

**UNITED STATES DISTRICT COURT
DISTRICT OF MASSACHUSETTS**

ACK RESIDENTS AGAINST TURBINES and
VALLORIE OLIVER,

Plaintiffs,

v.

U.S. BUREAU OF OCEAN ENERGY
MANAGEMENT; et al.,

Defendants,

and

VINEYARD WIND 1 LLC,

Intervenor-Defendant.

Case No. 1:21-CV-11390-IT

Hon. Indira Talwani

**PLAINTIFFS' MEMORANDUM OF POINTS AND AUTHORITIES IN OPPOSITION
TO CROSS-MOTIONS FOR SUMMARY JUDGMENT FILED BY FEDERAL
DEFENDANTS AND INTERVENOR VINEYARD WIND; PLAINTIFFS' REPLY IN
SUPPORT OF THEIR MOTION FOR SUMMARY JUDGMENT**

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TABLE OF CONTENTS

	Page
I. INTRODUCTION AND SUMMARY OF ARGUMENT	1
II. THE PROCEDURAL DEFENSES ADVANCED BY FEDERAL DEFENDANTS AND VINEYARD WIND HAVE NO MERIT	10
A. Plaintiffs Have Standing to Pursue Their ESA and NEPA Claims	10
1. Plaintiffs Have Standing to Pursue ESA Claims	11
2. Plaintiffs’ Have Standing to Pursue NEPA Claims	17
3. Plaintiffs Have Met All Criteria for Standing	21
B. Plaintiffs Exhausted Their Administrative Remedies	21
1. Challenges to Biological Opinions Do Not Require 60-Day Notice	22
2. Potential Impacts from Right Whales Fleeing WDA During Pile Driving	22
3. The North Atlantic Right Whale’s PBR Threshold	23
4. The “Override” Procedure During Pile Driving	24
5. Sufficiency of Clearance Zones	25
6. Passive Acoustic Monitoring (PAM) Detection Limit	26
7. EIS’s Assessment of Project’s Air Quality and GHG Impacts	26
III. THE VINEYARD WIND BIOLOGICAL OPINION IS LEGALLY INADEQUATE, AND FEDERAL DEFENDANTS ACTED ARBITRARILY AND CAPRICIOUSLY WHEN THEY APPROVED IT	27
A. Adequacy of BiOp Must Be Based On Project Described in the Approved COP, Not the Project Vineyard Wind Now Claims It Will Implement	27
1. Number of WTGs to Be Analyzed in BiOp	27
2. Pile Driving Activity and Noise Impacts	28
B. The BiOp Fails to Use “Best Available” Scientific Data to Determine Baseline Conditions for Jeopardy Analysis	29
1. The Quintana-Rizzo Study (2021)	29

TABLE OF CONTENTS

	Page
2. The Atlantic Large Whale Take Reduction Team Key Outcomes Memorandum.....	32
3. The North Atlantic Right Whale Consortium’s “2020 Annual Report Card” and the NOAA “US Atlantic and Gulf of Mexico Marine Mammal Stock Assessment 2020”.....	33
4. The PAMGuard Quality Assurance Module for Marine Mammal Detection Using Passive Acoustic Monitoring (August 2020).....	34
5. The Stober and Thomsen Study re Operational Noise Impacts of Large Offshore Wind Arrays	38
C. Evidence Does Not Support BiOp’s Conclusion That Mitigation Measures Will Prevent Jeopardy to Right Whales from Vessel Strikes	39
D. Evidence Does Not Support BiOp’s Conclusion That Project Mitigation Measures Will Prevent Jeopardy to Right Whales from Pile Driving Noise.....	43
1. Proposed “Soft Start” Procedure is Unproven and Constitutes Intentional Harassment and Take	43
2. The Project’s Right Whale “Detection” Measures Are Flawed.....	45
3. Shutdown “Override” Undermines Noise Protections.....	48
E. BiOp’s “No Jeopardy” Finding Relies Entirely the Ability of Project’s Mitigation Measures to Protect Right Whales from Vessel Strikes and Pile Driving Noise.....	49
F. The Biological Opinion Does Not Analyze Threats to Right Whale Due to Pile Driving “Clearance” Operations	50
G. The BiOp Provides an Inadequate Assessment of Project’s Operational Noise Impact on Right Whales	52
H. The BiOp’s “Recovery” Analysis is Flawed	52
1. Project Contributes to Threats That Thwart Right Whale Recovery	53
2. BiOp Relies on Flawed Mitigation Measures to Declare Project No Impediment to Right Whale Recovery.....	54

TABLE OF CONTENTS

	Page
3. The BiOp’s “Recovery” Analysis Fails to Consider Impacts From “Clearing” Right Whales from Project Area During Pile Driving	56
4. The BiOp Tests Project Impacts Against “Reclassification” Goals, Not “Recovery” Goals	56
5. BiOp Makes No Attempt to Identify Right Whale Abundance Goals and Analyze Project’s Potential to Slow Attainment of Those Goals	57
6. Cursory Response by Federal Defendants Cannot Save Deficient Recovery Analysis	57
I. NMFS and BOEM Acted Arbitrarily and Capriciously	58
IV. THE VINEYARD WIND ENVIRONMENTAL IMPACT STATEMENT VIOLATES NEPA.....	58
A. EIS Provides Inadequate Analysis of Project’s Impacts on North Atlantic Right Whale	58
1. Inadequate Discussion of Existing Conditions Regarding Right Whale	58
2. EIS Repeats Errors of BiOp as to Noise and Vessel Strike Impacts on Right Whales, and Mitigation for Those Impacts	60
3. Inadequate Analysis of Cumulative Impacts on Right Whale	61
B. EIS Provides Inadequate Analysis of Project’s Impacts on Air Quality and GHG Emissions	62
1. EIS Does Not Compare Project Emissions of Criteria Pollutants to NAAQS Thresholds	62
2. Air Emissions Data Cannot Be Hidden in an Appendix to a Non-NEPA Document	63
3. Plaintiffs Withdraw Claim Regarding Redacted Air Quality Data.....	64
4. The EIS Does Not Analyze Onshore Emissions or Emissions from Project-Related Economic Growth	64
C. BOEM Acted Arbitrarily and Capriciously When It Approved the EIS	65
V. CONCLUSION.....	65

TABLE OF AUTHORITIES

	Page(s)
Cases	
<i>Center for Biological Diversity v. Haaland</i> 562 F.Supp.3d 68 (2021)	11
<i>Center for Biological Diversity v. Salazar</i> 804 F.Supp.2d 987 (D. Ariz. 2011)	39, 50, 53
<i>Churchill County v. Babbitt</i> 150 F.3d 1072, 1078 (9th Cir. 1998)	19
<i>Conner v. Burford</i> 848 F.2d 1441 (9th Cir. 1988)	39
<i>Ellis v. Housenger</i> 252 F.Supp.3d 800, 812 (N.D. Cal. 2017)	15
<i>Friends of the Earth, Inc. v. Laidlaw Envtl. Servs. (TOC), Inc.</i> 528 U.S. 167, 183 (2000).....	13
<i>Gifford Pinchot Task Force v. United States Fish and Wildlife Service</i> 378 F.3d 1059 (2004).....	53
<i>Great Basin Resource Watch v. Bureau of Land Management</i> 844 F.3d 1095, 1101 (9th Cir. 2016)	58
<i>Half Moon Bay Fishermans' Mktg. Ass'n v. Carlucci</i> 857 F.2d 505, 510 (9th Cir. 1988)	58
<i>Hall v. Norton</i> 266 F.3d 969, 976-977 (9th Cir. 2001).....	18
<i>Heinrich v. Sweet</i> 308 F.3d 48, 61 (1st Cir. 2002).....	17, 18
<i>Hunt v. Washington State Apple Advert. Comm.</i> 432 U.S. 333, 343 (1977).....	11
<i>Jackson v. Johnson & Johnson</i> 330 F. Supp. 3d 616, 625 (D. Mass. 2018)	17, 18
<i>Japan Whaling Ass'n v. Am. Cetacean Soc'y</i> 478 U.S. 221, 231 n. 4 (1986).....	13
<i>Kern v. United States Bureau of Land Management</i> 284 F.3d 1062 (9th Cir. 2002)	27, 63, 64

TABLE OF AUTHORITIES

	Page(s)
Cases (Continued)	
<i>Lujan v. Defenders of Wildlife</i> 504 U.S. 555, 560-61 (1992)	11, 13
<i>National Wildlife Federation v. National Marine Fisheries Service</i> 524 F.3d 917, 931 (9th Cir. 2008)	53, 58
<i>National Wildlife Federation v. National Marine Fisheries Service</i> 184 F.Supp.3d 861 (D. Oregon 2016).....	57
<i>National Wildlife Federation v. Norton</i> 386 F.Supp.2d 553	14
<i>Pritchard v. Stanley Access Techs., LLC</i> 2011 WL 309662, at *5 (D. Mass. Jan. 27, 2011)	17, 18
<i>Save Our Cabinets v. United States Fish and Wildlife Service</i> 255 F.Supp.3d 1035, 1047, (D. Mont. 2017)	53
<i>Strahan v. Linnon</i> 967 F.Supp. 581 (D.Mass. 1997)	22
<i>Wild Fish Conservancy v. Salazar</i> 628 F.3d 513 (9th Cir. 2010)	53
Statutes	
16 U.S.C.	
§ 1536(b)(3)(A).....	50
40 C.F.R.	
§ 1502.20.....	63
50 C.F.R.	
§ 402.02.....	50
§ 402.14(g).....	32, 34
§ 402.14(g)(3)	50

Plaintiffs Nantucket (ACK) Residents Against Turbines and Vallorie Oliver (collectively, “Plaintiffs”) submit the following Memorandum of Points and Authorities in Opposition to the respective Cross-Motions for Summary Judgment filed by the United States Bureau of Ocean Energy Management, et al. (the “Federal Defendants”) and intervenor Vineyard Wind. This Memorandum also serves as Plaintiffs’ Reply Brief in support of its Motion for Summary Judgment.

I. INTRODUCTION AND SUMMARY OF ARGUMENT

On pages 60 and 61, the Biological Opinion (“BiOp”) for the Vineyard project summarizes the various human-related threats to the North Atlantic right whale, including entanglement in fishing gear, vessel strikes, loss of foraging habitat, and reduced prey species. (BOEM 77335-36.) The BiOp goes on to describe the right whales’ sharp and continuing population decline; recent mortality events involving vessel strikes and fishing gear entanglement; the species’ low calving rate; genetic isolation; and catastrophic loss of reproductive females. (*Ibid.*)

Then, in a rare moment of candor and transparency, the BiOp makes the following statement: **“Given the above information, North Atlantic right whales’ resilience to future perturbations is expected to be very low. (Hayes, et al. 2018a) . . . Consistent with this, recent modeling efforts indicate that the species may decline towards extinction if prey conditions worsen and anthropogenic mortalities are not reduced (Meyer-Gubrod et al. 2018).”** (BOEM 77336 [Emphasis added].)

Thus, the fundamental question to be addressed by the BiOp is this: Will the Vineyard Wind project add to the “perturbations” that now threaten the right whale with extinction? Or, to put it in the parlance of the Endangered Species Act (ESA), will the project jeopardize the species by adversely affecting its survivability or impeding its recovery?

