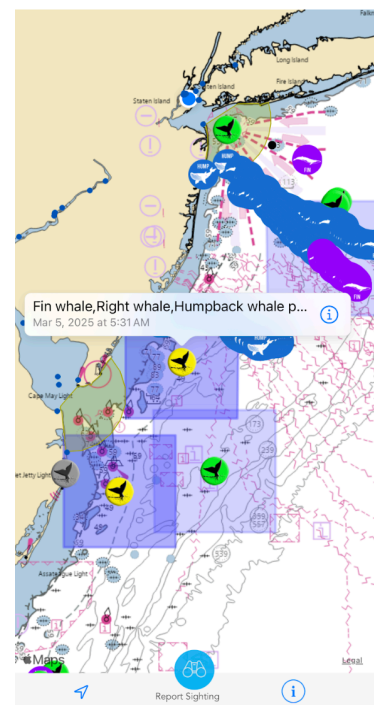
Powered By: [Whale Alert](#)

< [Fin whale,Right whale,Humpback whale pr...](#)

### Fin whale,Right whale,Humpback whale present Detection

Sighted on 2025-03-05  
Number Sighted: 3  
Comments: Whales Detected in Prior 3 Days

Atlantic City buoy  
Woods Hole Oceanographic Institution  
[Sensor Website](#)



**APPENDIX - D**

**NATIONAL MARINE FISHERIES SERVICE  
NARW 5-YEAR REVIEW - NOVEMBER 2022**

NARW 5 Year Review - NMFS Greater Atlantic Regional Fisheries Office - November 2022  
[https://media.fisheries.noaa.gov/2022-12/Sign2\\_NARW20225YearReview\\_508-GARFO.pdf](https://media.fisheries.noaa.gov/2022-12/Sign2_NARW20225YearReview_508-GARFO.pdf)

**NATIONAL MARINE FISHERIES SERVICE  
5-YEAR REVIEW**

North Atlantic Right Whale (*Eubalaena glacialis*)

**Current Classification:** Endangered

**Recommendation resulting from the 5-Year Review**

- Downlist to Threatened  
 Uplist to Endangered  
 Delist  
 No change is needed

**Review Conducted By (Name and Office):**

Greater Atlantic Regional Fisheries Office  
National Marine Fisheries Service

**REGIONAL OFFICE APPROVAL:**

Approve Michael Pentony Digitally signed by Michael Pentony  
Date: 2022.11.10 14:26:52 -05'00' Date: 11/10/22

**Cooperating Regional Administrator, NOAA Fisheries**

Concur  Do Not Concur  N/A

Signature AMENDOLA.KIMBERLY.BARBARA.1365830769 Digitally signed by AMENDOLA.KIMBERLY.BARBARA.1365830769  
Date: 2022.11.17 17:49:21 -05'00' Date: 11/17/22

**HEADQUARTERS APPROVAL:**

**Assistant Administrator, NOAA Fisheries**

Concur  Do Not Concur

Signature RAUCH.SAMUEL.D.II.1365850948 Digitally signed by RAUCH.SAMUEL.D.II.1365850948  
Date: 2022.12.09 14:29:54 -05'00' Date: \_\_\_\_\_

### 1.3.2 Listing History

#### Original Listing

**FR notice:** 35 FR 18319

**Date listed:** December 2, 1970

**Entity listed:** Northern right whale (*Eubalaena spp.*)

**Classification:** Endangered (Under the Endangered Species Conservation Act of 1969)

#### Revised Listing

**FR notice:** 73 FR 12024

**Date listed:** March 6, 2008

**Entity listed:** North Atlantic right whale (*Eubalaena glacialis*)

**Classification:** Endangered

### 1.3.3 Associated Rulemakings

Atlantic Large Whale Take Reduction Plan: 62 FR 39157, July 22, 1997; Taking of Marine Mammals Incidental to Commercial Fishing Operations; Atlantic Large Whale Take Reduction Plan Regulations and subsequent amendments. See 50 CFR 229.32.

Federal Regulations Governing the Approach to North Atlantic Right Whales: 69 FR 69536, November 30, 2004. See 50 CFR 222.32 and 217.12.

Speed Restrictions to Reduce the Threat of Ship Collisions with North Atlantic Right Whales: 73 FR 60173, October 10, 2008. Endangered Fish and Wildlife; Speed Restrictions to Reduce the Threat of Ship Collisions with North Atlantic Right Whales and subsequent amendments. See 50 CFR 224.105.

Revised Critical Habitat Designation: 81 FR 4838, January 27, 2016. Endangered and Threatened Species; Critical Habitat for Endangered North Atlantic Right Whale. See 50 CFR 226.203.

The listing criteria in section 2.2.3 for recovery has not been met and therefore NMFS concurred no change is needed to classification in November 2022, however the need to revisit recovery criteria seems warranted as GARFO and NMFS warned of an emerging potential threat to the NARW associated with offshore wind energy development.

In particular, criteria number 3. Listing/Recovery Factor noted the present or threatened destruction, modification or curtailment of a species habitat or range note in order to endure the long-term recovery needs of the North Atlantic right whale and provide adequate assurance of population stability, threats to right whale habitat or range must be reduced or removed. Habitat degradation may occur from oil spills, noise pollution from shipping or oil and gas development, dredging, and contaminants.

**Finding: This criterion has not been met. Emerging potential threats to right whale habitat include those associated with wind energy development, aquaculture development, and climate change.**

## APPENDIX - E

### **Asbury Park Press**

## **Whales recorded in large numbers off New Jersey coast**

Amanda Oglesby

Published July 29, 2024

Whales are gathering in large numbers off New Jersey in a portion of the Atlantic Ocean called the New York Bight, according to several sources.

Viking Yacht Company of New Gretna, Burlington County, posted to Facebook, that a large group of North Atlantic right whales, an endangered species with only about 360 individuals left, was congregating in the New York Bight between the Hudson Canyon off Sandy Hook and Block Canyon off Montauk, New York.

The New York Bight is a triangular area of ocean that stretches between the Jersey Shore and Long Island.

“NOAA (the National Oceanic and Atmospheric Administration) has used planes to identify the whales - present due to large amounts of food,” Viking Yacht staff wrote on Facebook. “We’re advising boaters to be vigilant. If whales(s) are seen provide a wide berth.”

Earlier this month, NOAA issued slow zones east of Atlantic City and southwest of Martha’s Vineyard to protect the North Atlantic right whales. The agency requested boaters travel under 10 knots while inside the zones. The slow zones expired Monday, July 29.

“In addition to right whales, other species of large whales are foraging in the canyons as well, in order to protect both whales and boaters, please be alert when transiting to and approaching the offshore canyons, including but not limited to Hudson Canyon,” NOAA personnel wrote on Facebook.

Gotham Whale, a research and advocacy organization, also reported numerous whale sightings off the New Jersey coast.

“All of our whale watching partners have been seeing whales and dolphins in the Western NY Bight,” the organization wrote on its Facebook page. “Not just single whale sightings but multiple whales have been sighted on all boats. There is so much action out in the Bight with birds, sharks, whales, dolphins, turtles, rays and other really cool sightings.”

Bill Kim, the owner of Jersey Shore Whale Watching Tour in Belmar, said that this summer has been his best among the past seven years for seeing whales.

Juvenile whales tend to swim closer to the coast, while adults swim farther from land, said the boat tour owner. “There’s so many (whales) out there, “ he said. “If food is there, that’s where they’re going to hang.”

McKim said the whales are feeding on menhaden, or bunker fish, close to shore and eating sand eels farther out along the Hudson Canyon.

Coastal upwelling, or cold ocean water rising to the surface at the shore, also seems to be benefitting the whales this year, he said.

“Basically any direction you pick, there were whales,” McKim said.

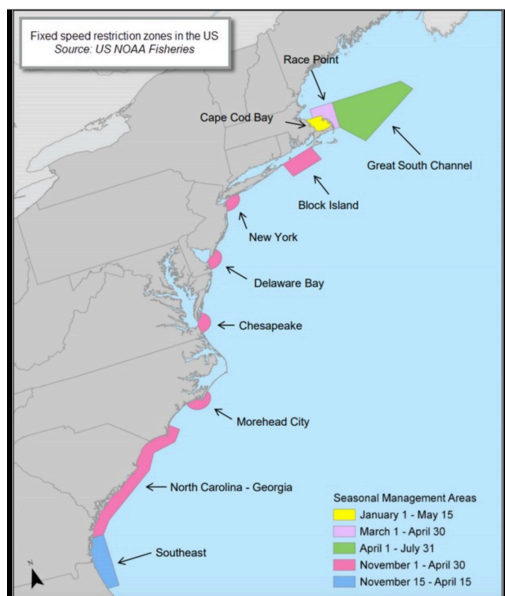
Whale sightings are also happening from the beach.

An X user @rsicklescj7 posted a video Sunday showing a feeding whale surfacing off Seaside Park.

Whales were also recently spotted east of Belmar, according to the X account of Monmouth University’s Urban Coast Institute spokesperson Karl Vilacoba.

“The common theory is that only 1% of the world’s population will ever see a whale (in person), “ said McKim. “People go bananas the first time they see a whale’s tail.... It’s beautiful.”

*Amanda Oglesby is an Ocean County native who covers education and the environment. She has worked for the Press for more than 16 years.*



The special management areas are either “active” or “inactive” according to NOAA’s charts. The measures in place off season are voluntary.

Based on overwhelming sightings of NARWs over the past decade during the “off season” these SMA’s in place since 2008 to protect the species are useless. NOAA continues to use this mitigation today, even after a UME was declared in 2017.

During the INACTIVE months, May through October, NARW’s are in danger as SMAs are working.



**New Right Whale Slow Zone: E Atlantic City, NJ - Effective Through 7/17**  
 NOAA Fisheries sent this bulletin at 07/03/2024 02:21 PM EDT

Having trouble viewing this email? [View it as a Web page.](#)



## New Right Whale Slow Zone: E Atlantic City, NJ

### Effective Through July 17

On July 2, 2024, the NOAA North Atlantic Right Whale Sighting Survey detected the presence of right whales east of Atlantic City, NJ. The right whale Slow Zone is in effect through July 17, 2024.

As a reminder, one additional Slow Zone is also currently in effect. Locations and effective dates are listed below.

### VOLUNTARY Right whale "Slow Zone" AREAS

Mariners are requested to avoid or transit at 10 knots or less inside the following Dynamic Management Area (DMA) where right whales have been detected. Please visit our [website](#) for more information.

#### East of Atlantic City, NJ DMA Slow Zone: Effective July 2-17

- Waters bounded by:
- NORTHERN BOUNDARY: 39°49' N
- SOUTHERN BOUNDARY: 39°07' N
- EASTERN BOUNDARY: 72°04' W
- WESTERN BOUNDARY: 72°55' W

#### Southeast of Nantucket, MA DMA Slow Zone: Effective June 29-July 14

- Waters bounded by:
- NORTHERN BOUNDARY: 40°52' N
- SOUTHERN BOUNDARY: 40°16' N
- EASTERN BOUNDARY: 67°45' W
- WESTERN BOUNDARY: 68°35' W

### Active Seasonal Management Areas (SMAs)

Mandatory speed restrictions of 10 knots or less (50 CFR 224.105) are in effect for vessels 65 feet or larger in the following areas:

- Great South Channel SMA (Apr. 1 - Jul. 31)

### Give Right Whales Room

North Atlantic right whales are on the move along the Atlantic coast of the U.S. If seen, remember that approaching a right whale closer than 500 yards is a violation of federal and state law.

### Right Whales in Trouble

Endangered North Atlantic right whales are approaching extinction. There are approximately 360 individuals remaining, including fewer than 70 reproductively active females. Human impacts continue to threaten the survival of this species.

In August 2017, NOAA Fisheries declared the increase in right whale mortalities an "Unusual Mortality Event," which helps the agency direct additional scientific and financial resources to investigating, understanding, and reducing the mortalities in partnership with the Marine Mammal Stranding Network, Canada's Department of Fisheries and Oceans, and outside experts from the scientific research community.

### More Information

Details and graphics of all of all [vessel strike management zones](#) currently in effect.

Download the [Whale Alert app](#) for iPad, iPhone, and Android for real time updates on Slow Zones, SMAs, and other right whale sightings.

[Recent right whale sightings](#) and real-time [acoustic detections](#) along the eastern seaboard.

Find out more about our [right whale conservation efforts](#) and the researchers behind those efforts.

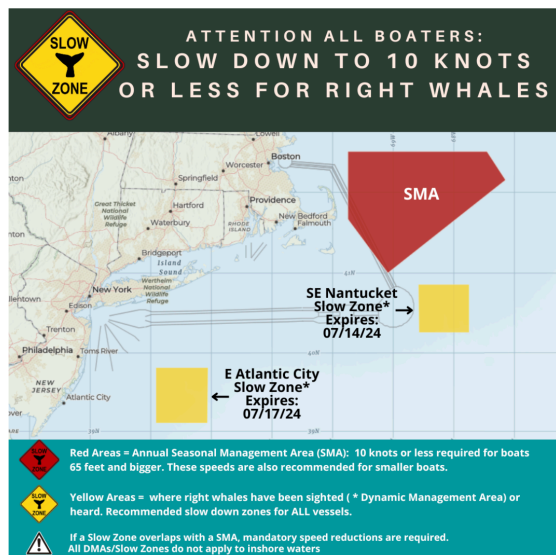
### Spread the Word!

All boaters from Maine to Virginia, or interested parties, can sign up for [email or text notifications](#) about the latest Right Whale Slow Zones. You can also follow us on Facebook (@NOAAFisheriesNEMA) and Twitter (@NOAAFish\_GARFO) for announcements.

Share our [video](#) on Right Whale Slow Zones.