The best available scientific and commercial data – some of which the BiOp uses, some of which it ignores – demonstrate that the Vineyard Wind project will not only increase and intensify the perturbations driving the right whale towards extinction, it will directly impact a large percentage of the 356 right whale individuals known to exist in the world, frustrating both the survival and the recovery of the species. The salient facts are these:

- The Vineyard Wind project area – also known as the Wind Development Area (WDA) – is located within the Rhode Island/Massachusetts Wind Energy Area (WEA), where 87 percent of all right whale individuals (327 of 356) were observed between 2011 and 2019. (NMFS 53319, 53324.)
- The Vineyard Wind WDA overlaps a right whale “hot spot” where whales congregate to feed and engage in other critical life history behaviors. (NMFS 53321-22, 53326.)
- The approved Vineyard Wind Construction and Operations Plan (COP) and the BiOp authorize Vineyard Wind to install up to 102 wind turbine generators (WTGs) in the WDA. (BOEM 77425.)
- These WTGs will be installed in the sea floor using pile driving. Pile driving generates high levels of impulsive sound at low-frequency bandwidths that overlap/correspond to right whale hearing. For this reason, the project’s pile driving activities will expose right whales to Level A and Level B harassment noise, leading to physical damage and hearing loss, both permanent and temporary. (BOEM 77461, 77438-40.)
- Vineyard Wind’s pile driving activities – by design – will force right whales out of the WDA into surrounding waters that are known to have high levels of commercial vessel traffic and significant amounts of vertical buoy ropes (VBR) – the very kind of fishing gear that entangles right whales and kills them. (BOEM 77580; NMFS 66321-22.)

- The project’s WTGs, once operational, will generate constant low-frequency noise, which can “mask” right whale vocalizations (e.g., up calls and “gunshots”) and reduce “communication space”. (NMFS 8751, 8756-60.)
- Project construction will require thousands of vessel trips back and forth between the WDA and staging ports in Massachusetts, Rhode Island, and Nova Scotia. These vessel trips will take place within right whale habitat, including right whale “hotspots” like the WDA itself. (BOEM 77293-94; NMFS 53321-22, 53326.)
- The vast majority of these vessel trips will be made by “crew transfer vessels”, which average approximately 90 feet in length and travel at 25 knots per hour. (BOEM 34861.) Although scientific studies show that whales struck by vessels traveling in excess of 15 knots per hour die 100 percent of the time (BOEM 129897, 129902), the BiOp *exempts* crew transfer vessels from the 10-knot per hour speed limits that applies to other project-related boats and ships. (BOEM 77304, 77525.)
- Significant numbers of right whales reside in or migrate through the WDA **year-round**, including during those months when pile driving and other construction activities will be occurring at the project site. (NMFS 53324, 53329.)

Despite this evidence showing the Vineyard Wind project will exacerbate the very threats that are quickly extirpating the North Atlantic right whale, the BiOp concludes that the project will neither reduce the survivability of the species nor impede its recovery – i.e., will not “jeopardize” the species. (BOEM 77630-31.) The author of the BiOp, the National Marine Fisheries Service (NMFS), bases this “no jeopardy” determination on its “expectation” that the mitigation measures proposed by Vineyard Wind and incorporated into the project will effectively protect right whales

from Level A pile driving noise, vessel strikes, and all other project-related impacts. (BOEM 77628.)

But the data in the record, including information set forth in the BiOp itself, demonstrate that this expectation is unfounded. For example, before each pile driving event, the BiOp requires Vineyard Wind to establish a right whale “clearance zone” using Passive Acoustic Monitoring (PAM). From June 1 to October 31 – when most pile driving is anticipated to occur – the clearance zone will extend only 5 kilometers (km) from the pile driving activity, which is substantially less than the Level A noise contour for pile driving, which extends approximately 7.25 km from the pile driving site. (BOEM 77442, 77453, 77457.) This means that some right whales could enter the Level A noise exposure zone and not be detected by PAM, resulting in unauthorized take.

But that’s not the half of it. The BiOp draws a distinction between “clearance” zones, which are established *before* pile driving commences, and “shut-down” zones, which are implemented *during* pile driving activity. (BOEM 77453.) According to the BiOp, from June 1 to October 31, the PAM shut-down zone extends only 3.2 km from the pile-driving site, even though the pile driving activity will generate Level A noise at a radius of 7.25 km. (*Ibid.*) Consequently, during active pile driving, no shut-down order will be given *unless* a whale is detected within that 3.2-km zone. Whales swimming outside the 3.2-km shut-down zone but within the 7.25-km Level A noise contour will be exposed to Level A noise, and no shut-down order will be given to protect them. This, too, will result in unauthorized take.

In addition, PAM has significant limitations in its ability to guarantee that right whales are absent from the pile driving impact area. Unlike sonar, which can detect any physical body within its scope, PAM equipment can only detect whales that are *actively vocalizing* within the PAM coverage area. Baleen whales, including right whales, often go hours, even days, without

vocalizing.¹ Such “silent” whales will not be detected by PAM, even when present within the PAM coverage zone. As a result, these whales would be exposed to the project’s Level A pile driving noise and the PAM operator would not even know about it. In short, PAM cannot ensure that the project’s Level A noise exposure area is free of right whales. The proposed Protected Species Observers (PSOs) will not be able to fill this “detection” gap, because the PSOs, even when stationed on an elevated platform, can only see whales at a distance of 1.5 km or less, and that’s if the whales are on the water’s surface. PSOs cannot detect whales more than a few feet under the water.

Then there is the matter of vessel strikes. The most effective way to avoid vessel strikes on right whales is to restrict vessel speeds to 10 knots per hour or less. (BOEM 77519, 77524; NMFS 3490-96.) The BiOp imposes a 10-knot speed limit on project-related vessels, but with two huge exceptions. (BOEM 77304.) First, all project vessels can disregard the 10-knot speed limit when transiting through Nantucket Sound, which lies between mainland Massachusetts and the project WDA. (BOEM 77304.) Second, the 10-knot speed limit does *not* apply to crew transfer vessels, no matter where they are traveling to or from. (BOEM 77304, 77525.) Crew transfer vessels – which account for the majority of the project’s anticipated vessel trips – average 90 feet in length and travel at 25 knots (BOEM 34746, 34861), well above the speed at which a vessel strike is 100 percent fatal for whales (15 knots). (BOEM 129897, 129902.) These two exceptions completely gut the 10-knot speed limit and undermine its ability to protect right whales from vessel strikes.

¹ See, Barkaszi, et al., “PAMGuard Quality Assurance Module for Marine Mammal Detection Using Passive Acoustic Monitoring: Signal Injection and Detection Evaluator (SIDE),” CSA Ocean Sciences, Inc., August 2020, Executive Summary and Section 2.1.1.3, a true and correct copy can be accessed through the link provided in the declaration of David P. Hubbard in Support of Plaintiffs’ Motion for Summary Judgment; see also Plaintiffs’ Supplemental Statement of Material Facts in Support of Plaintiffs’ Motion for Summary Judgment, ¶ 2.

NMFS and Vineyard Wind, however, tell us not to worry about vessel strikes because each boat will be assigned at least one PSO whose job is to scan the surface of the water looking for right whales. If the PSO sees one, he or she is required to alert the boat captain, who in turn can take evasive action to avoid striking the animal. As noted, however, PSOs cannot see below the water's surface, and research shows that whales swimming as deep as 30 feet can still be caught in the "draft pull" of the boat's hull, resulting in a collision. (NMFS 6117.)

NMFS and Vineyard Wind contend that any whales that slip by the PSOs will be detected by PAM equipment. Again, however, PAM can only detect whales when they are actively vocalizing; non-vocalizing whales will not register. (Barkaszi, et al. (2020).) Also, nothing in the BiOp mandates that such equipment be installed on crew transfer vessels (or any other project-related ship); nor does the BiOp require Vineyard Wind to install PAM equipment to provide full coverage of the 55-mile vessel route between the staging port in New Bedford, Massachusetts and the project WDA. Moreover, none of the BiOp mitigation measures apply to the areas immediately outside the project's "Action Area".² This is critical, because Vineyard Wind, through its "soft start" pile driving procedure, hopes to push right whales away from the project site and into surrounding waters – waters known to have significant vessel traffic, both commercial and recreational. (BOEM 34742; BOEM 77310, 77458; BOEM 194539; BOEM 77411, 77580.)

² The project's "Action Area" is defined as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." The action area includes the 75,614 acre WDA where project activities will occur and the surrounding areas ensounded by proposed Project noise; the OECC, which extends north through Muskeget Channel to landfall in south-central Cape Code; the vessel transit areas between the WDA and ports in Massachusetts (New Bedford, Brayton Point, and Montaup), Rhode Island (Providence and Quonset Point, Rhode Island) and Canada (Sheets Port, St. John, and Halifax) and the routes used by vessels transporting manufactured components from Europe (see Figure 3.4.1, 3.4.2, and 3.4.3) inclusive of the portion of the Atlantic Ocean that will be transited by those vessels and the territorial sea of nations along the European Atlantic coast from which those vessels will originate. (BOEM 77320.)

Simply put, the proposed mitigation measures are insufficient to prevent project-related vessel strikes on right whales. And given that the right whale's Potential Biological Removal (PBR) rate has dropped to 0.8 – meaning it cannot absorb even one human-caused mortality per year and sustain its current population size – any project-related vessel strike will jeopardize the species. (NMFS 33684.)

The BiOp's fundamental defect is its refusal to adjust its impact/jeopardy analysis to recent data showing that (i) right whales have sustained, and continue to sustain, significant “mortality events” each year, causing the species to lose more individuals than it can replace through new births; (ii) right whales, like their prey species, have shifted their geographical preferences and now congregate in the waters south of Nantucket – including the Vineyard Wind WDA – to forage and engage in other live history behaviors; (iii) the WDA itself is a right whale “hotspot”; and (iv) right whales are no longer just seasonal visitors to the waters south of Nantucket but reside in or use these waters year-round, including the summer and fall months when Vineyard Wind plans to conduct pile-driving and other construction activities at the project site.

This failure to use the best available data on right whale threats, population trends, and year-round residency in the Vineyard Wind WDA is perhaps most pronounced in the BiOp's uber-brief, back-of-the-napkin assessment of the project's potential to impede recovery of the species. Rather than test the project's impacts against the right whale's current status – i.e., declining population, low calving rate, increased mortality events, loss of reproductive females, reduced and shifting prey species – the BiOp's recovery analysis simply assumes the project's mitigation measures will be enough to prevent project-related impacts from impairing recovery. In fact, the BiOp does not actually assess the project in relation to the right whale's recovery goals – which are tied to the ultimate delisting of the species – but to four criteria NMFS has developed for

reclassifying the right whale from “endangered” to “threatened”. (BOEM 77630.) In this very real sense, the BiOp includes no true “recovery” analysis at all.

Neither the federal defendants nor Vineyard Wind make a serious effort to address Plaintiffs’ arguments regarding the BiOp’s deficient “recovery” analysis, tacitly admitting that the document fails to provide this legally-required element of the jeopardy assessment.

The flaws in the BiOp are then repeated in the Vineyard Wind Environmental Impact Statement (EIS). Like the BiOp, the EIS downplays the WDA’s importance to the right whale and fails to analyze the project’s impacts in light of recent data showing that the whale has shifted its foraging preferences and now relies heavily on the RI/MA WEA (including the Vineyard Wind WDA) for food. It also makes the same false assumptions regarding the effectiveness of Vineyard Wind’s proposed measures for mitigating noise and vessel strike impacts on right whales. And, just like the BiOp, the Vineyard Wind EIS does not even mention, much less investigate, whether and to what extent the project (and the six other offshore wind farms slated for Massachusetts WEA) will drive right whales into areas of heavy vessel traffic and high concentrations of fixed fishing gear.

On a completely different front, the EIS also provides a deficient analysis of the Vineyard Wind project’s air emissions, both inshore and offshore, including those that contribute to climate change. For example, the EIS fails to compare the project’s emissions to the applicable Clean Air Act (CAA) National Ambient Air Quality Standard (NAAQS) thresholds for each regulated pollutant. The federal defendants and Vineyard Wind claim that this information is set forth in an appendix to Vineyard Wind’s COP; but NEPA does not permit federal agencies to tuck key impact information in appendices to non-NEPA documents. Instead, the impact information must be contained in the EIS itself. More egregious still is the EIS’s utter failure to account for emissions

from the project's much-touted ability to generate economic growth and new employment. The federal defendants and Vineyard Wind are happy to take credit for the economic boom they claim the project will create (see Doc. 28-1 at 2), but they do not assess the air quality and GHG impacts of that growth. In failing to model, measure, analyze, and disclose these growth-related emissions, the EIS violated NEPA.

The federal defendants and Vineyard Wind have no convincing answer to Plaintiffs' *substantive* arguments regarding the legal defects of the BiOp and the EIS. So they retreat to *procedural* defenses, arguing first that Plaintiffs lack standing to pursue this litigation, and second that Plaintiffs' Notice of Intent to Sue letters and NEPA comments did not adequately warn NMFS and BOEM of the claims now made in Plaintiffs' legal brief, resulting in a failure to exhaust administrative remedies.

These defenses are without merit. As shown below, the Plaintiffs have adequately demonstrated injury in fact and causation for purposes of establishing standing on their ESA and NEPA causes of action. The declarations of Vallorie Oliver and Amy DiSibio, both of whom are members of plaintiff Nantucket (ACK) Residents Against Turbines, show that each of them resides on Nantucket; have a significant connection to the North Atlantic right whale; are worried that it is being pushed toward extinction; would be emotionally distraught if the project were to harm or kill any right whale and further jeopardize the species; and have concrete plans to observe the right whale in the future.

To remove any confusion on this point, Vallorie Oliver has submitted a supplement to her original declaration, where she explains and clarifies the emotional and psychological injury she will suffer knowing that the Vineyard Wind project will adversely affect right whales, potentially leading to its extirpation within Ms. Oliver's lifetime. Scientists now refer to this type of injury as

“ecological grief”, which includes the anguish one feels when ecosystems are damaged and species are lost. Ms. Oliver’s supplemental declaration also clears up any misperceptions about her standing to challenge the EIS’s air quality analysis. She *does* live on Nantucket; she *does* breathe while she is there; she *does* visit the onshore areas near New Bedford (Vineyard Wind’s staging port); and she *does* breathe air while on these trips to the mainland.

Finally, there is no question that Plaintiffs exhausted their administrative remedies. Their 60-day Notice of Intent to Sue letters adequately apprised the federal defendants of the defects of the BiOp, including (i) the BiOp’s mistaken assumption that the Vineyard Wind project would not expose right whales to Level A harassment noise, (ii) the potential threats and impacts right whales may encounter when pushed out of the WDA by project pile driving, and (iii) the BiOps failure to present a complete, accurate, and up-to-date picture of the right whale’s currently imperiled status, including its steep slide towards extinction. Plaintiffs’ comments on the Draft, Supplemental, and Final EIS likewise alerted BOEM to the deficiencies in the document’s analysis of project impacts on right whales, air quality, and GHG emissions.

II. THE PROCEDURAL DEFENSES ADVANCED BY FEDERAL DEFENDANTS AND VINEYARD WIND HAVE NO MERIT

A. Plaintiffs Have Standing to Pursue Their ESA and NEPA Claims

Plaintiffs attached to their Opening Brief the declarations of Vallorie Oliver and Amy DiSibio, both of whom are members of plaintiff Nantucket (ACK) Residents Against Turbines. (See Doc. 88-2 and Doc. 88-3.) These declarations establish that Ms. Oliver and Ms. DiSibio – and, by extension, Nantucket Residents Against Turbines – have been or will be injured by the federal defendants’ adoption of the BiOp and EIS for the Vineyard Wind project, as these decisions will lead to the construction and operation of the project itself, which will adversely affect Ms. Oliver’s and Ms. DiSibio’s interests. (*Ibid.*) In their declarations, Ms. Oliver and Ms. DiSibio

provide evidence that they will suffer “injury in fact” should the project, as approved, be implemented, and that their injuries can be redressed by this Court by setting aside the BiOp and/or the EIS challenged in this lawsuit.

In their cross-motion for summary judgment, the federal defendants contend that the declarations of Ms. Oliver and Ms. DiSibio are insufficient to establish injury in fact under the ESA and thus the Plaintiffs lack standing to engage this Court’s jurisdiction on matters pertaining to the adequacy of the Vineyard Wind BiOp. (Doc. 97 at pp. 16-17.) Vineyard Wind joins in this argument (without briefing it), but also asserts that Plaintiffs lack standing under NEPA to challenge the EIS’s analysis of project impacts on air quality and GHG emissions. (Doc. 100 at p. 8.) As shown below, however, the standing bar under the ESA and NEPA is nowhere near as high as the federal defendants and Vineyard Wind want to put it, and Plaintiffs clear it with ease.

1. Plaintiffs Have Standing to Pursue ESA Claims

To establish constitutional standing, plaintiffs must show that they meet three criteria: (1) injury in fact, (2) causation, and (3) redressability. *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 560-61 (1992). An association, such as Nantucket Residents Against Turbines, has standing to bring suit on behalf of its members provided “its members would otherwise have standing to sue in their own right.” *Center for Biological Diversity v. Haaland*, 562 F.Supp.3d 68, 78 (2021), quoting *Hunt v. Washington State Apple Advert. Comm.*, 432 U.S. 333, 343 (1977).

In her declaration, Ms. DiSibio states that she is a part-time resident of, and long-time visitor to, Nantucket, and enjoys the rich marine life that surrounds Nantucket Island, including threatened and endangered species. Doc. 88-3 at ¶ 4. She also avers that she has had, and continues to have, “opportunities to observe them [threatened and endangered species] in their natural habitat.” *Ibid.* Next, she states that “[m]y family and I enjoy whale watching off Nantucket” and

“[m]any of these sea animals, including and especially the North Atlantic right whale, are truly magnificent.” *Ibid.* Ms. DiSibio then turns inward, to express her personal feelings of loss should the Vineyard Wind project harm right whales and push the species toward extinction:

I have kept myself informed about the right whale and its recent slide toward extinction. It pains me to think that there are only about 325 of these incredible marine mammals left in the entire world, and that the Vineyard Wind Project may cause them harm or result in further losses. I feel a responsibility to protect the right whale and the other potentially affected marine species against the damage the Project may bring.

Doc. 88-3 at ¶ 4.

Ms. Oliver, in her declaration, expresses similar connections to the North Atlantic right whale. First, for context, she states that she was born on Nantucket and has resided there her entire life (60 years). Doc 88-2 at ¶ 3. Next, she explains that, from the time she was a child, life on Nantucket centered around whales, and that the cultural history of the island “is defined by the whale.” *Ibid.* Ms. Oliver then states she enjoys the natural environment that Nantucket offers, “especially the rich marine life that defines what Nantucket is and what we want it to be in the future” *Ibid.* As to the right whale, Ms. Oliver writes:

I am awe inspired that so many marine animals, including some that are threatened or endangered, still choose to visit and live in the waters around Nantucket. I love that I have had, and continue to have, opportunities to observe them in their natural habitat. Many of these sea animals, including and especially the North Atlantic right whale, are truly magnificent to behold. *Seeing them, whether from a boat or from the air, is a sacred and metaphysical experience that most people never get the chance to encounter.* It is a sublime connection you have with them, one you have been near them and seen how majestic these animals truly are. It comforts me to know that they are still there, just under the surface, sharing the water with me, even when I am not near them.

Doc. 88-2 at ¶ 3. (Emphasis added.)

Ms. Oliver follows up this statement by expressing her fear that the Vineyard Wind project, as approved, will hasten the right whale’s extirpation.

Additionally, the permissions that have been granted to harm and take a whale is disconcerting. This non-logical action will in all likely hood (sic), drive this species toward extinction. Should the Project result in any harm to North Atlantic right whales, or any other listed species, I will feel that I have failed in my duty to protect them”

Doc 88-2 at ¶ 3.

The declarations proffered by Ms. DiSibio and Ms. Oliver establish that they live in, visit, and share the same maritime ecosystem that has become a refuge for the North Atlantic right whale. The declarations also establish that both women have a deep connection to the right whale and are committed to its preservation not only in the waters around Nantucket, but overall. Ms. DiSibio has declared that she and her family go whale watching off Nantucket – a recreational and aesthetic experience that the project could substantially diminish. The Supreme Court, in *Japan Whaling Ass’n v. Am. Cetacean Soc’y*, 478 U.S. 221, 231 n. 4 (1986) found that whale watchers alleged sufficient injury in fact by asserting that their whale watching activities would be adversely affected by the defendants’ whale harvesting. This is no different. And the Supreme Court has stated that “environmental plaintiffs adequately allege injury in fact when they aver that they use the affected area and are persons for whom the aesthetic and recreational values of the area will be lessened by the challenged activity.” *Friends of the Earth, Inc. v. Laidlaw Envtl. Servs. (TOC), Inc.*, 528 U.S. 167, 183 (2000)

The federal defendants, however, are not satisfied. They complain that neither declarant “provides any specific facts to establish that she has ever seen a right whale, or that she has any concrete plans to attempt to see them in the future.” (Doc. 97 at p. 16.) However, while the “desire to use or observe an animal species, even for purely esthetic purposes,” will confer standing under the ESA (*Lujan*, 504 U.S. at 562-63), a plaintiff does not *forfeit* standing simply because she has not seen the animal in question. This issue was squarely addressed in *National Wildlife Federation*

v. Norton, 386 F.Supp.2d 553, where a conservation group challenged a decision of the U.S. Fish and Wildlife Service (USFWS) to reclassify the gray wolf from “endangered” to “threatened”. *National Wildlife Federation v. Norton*, *supra*, 386 F.Supp.2d at 557. The USFWS argued that because none of plaintiff’s declarants had actually seen a gray wolf, plaintiff lacked standing. The court disagreed: “Even though the Declarants have not actually seen a gray wolf, actual observation of a rare, endangered species is not the test for standing in ESA cases, and therefore, plaintiffs have demonstrated ‘injury in fact’.” *Id.*, at p. 560.