### Questions?

Media: Contact [GARFO Public Affairs](#)



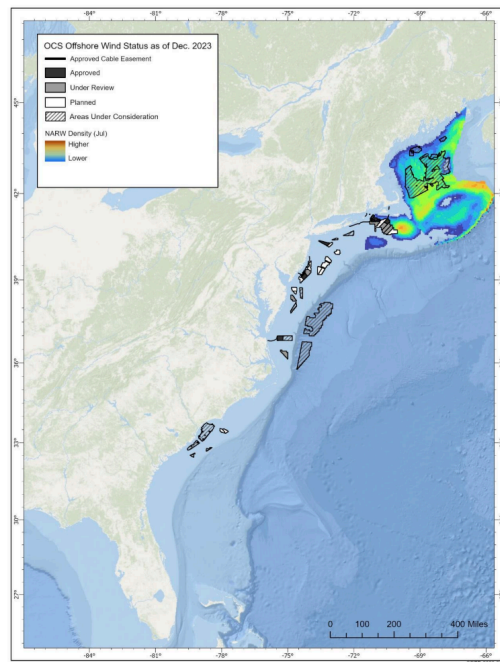
## APPENDIX - G

# North Atlantic Right Whales

## Are On The Move Along The U.S. Mid-Atlantic

The Figure D-7 Density map below used for the latest (2024) BOEM North Atlantic Right Whale and Offshore Wind Strategy report **does not** reflect the best available science. Jason Roberts, a Research Associate at the Marine Geospatial Ecology Lab, Duke University stated at the 2024 **State of the Science Workshop, July 2024**, Stonybrook, NY that the “Hudson Canyon area in 2024 has been a major **hot spot for right whales**” and, “historically this is an unknown area, because we haven't had much sampling... so it's hard to say whether or not it's a new thing or an old thing. My own gut feeling is it's probably, mostly, maybe a new thing related to ocean graphic changes that we've been talking about so I'm highly interested in that.” He then stated, “**But, I suspect the NARW density there has never been zero, even heading into summer, July 2024, like this over the past few years. We need to incorporate acoustics.**”

The BOEM and NOAA need to consider the best available science in order to protect the endangered species as the law requires.

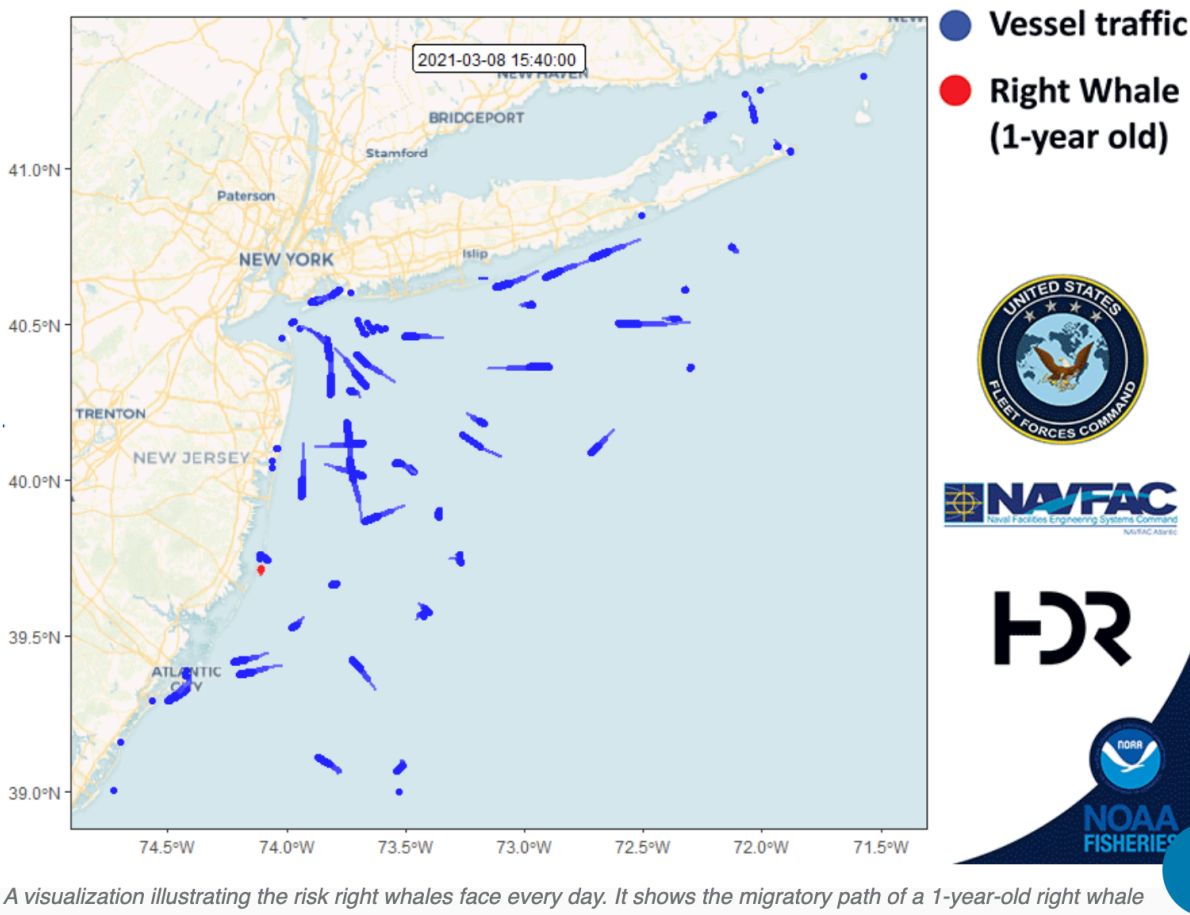


**Figure D-7. Density of NARWs in U.S. waters during the month of July (2010–2019)**  
Narrow lines leading from leases to land are cable route easements. Due to State/Federal Jurisdiction, the easement shows as ending at the State waters boundary where other State and Federal regulations apply. All leases with approved COPs will include easements shortly after approval. Source: Roberts et al. (2023); Roberts et al. (2016).

## APPENDIX - H

# Traffic in the New York / New Jersey Bight The NARW, Vessel Traffic and Offshore Wind Farm

This visualization illustrates the risk right whales face every day. It shows the migratory path of a 1-year-old right whale satellite-tagged off the Virginia/North Carolina coast in March 2021. The whale (red dot) traveled north along the Mid-Atlantic coast, overlapping with heavy vessel traffic (blue dots) and busy port entrances. In fact, the visualization shows only a portion of the actual vessel traffic—those vessels equipped with Automatic Identification Systems (AIS).



A visualization illustrating the risk right whales face every day. It shows the migratory path of a 1-year-old right whale satellite-tagged off the Virginia/North Carolina coast in March 2021. Credit: NOAA Fisheries.

## APPENDIX - I

### **NAVFAC - Report/Video published 2023**

**More than just a migration corridor: Important North Atlantic right whale surface-active behaviors observed in the western Mid-Atlantic.**

[https://www.navymarinespeciesmonitoring.us/files/4916/9868/9618/13\\_Aschettino\\_etal\\_NARW\\_2023.pdf](https://www.navymarinespeciesmonitoring.us/files/4916/9868/9618/13_Aschettino_etal_NARW_2023.pdf)

North Atlantic Right Whale Sightings and Group Composition in the VA/NC Mid-Atlantic: 2018–2023 - As part of the U.S. Navy’s Marine Species Monitoring Program, HDR Inc. has been conducting aerial and vessel surveys for large whales off Virginia and North Carolina since 2015. Jessica Aschettino<sup>1</sup>, Dan Engelhaupt<sup>1</sup>, Amy Engelhaupt<sup>2</sup>, Todd Pusser<sup>3</sup>, Mark Cotter<sup>1</sup>, Michael Richlen<sup>1</sup>, Jackie Bort Thornton<sup>4</sup>, Katie Jackson<sup>5</sup>, and Joel Bell<sup>4</sup> <sup>1</sup>HDR Inc., Virginia Beach, VA <sup>2</sup>Amy Engelhaupt Consulting, Virginia Beach, VA, <sup>3</sup>Todd Pusser, West End, NC, <sup>4</sup>Naval Facilities Engineering Systems Command, Atlantic, Norfolk, VA <sup>5</sup>Florida Fish and Wildlife Conservation Commission, St. Petersburg, FL

Data from these efforts highlight the seasonal importance of southern Virginia / northern North Carolina for all demographic groups of NARWs and the importance of long-term monitoring efforts. • Within-season and between-season re-sights, along with behavior observed during these surveys (see Engelhaupt talk / 24 Oct 2023 – 1445) further support the VA/NC Mid-Atlantic as important habitat. • Increased survey effort in this region will further elucidate key habitats outside of historical breeding and feeding grounds, particularly with respect to shipping activities and future offshore wind development. • Observations of NARWs outside of Seasonal Management Areas suggest current protections for NARWs in the Mid-Atlantic may be insufficient.

*Past research has not been focused on the Mid Atlantic as extensively as in the critical habitat shown in these maps, early work would have suggested this middle ground would have been where right whales would be traveling between the two areas. Recent work has done a more thorough job of documenting the occurrence in the region and beginning to build a more significant use of the habitat than that previously understood. Aerial surveys in the Mid Atlantic have documented sightings throughout the area and documented occasions of open-mouth swimming. Passive acoustic monitoring has been a great way to increase the understanding of distribution. Davis summarized results from multiple studies and noted an increase in Mid Atlantic detections post 2010 and Salisbury reported Maru recordings in the Virginia wind area detected right whale up calls all year though this did increase during migration months. Some right whales not only use the area as a migration corridor, some individuals do stay, play and maybe eat - this all seems like an important piece for the consideration of protective measures.*

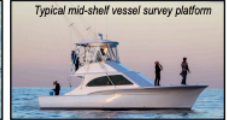
# North Atlantic Right Whale Sightings and Group Composition in the VA/NC Mid-Atlantic: 2018–2023

## Introduction

As part of the U.S. Navy's Marine Species Monitoring Program, HDR Inc. has been conducting aerial and vessel surveys for large whales off Virginia and North Carolina since 2015.

## Methods

- Non-systematic vessel surveys, which included a sUAS, occurred seasonally (primarily November – March) on 184 days in nearshore and mid-shelf waters and year-round on 90 days in offshore waters.
- A total of 37 aerial surveys, encompassing portions of coastal, mid-shelf, and offshore waters, occurred year-round, though effort was not consistent across months or years.



## Results

- Between April 2018 and March 2023 North Atlantic right whales (NARWs) were sighted 20 times over 17 survey days (Figure 1). Sightings occurred in January (n=6), February (n=5), March (n=6), April (n=2), and November (n=1).
- A concerted focus on locating NARWs during the winter of 2022/2023 resulted in a marked increase in the number of sightings and individual NARWs seen, with 27 unique individuals documented (Table 1).

## NARW demographics:

- 46 unique NARWs identified; 25 male, 14 female, and 7 of unknown sex (Figure 2).
- Age class ranged from newborn to minimum 42 years (mean=14) (Figure 3).

## Resight history:

- Nine NARWs were seen two or more times; two of those individuals were seen in different field seasons - #3360/Horton (1,057 days between sightings) and #4523/Beaker (746 days between first and last sighting); eight individuals were resighted in the same season 1–104 days between sightings (mean=22.5 days).

## Group composition:

- Group size ranged from 1–8 individuals (mean=3) (Figure 4).
- Paired NARWs were seen on six occasions; two adult females (one pregnant), two adult male/female pairs, and three unique cow/calf pairs: #1245/Slalom and calf (2022), #4180/Dyad and calf (2022), and #2605/Smoke and calf (2023).
- Lone NARWs were observed on six occasions; four were yearlings, one was an adult female, and one was an adult of unknown sex.
- The remaining eight sightings were comprised of 3–9 NARWs, five of which were in surface active groups.

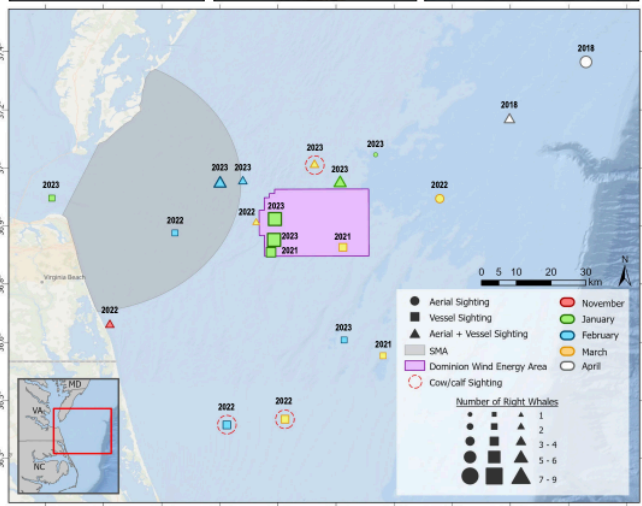


Figure 1. North Atlantic right whale sightings from HDR's aerial and vessel platforms collected off VA/NC from 2018 – 2023.

Season	Sightings	Individuals	Unique IDs for season
2017/2018	2	8	7
2018/2019	0	0	0
2019/2020	0	0	0
2020/2021	4	7	6
2021/2022	4	8	8
2022/2023	10	36	27

Table 1. NARW sightings by season for all aerial and vessel surveys off the VA/NC Mid-Atlantic between 2018 – 2023.

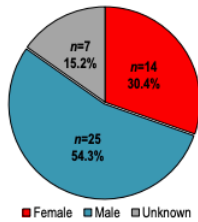


Figure 2. Sex ratio of 46 NARWs seen off the VA/NC Mid-Atlantic between 2018 – 2023.

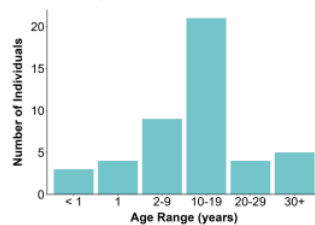


Figure 3. Age distribution of NARWs sighted off the VA/NC Mid-Atlantic between 2018 – 2023.

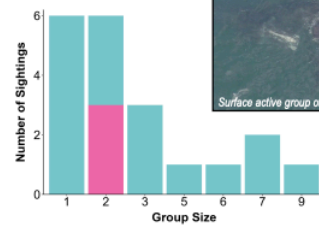


Figure 4. Group size of NARW sightings off the VA/NC Mid-Atlantic between 2018 – 2023. Shaded pink area indicates cow/calf pairs.



## Discussion

- Data from these efforts highlight the seasonal importance of southern Virginia / northern North Carolina for all demographic groups of NARWs and the importance of long-term monitoring efforts.
- Within-season and between-season re-sights, along with behavior observed during these surveys (see Engelhaupt talk / 24 Oct 2023 – 1445) further support the VA/NC Mid-Atlantic as important habitat.
- Increased survey effort in this region will further elucidate key habitats outside of historical breeding and feeding grounds, particularly with respect to shipping activities and future offshore wind development.
- Observations of NARWs outside of Seasonal Management Areas suggest current protections for NARWs in the Mid-Atlantic may be insufficient.

## Acknowledgements

This project was funded by U.S. Fleet Forces Command under the U.S. Navy's Marine Species Monitoring Program and data was collected under NMFS Permit Nos. 16239 & 21482. We thank our boat captains, pilots (TSC Corporation), observers who assisted in the field, and Jess Ozog for GIS support. Thanks to our colleagues at Clearwater Marine Aquarium Research Institute, Northeast Fisheries Science Center, the New England Aquarium and NARW Consortium / North Atlantic Right Whale Catalog.



# A closer look at an unusual late-spring aggregation of North Atlantic right whales off Virginia using tag and environmental data



Jessica Aschettino<sup>1</sup>, Dan Engelhaupt<sup>1</sup>, Amy Engelhaupt<sup>2</sup>, Jess Ozog<sup>3</sup>, Jackie Bort Thornton<sup>3</sup>, Joel Bell<sup>4</sup>, & Katie Jackson<sup>4</sup>

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<sup>4</sup> Florida Fish and Wildlife Conservation Commission, St. Petersburg, Florida, 33701, US



NARW Consortium Meeting

October 2024

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## Summary/Conclusion

- Unusual late spring aggregation of baleen whales off VA in May/June 2024
- At least 27 individual NARWs identified in 11 sightings from vessel and plane
- Sightings at mean SST 16.5°C
- 4 suction-cup tags collected 28 hours of behavioral data, including 122 dives
- Tag data, combined with visual observations supports intense foraging activity by NARWs through dense concentrations of prey
- Extent of time at surface and shallow dive behavior (especially at night) puts NARWs at risk for vessel interactions



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## A closer look at an unusual late-spring aggregation of North Atlantic right whales off Virginia

Unpublished

### Survey Effort & Sightings

#### North Atlantic right whale sightings:

22 May 2024 – 7 individuals identified;  
behavior = feed

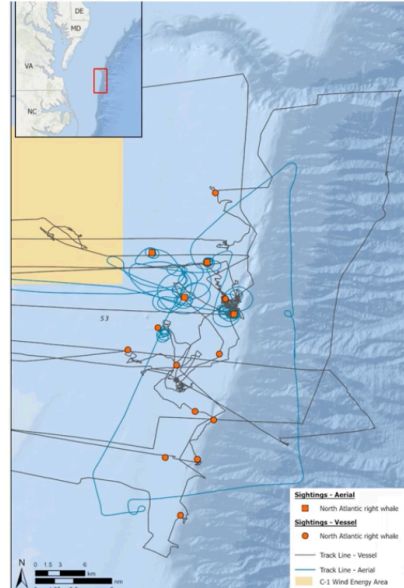
25 May 2024 – 11 individuals identified;  
(aerial and vessel)  
behavior = feed

29 May 2024 – 14 individuals identified;  
behavior = feed

30 May 2024 – 9 individuals identified;  
behavior = mill or travel

01 June 2024 – 2 individuals identified  
behavior = mill

Depths: 63–129 m (mean = 93 m) and  
within 0.3–11.3 km (mean = 4.3 km) of  
the shelf break



## A closer look at an unusual late-spring aggregation of North Atlantic right whales off Virginia

### NARW Identifications

27 unique NARWs  
14 individuals seen  $\geq$  2 days

13 males  
10 females  
4 unknown

23 adults  
3 juveniles  
1 calf

Noteworthy:  
Eg #1050 – not seen since 2011  
Eg #3270 / Pico and her  
undocumented calf

NARW ID #	Other Known Names	# Days Seen	Min Est Age when Seen	Age / Sex if Known
#2920		3	25	male
2023Calfof#2029		3	1	unknown
#1047		2	67	unknown
#1317	Ergo	2	41	male
#1611	Clover	2	38	female
#2040	Naevus	2	34	female
#3101	Harmonia	2	23	female
#3241		2	22	male
#3297		2	22	unknown
#3391		2	21	male
#3442	Armada	2	20	male
#3860	Bocce	2	16	female
#4129	Goldfish	2	13	male
#4145		2	13	male
#1050		1	44	male
#2510	Mitosis	1	29	male
#2520		1	30	female
#3270	Pico	1	22	female
2024Calfof#3270		1	0	unknown
#3340	Plover	1	21	male
#3545		1	19	male
#3350		1	21	male
#3680	Seadragon	1	20	male
#3908	Zero	1	15	female
#4310	Prickly Pear	1	11	female
#4610		1	7	female
2022Calfof2040 (#5240)		1	2	female

## A closer look at an unusual late-spring aggregation of North Atlantic right whales off Virginia

## APPENDIX - J

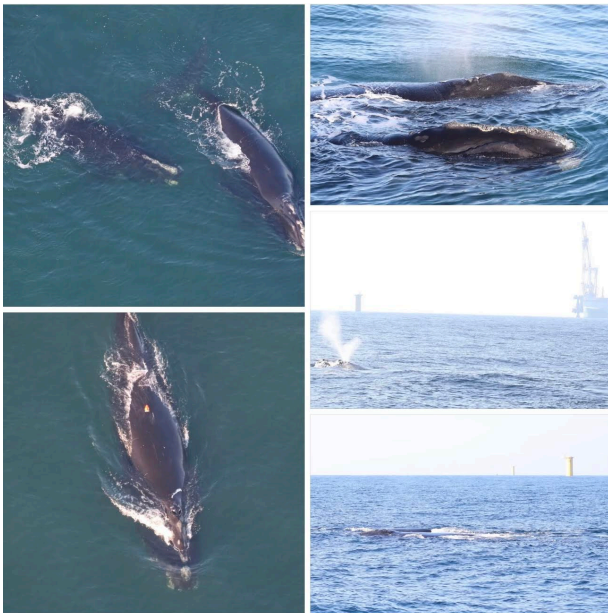
### 10 North Atlantic Right Whales off Virginia - January 25, 2025

*Saturday morning 25 January, NAVFAC Atlantic alerted right whale "chatter" on the U.S. Navy's whale monitoring buoy located approximately 35 miles east of Cape Henry.*

*A group of 3 female right whales were located in the Dominion wind energy area, slow traveling, and occasionally surface active with each other. Another group of approximately 7 right whales approximately 15 miles east of Cape Henry.*

*They sit low in the water, are **VERY difficult to see from a boat in the best of conditions**, and spend a considerable amount of time just below the surface of the water.*

*Research is led by HDR Inc., funded by United States Fleet Forces Command, and managed by Naval Facilities Engineering Systems Command (NAVFAC) Atlantic under the U.S. Navy's Marine Species Monitoring program. All scientific activities are conducted under NMFS scientific research permit #28184*



-----,

Our team saw "Smoke" once again with her calf about 30 miles off the coast of Virginia on Sunday 05 March 2023. The vessel team deployed the drone to collect identification and measurement data, assess overall health, check for entanglement in fishing gear, and document the sighting. Smoke's latest calf has been confirmed as female and was very playful, spending a lot of time at or near the surface.

rig  
Ch  
No  
Mi  
Vir



Right Whale "Smoke" with her 2023 calf (female) on 05 March 2023

"Caterpillar" was also resighted in the southeast. "Caterpillar" suffered a vessel strike at the age of 2, which she survived, but has never been seen with a calf. Sadly, the whale that [washed up dead in Virginia Beach](#) earlier in the year due to injuries consistent with a vessel strike, was her brother (#3343). Their aunt and older sister were also [victims of vessel strike](#).

## **APPENDIX - K**

### **Residency, demographics, and movement patterns of North Atlantic right whales *Eubalaena glacialis* in an offshore wind energy development area in southern New England, USA - 2021 <https://www.int-res.com/articles/esr2021/45/n045p251.pdf>**

*“Offshore wind energy development is growing quickly around the world. In southern New England (SNE), USA, one of the largest commercial offshore wind energy farms in the USA will be established in the waters off Massachusetts and Rhode Island, an area used by the Critically Endangered North Atlantic right whale *Eubalaena glacialis*. Prior to 2011, little was known about the use of this area by right whales. We examined aerial survey data collected between 2011–2015 and 2017–2019 to quantify right whale distribution, residency, demography, and movements in the region. Right whale occurrence increased during the study period. Since 2017, whales have been sighted in the area nearly every month, with peak sighting rates between late winter and spring.*

*“The regular presence of right whales in SNE deserves more attention. Since SNE will become one of the largest commercial offshore wind energy leases along the US east coast, the consequences of the construction and operation are relevant to the conservation of the species. The effects of offshore wind development on right whales are unknown (Madsen et al. 2006), but this enormous development could have a local impact on right whales at a critical time when they are becoming more reliant on the region (Leiter et al. 2017).*

*Both construction and maintenance activities may also expose right whales to higher levels of vessel traffic as well as increased noise. Increased vessel traffic will result in a greater risk of vessel strikes with right whales. In addition, low-frequency noise from large ships (20–200 Hz) overlaps acoustic signals used by right whales (Hatch et al. 2012). Collectively, these perturbations could affect the use of this region by right whales as well as influence their migratory movements throughout the mid-Atlantic region (Schick et al. 2009).*

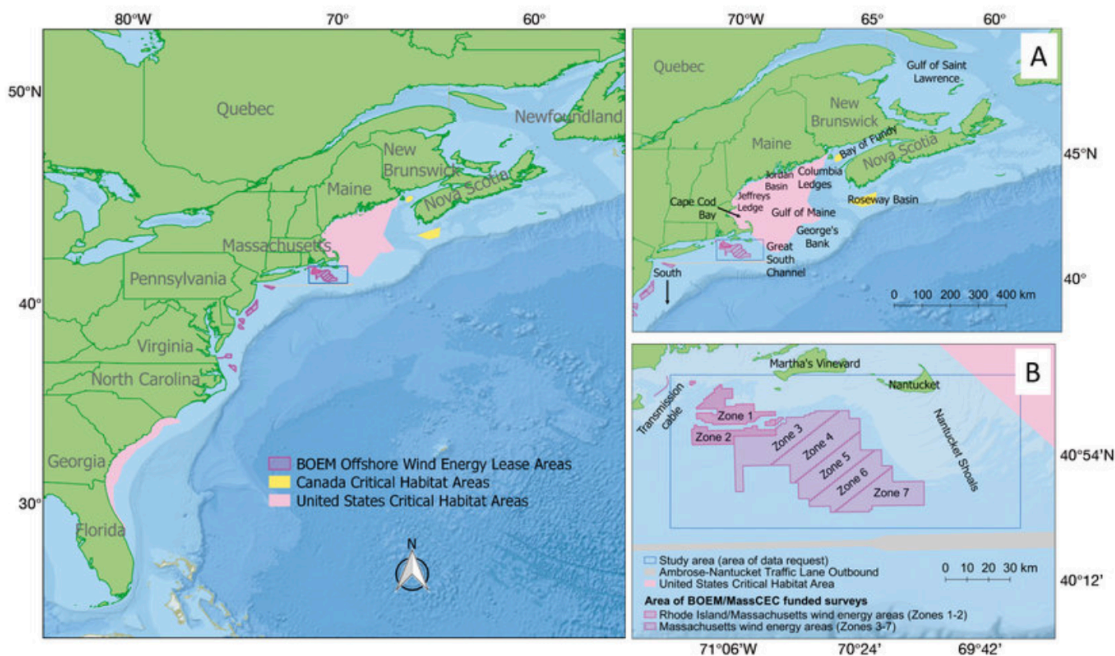
*Sighting rates varied through time, suggesting that right whales have become more common in recent years and that their presence now extends beyond the December–May period in SNE.*

*Right whales may utilize SNE as a feeding ground more often than as a social or mating ground, although behaviors linked to both activities have been observed in the area. Feeding was recorded on more occasions than socializing, and it was observed in all seasons, whereas surface active groups were observed mainly in the winter and spring. Preliminary results of oceanographic surveys conducted in waters near right whale sightings suggest that their diet includes multiple zooplankton species including *Calanus finmarchius* and *Centropages* sp. (QuintanaRizzo et al. 2018).*

*Evidence of feeding throughout the seasons provides support for the extension of US feeding critical habitats into SNE waters. Almost 50% of reproductive females utilized this area within the study period, which is an important consideration for the species' conservation since the overall population has declined significantly (Pace et al. 2017, Corkeron et al. 2018). Conceptive females were not often seen, and their proportional presence was not as high as in the inferred mating ground identified by Cole et al. (2013) over a decade ago. However, large numbers of conceptive females are not required for mating to occur because mating groups often consist of many males and 1 female (Kraus & Hatch 2001).*

Table 2. Total tally of right whales recorded in all sightings (no ID included), unique ID, population percentage sighted in relation to the general right whale population (based on Pace et al. 2017 and Pettis et al. 2021 updated population estimates), and annual survey effort (km) in southern New England waters by main data contributors. NEAq: New England Aquarium; NEFSC: Northeast Fisheries Science Center; CCS: Center for Coastal Studies; NA: not available at the time of the data request; NC: not calculated (number of unique IDs not available); (-) no data

Year	Tally of right whales	Unique ID	% of population $\pm$ SE	NEAq (km)	NEFSC (km)	CCS (km)
2011	83	53	11 $\pm$ 1	4279	2455	327
2012	28	22	5 $\pm$ 1	16 042	1471	-
2013	32	20	4 $\pm$ 1	12 890	779	-
2014	44	43	9 $\pm$ 1	17 279	1763	-
2015	86	53	11 $\pm$ 1	9594	6761	357
2017	214	122	29 $\pm$ 2	18 867	2456	-
2018	418	202	53 $\pm$ 2	11 295	9732	-
2019	250	NA	NC	20729	NA	-



Right whale critical habitats in the USA and Canada, and offshore wind energy lease areas. (A) Habitats studied in the analysis of right whale movement patterns. South covers the area from New York to Florida. (B) Study area south of Martha's Vineyard and Nantucket, Massachusetts, USA, which encompasses the Rhode Island–Massachusetts and Massachusetts wind energy areas. BOEM: Bureau of Ocean Energy Management; MassCEC: Massachusetts Clean Energy Center