But even if “observation of the animal” were the litmus test for standing to bring claims under the ESA, plaintiffs would pass. Ms. Oliver, in her declaration, discusses her opportunities to observe North Atlantic right whales in their natural habitat; how they are “magnificent to behold”; and that “seeing them” from a boat or from the air, is a “sacred and metaphysical experience.” Doc. 88-2 at ¶3. It is difficult to see how the federal defendants can read these words, in the context in which they were provided, and conclude that Ms. Oliver has not observed a right whale and has no concrete intention to ever observe one in the future. Apparently, however, the federal defendants need Ms. Oliver to say the magic words “I’ve seen a right whale and I have concrete plans in the future to see a right whale again.” To appease federal defendants and eliminate all debate on the matter, Ms. Oliver has proffered a supplemental declaration, attached hereto, which includes the very statement that federal defendants want to hear:

As I explained in my first declaration, dated July 25, 2022 (ECF 88-2), the North Atlantic right whale is embedded in the cultural fabric of Nantucket and is an integral part of my personal environment. *I have seen right whales in the waters around Nantucket, including waters potentially affected by the proposed Vineyard Wind project. And while the number of right whales continues to drop to dangerously low levels and now rests at about 350 individuals, I do have concrete plans to observe right whales in the waters around Nantucket in the future.* I will do so, of course, while maintaining the federally mandated 500 yards of separation between myself and any right whale that I might see.

See Supp. Oliver Decl., ¶4 (emphasis added).³

The injuries sustained, or to be sustained, by Ms. Oliver are not limited to reduced opportunities for observing North Atlantic right whales. As she explains in her supplemental declaration, the Vineyard Wind project has the potential to contribute to the extirpation of the right whale, leading Ms. Oliver to suffer what environmental scientists and psychologists now refer to as “ecological grief”.

According to Ashlee Cunsolo and Neville R. Ellis, who first coined the term in their article “Ecological grief as a mental health response to climate change-related loss” (*Nature Climate Change*, Vol.8, April 2018, pp. 275-281), ecological grief is “the grief felt in relation to experience or anticipated ecological losses, *including the loss of species*, ecosystems and meaningful landscapes due to acute or chronic environmental change.” *Id.*, p. 275.⁴ This phenomenon of ecological grief has recently received significant scientific attention. See, for example, Clark, Timothy (2020) “Ecological grief and anthropocene horror.” *American imago* 77(1), pp. 61-80; Agoston, Csilla, et al. (2022), “The psychological consequences of the ecological crisis: Three new questionnaires to assess eco-anxiety, eco-guilt, and ecological grief,” *Climate Risk*

³ In the event federal defendants or Vineyard Wind object to Ms. Oliver’s supplemental declaration on grounds it was attached to Plaintiffs’ Reply Brief, we would point out that when a plaintiff’s standing is challenged on cross-motions for summary judgment, nothing precludes that plaintiff from submitting evidence of standing in a Reply/Opposition Brief. *Ellis v. Housenger*, 252 F.Supp.3d 800, 812 (N.D. Cal. 2017) [“where . . . the issue of standing is raised in a motion for summary judgment filed by the defendant, the plaintiff, in its opposition, may offer evidence to establish its standing at that time”]. Here, the Plaintiffs’ Reply Brief also serves as their Opposition to the respective cross-motions for summary judgment filed by the federal defendants and Vineyard Wind, both of whom have a future opportunity to respond to the evidence set forth in Ms. Oliver’s supplemental declaration. As a result, neither the federal defendants nor Vineyard Wind is prejudiced.

⁴ A true and correct copy of the Cunsolo and Ellis article can be accessed through the link provided in the Declaration of David P. Hubbard in support of Plaintiffs’ Motion for Summary Judgment (Dec. of D. Hubbard).

Management, Vol. 37; Kent, Suzanne and Keri Vacanti Brondo, “‘Years Ago the Crab was so Plenty’: Anthropology’s Role in Ecological Grieving and Conservation Work,” *Culture, Agriculture, Food and Environment* (2019); Ojala, et al., “Anxiety, Worry and Grief in a Time of Environmental and Climate Crisis: A Narrative Review,” *Annual Review of Environmental Resources* (2021), Vol. 46, pp. 35-58; Cunsolo, et al, “You can never replace the caribou: Inuit Experiences of Ecological Grief from Caribou Declines,” *America Imago*, 77(1), pp. 31-59).⁵ There is general consensus among these experts that mental health degradation stemming from ecological loss is becoming more common and more serious. This sense of loss, and the mental and emotional anguish it causes, tends to be most acute among people who share a landscape or ecosystem with a particular species that was once embedded in the culture but has now disappeared. Cunsolo and Ellis (2018).

In her supplemental declaration, Ms. Oliver describes how the Vineyard Wind project, if it were to cause further loss of right whales, would harm her emotionally and psychologically. (Supp. Dec. of Vallorie Oliver, ¶¶ 2-3.) As Ms. Oliver emphasizes, the whale is central to the place she has called home her entire life, and anything that further reduces the whales’ population or its potential for recovery directly damages her in turn, causing her to experience emotional distress. (*Ibid.*) This is the very definition of “ecological grief” and it constitutes injury in fact, thereby conferring standing on Ms. Oliver and Nantucket Residents Against Turbines to pursue this action under the ESA.

⁵ True and correct copies of these five articles can be accessed through the link provided in the Dec. of D. Hubbard.

2. *Plaintiffs' Have Standing to Pursue NEPA Claims*

Plaintiffs have challenged the Vineyard Wind EIS on grounds that it fails to provide a NEPA-compliant analysis of the project's impacts on (i) North Atlantic right whales, (ii) air quality, and (iii) GHG emissions. The federal defendants raise no "standing" defense to these claims, apparently satisfied that Plaintiffs have established a sufficient injury in fact to prosecute them. (See Doc. 97 at pp. 15-18.) Vineyard Wind, however, contends Plaintiffs have no standing to challenge the EIS's air quality analysis because there is insufficient evidence that the project's air emissions will actually reach Plaintiffs and cause them any harm. (Doc. 100 at pp. 9-12.) The fact that Ms. Oliver resides on Nantucket Island, just 14 miles from the Vineyard Wind WDA, is not enough to convince Vineyard Wind that she might inhale air carrying pollutants from the project. According to Vineyard Wind, Ms. Oliver must hire an air emissions expert to establish injury in fact and causation sufficient to give her standing to sue under NEPA. (Doc. 100 at pp. 10-11.) Vineyard Wind's position is absurd and finds no support in the law.

For example, Vineyard Wind contends that "[d]emonstrating one is actually affected by a specific source of air pollutant emissions requires expert testimony." (Doc. 100 at p. 10.) As authority for this contention, Vineyard Wind cites *Heinrich v. Sweet*, 308 F.3d 48, 61 (1st Cir. 2002), *Jackson v. Johnson & Johnson*, 330 F. Supp. 3d 616, 625 (D. Mass. 2018), and *Pritchard v. Stanley Access Techs., LLC*, 2011 WL 309662, at *5 (D. Mass. Jan. 27, 2011). (Doc. 100 at p. 10.) None of these three cases, however, address Article III standing requirements for a NEPA claim. In fact, none of them involves standing issues at all. All three cases were tort actions where the defendants disputed the plaintiffs' ability to prove causation and, by extension, liability.

Heinrich v. Sweet involved a wrongful death claim against two physicians and the hospital with which they were affiliated. *Heinrich v. Sweet*, *supra*, 308 F.3d at 48. In that case, the court

held that expert testimony was required to establish a causal connection between the treatment prescribed by the doctors and the patient's death. *Heinrich v. Sweet, supra*, 308 F.3d at 61. Thus, *Heinrich* does **not** stand for the proposition that a NEPA plaintiff, to establish standing to challenge an EIS's air quality impact analysis, must demonstrate through expert testimony that he or she will be injured by the project's air emissions.

Jackson v. Johnson & Johnson is inapposite for similar reasons. There, the plaintiff sued the defendant pharmaceutical company alleging physical and emotional damage from ingesting the defendant's antipsychotic medication. *Jackson v. Johnson & Johnson, supra*, 330 F. Supp. 3d at 625. Like *Heinrich*, the *Jackson* case did not involve any defense based on lack of standing. Instead, the defendant pharmaceutical company argued, and the court agreed, that without expert testimony, the plaintiff could not establish causation for purposes of imposing tort liability. *Ibid.* Again, this holding has nothing to do with Article III standing requirements for a NEPA claim.

Pritchard v. Stanley Access Techs., LLC also provides no support for Vineyard Wind's position. That case, like *Heinrich* and *Jackson*, involved personal injury torts grounded in negligence. *Pritchard v. Stanley Access Techs., LLC, supra*, 2011 WL 309662, at *1-2. It did not involve a defense based on lack of standing and did not address claims under NEPA.

Fortunately, we are not without guidance as to the type and extent of evidence needed to satisfy the "causation" element of standing in the NEPA context. In *Hall v. Norton*, 266 F.3d 969, 976-977 (9th Cir. 2001), the 9th Circuit addressed this very issue. The plaintiff in *Hall* sued the United States Bureau of Land Management (BLM) over its decision to exchange lands with a private developer, alleging (among other things) that the Environmental Assessment (EA) for the action provided an inadequate analysis of air quality impacts. *Hall v. Norton, supra*, 266 F.3d at 971-72. BLM moved for summary judgment on grounds that the plaintiff had not satisfied the

“causation” criterion for Article III standing. *Id.*, at pp. 973-74. The district court, finding in favor of BLM, ruled that the plaintiff, in order to establish standing, had to demonstrate a linkage between his alleged injury and air emissions from the specific parcels to be exchanged. *Id.*, at p. 974. The Ninth Circuit reversed, and in so doing articulated a clear distinction between the evidence required to establish standing and that required to demonstrate causation for purposes of tort liability:

The purpose of the standing doctrine is to ensure that the plaintiff has a concrete dispute with the defendant, not that the plaintiff will ultimately prevail against the defendant. ***Thus, Hall need not establish causation with the degree of certainty that would be required of him to succeed on the merits, say, of a tort claim.*** Rather, Hall need only establish “the ‘reasonable probability’ of the challenged action’s threat to [his] concrete interest.”

Id., at pp. 976-77, quoting *Churchill County v. Babbitt*, 150 F.3d 1072, 1078 (9th Cir. 1998) [emphasis added].

Despite this clear statement of the law, Vineyard Wind goes on at length describing the scientific proof Vallorie Oliver and Amy DiSibio would have to submit before standing would be conferred. (Doc. 100 at pp. 10-11.) Vineyard Wind even retained an air modeling expert, Shari Libicki, to opine on the precise types of technical analyses that would be required to determine whether the project’s air emissions would affect people on Nantucket. See Doc. 100 at 10-11; see also Declaration of Shari Libicki in support of Doc. 100 at ¶¶ 33-35. Ironically, Ms. Libicki testimony says more about the inadequacy of the Vineyard Wind EIS than it does about Article III standing requirements.

For example, Ms. Libicki states that “Plaintiffs have not asserted any potential air quality impacts and could not do so by simply reviewing the materials provided in the COP appendix or the Final EIS.” Decl. of Shari Libicki, ¶¶ 33-34; Doc. 100 at 11. Thus, according to Ms. Libicki, the air emissions data set forth in the COP appendix and the Final EIS are insufficient to determine

whether there would be air quality impacts on Nantucket (and, presumably, Martha's Vineyard and mainland towns like New Bedford). Not exactly a ringing endorsement of the EIS's air quality analysis. Then, Ms. Libicki indicates that understanding exposure to air pollutants requires emission "dispersion modeling", which "uses mathematical techniques to simulate the air and chemical processes that affect air pollutants as they disperse and react in the atmosphere." Decl. of Shari Libicki, ¶ 35; Doc. 100 at 11. Ms. Libicki goes on, stating that this modeling requires "[c]omplex data sets . . . including meteorological data (a historical record of wind speed, wind direction, atmospheric stability, temperatures, and other meteorological parameters)" as well as "the location, configuration, and emission patterns of the emissions sources." *Ibid.*

Holy mackerel.

It would have been nice if BOEM and Vineyard Wind had provided this kind of detailed impact information in the EIS, but they did not. Yet Vineyard Wind is now arguing that Vallorie Oliver and Amy DiSibio, to demonstrate standing under NEPA, needed to hire an air quality modeling expert to generate these intensive air emissions data. Ridiculous. Fortunately, the law does not require Plaintiff to meet Vineyard Wind's demands. In her supplemental declaration, Vallorie Oliver confirms that she lives on Nantucket Island and thus shares the same air basin where the project's emissions will be received and felt. Supp. Dec. of Vallorie Oliver, ¶ 12. Ms. Oliver's supplemental declaration also establishes that she routinely visits cities and towns on the Massachusetts mainland, including New Bedford, where the project will be conducting most of its staging operations and generating significant employment, economic growth, and, by extension, air emissions. *Ibid.*

In addition, the evidence shows that the project will emit air pollutants regulated under the CAA. (See BOEM 37829, 37840.) The NAAQS for these criteria pollutants were established to

protect human health. By definition, then, emissions of these pollutants have the potential to harm human health, including Vallorie Oliver's. Therefore, she satisfies both the injury in fact and causation requirements for standing to challenge the Vineyard Wind EIS air quality analysis.

3. Plaintiffs Have Met All Criteria for Standing

As shown above, the Plaintiffs have demonstrated injury in fact for their ESA and NEPA claims. It is also clear that the injuries in question have been or will be caused by the Vineyard Wind project – a project that would not be implemented *but for* federal defendants' adoption of the BiOp (including its Incidental Take Authorization) and the EIS. Thus, Plaintiffs satisfy the "causation" element of standing as well. Lastly, there is no question that this court can redress Plaintiffs' complaints and prevent their injuries by declaring the BiOp and EIS legally inadequate, setting them aside, and halting the Project until they are revamped to comply with federal law. Consequently, Plaintiffs satisfy the third and final standing criterion as well.

B. Plaintiffs Exhausted Their Administrative Remedies

The federal defendants contend that Plaintiffs' 60-day NOI letters criticizing the BiOp failed to apprise NMFS and BOEM of five issues raised in Plaintiffs' Opening Brief: (1) that whales, in response to the project's "soft start" pile driving procedure, would flee "to NMFS Statistical Area 537"; (2) that the BiOp fails to consider the right whale's Potential Biological Removal (PBR) threshold; (3) that the override procedure for pile driving was problematic; (4) that the size of the pile driving clearance zone was insufficient; and (5) that the PAM detection limit was inadequate given the size of the project's Level A noise impact area. (Doc. 97 at p. 9.) For its part, Vineyard Wind alleges Plaintiffs failed to notify BOEM that the EIS included insufficient data on the project's air pollution emissions. (Doc. 100 at pp. 28-29.) A quick review

of Plaintiffs' 60-day NOI letters and EIS comments shows that Plaintiffs adequately alerted NMFS and BOEM to each of these issues.

1. Challenges to Biological Opinions Do Not Require 60-Day Notice

As an initial matter, the law is well-settled that challenges to biological opinions are brought pursuant to the Administrative Procedures Act (the "APA"), *not* the citizen suit provision of the ESA. *Strahan v. Linnon*, 967 F.Supp. 581, 592 (D.Mass. 1997). Therefore, such challenges are not subject to the citizen suit provision's 60-day notice requirement. (*Ibid.*) For this reason, federal defendants cannot now assert that Plaintiffs failed to exhaust their administrative remedies regarding challenges to the adequacy of the Vineyard Wind BiOp. There were no administrative remedies to exhaust. But even if Plaintiffs *were* required to submit a 60-day NOI letter to federal defendants as a prerequisite to challenging the Vineyard Wind BiOp, the Plaintiffs complied. In fact, Plaintiffs submitted three such letters, and together they adequately alerted federal defendants of each ESA issue discussed in Plaintiffs Opening Brief and in this Reply.⁶

2. Potential Impacts from Right Whales Fleeing WDA During Pile Driving

Federal defendants allege that Plaintiffs did not raise the issue of right whales leaving the Vineyard Wind WDA and "fleeing to NMFS Statistical Area 537" in response to the project's "soft start" pile driving procedure. (Doc. 97 at p. 18.) Federal defendants are wrong. In paragraph 36 of its 60-day NOI letter, dated November 27, 2021 (Doc. 97-3), Plaintiffs made the following comment:

The BiOp fails to assess vessel strike risk to right whales and other federally-listed species in the context of the already-crowded shipping lanes in or near the Project Area. In addition, the BiOp assumes that right whales and other federally-listed species will move out of the Project Area as an "avoidance response" to pile drilling noise; however, if this is true, these animals, in their

⁶ The three Notice of Intent to Sue letters are attached as Exhibits B, C, and D to federal defendants cross-motion for summary judgment. Docs 97-2, 97-3, and 97-4.

efforts to swim away from the pile driving noise, will likely enter areas of high vessel traffic, increasing the risk of ship strikes. This impact is not analyzed in the BiOp.

Doc. 97-3, at p. 10 [Comment 36].

Plaintiffs could not have been more clear. They were pointing out to NMFS that the BiOp does not analyze what happens to right whales when the project's pile driving noise forces them out of the WDA into surrounding waters known to have high levels of fishing vessel traffic. As NMFS well knows, the project WDA lies completely within Area 537. (See Doc. 100 at p. 12-15.) Thus, as a simple matter of geography, whales forced to leave the WDA will automatically be "fleeing" to Area 537. Plaintiffs adequately alerted federal defendants of this issue and therefore exhausted their administrative remedies.

3. The North Atlantic Right Whale's PBR Threshold

Federal Defendants' second complaint is that Plaintiffs did not notify them that the BiOp should have discussed the project's impacts in relation to the North Atlantic right whale's Potential Biological Removal (PBR) rate of 0.8. (Doc. 97 at p. 9.) Again, the federal defendants are wrong. While it is true that Plaintiffs' 60-day NOI does not mention the phrase "Potential Biological Removal rate" or use the acronym PBR, the NOI is emphatic that the BiOp fails to adequately assess the project's impacts in relation to the right whale's declining population – a population that is diminishing so fast that extinction of the species could occur within the next 30 years. (NMFS 63323.) Take, for example, the following comment from Plaintiffs November 27, 2021 60-Day NOI letter:

The BiOp's no jeopardy determination fails to account for recent sharp declines in right whale populations. It also fails to account for the extremely low abundance number for the species, which is now less than 350 individuals. Given the low number of right whales and the consistent loss of calf-bearing females, the BiOp should analyze and explain how project-related take of *any* individual could be absorbed without jeopardizing the species as a whole. The

BiOp, however, provides no such analysis or explanation and is therefore deficient as a matter of law.

Doc 97-3 at p. 9, [Comment 28].

The comment's specific reference to "how project-related take of *any* individual could be absorbed without jeopardizing the species as a whole" relates directly to the right whale's PBR threshold. Comment 68 from the NOI letter raises the same issue, but with slightly different language:

The BiOp includes a great deal of data showing that the NARW is in sharp decline, with a total population that will soon fall below 300 individuals (see BiOp, 57), yet the BiOp fails to interrelate these data and the anticipated impacts of the VW project. That is, the BiOp fails to adequately assess the project's impacts, such as vessel strikes and noise and potential reductions in prey species, in the context of the NARW's current struggles to maintain population viability and avoid extinction.

Id., at p. 16.

The only reason Plaintiffs did not use the term "PBR" is that the BiOp never mentions it and Plaintiffs didn't know such a term existed until they began reviewing the various documents in the Administrative Record for this case – i.e., long after they submitted their 60-day NOI letter. But there is no escaping the fact that the comment quoted above adequately notified NMFS that the BiOp's fails to assess whether the species could "absorb" even one project-related take of a right whale individual. Therefore, Plaintiffs exhausted their administrative remedies on this issue.

4. The "Override" Procedure During Pile Driving

Next, the federal defendants assert that Plaintiffs failed to apprise them of concerns regarding the project's "override" procedure, in which the project's lead engineer can veto a pile driving shut-down order issued due to right whales presence in the Level A noise impact area. (Doc. 97 at p. 18.) Plaintiffs' 60-day NOI, however, fully informed NMFS and BOEM that by

allowing the project engineer to override the shut-down order, the BiOp vitiated the protective benefits of having PSOs and PAM operators. The following two comments address this issue:

The mitigation measures described in the BiOp provide a “feasibility” exception to pile driving limitations, under which Vineyard Wind can continue pile driving even in the presence of right whales or other listed species if halting the pile driving work is not feasible. This exception makes the pile driving protections and limitations meaningless, as it gives Vineyard Wind complete discretion as to when and under what circumstances they can be disregarded.

Doc 97-3 at p. 7 [Comment 12].

The mitigation measures described in the BiOp provide a “practicability” exception to pile driving limitations, under which Vineyard Wind can continue pile driving even in the presence of right whales or other listed species if halting the pile driving work is not practicable. This exception makes the pile driving protections and limitations meaningless, as it gives Vineyard Wind complete discretion as to when and under what circumstances they can be disregarded.

Id., at p. 7 [Comment 13].

The “feasibility” and “practicality” exceptions discussed in these comments provide the basis for the project engineer’s authority to “override” a pile-driving shut-down order. Thus, federal defendants cannot claim they were uninformed that Plaintiffs’ objected to the “override” procedure on grounds it undermined protections for the right whale. Defendants *were* informed, and Plaintiffs therefore exhausted their administrative remedies on this issue.

5. *Sufficiency of Clearance Zones*

Next, the federal defendants argue that Plaintiffs never objected to the size or sufficiency of the pile driving clearance zone. (Doc. 97 at p. 18.) Not true. The size of the pile driving clearance zone is directly related to the efficacy of the project’s “detect and avoid” measures for preventing Level A noise impacts on right whales. However, if the size of the clearance zone does

not cover the entire Level A noise impact area, right whales will be exposed to Level A noise, resulting in take. Plaintiffs raised this issue in their 60-day NOI letter:

The BiOp improperly accepts Vineyard Wind's position that the project will result in no Level A harassment of right whales. That position is based on the unproven and unsubstantiated efficiency of Vineyard Wind's proposed "detect & avoid" measures – the very same measures that include a host of exceptions, qualifications, and loopholes.

Doc 97-3 at p. 11 [Comment 38].

This comment adequately apprised federal defendants that the BiOp's "detect and avoid" measures, which include establishing a pre-pile driving "clearance" zone, were insufficient to protect right whales from Level A harassment noise. Thus, Plaintiffs exhausted their administrative remedies on this issue.