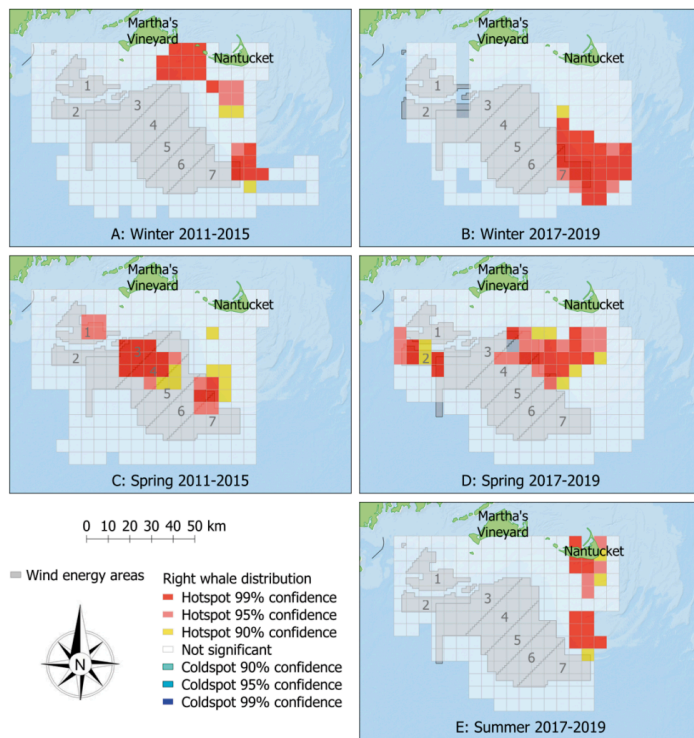
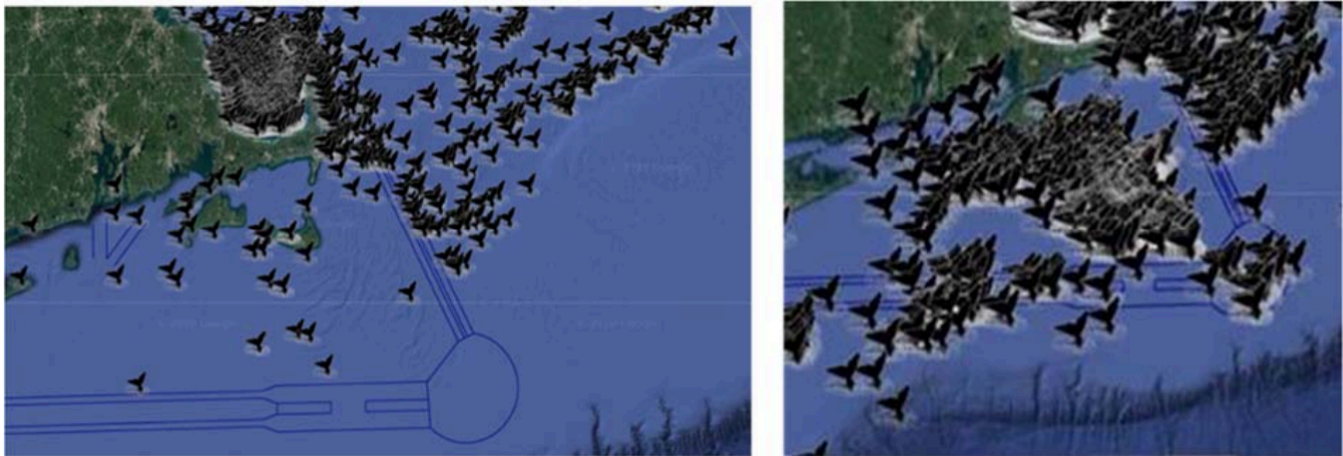


Fig. 5. Hotspot analysis of right whale seasonal distribution in the study area (A,C: 2011–2015; B,D,E: 2017–2019), with hotspots based on significantly higher values than surrounding areas. No coldspots were identified. Wind energy area lease zones are identified by numbers. Additional details of the study area are shown in Fig. 1

## APPENDIX - L



Figures 3 and 4: These figures show right whale sightings as reported by NMFS between January 1, 2011, and December 31, 2014 (left); and May 1, 2015, and May 1, 2020 (right). These data include both opportunistic sightings and survey data not effort corrected. However, they demonstrate that this area is increasingly important habitat for right whales.<sup>97</sup>

The increase in visual sightings in Southern New England in recent years is also reflected by acoustic detections of right whales in the area.<sup>98</sup> Scientists recently confirmed earlier understandings that right whales use the entire eastern seaboard of North America for most of the year, but with shifting distributions over the past decade to areas formerly thought of as a migratory corridor, such as Southern New England and the Great South Channel which the whales now use for foraging and social behavior.<sup>99</sup> These data demonstrate year-round use of the waters of Southern New England.<sup>100</sup>

Right whale aggregations are so common in this area that NMFS has repeatedly established voluntary speed restrictions and asked vessels to change their routes to reduce vessel strikes.<sup>101</sup>

In 2019, more than 100 whales—around one quarter of the entire population at the time—were documented in the area south of Martha’s Vineyard and Nantucket on the same day.<sup>102</sup> Moreover, seven right whales have been found dead in Southern New England since 2017, and entangled whales have recently been sighted in the area.<sup>103</sup>

NMFS’s North Atlantic Right Whale Expert Working Group recently recognized waters South of the Islands (Martha’s Vineyard and Nantucket) as a year-round core foraging habitat for right whales.<sup>104</sup>

<sup>97</sup> Id.

<sup>98</sup> Davis, G. E., M. F. Baumgartner, J. M. Bonnell, J. Bell, C. Berchok, J. B. Thornton, S. Brault, G. Buchanan, R. A. Charif and D. Cholewiak. 2017. Long-term passive acoustic recordings track the changing distribution of North Atlantic right whales (*Eubalaena glacialis*) from 2004 to 2014. *Scientific reports* 7:13460.

99 Leiter, S. M., K. M. Stone, J. L. Thompson, C. M. Accardo, B. C. Wikgren, M. A. Zani, T. V. N. Cole, R. D. Kenney, C. A. Mayo, S. D. Kraus. 2017. North Atlantic right whale *Eubalaena glacialis* occurrence in offshore wind energy areas near Massachusetts and Rhode Island, USA. *Endangered Species Research* 34: 45–59.

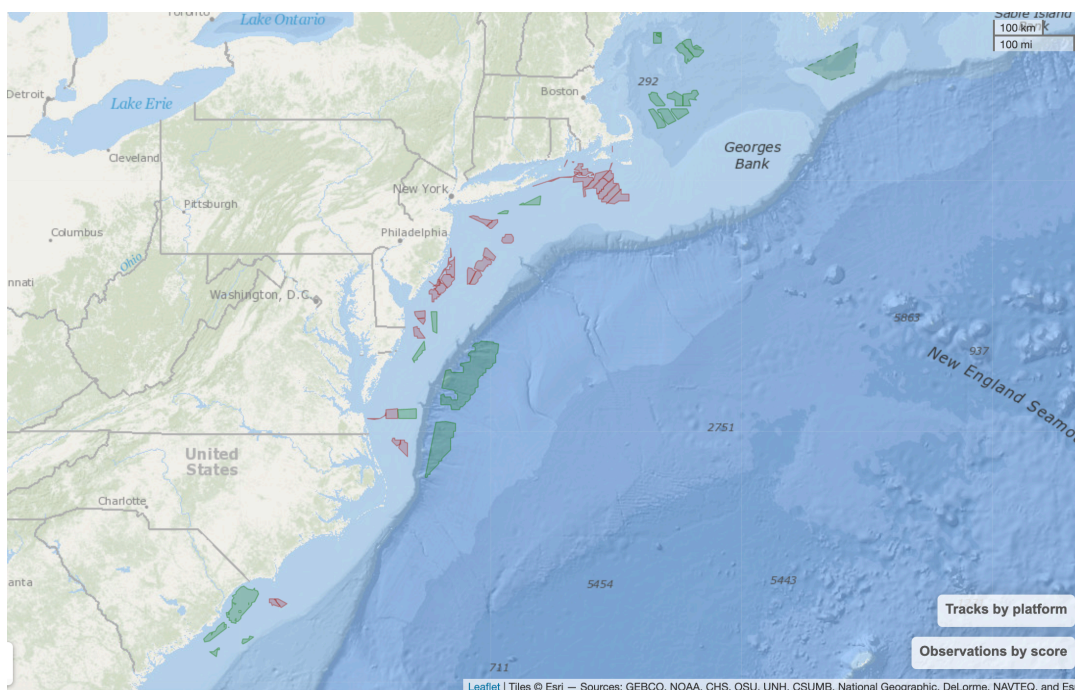
100 Davis, G. E., et al. 2017.

101 See, e.g., NMFS, Voluntary Vessel Speed Restriction Zone in Effect South of Nantucket to Protect Right Whales (Jan. 28, 2019), <https://www.fisheries.noaa.gov/feature-story/voluntary-vessel-speed-restriction-zone-effect-south-nantucket-protect-right-whale>; NMFS, Extended Through April 23: Voluntary Vessel Speed Restriction Zone South of Nantucket to Protect Right Whales (Apr. 10, 2019), <https://www.fisheries.noaa.gov/feature-story/extendedthrough-april-23-voluntary-vessel-speed-restriction-zone-south-nantucket>; NMFS, Vessel Speed Restriction Zone South of Nantucket to Protect Right Whales (Dec. 13, 2019), <https://content.govdelivery.com/accounts/USNOAAFISHERIES/bulletins/2714e3e>; Matt Berg, Speed zone near Nantucket Extended to protect 50 right whales spotted in area, *Boston Globe* (Feb. 4, 2020) [protect-50-rightwhales-spotted-area/](https://www.bostonglobe.com/news/2020/02/04/speed-zone-near-nantucket-extended-to-protect-50-right-whales-spotted-in-area/); NMFS, Extended: Slow Speed Zone South of Nantucket to Protect Right Whales (Oct. 20, 2020), <https://content.govdelivery.com/accounts/USNOAAFISHERIES/bulletins/2a6d610>; NMFS, Slow Speed Zone South of Nantucket to Protect Right Whales (Nov. 16, 2020), <https://content.govdelivery.com/accounts/USNOAAFISHERIES/bulletins/2acb3e1>.

102 NMFS, Voluntary Vessel Speed Restriction Zone in Effect South of Nantucket to Protect Right Whales (Jan. 28, 2019), <https://www.fisheries.noaa.gov/feature-story/voluntary-vessel-speed-restriction-zone-effect-south-nantucketprotect-right-whales>.

103 See, e.g., NMFS, Unusual Mortality Event.

104 See, e.g., NMFS, Right Whale Monitoring and Surveillance at 6, 25.



## APPENDIX - M

### **Acoustic presence and vocal activity of North Atlantic right whales in the New York Bight: Implications for protecting a critically endangered species in a human-dominated environment**

Contributed Paper Accepted August 10, 2022

Cited:

Murray, A., Rekdahl,

M. L., Baumgartner, M. F., & Rosenbaum, H. C. (2022). Acoustic presence and vocal activity of North Atlantic right whales in the New York Bight: Implications for protecting a critically endangered species in a human-dominated environment. *Conservation Science and Practice*, e12798. [https:// doi.org/10.1111/csp2.12798](https://doi.org/10.1111/csp2.12798)

In 2021, scientists were hired by Equinor, an offshore wind developer to research the presence of NARWs in the NY Bight. The following report analyzed **acoustic recordings collected via a buoy moored off the coast of NY 28.9 km (17.9 miles) from the Port of NY- NJ SMA, which is the same buoy system used to activate SZs (Baumgartner et al., 2019; Pettis et al., 2021)**. The study determined the presence of NARWs relative to the Port of NY-NJ SMA as this is the primary mitigation measure for vessel strikes in the NYB. The results were discussed with respect to mitigating vessel strikes via SMAs and dynamic management areas.

In US mid-Atlantic waters, SMAs are constrained to a 37 km radius (22.9 miles) around port entrances and are active from November 1 to April 30. Outside SMAs, NOAA implemented dynamic management areas (DMAs) activated in near real-time by NARW visual sightings (Clapham & Pace, 2001; NOAA, 2008).

In 2017, NOAA declared a UME for the NARW which still exists today. About 38% of UMEs caused by vessel strikes occurred in US waters, yet seasonal management areas (SMAs) implemented in 2008 were not revised. SMAs are the primary mitigation measure for vessel strikes however compliance is rare and the measure is ineffective for the conservation of the NARW. Whereas SMAs are mandatory, mariner cooperation with the 10-knot speed limit in DMAs/SZs, or avoidance of these areas, is voluntary.

Incidences of mysticete vessel strikes, including NARWs, are greater in the US mid-Atlantic when compared to critical habitat foraging or calving grounds, therefore it is imperative to designate the migratory route that coincides with bouy detections as critical habitat.

*Noted from the Article:*

North Atlantic right whale (NARW) distribution shifts have led to increased presence in the US mid-Atlantic, which includes the New York Bight (NYB), an area with substantial vessel traffic. NARW vessel strikes are mitigated by a seasonal management area (SMA) that is active

November–April. Outside the SMA, voluntary speed restrictions are implemented over a limited area when NARW calls are acoustically detected; therefore, it was important to quantify NARW vocal activity.

Acoustic recordings (2016–2020) were analyzed to determine NARW presence, vocal states, and diel pattern of vocal activity. NARWs were detected outside SMA boundaries, and medium/high vocal states (21–69 calls over 3–6 h) **occurred while the SMA was inactive**.

NARWs were acoustically detected when they were not detected by aerial surveys, illustrating acoustic detections are a viable method for triggering mitigation measures when NARWs are vocalizing but are not visually observed.

Historically, NARW habitats included calving grounds in the United States (US), a presumed migration corridor through US mid-Atlantic waters, and foraging grounds in US and Canadian waters within or bordering the Gulf of Maine (GOM; Kenney et al., 2001; Winn et al., 1986). Critical habitats include calving grounds along the coast of northern Florida to South Carolina, and foraging grounds in the Great South Channel (GSC) and GOM (Figure 1; NOAA, 2015).

Between 2017 and 2021, there were 50 NARW UMEs (mortalities and serious injuries that eventually result in death) primarily caused by vessel strikes (26%) or entanglement in fishing gear (46%; NOAA, 2022a). Given the 2020 population estimate of 336 individuals, the UMEs equate to 15% of the population, exceeding the Potential Biological Removal (PBR) threshold of <1 whale per year set by the MMPA (Hayes et al., 2019; NOAA, 2022a; Pettis et al., 2022) by a factor of 10 (i.e., 50 mortalities/5 years). This represents only a fraction of the total human-induced mortalities as many go undetected (Pace III et al., 2020). Since NARW extinction could occur in <30 years (Meyer-Gutbrod et al., 2018), the ongoing UMEs indicate an urgent need for management actions that incorporate these large-scale shifts in distribution.

The boundaries of US mid-Atlantic SMAs were derived from incomplete data, predicated on an assumption, and do not encapsulate recent shifts in NARW distribution. An underlining assumption of the analysis was that NARW presence in this region was solely a reflection of migrating whales. This assumption may not be accurate.

NARWs may transit through the US mid-Atlantic several times a year, instead of just during a seasonal migration (Brown & Marx, 2000; Knowlton et al., 2002). NARWs were observed feeding and engaging in behavior suggestive of mating in US mid-Atlantic waters, indicating this region is utilized for more than migration (Sadove & Cardinale, 1993; Tetra Tech & LGL, 2020; Whitt et al., 2013; Zoidis et al., 2021). Year-round acoustic presence in the US mid-Atlantic along with the newly formed southern New England foraging ground (Davis et al., 2017; Hodge et al., 2015; Leiter et al., 2017; Salisbury et al., 2015) suggest the region is more than a migration corridor. The southern New England foraging ground is not protected by an SMA and although DMAs were implemented, low mariner cooperation (NOAA, 2020) suggest NARWs are not adequately protected. Additionally, year-round presence in the US mid-Atlantic mean NARWs

are not protected from vessel strikes while SMAs are inactive (May 1 to October 30) further signifying a lack of protection in this region.

Inadequate protection from vessel strikes is problematic for the New York Bight (NYB), which is located within the US mid-Atlantic. There is a significant volume of vessel traffic in these waters, and 20% of the UMEs caused by vessel strikes in US waters occurred in this area (NOAA, 2022a; Port Authority NY NJ, 2022) Off the coast of NJ, NARW were visually observed from fall through spring, but acoustically detected in all seasons (Whitt et al., 2013). Off the NY coast, NARW were acoustically detected between February and May and intermittently detected between September and January, but summer months (June–August) were not surveyed (Muirhead et al., 2018).

A buoy (Melville) moored in the NYB from June 2016 to January 2020 collected acoustic recording. (See Exhibit C)

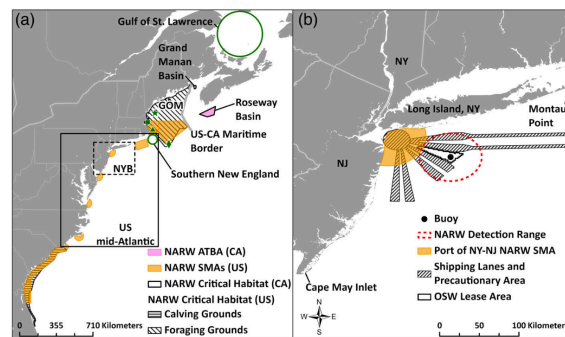


FIGURE 1 Map (a) illustrates North Atlantic right whale (NARW) habitats in United States (US) and Canadian (CA) waters as well as management areas for mitigating NARW vessel strikes; seasonal management areas (SMAs) and areas to be avoided (ATBA). Black hashed lines indicated NARW critical foraging and calving habitats in US waters as designated by US National Oceanic and Atmospheric Administration. Specific foraging areas within or around the Gulf of Maine (GOM) are designated by green symbols; the triangle is Cape Cod Bay, square is Massachusetts Bay, star is Jeffrey's Ledge, and diamond is the Great South Channel. The novel US foraging ground in southern New England is designated by a green circle. Black solid lines indicate critical habitats (Roseway Basin and Grand Manan Basin) in Canadian waters as designated under the Canadian Species at Risk Act. The novel Canadian foraging ground in the Gulf of Saint Lawrence is designated by a green circle. US SMAs are shaded orange and the Roseway Basin ATBA is shaded pink. The US mid-Atlantic region is designated by a solid black rectangle, and a dashed black square designates the New York Bight (NYB). SMAs in the US mid-Atlantic, including the Port of New York-New Jersey (Port of NY-NJ) SMA are active from November 1 to April 30. Map (b) illustrates the study area in the NYB. A black dot represents the buoy location within an offshore wind lease area (Equinor Wind Lease 0512) that is designated by a black line. The red dashed line is the maximum potential detection range for NARW calls based on values reported in Estabrook et al. (2021). The Port of NY-NJ SMA is shaded orange. Black hashed lines indicate shipping lanes that feed into the port.

NARW were present from November to April each year while the Port of NY-NJ SMA was active; however, NARW were also detected when this SMA was inactive in October, May, June, and/or July depending on the year. The results of our study, in conjunction with other surveys conducted between 2017 and 2020 (Estabrook et al., 2019, 2020; Zoidis et al., 2021) provided a modern day understanding of NARW presence in the NYB. When data from our study were pooled across years, we acoustically detected NARWs in every month except August and September.

NARW vocal activity detected while the Port of NY- NJ SMA was inactive was elevated enough to be categorized as medium or high vocal states, suggesting on a daily basis numerous whales may utilize the NYB when the SMA is inactive.

## APPENDIX - N

Right whale calving season update!

So far this winter, 10 mother-calf pairs have been sighted, including four first-time mothers! 66 additional right whales have been documented from North Carolina to Florida, including 18 females, 7 yearlings, and 41 males/unknown sex whales. Of the 18 additional females sighted, 15 are old enough to be potential mothers, but only two – Catalog #3194 ‘Granite’ and #3904 ‘Champagne’ – have given birth before.

Right whales continue to be sighted off Florida and are active throughout the Southeast U.S. calving grounds. The pair of adult females - Catalog #3940 ‘Koala’ and #4190 ‘Curlew’ - sighted off Florida’s Gulf Coast have not been reported since February 23 but are likely still navigating their way back to the Atlantic Coast.

Boaters are reminded to post a lookout, use caution, and #givethespace

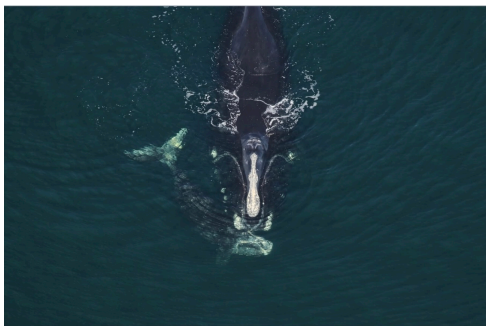
Please report large whale sightings to 1-877-WHALE-HELP (877-942-5343) or to the USCG on VHF Ch. 16. For recent sighting information, visit [www.whalemap.org](http://www.whalemap.org)

Aerial surveys and small vessel work will continue through March 31 off Florida/Georgia and through April 15 off the Carolinas. These long-term monitoring projects are a collaborative effort between FWC, Clearwater Marine Aquarium Research Institute, Wildlife Resources Division - Georgia DNR, NOAA Fisheries Service, New England Aquarium, U.S. Army Corps of Engineers, South Atlantic Division, U.S. Coast Guard Atlantic Area, and U.S. Navy Stewards of the Sea.

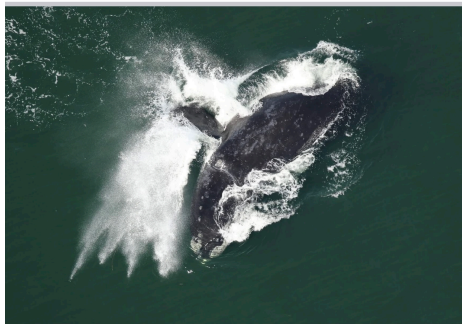
For more information on right whale population estimates visit: [bit.ly/NARWpopulation](http://bit.ly/NARWpopulation)

Additional calving season information: [bit.ly/NARW2025](http://bit.ly/NARW2025)

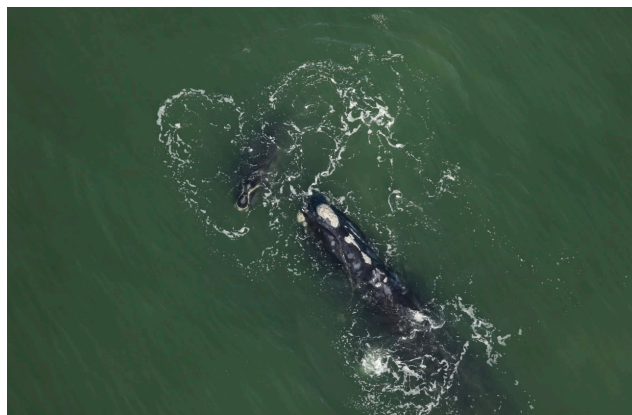
Photos taken by Florida Fish and Wildlife Conservation Commission under NOAA permit 26919.



Right whale Catalog #3705 'Check Mark' with her first calf. The pair was spotted approximately 11NM off Ponte Vedra Beach, FL on February 23, 2025. Photo taken by Florida Fish and Wildlife Conservation Commission under NOAA... See more



Right whale Catalog #3380 'Lemur,' an adult male, slaps the surface of the water with his right flipper. Lemur was spotted approximately 5NM off Ponte Vedra Beach, FL on February 23, 2025. Photo taken by Florida Fish and Wildlife Con... See more



Right whale Catalog #2430 'Minus One' and her growing calf sighted approximately 0.5NM off South Ponte Vedra Beach, FL on January 5, 2025. Photo taken by Florida Fish and Wildlife Conservation Commission under NOAA permit 26919.

## APPENDIX - O

### **Special Management Considerations or Protections**

**“Critical habitat” includes areas occupied by the species “on which . . . those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection” are found. Id. § 1532(5)(A)**

#### **1) Endangered Fish and Wildlife; Final Rule To Implement Speed Restrictions to Reduce the Threat of Ship Collisions With North Atlantic Right Whales - 10/20/2008**

50 CFR Part 224

[Docket No. 040506143-7024-03]

RIN 0648-AS36

*For the North Atlantic right whale population to recover, vessel-related deaths and injuries must be reduced. The recently revised North Atlantic Right Whale Recovery Plan (NMFS, 2005) ranks steps to reduce and eliminate such deaths among its highest priorities, and indicates that developing and implementing an effective strategy to address this threat is essential to recovery of the species.*

*In collaboration with other agencies and organizations, NMFS has undertaken extensive efforts to encourage voluntary actions by vessel operators to reduce the risk of collisions between ships and North Atlantic right whales. In part, it has sought to limit vessel approaches to right whales, increase awareness of east coast mariners about the vulnerability of right whales to ship strikes, and provide mariners with real time right whale sighting locations.*

*Despite measures developed and undertaken by agencies, stakeholders, partners, and industry to date, right whale deaths from ship strikes continue and voluntary measures appear to be insufficient. NMFS has concluded that existing measures are insufficient to reduce the likelihood of ship strikes and allow the species to recover. Accordingly, NMFS determined that further action is required, and that a rule to limit vessel speeds in times and areas where right whales are most likely to occur is necessary. This rule making is designed to significantly reduce the occurrence and severity of collisions with North Atlantic right whales while minimizing adverse impacts on ship operations.*

*As a result of low population size for North Atlantic right whales, lack of observed population growth, and deaths from human activities, NMFS determined in 2000, and each year since, that the North Atlantic right whale population's “Potential Biological Removal” (PBR)—defined by the MMPA as “the maximum number of individuals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its Optimum Sustainable Population”—is zero. That is, under the MMPA, the population can sustain no deaths or serious injuries due to human causes if its recovery is to be assured.*

*The species is listed as Endangered on the Endangered Species Act's (ESA) List of Threatened and Endangered Wildlife and Plants, and as Depleted under the MMPA. Thus, under these statutes, it is illegal to strike a right whale with a ship.*

**2) Amendments to the North Atlantic Right Whale Vessel Strike Reduction Rule -  
08/01/2022**

50 CFR Part 224

[Docket No. 220722-0162]

RIN 0648-BI88

*Despite NMFS' best efforts, the current speed rule and other vessel strike mitigation efforts are insufficient to reduce the level of lethal right whale vessel strikes to sustainable levels in U.S. waters. NMFS has determined that additional action is needed to address gaps in current management programs and better tailor mitigation efforts. In evaluating potential changes to the current speed rule NMFS considered up-to-date strike risk modeling, data on right whale strike events, species distribution, and vessel traffic characteristics in right whale habitat, and the extensive and informative comments received in response to the 2020 speed rule assessment.*

*Since implementation of the speed rule in 2008, the distribution of right whales has shifted, resulting in a misalignment between areas of high vessel strike risk and current SMA spatial and temporal bounds. Improved data on vessel traffic and right whale distribution/habitat use further highlight this discrepancy and the need to adjust SMA boundaries to better address the risk of collisions. For example, after 2010, right whales began to frequent the region south of Martha's Vineyard and Nantucket, MA, and are now regularly observed in large aggregations foraging in the area (Leiter et al. 2017). Prior to this period, that region, while part of right whale habitat, was not identified as an important foraging area. In 2021 alone, 67 voluntary DMAs and Slow Zones were declared (28 of which were off Martha's Vineyard and Nantucket), demonstrating the ongoing spatial and temporal mismatch between whale aggregations and vessel strike protections.*

**3) Existing SMAs do not reflect shifting right whale distribution and habitat use along the U.S. East Coast, and risk modeling reveals areas/times of elevated vessel strike risk are not currently covered by SMAs.**

[Right Whale Slow Zones](#) and Dynamic Management Areas (DMAs) are voluntary programs NOAA Fisheries uses to notify vessel operators to slow down to avoid right whales habitat also known as the migratory corridor from Maine to Florida.

## **APPENDIX - P**

### **Language in the ESA Regulation**

424.12 Criteria for designating critical habitat.

(a) To the maximum extent prudent and determinable, we will propose and finalize critical habitat designations concurrent with issuing proposed and final listing rules, respectively. If designation of critical habitat is not prudent or if critical habitat is not determinable, the Secretary will state the reasons for not designating critical habitat in the publication of proposed and final rules listing a species. The Secretary will make a final designation of critical habitat on the basis of the best scientific data available, after taking into consideration the probable economic, national security, and other relevant impacts of making such a designation in accordance with [§ 424.19](#).

(1) Designation of critical habitat may not be prudent in circumstances such as, but not limited to, the following:

- (i) The species is threatened by taking or other human activity and identification of critical habitat can be expected to increase the degree of such threat to the species;
- (ii) The present or threatened destruction, modification, or curtailment of a species' habitat or range is not a threat to the species;
- (iii) Areas within the jurisdiction of the United States provide no more than negligible conservation value, if any, for a species occurring primarily outside the jurisdiction of the United States; or
- (iv) No areas meet the definition of critical habitat.

(2) Designation of critical habitat is not determinable when one or both of the following situations exist:

- (i) Data sufficient to perform required analyses are lacking; or
- (ii) The biological needs of the species are not sufficiently well known to identify any area that meets the definition of "critical habitat."

(b) Where designation of critical habitat is prudent and determinable, the Secretary will identify specific areas within the geographical area occupied by the species at the time of listing and any specific areas outside the geographical area occupied by the species to be considered for designation as critical habitat.

(1) The Secretary will identify, at a scale determined by the Secretary to be appropriate, specific areas within the geographical area occupied by the species for consideration as critical habitat.

The Secretary will:

- (i) Identify the geographical area occupied by the species at the time of listing.
- (ii) Identify physical and biological features essential to the conservation of the species at an appropriate level of specificity using the best available scientific data. This analysis will vary between species and may include consideration of the appropriate quality, quantity, and spatial and temporal arrangements of such features in the context of the life history, status, and conservation needs of the species.
- (iii) Determine the specific areas within the geographical area occupied by the species that contain the physical or biological features essential to the conservation of the species.

(iv) Determine which of these features may require special management considerations or protection.