6. Passive Acoustic Monitoring (PAM) Detection Limit

Lastly, federal defendants claim that Plaintiffs failed to raise objections to the Passive Acoustic Monitoring (PAM) detection limit. (Doc. 97 at p. 18.) However, this is the same issue as the size of the pre-pile driving clearance zone, because the clearance zone is established and maintained using PAM equipment. As shown above, Plaintiffs alerted federal defendants that the Level A "detect and avoid" measures described in the BiOp – the very measures which set the PAM detection limits – were insufficient to protect right whales from the project's Level A pile driving noise. Consequently, plaintiffs exhausted their administrative remedies on this issue.

7. EIS's Assessment of Project's Air Quality and GHG Impacts

Vineyard Wind argues that Plaintiffs should be disqualified from claiming that key emissions data were redacted from the Vineyard Wind COP appendices, thereby thwarting Plaintiffs ability to comment on the project's air quality impacts. (Doc. 100 at p. 28.) According to Vineyard Wind, Plaintiffs forfeited this issue by not raising it in their comments on the EIS. *Ibid.* Vineyard Wind, however, has missed the point of Plaintiffs argument. Regardless of whether

the air emissions data were redacted or simply omitted from the start, the fact is that the information never made it into the EIS where it belonged. Under NEPA, key impact information, such as how a project's air emissions compare to the NAAQS thresholds, must be set forth in the EIS itself, not in an appendix to a non-NEPA document, such as Vineyard Wind's COP. *Kern v. United States Bureau of Land Management*, 284 F.3d 1062, 1073 (9th Cir. 2002) [EIS impact analysis may not rely on non-NEPA documents].

In their comments on the Draft EIS, Plaintiffs complained that the EIS failed to include project emissions data and also neglected to disclose how the project's emissions compared to the NAAQS thresholds:

Inadequate Analysis and Disclosure of Construction-Related Emissions of NAAQS Pollutants. The DEIS provides only summary information regarding the Project's construction-related emissions. It does not identify each emission source or disclose the quantity of each NAAQS air pollutant that will be emitted (e.g., NO_x, CO, PM₁₀).

(BOEM 78670.)

This statement adequately apprised BOEM that the Draft EIS failed to include important information regarding the project's emission of NAAQS pollutants, which likely explains why BOEM – as the author of the EIS – did not assert a “failure to exhaust” defense to this claim. In short, Plaintiffs did not waive or forfeit this issue.

III. THE VINEYARD WIND BIOLOGICAL OPINION IS LEGALLY INADEQUATE, AND FEDERAL DEFENDANTS ACTED ARBITRARILY AND CAPRICIOUSLY WHEN THEY APPROVED IT

A. Adequacy of BiOp Must Be Based On Project Described in the Approved COP, Not the Project Vineyard Wind Now Claims It Will Implement

1. Number of WTGs to Be Analyzed in BiOp

Vineyard Wind asserts that it will be constructing only 62 WTGs, not the 100 WTGs assumed in the BiOp. (Doc. 100 at p. 20.) For this assertion, Vineyard Wind cites the Declaration

of Rachel Pachter, a company employee. (See VW Separate Statement, pp. 7-8, ¶ 40.) In addition to being outside the record considered by BOEM and NMFS, Ms. Pachter’s declaration is irrelevant because the BOEM-approved COP for the Vineyard Wind project gives Vineyard Wind the ability to install as many as 100 WTGs, without further limitation. Vineyard Wind wanted substantial flexibility in terms of the size, type, and number of WTGs it could install, and BOEM obliged. For this reason, the BiOp includes the following statement:

BOEM’s approval of the COP, with conditions, does not appear to limit the maximum number of WTGs beyond the limits already imposed by the upper bounds of the Project Design Envelope (100 WTGs). While we expect that, with the anticipated commercial availability of a 14 MW turbine, and Vineyard Wind’s consideration of the GE Haliade X (12-14 MW capacity as described by GE), there may be as few as 57 turbines installed, the action that BOEM has requested consultation on remains as the installation of up to 100 WTGs. *Therefore, this consultation considers the effects of installing, operating, and decommissioning up to 100 offshore wind turbine generators (WTGs) of 8 to 14 MW capacity (with higher capacity requiring fewer turbines), and one or two electrical service platforms (ESP), an onshore substation, offshore and onshore cabling, and onshore operations and maintenance facilities.*

(BOEM 77285-86 [Emphasis added].)

But even the 100 WTG figure is not completely accurate. Later in its discussion of “Sources of Increased Underwater Noise,” the BiOp indicates that the COP allows installation of “[u]p to 100 monopile foundations and up to 12 jacket foundation” but that the “total number of foundations installed will not exceed 102.” (BOEM 77425.)

2. *Pile Driving Activity and Noise Impacts*

When Plaintiffs stated that the project’s pile driving activities would create a Level A harassment radius of 7.25 km, Vineyard Wind claimed Plaintiffs were in error. (See Doc. 100 at p. 24, n. 9.) The record shows, however, that Plaintiffs were correct, because the BiOp itself states that the Level A noise impact area has a radius of 7.25 km. (BOEM 77442.). Likewise, Vineyard Wind is wrong to suggest that the pile driving activity will take only 62 days. (Doc. 100 at pp. 19-

20.) The BiOp expressly states that 102 WTGs will require 102 days of pile driving. (BOEM 77425.)

Vineyard Wind also suggests that its “bubble curtain” noise mitigation technique should be credited with 12 dB of noise attenuation. (Doc. 100 at p. 20.) Vineyard Wind made this same pitch to NMFS during consultation, but NMFS rejected it on grounds that the data did not support 12 dB of attenuation and that 6 dB was a more realistic figure. (BOEM 77448.) For this reason, the BiOp appropriately credits the bubble curtain with 6 dB of noise reduction. (*Ibid.*)

Next, Vineyard Wind wants the Court to disregard the BiOp’s discussion of pile driving noise under the Maximum Design scenario with two piles driven per day. (Doc. 100 at p. 20.) This particular scenario would expose 1.39 right whales to Level A harassment noise (BOEM 77445 [Table 7.1.12], 77450 [Table 7.1.16]), resulting in a take. Vineyard Wind claims that this scenario is “unrealistic”. (Doc. 100 at p. 20.) The problem with that argument, however, is that the COP, at Vineyard Wind’s request, approved this scenario as a construction option (BOEM 77426); and Vineyard Wind has never withdrawn it. Therefore, it was appropriate for the BiOp to include this scenario in its underwater noise analysis. (See BOEM 77426.)

B. The BiOp Fails to Use “Best Available” Scientific Data to Determine Baseline Conditions for Jeopardy Analysis

1. The Quintana-Rizzo Study (2021)

In their Opening Brief, Plaintiffs discussed in detail a 2021 study by whale experts, including NMFS biologists from Woods Hole, titled “Residency, demographics, and movement patterns of North Atlantic right whales *Eubalaena glacialis* in an offshore wind energy development area in southern New England” (Quintana-Rizzo et al. 2021). (NMFS 53318-53335.) See Doc 89 at 25-28. This study represents the most recent and comprehensive assessment of right whale population and movement trends so far produced; it is also the *only*

study that analyzes right whales in relation to the Rhode Island/Massachusetts Wind Energy Area (WEA) and the proposed industrial-scale wind farms within it, including the Vineyard Wind Project. In a word, the Quintana-Rizzo (2021) study is the quintessence of the “best available scientific and commercial data”, as that term is used in the ESA.

Plaintiffs pointed out, however, that the BiOp barely mentions the Quintana-Rizzo study and never engages with its specific findings. Doc 89 at 28. The federal defendants argue that the BiOp *did* consider the Quintana-Rizzo study and that no material information was withheld. Doc 97 at 22, n. 11. A quick comparison of the two documents proves otherwise.

For example, the Quintana-Rizzo study connects recent shifts in right whale distribution and foraging behavior to the potential impacts of placing commercial offshore wind projects in precisely the area that whales now rely on for survival:

Since SNE [southern New England] 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).

(NMFS 53319.)

Nowhere does the BiOp make a statement anything like this. The federal defendants respond to this omission by stating “[t]he fact that right whales *may* utilize the [Vineyard Wind] Action Area as a feeding and/or stopover site is not in dispute.” (Doc. 97 at pp. 22-23 [emphasis added].) This takes euphemism to a whole new level. It also mutes the importance of the Vineyard Wind WDA – and the RI/MA WEA as a whole – to right whale survival and recovery.

The Quintana-Rizzo study then describes some of the impacts of large-scale offshore wind projects (habitat changes, water column stratification, increased vessel noise, increased vessel traffic and risk of collisions with whales) and states: “Collectively, these perturbations could

affect the use of this region by right whales as well as influence their migratory movement throughout the mid-Atlantic region (Schick et al. 2009).” (NMFS 53320.) The BiOp does not mention this part of the Quintana-Rizzo study; nor does it independently assess the extent to which “perturbations” associated with offshore wind development will affect right whale use of the RI/MA WEA and/or influence right whale migration throughout the mid-Atlantic.

Next, the Quintana-Rizzo study indicates that its research team identified 327 unique right whales in the RI/MA WEA, which represents **87 percent** of the species’ total population. (NMFS 53324 [emphasis added].) In other words, the RI/MA WEA is not just a seasonal waystation for a few right whales on their yearly migrations. It is a critical feeding area for the vast majority of right whales remaining on this earth. The BiOp, however, never cites this portion of the Quintana-Rizzo study and never discloses that 87 percent of all known right whales use the RI/MA WEA.

The Quintana-Rizzo study also determined that at least 16 of the 327 whales observed by the research team had died as of December 2020. (NMFS 53324.) That is a huge loss for a species with such low abundance numbers. Yet, NMFS ignores this information and omits it from the BiOp’s “baseline conditions” discussion.

One of the other major findings of the Quintana-Rizzo study is that “sighting rates” of right whales, while highest from winter through early spring, were also high during the summer months, especially August. (NMFS 53329.) This data runs counter to the conventional wisdom that right whales are largely absent from Massachusetts waters during summer and fall. In fact, many of the measures that are designed to protect right whales – including those incorporated into the Vineyard Wind BiOp – assume that right whales pass through these waters during the winter and spring and are gone by June, not to reappear until November. (BOEM 77311-12, 77314, 77457.) The Quintana-Rizzo study upends that long-standing assumption, stating that “the

presence of right whales in the SNE during all seasons is an important consideration for the planning and execution of offshore wind development.” (NMFS 53331.) The study then amplifies this point: “[I]ncreasing summer and fall presence deserves special attention since this will overlap with the current schedule for pile driving for turbine foundations in the next few years, the phase of construction considered to have the greatest impact.” (NMFS 53331.) The BiOp, however, ignores this admonition and relies on old-school mitigation measures that assume “seasonal” use of the WDA by right whales. (BOEM 77457.)

Finally, the Quintana-Rizzo study expressly identifies the Vineyard Wind WDA as a right whale “hotspot”, due to high numbers of right whale sightings in that area during Spring 2011-2015 and Spring 2017-2019. (NMFS 53321-22, 53326 [Fig. 5 (Hotspot Analysis)].) The BiOp does not discuss these data or identify the Vineyard Wind WDA as a right whale “hotspot”. Nor does the BiOp evaluate how building and operating a large-scale commercial wind project in such a hotspot might affect right whale survivability and recovery.

In short, it is not enough to cite the Quintana-Rizzo study, which the BiOp does very sparingly. Nor is it enough to just “consider” the data from that study. Rather, the ESA requires that NMFS actually *use* the Quintana-Rizzo study and allow it to inform the BiOp’s assessment of the project’s potential to jeopardize the species. 50 C.F.R. § 402.14(g). That did not happen, and for that reason the BiOp is legally deficient.

2. *The Atlantic Large Whale Take Reduction Team Key Outcomes Memorandum*

The Atlantic Large Whale Take Reduction Team (TRT) Key Outcomes Memorandum is important because it found that recent shifts in right whale feeding patterns could bring the whales into potential conflict with commercial fishing operations in NMFS Statistical Area 537. (BOEM 194539.) The Vineyard Wind WDA lies within Area 537, and according to the BiOp, Area 537

has “approximately 987 to 2,650 vertical [buoy] lines” in the water at any one time, depending on the month. (BOEM 77580.) The greatest number of these vertical buoy lines (approximately 1,717 to 2,650) are fixed into place during the months of May through October – which coincides with the period when Vineyard Wind plans to conduct pile driving for the project. (See BOEM 77580; see also 77306, 77311-13.)

The BiOp does not take the cues provided by the TRT Key Outcomes Memorandum and thus does not analyze whether the extensive use of fixed fishing gear (i.e., vertical buoy ropes) in Area 537 poses risks to whales pushed out of the WDA during the project’s pile driving operations. Instead, the BiOp discusses the 987 to 2,650 vertical buoy lines only in the context of the project’s surveys to assess lobster, crab and black sea bass resources. (See BOEM 77578-77581.) What makes this omission especially frustrating is that the biologists at NMFS – as the chief federal regulators of commercial fishing in the Outer Continental Shelf – *know* where these 987 to 2,659 vertical buoy lines are concentrated, just as they *know* the travel routes of the fishing vessels that set and retrieve these buoy lines. Yet, the BiOp makes no effort to *use* these commercial fishing data from Area 537 for purposes of analyzing whether the project, through pile driving, will force whales into areas with high concentrations of fishing gear and high levels of vessel use. For this reason alone, the BiOp is legally deficient.

3. *The North Atlantic Right Whale Consortium’s “2020 Annual Report Card” and the NOAA “US Atlantic and Gulf of Mexico Marine Mammal Stock Assessment 2020”*

The North Atlantic Right Whale Consortium’s “2020 Annual Report Card” and NOAA’s “US Atlantic and Gulf of Mexico Marine Mammal Stock Assessment 2020” are important because they provide the best and latest information on two critical aspects of right whale population trends. The 2020 Annual Report Card found that the calving interval for right whales is now 7.6 years, more than twice what it was just ten years earlier. (BOEM 208682 [Table 2].) It also determined

that in 2020, “detected mortalities outnumbered births 3:2.” (BOEM 208678.) NOAA’s “Stock Assessment”, issued in July 2021, confirms that right whales have now shifted location and have been seen “in large numbers in a region south of Martha’s Vineyard and Nantucket Islands, an area outside of the Northeastern U.S. Foraging Area Critical Habitat.” (NMFS 33671.) It then concludes that the Potential Biological Removal (PBR) threshold for the right whale has dropped to 0.8 and that, consequently, “human-caused mortality or serious injury for this stock must be considered significant.” (NMFS 33684.)

The BiOp does not discuss the “2020 Report Card” or the “2020 Stock Assessment”. It does not disclose that in 2020 detected mortalities outnumbered births 3:2, or that the right whale’s PBR had fallen to 0.8. And it certainly does not consider these data in light of the right whale’s shift in location (towards the region south of Martha’s Vineyard and Nantucket), on one hand, and the Vineyard Wind project’s impacts, on the other. It is not enough to say, as federal defendants do, that the BiOp discloses the recent population declines of the right whale. (Doc. 97 at p. 27.) The ESA demands that the BiOp *use* the most recent population data to assess whether the action under review (here, the Vineyard Wind project) will put further stress on that population, affecting the species’ survivability and recovery. See 50 C.F.R. § 402.14(g). The BiOp fails in this basic task.

4. The PAMGuard Quality Assurance Module for Marine Mammal Detection Using Passive Acoustic Monitoring (August 2020)

On October 4, 2022, counsel for Plaintiffs located a study that evaluates the limitations of passive acoustic monitoring (PAM) systems when used to detect marine mammals in the regulatory context. (Dec. David P. Hubbard in Support of Plaintiffs’ MSJ, ¶12.) The study is titled “PAMGuard Quality Assurance Module for Marine Mammal Detection Using Passive Acoustic Monitoring.” (*Ibid.*) It was published in August 2020 and prepared by CSA Ocean Sciences, Inc.,

with assistance from scientists at the University of St. Andrews (Scotland) and the Scripps Institution of Oceanography, University of California, San Diego. (*Ibid.*) The primary author of the study is Mary Jo Barkaszi of CSA Ocean Sciences, Inc. (*Ibid.*)

The Administrative Record indices provided by NMFS and BOEM do not include the PAMGuard Quality Assurance Study, though the NMFS index does contain a different study by Mary Jo Barkaszi published in 2012. (NMFS 6067-6116.) This indicates that NMFS was aware of Ms. Barkaszi's work and credentials in the area of underwater acoustics. The BiOp also makes no mention of the PAMGuard Quality Assurance Study (henceforth, "Barkaszi, et al. (2020)").⁷

The importance of the Barkaszi, et al. (2020) study to the issues covered in the Vineyard Wind BiOp cannot be overstated. Specifically, the study discloses that PAM systems have significant limitations when it comes to detecting marine mammals, especially baleen whales like the North Atlantic right whale, which tend to vocalize much less frequently than other cetaceans. The study explains that PAM systems may have a significant "miss rate" when it comes to detecting marine mammals, even those that vocalize many times an hour. Below are some of the key findings from the study:

- "The efficacy of a towed passive acoustic monitoring (PAM) system depends on multiple factors, including the system's ability to detect weak signals that may be masked by background sound levels, present detection events to an operator, an operator's ability to stay attentive and interpret these results, and an operator's judgment when making a final decision on the validity of an acoustic encounter."

(Exec. Sum.)

⁷ A link to the Barkaszi, et al. (2020) study is provided in the Declaration of David Hubbard in Support of Plaintiffs' Motion for Summary Judgment.

- “PAM systems used for either real-time mitigation (i.e., commercial PAM systems) or research monitoring purposes are not routinely accompanied by a standard procedure for predicting detection performance or evaluating the real-time performance of either a human PAM operator or an automated algorithm.” (Exec. Sum.)
- “Ideally, a system is able to detect and localize animals to the edge of a defined mitigation zone. If, however, a system is not able to detect animals, it may be difficult to determine whether that was due to a genuine absence of animals or missed acoustic detections.” (Exec. Sum.)
- “In the absence of detections, no method currently exists for establishing the ‘miss rate’ of a PAM system in real-time, and establishing whether a planned or continuing operation can be reasonably expected to be able to detect marine mammal signals of interest.” (Exec. Sum.)

The Barkaszi, et al. (2020) study explains that while use of PAM systems for regulatory and mitigation purposes continues to increase, there is a general misperception about how efficient PAM systems are for detecting marine mammals: “[T]here is an implied presumption that animal vocalizations will be consistently detected regardless of operator abilities or background noise conditions encountered, as there is no assessment or reporting required of either noise levels or detection efficiency of the operator or automated detector (Barkaszi and Kelly, 2018; Ludwig, et al. 2016; Verfuss et al, 2018).” (Barkaszi, et al. (2020), Introduction.) The study then clarifies that this “implied presumption” of detection efficiency is misplaced: “In reality, for both visual and acoustic monitoring, detection performance at a given distance can be highly variable, as can the response time for mitigation actions. For acoustic monitoring, the frequency, amplitude,

directionality, and repetition rate of the source calls, as well as the continually changing background noise levels, will affect the ability to detect signals generated within a monitoring zone (Andriolo et al., 2018; Clausen et al., 2019; Parks et al., 2009; Clausen et al., 2019; Parks et al., 2009; Thode and Guan, 2019; Van Parijs et al. (2009).” (Barkaszi, et al. (2020), Introduction.)

Moreover, the study discloses that PAM systems will have difficulty detecting marine mammals that vocalize on an infrequent basis, such as baleen whales, In fact, even a “signal injector” (SI), which the authors developed to test whether a PAM system is performing as intended, will not produce actionable results if the animals in question are not vocalizing:

The SI tests the ability of the system to detect animals *should they vocalize*. For example, some species of baleen whales may only vocalize rarely or at a certain time of year. Should the SI be instructed to inject 50 sequences of baleen whale calls at varying distances, it will inject 50 sequences. This can show whether or not the PAM system is working, but if animals are not vocalizing (and will not produce any sequence of calls, let alone 50), they will not be detected in a real survey situation.

(Barkaszi, et al. (2020), Section 2.1.1.3.) (Emphasis in the original.)

What this means is that even with the Sequence Injector (SI) tool that Barkaszi et al. have developed, expert technicians cannot accurately test a PAM system’s performance efficiency if the animals in question do not vocalize often enough to generate a discernable sequence of calls. Baleen whales, including right whales, do not vocalize very often, which means they are difficult for PAM systems to detect, even when those systems are working properly.

Given that so much of NMFS’s “no jeopardy” determination is based on the efficient use of PAM to detect right whales so that immediate evasive/avoidance action can be taken to protect them from project-related harm, the Barkaszi, et al. (2020) study should have been discussed at length in the BiOp. Unfortunately, the BiOp does not mention the Barkaszi, et al. (2020) study at all; nor does the BiOp examine any other literature which addresses the real-world and real-time limitations of the very PAM systems on which the Vineyard Wind mitigation plan is based. By

failing to consult, disclose, and discuss the Barkaszi, et al. (2020) study, the BiOp violated its duty to use the “best available scientific and commercial date”.

5. *The Stober and Thomsen Study re Operational Noise Impacts of Large Offshore Wind Arrays*

In their Opening Brief, Plaintiffs showed that the BiOp largely ignored a very recent study published by Uwe Stober and Frank Thomsen that examined the underwater noise implications of operating large wind turbines (i.e., those capable of generating more than 10 megawatts (MW)) at industrial-scale wind farms. (Plaintiffs Opn.Br., pp. 23-25, 39, citing Stober, Uwe and Frank Thomsen (2021) “How could operational underwater sound from future offshore wind turbines impact marine life?” at NMFS 57132-36.)