(2) After identifying areas occupied by the species at the time of listing, the Secretary will identify, at a scale determined by the Secretary to be appropriate, specific areas outside the geographical area occupied by the species at the time of listing that the Secretary determines are essential for the conservation of the species. Such a determination must be based on the best scientific data available.

(c) Each critical habitat area will be shown on a map, with more-detailed information discussed in the preamble of the rulemaking documents published in the Federal Register and made available from the lead field office of the Service responsible for such designation. Textual information may be included for purposes of clarifying or refining the location and boundaries of each area or to explain the exclusion of sites (e.g., paved roads, buildings) within the mapped area. Each area will be referenced to the State(s), county(ies), or other local government units within which all or part of the critical habitat is located. Unless otherwise indicated within the critical habitat descriptions, the names of the State(s) and county(ies) are provided for informational purposes only and do not constitute the boundaries of the area. Ephemeral reference points (e.g., trees, sand bars) shall not be used in any textual description used to clarify or refine the boundaries of critical habitat.

(d) When several habitats, each satisfying the requirements for designation as critical habitat, are located in proximity to one another, the Secretary may designate an inclusive area as critical habitat.

(e) The Secretary may designate critical habitat for those species listed as threatened or endangered but for which no critical habitat has been previously designated. For species listed prior to November 10, 1978, the designation of critical habitat is at the discretion of the Secretary.

(f) The Secretary may revise existing designations of critical habitat according to procedures in this section as new data become available.

(g) The Secretary will not designate critical habitat within foreign countries or in other areas outside of the jurisdiction of the United States.

(h) The Secretary will not designate as critical habitat land or other geographic areas owned or controlled by the Department of Defense, or designated for its use, that are subject to a compliant or operational integrated natural resources management plan (INRMP) prepared under section 101 of the Sikes Act (16 U.S.C. 670a) if the Secretary determines in writing that such plan provides a conservation benefit to the species for which critical habitat is being designated. In determining whether such a benefit is provided, the Secretary will consider:

(1) The extent of the area and features present;

(2) The type and frequency of use of the area by the species;

(3) The relevant elements of the INRMP in terms of management objectives, activities covered, and best management practices, and the certainty that the relevant elements will be implemented; and

(4) The degree to which the relevant elements of the INRMP will protect the habitat from the types of effects that would be addressed through a destruction-or-adverse-modification analysis.

## APPENDIX - O

### Reference: Whale Map

#### NARW Habitat off the Atlantic Ocean

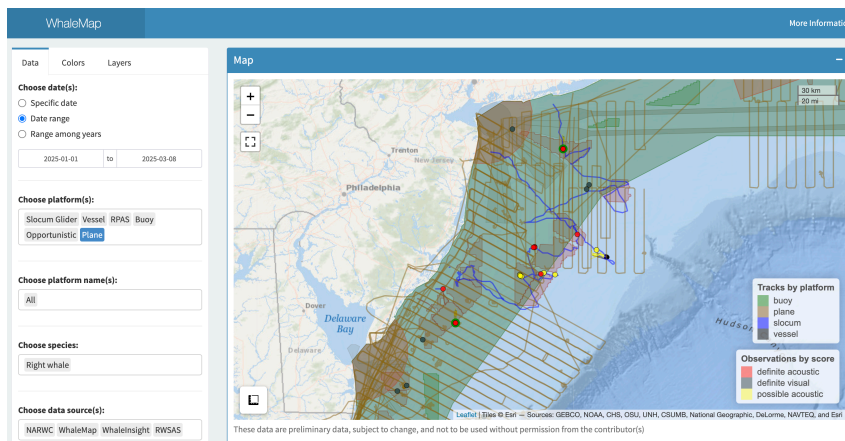
#### New England - New Jersey - Virginia

Whale Map uses Sloucum Gliders, Planes, Vessels, RPAs, Buoys and Opportunistic sightings. As science has developed, so have the sightings of NARWs over the past few years. It clearly shows the migratory corridor off the East Coast travels directly through and over proposed turbine projects.

Robots4Whales' monitored by Mark Baumgartner at Woods Hole Oceanographic Institution (WHOI) and collaborators, is the autonomous platform of bouys, gliders and floats are at the forefront of marine research technology, providing near real-time information on the presence of whales and sharing this information with stakeholders to improve conservation efforts. Our reference page provides logs from 2016-2024 of Sei, Fin, Humpback and NARW detections in the NY Bight. There are logs for the entire Mid-Atlantic from Maine to North Carolina.

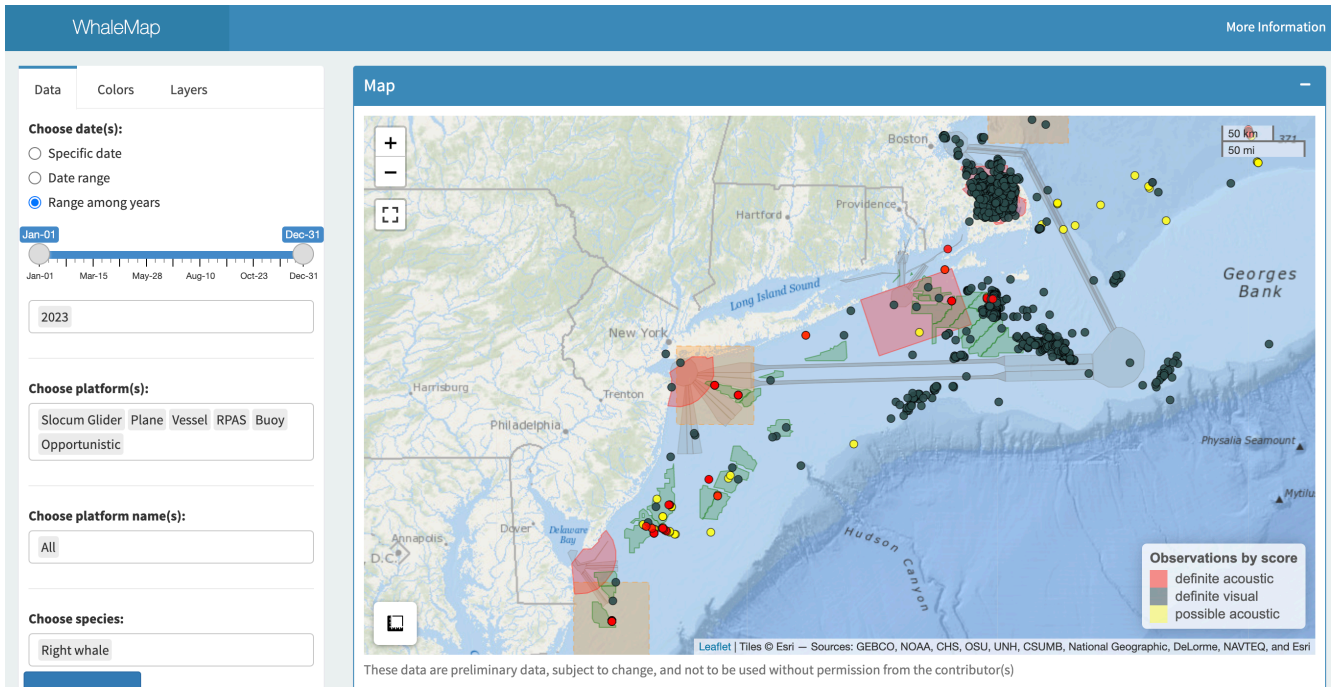
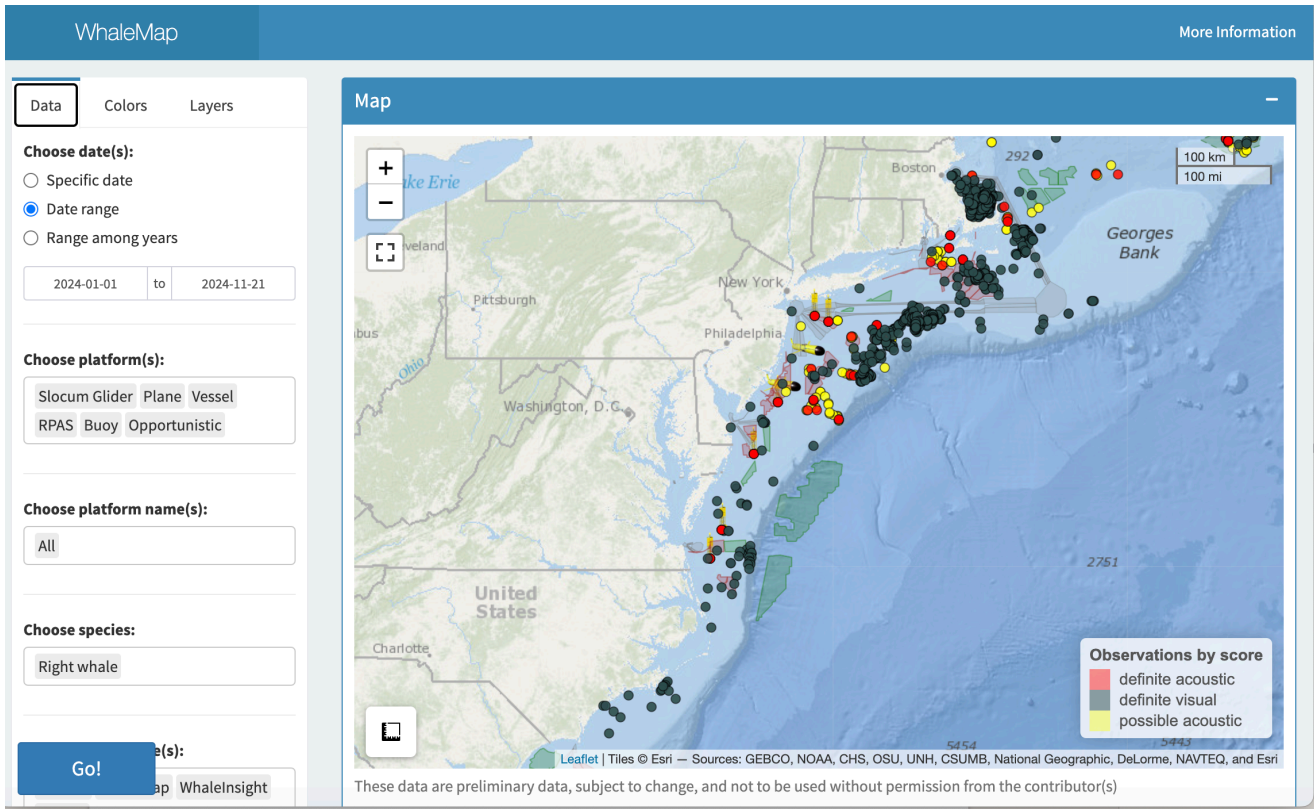
WHOI monitors the presence of marine mammals from ocean-going robots by listening for the sounds the animals make. The robots automatically detect those sounds, identify the species based on characteristics of the sounds, and report which species have been heard to researchers on shore via satellite in near real time. Human analysts verify this information, after which it is automatically shared with scientists, industry, and state and federal managers to inform and enable research and conservation measures, such as NOAA's [Slow Zones for Right Whales](#), Transport Canada's [vessel strike mitigation](#) program, Department of Fisheries and Oceans Canada's [fishing gear entanglement mitigation](#) program and the Benioff Ocean Science Laboratory's [Whale Safe](#) program.

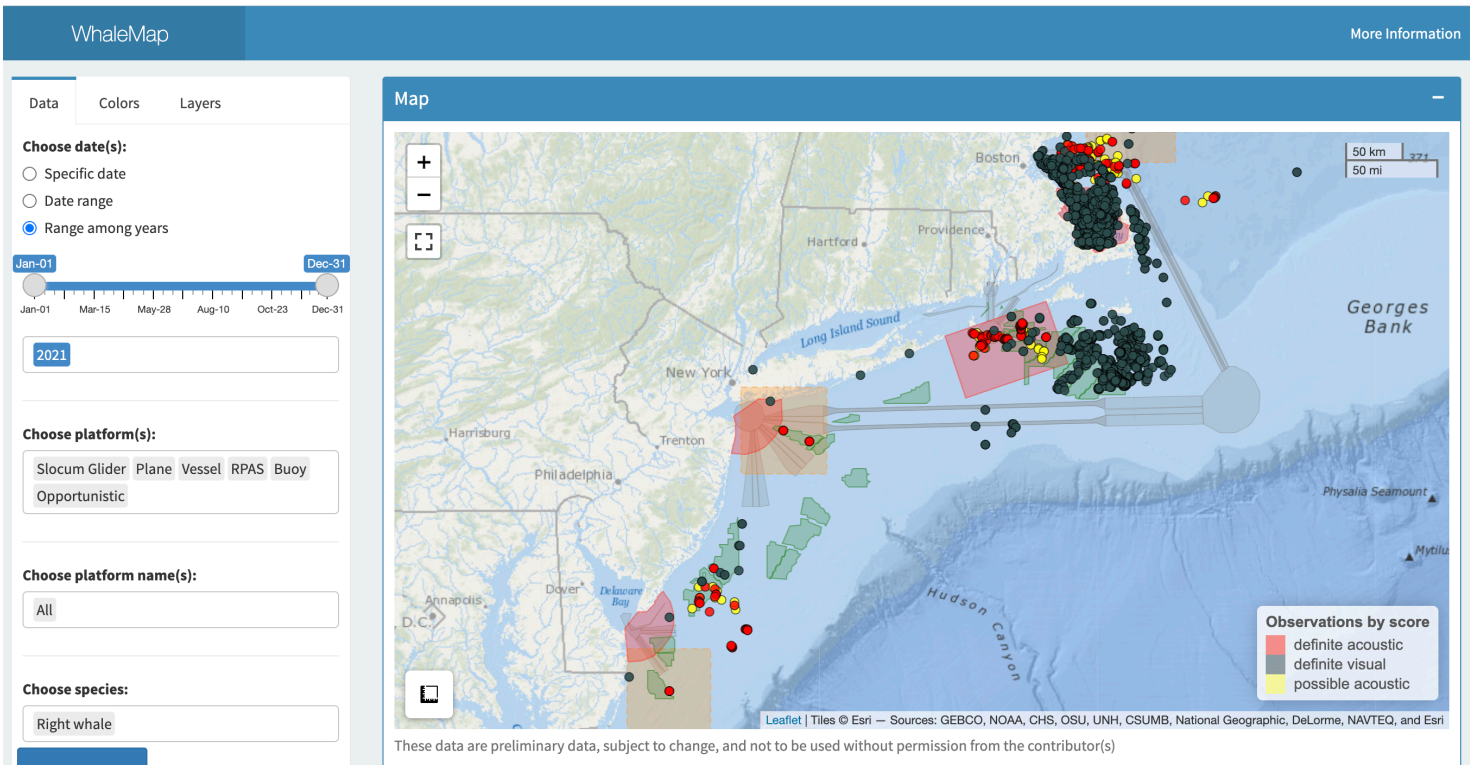
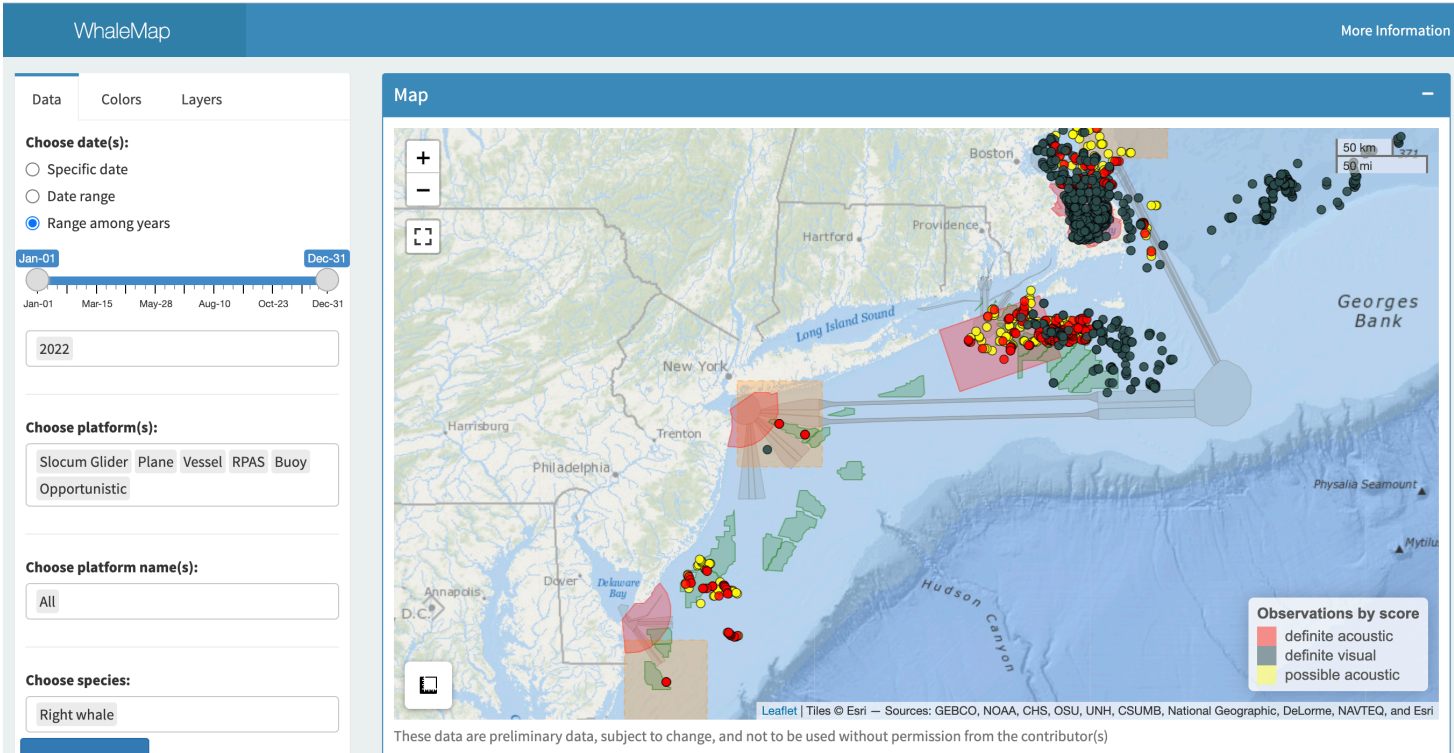
The maps below are NARW detections by year for the range habitat Maine to Virginia.

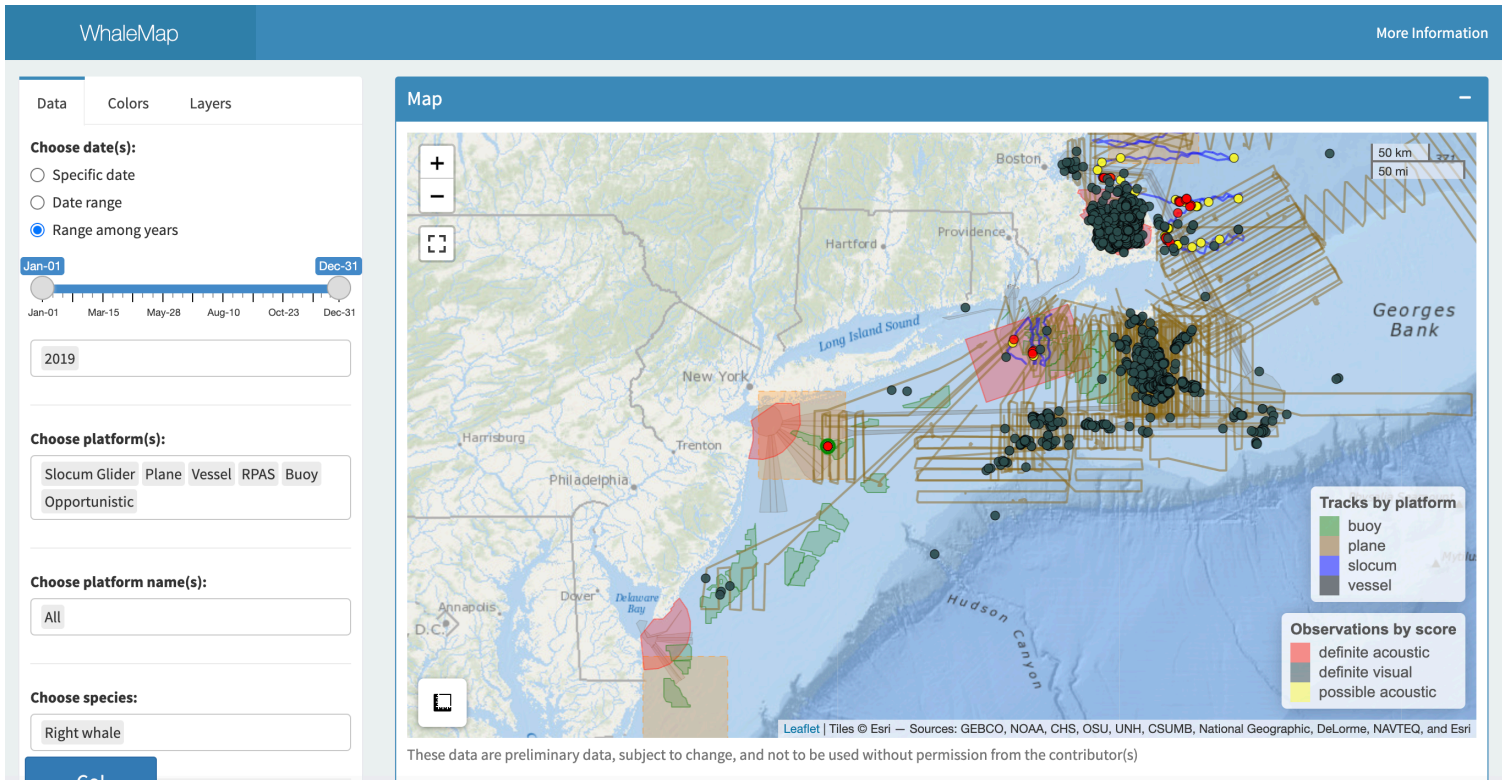
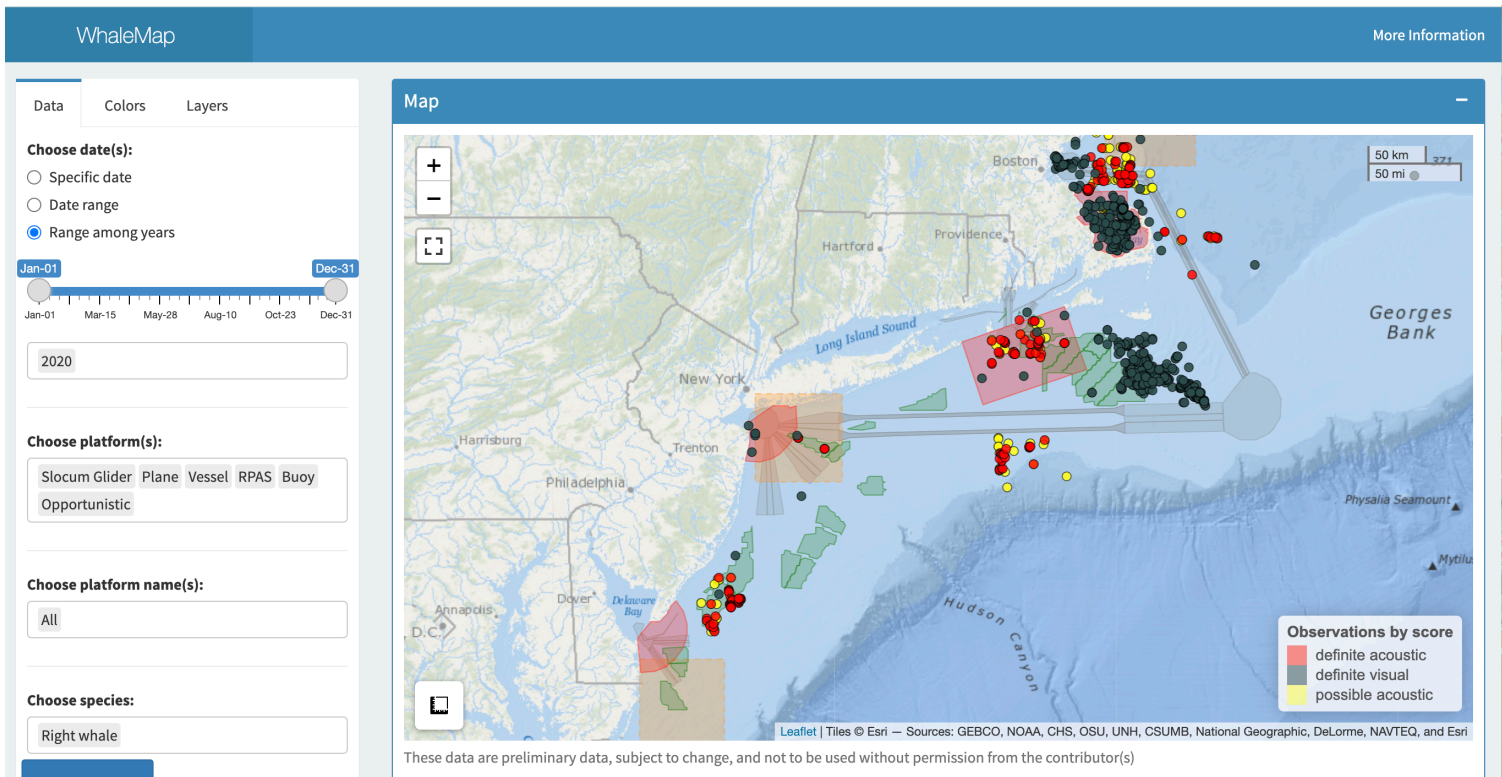


1/1/2025 - 3/8/2025  
NARW Detections within the proposed offshore wind areas off the coast of New Jersey and New York. The NARW migration is directly through proposed turbine complexes without any consideration to the impacts of operational turbine noise.

# Whale Map NARW Detections Annually- 2024, 2023, 2022, 2021, 2020, 2019, 2018 as follows:







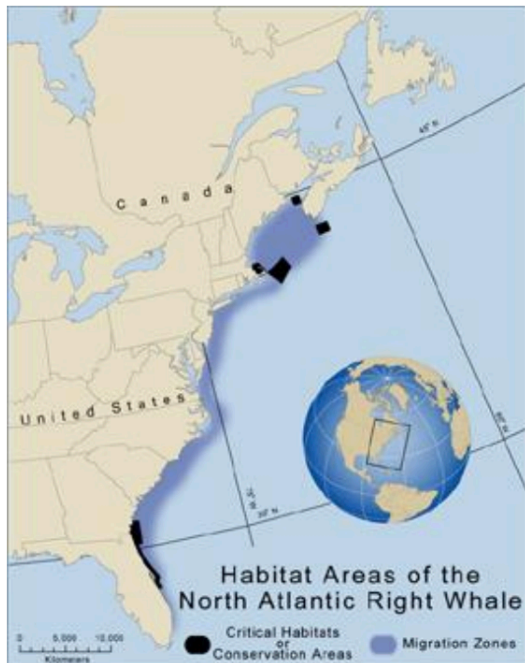
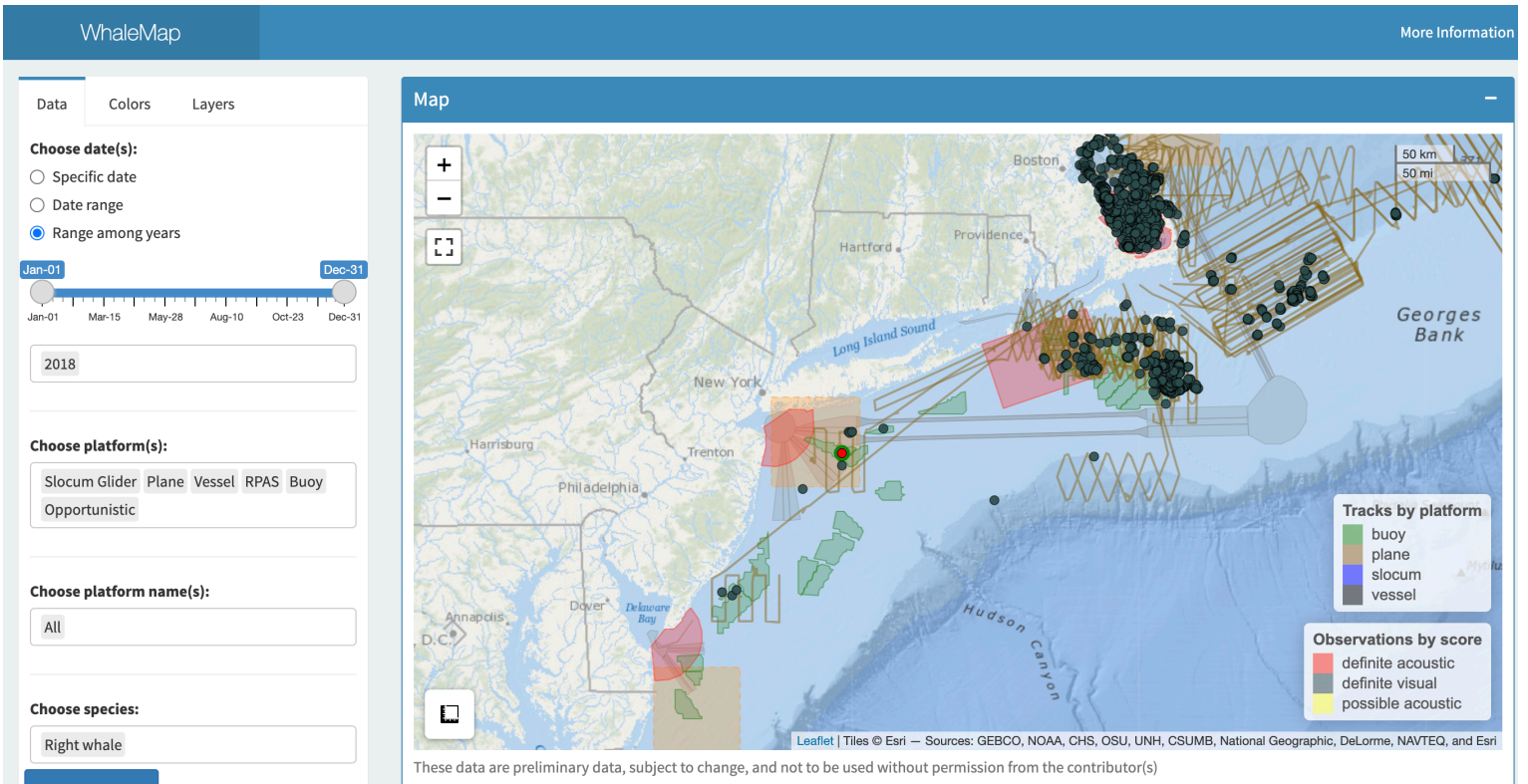


Figure 4. Range of the western North Atlantic right whale. Figure from NARWC 2013.

## APPENDIX - R

### **Marine Mammals of Rhode Island, Part 2, North Atlantic Right Whale**

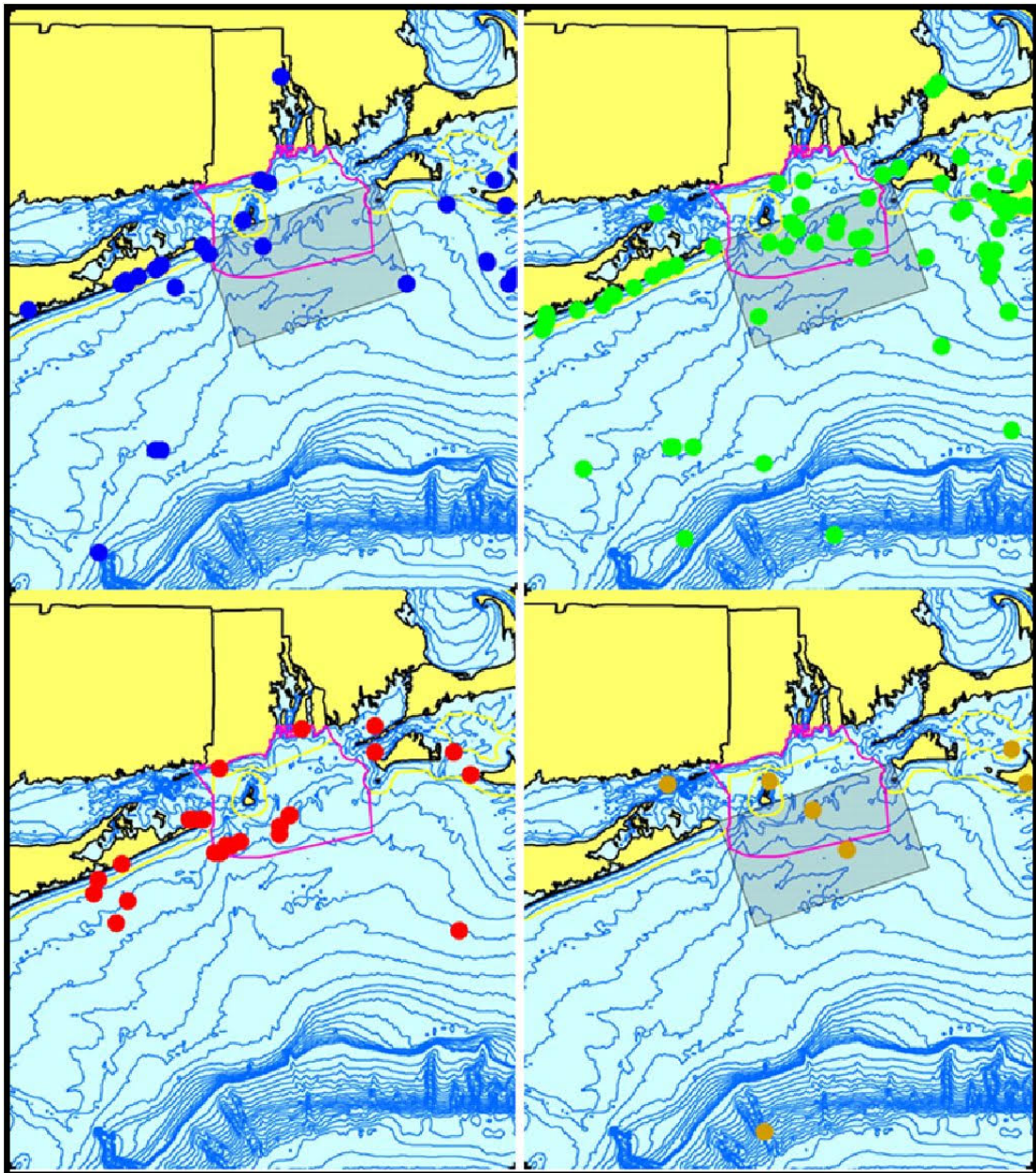
**By Robert Kenney**

Published: June 27, 2013

<https://rinhs.org/marinemammsofri2/>

Historical occurrence: Glover Allen in 1916 reported three historical records from Rhode Island, two of which came to him in letters from Major Edgar A. Mearns. In February 1828, “a Right Whale forty-four feet long, and rated at about seventy barrels of oil, was killed in the waters off Providence, R.I., after having been seen for several days ‘sporting in our river’.” “1893.—Major E.A. Mearns furnishes me with a note of what was said to have been a Right Whale, about 50 feet in length, that was stranded on Ochre Point, Newport, R.I. The blubber had already been removed by one Mr. Church at Tiverton, where the whale had been killed. The carcass was finally sunk at sea by order of the City Council. The exact date is not available.” “1894.—Major Mearns also sends me the record of a Right Whale that appeared off Beaver Tail, Conanicut Island, R.I., in this year. It finally was sighted off Fort Adams, where it was shot and killed (exact date unknown). He adds that Mr. Joshua P. Clark, formerly in charge of the Life Saving Station at Watch Hill, R.I., told him that Right Whales have been seen off Block Island in more recent years, although the most part of the whales seen in those waters are Finbacks.” There is also a specimen record from the Academy of Natural Sciences of Philadelphia (ANSP3227)—right whale skull fragments from Rhode Island from November 1857. T right whale fishery clearly reflect what is known about the migratory pattern of the population. Most of the kills occurred in winter and early spring, from January through May with a peak in April, and included a high proportion of mothers and calves. The fishery was primarily targeting northbound animals during the spring migration.

Recent occurrence: NARWs have occurred off Rhode Island in all seasons of the year (see map). They are most common in spring, less common in winter and summer, and relatively scarce in fall. Animals in this region are mainly migrating between winter calving grounds in the southeastern U.S. and feeding grounds in and around the Gulf of Maine. Howard Winn (a URI Graduate School of Oceanography professor who died in 1995, and my Ph.D. advisor) hypothesized that the southbound migration in fall was more diffuse and farther offshore than the spring migration. It appears that northward migrating right whales in late winter and spring travel along shore until reaching Cape Hatteras, North Carolina, after which they spread out more, with some continuing to follow the coast while others take a more direct route towards Massachusetts. NARWs off Rhode Island seem to show that pattern, with the majority relatively close to shore, but others more offshore and maybe on a migratory pathway between Cape Hatteras and the Great South Channel.



Combined sighting, stranding, and bycatch records of North Atlantic right whales in the Rhode Island Ocean SAMP study area, 1828–2007 (n = 156: winter [blue] = 30, spring [green] = 91, summer [red] = 25, fall [brown] = 7; unknown = 3). The gray-shaded box is the Block Island Sound Seasonal Management Area, in effect from November through April. (from the SAMP Technical Report)

## APPENDIX - S

### **Whale Watching Is Expanding in the NY/NJ Bight**

The International Fund for Animal Welfare notes tourism numbers, expenditures and expanding economic benefits in special report. There's something magical about watching a whale surface from the depths of the ocean. Getting a glimpse of these giants sparks amazement and makes us marvel at the true beauty of the natural world.

High-quality nature documentaries that are now widely available give millions of people the opportunity to witness the amazing world of whales like never before—but seeing a whale in the wild can be a life-changing experience.

Whale watching has become an incredible industry to not only spread awareness of whales, but also help communities economically prosper in a sustainable way. (1) Whale watching is big business - a 2008 study - estimated over 13 million people a year were taking whale watch trips in over 120 countries and generating a whopping \$2.1 billion per year in total revenues and the industry has only continued to grow since then. (1)

(1) The Benefits of Sustainable Whale Watching <https://www.ifaw.org/international/journal/sustainable-whale-watching>

*Miss Belmar Whale Watching, a business located in New Jersey for over 85 years, has deep concerns about all offshore wind areas in the ocean, and even more concerning over the fully permitted leases of Atlantic Shores South and Empire Wind off the coast of NJ and its adverse environmental impacts to marine mammals and how it will affect their business. A number of credible studies have shown that the whale population in their tour area will be significantly impacted from the underwater noise from all phases of project development, including vessel surveys using high intensity noise devices, the pile driving of foundations and the operation of the several hundred much larger wind turbines to be employed here. Such activity can kill whales or at a minimum cause them to avoid or stand off from their traditional tour areas. This then will have a significant adverse impact on their whale watching business.*

## APPENDIX - T

# ‘Greening’ of Coastal Waters May Have Dire Consequences

Linda Bonvie RCPo January 14, 2025

What is known about the consequences of offshore wind can be summed up in four words straight from the lead federal agency for these projects: “incomplete and unavailable information.”

The frightening truth is that experts have no idea how these 850-foot giants that require the pounding of 2,000-ton hollow steel cylinders, called monopiles, into the seabed will affect whales and other sea life, or even the ocean itself. And that’s even while they expect such projects to have little if any impact on climate change.

Turbines that are in permitting and construction stages along the Atlantic seaboard now would total, if completed, more than a thousand spinning towers in the ocean. But warnings about the potentially disastrous fallouts have been brushed aside.

Case in point: Megan Brunatti, a high-level official at the New Jersey Department of Environmental Protection lambasted the proposed wind energy development off the coasts of Delaware, Maryland, and Virginia, what’s called the “Central Atlantic” region.

Offshore wind development there, **she wrote in a letter** to the Bureau of Ocean Energy Management (BOEM), could have “potentially catastrophic cumulative impacts” on New Jersey’s surf clam industry, along with adverse effects on blue crabs, scallops, and essential menhaden stocks.

“There is still not an effective methodology or permitting requirement for analyzing cumulative impacts,” wrote Brunatti, a deputy chief of staff at the agency.

Even BOEM acknowledges offshore wind structures will be “visible on military and national security vessels and aircraft radar,” affecting Federal Aviation Administration and Department of Defense operations.

Nobody seems to be heeding these warnings, however. This past summer, as planned, 280,000 acres in the Central Atlantic region were auctioned off on schedule.

That’s not all.

A 2024 National Academies study admitted that vital “knowledge gaps” in our offshore wind experiment include almost everything about “hydrodynamics (water motion) around wind energy turbines.”

In regard to marine life, the authors, all leading experts from top-tier research facilities around the country, said those unknowns may harm sea creatures from the smallest to the largest, as turbine-altered “waves, tides, and currents” can disrupt zooplankton, the tiny animals giant whales feed on.

Even a regional administrator at the National Oceanic and Atmospheric Administration Fisheries division warned government officials that the entire wind-energy area auctioned off last October in the Gulf of Maine “overlaps with critical habitat” designated for the North Atlantic right whale, as well as other perilously endangered marine mammals.

His letter cautioned that the wind turbine area encroaches on habitats that “support deep-sea corals and sponges” along with other “ecologically important” marine areas.

Beyond their potential impacts on sea life, turbines use one of the **most potent** and persistent greenhouse gases known—sulfur hexafluoride. Once the chemical escapes, it lives on in the atmosphere for thousands of years.

This heat-trapping gas will be used both in the wind turbines and the offshore and onshore substations that the technology requires.

It remains to be seen what the new administration can or will do to slow or stop these projects as promised by then-candidate Trump.

Whatever that might be, there’s no doubt that proponents of offshore wind, as well as powerful labor unions and associations, are looking for ways to keep these projects spinning along.

Under the law, construction of these edifices may “torment, “injure,” and “disturb” marine mammals—harm that is shockingly allowed as long as official “**harassment authorizations**” are issued. This applies even to species on the brink of extinction such as the North Atlantic right whale.

Environmental threats aside, construction has resumed at **Vineyard Wind**, offshore of idyllic Martha’s Vineyard. There, a 70-ton turbine blade—the length of a football field—broke off last July, scattering sharp shards of debris in the ocean and washing up on Massachusetts and Rhode Island beaches.

Coastal Virginia Offshore Wind has so far installed 78 monopiles for its planned 176 turbines. Revolution Wind continues construction offshore from Connecticut and Rhode Island.

Atlantic Shores, which will be visible from the famed New Jersey beaches, just received the final approvals for its “south” project, 8.7 miles offshore of Atlantic City, which will comprise around half of the 200 turbines expected to blanket a swath of the South Jersey coast.

At this point, the United States government has auctioned off thirty-two wind energy leases in the outer continental shelf from Maine to North Carolina, representing over three million acres of seabed. They have been bought by mostly foreign interests aided with billions of U.S. dollars in subsidies and tax credits.

But paradoxically federal officials have stated, “U.S. offshore wind projects would by themselves probably have a limited impact on global emissions and climate change.”

Despite all the unknowns surrounding practically every aspect of offshore wind, this environmental Titanic has continued to proceed at full throttle.

***Linda Bonvie is a South Jersey-based health and environmental journalist and co-author of A Consumer’s Guide to Toxic Food Additives. She has been reporting extensively on offshore wind since 2023.***