Given that Vineyard Wind intends to install and operate WTGs with a power capacity of 14 MW, the Stober study is not only relevant; it addresses a potential operational impact of the project that has received little scientific attention. Rather than actively engage with the Stober study, the BiOp waves it away, claiming the authors themselves were uncertain of their methodology. (BOEM 77432; Doc. 100, at 21-22.) Vineyard Wind contends that the BiOp also rejected the Stober study because it only assessed gearbox-driven turbines, not the quieter “direct-drive” turbines Vineyard Wind plans to install. Doc. 100 at 22. This is incorrect. The Stober study *does* account for direct-drive turbines and determined that “[i]f the sound reduction for new direct drive turbines of 10 dB is representative for all wind turbines and nominal powers, the 10 MW example with direct drive would be expected to cause behavioral disruption up to 1.4 km and 120 m for the 5 MW turbine.” (NMFS 57135.) Even the BiOp acknowledged that the Stober study addressed noise from direct-drive turbines: “Using this methodology, and considering the lower sound levels measured at projects with direct drive turbines (e.g., Elliot et al. 2019) compared to WTGs with gearboxes, they predicted that a 10 MW direct-drive WTG would produce underwater

noise above the 120 dB re 1uPa RMS at a distance of up to 1.4 km from the turbine.” (BOEM 77432.)⁸ Rather than use the Stober study, the BiOp relies on operational noise data from the Block Island Wind Farm (BIWF), which has just 5 WTGs, each with a power capacity of only 6 MW. (BOEM 77432, 77464; NMFS 27989, 27993, 28061.)

There is no support for the BiOp’s position that the Stober study used uncertain methods. Nor is there support for the BiOp’s reliance on the BIWF noise data. The BIWF turbines are simply too small and too few in number to provide a meaningful comparison with the much larger and more numerous Vineyard Wind turbines. The Stober study, on the other hand, clearly states that even direct-drive wind turbines, when they reach 10 MW capacity and are concentrated in large numbers within a wind array, can generate underwater noise that is capable of adversely affecting baleen whales. (NMFS 57132, 57135.) In failing to engage with this study, NMFS not only abrogated its duty to use the best available scientific data, it failed to give the benefit of the doubt to the species, as the ESA requires. *Conner v. Burford*, 848 F.2d 1441, 1454 (9th Cir. 1988).

C. Evidence Does Not Support BiOp’s Conclusion That Mitigation Measures Will Prevent Jeopardy to Right Whales from Vessel Strikes

Mitigation measures supporting a BiOp’s no jeopardy finding must be “certain to occur”, “capable of implementation”, and “most important, they must address the threats to the species in a way that satisfies the jeopardy and adverse modification standards.” *Center for Biological Diversity v. Salazar*, 804 F.Supp.2d 987, 1001, (D. Ariz. 2011). Here, the BiOp’s mitigation measures for preventing project-related vessel strikes on right whales do not meet this test. They

⁸ The BiOp mentions that Stober agrees operational wind turbine noise is less than shipping noise (BOEM 77432), which is true (NMFS 57134), but Stober is equally clear that shipping noise is intermittent while turbine noise is constant and “well above typical background noise levels... . (*Ibid.*)

are facially inadequate and will expose whales to such strikes, adversely affecting both their survivability and recovery.⁹

Whales struck by vessels traveling in excess of 10 knots per hour have a high likelihood of sustaining serious injury or being killed. (BOEM 77519, 77524; BOEM 129897, 129902.) When the speed of the vessel approaches 15 knots, research shows that a collision will be fatal to the whale 100 percent of the time. (BOEM 129897, 129902.) The IHA and BiOp for Vineyard Wind, however, do not require all project vessels to maintain speeds of 10 knots or less at all times. Instead, the IHA and BiOp provide two huge exceptions to the 10-knot speed limit.

First, all of the project's vessels, of whatever type and size, can travel in excess of 10 knots – indeed, can travel however fast their captains wish to go – when transiting through Nantucket Sound, an area of approximately 760 square miles that lies between the Vineyard Wind WDA and mainland Massachusetts. (BOEM 34732.)

Second, the project's crew transfer vessels may also disregard the 10-knot speed limit, no matter where they are traveling. (BOEM 77304, 77525.) The BiOp does not disclose how large or fast the crew transfer vessels will be, but according to the EIS, such vessels will average 90 feet in length and travel at 25 knots per hour (BOEM 34861) – well over the speed at which a collision with a right whale will be fatal 100 percent of the time (15 knots). The EIS also discloses that the vast majority of project-related vessel trips will be made by crew transfer vessels. (BOEM 34746, 34861.)

⁹ The mitigation measures for avoiding vessel strikes and protecting right whales from Level A pile driving noise, as set forth in the IHA and the BiOp, are considered *part* of the project itself. (See, e.g., BOEM 77628.) As such, they are integral to, and form part of, the BiOp's "no jeopardy" determination. They are not "reasonable and prudent measures" imposed after the BiOp's "no jeopardy" determination, as Vineyard Wind suggests in its brief. (See Doc. 100 at pp. 18-19.)

Neither the federal defendants nor Vineyard Wind have a satisfactory response to this regulatory anomaly. They cannot explain how these two exceptions to the 10-knot speed limit will not increase vessel strike risk and jeopardize the right whale. The federal defendants provide only a *logistical* – not a *biological* – rationale for exempting crew transfer vessels from the 10-knot speed limit. They say that if crew transfer vessels kept to 10 knots, crew members would spend 9-10 hours of each day transiting back and forth between staging ports (e.g., New Bedford) and the WDA, leaving little time for work. (Doc. 97 at pp. 40-41.) While this may be true, it does not change the fact that crew transfer vessels, if allowed to travel at 10 knots or more, pose a significant collision risk to North Atlantic right whales – a risk not analyzed, disclosed, or authorized in the IHA or the BiOp.¹⁰

Federal defendants and Vineyard Wind contend that the collision risk posed by vessels traveling in excess of 10 knots will be adequately mitigated by placing at least one Protected Species Observer (PSO) on each boat/ship. (Doc. 97 at p. 32; Doc. 100 at pp. 23-24.) The PSO's task is to scan the water's surface while the vessel is traveling, looking for signs of right whales. If the PSO sees a whale, he or she must alert the captain who can then take evasive action to avoid colliding with the whale. As Plaintiffs explained in their Opening Brief, however, PSOs on boats cannot detect whales that are more than 1,000 meters away, even with good visibility conditions (i.e., no fog, plenty of light, calm seas). (BOEM 77524-25.) In addition, they cannot detect whales beneath the water, and research shows that even when whales are swimming as deep as 30 feet below the surface, they can be pulled into the draft of a vessel's hull and propeller. (NMFS 6117.)

¹⁰ Furthermore, this logistical problem is not insoluble. Vineyard Wind can provide ships with cabin at the WDA so that crew members can stay at the project site overnight and for multiple days. This would have the added benefit of reducing the total number of vessel trips, which in turn would protect whales.

Plaintiffs also pointed out that neither the IHA nor the BiOp prevents Vineyard Wind from operating its vessels – including high-speed crew transfer vessels – at night or during the dark pre-dawn hours of the morning. Doc. 89 at 44. PSOs will be of little use under such conditions. Vineyard Wind, however, argues that the PSOs could be outfitted with night vision goggles. (Doc. 100 at p. 24.) But there is no evidence in the record that night vision goggles would be helpful in this particular application, given their limitations as to distance and resolution. And there is still the problem of whales going unseen beneath the water’s surface. Not even night goggles will fix that.

We are told, however, that any whales that slip by the PSOs will be picked up by Passive Acoustic Monitoring (PAM) equipment. (Doc. 97 at p. 38-39; Doc. 100 at pp. 24-27.) This position finds no support in logic or the record. **First**, the BiOp does not require that the project’s vessels be kitted with PAM systems. **Second**, the transit routes the vessels will use have not been definitively established as to location and width, and they will likely fluctuate over the course of the project’s construction period and operational life. The BiOp does not explain how PAM equipment will be deployed to provide coverage for such route changes. **Third**, the transit routes themselves are long – 55 miles one way between New Bedford and more than 400 miles one way between the WDA and the selected ports in Canada. (BOEM 77294.) The BiOp does not discuss how PAM equipment will be deployed to provide coverage over such huge areas. **Fourth**, PAM only works as a detection tool if and when whales are actively vocalizing, and if the vocalizations are not masked by other noise sources, such as vessel traffic. (Barkaszi, et al. (2020).) Whales that are *not* actively vocalizing, or whales whose calls are drowned out by other ambient noise, will evade PAM. (*Ibid.*)

Given that the whales and the crew transfer vessels will be moving in a dynamic relation to one another, at different speeds and at different vectors, and given that right whales have a notoriously low “call frequency”, it is unlikely that the PAM system – even if robust enough to provide coverage of the entire transit corridor – will detect every right whale that may come in contact with a project vessel. In fact, the PAM “miss rate” can be significant and leave many whales undetected. (Barkaszi, et al. (2020).)

So, in the end, the BiOp allows the vast majority of the project’s vessels (i.e., crew transfer vessels) to travel at speeds well over 10 knots (i.e., 25 knots) throughout most of project’s defined Action Area, and the only thing preventing these vessels from potentially striking and injuring/killing a right whale are (1) PSOs who cannot see at distance, in the dark, or underwater, and (2) PAM equipment which will not be deployed to provide full coverage of the project’s vessel routes and which cannot detect whales unless they are actively vocalizing loud enough to be detected over other noise in the water. Based on these facts, there is no way to square the BiOp’s conclusion that the project poses no vessel strike threat to right whales and thus no jeopardy to the species.

D. Evidence Does Not Support BiOp’s Conclusion That Project Mitigation Measures Will Prevent Jeopardy to Right Whales from Pile Driving Noise

1. Proposed “Soft Start” Procedure is Unproven and Constitutes Intentional Harassment and Take

Vineyard Wind intends to use a so-called “soft start” procedure to push whales out of the project’s pile driving noise impact area. (BOEM 77458.) Under this procedure, the lead engineer will order pile driving to commence but only at power levels capable of generating Level B harassment noise, as this is expected to annoy the whales sufficiently to force them to swim away from the project site. (*Ibid.*) Once the whales are cleared through this procedure, the lead engineer

can order full-throttle pile driving – i.e., pile driving that generates Level A harassment noise. (*Ibid.*)

Theoretically, the soft start procedure enables Vineyard Wind to “clear” the pile driving noise impact area of all right whales whenever Vineyard Wind decides it wants to start installing the WTGs. Put differently, the soft start allows Vineyard Wind engineers – not the whales – to control when pile driving takes place; they don’t have to wait for the whales to leave on their own volition.

The record contains no evidence that the soft start procedure has been used successfully in the past to encourage right whales, or any other cetacean, to leave an area where pile driving or some other project-related noise event will take place. It may work; it may not. And, if the “soft start” procedure fails and right whales decide to stay in the Level A noise contour – i.e., within 7.5 km of the pile driving site – the PAM equipment may not even detect them, since PAM coverage during the summer and fall only extends 5 km from the pile driving site and will only pick up actively vocalizing whales. (BOEM 77453, 77457.) This would lead to a Level A harassment take of right whales.

Even assuming the soft start procedure works as planned, it is a form of purposeful harassment or hazing not authorized under the Marine Mammal Protection Act (MMPA) or the ESA. The federal defendants contend that the soft start procedure is not “intentional” but simply a by-product of normal pile driving ramp-up. (Doc. 97 at p. 36.) The BiOp, however, describes it differently and clearly discusses the soft start procedure as a measure for ensuring right whales are removed from the pile driving noise impact area before full-power pile driving starts. (BOEM 77458 [“soft start procedure is designed to provide a warning to marine mammals or provide them with a chance to leave the area prior to the hammer operating at full capacity.”].)

Vineyard Wind acknowledges that the soft start process is intentional but claims that it is still “incidental” to a lawful activity (development of an offshore wind farm) and thus permissible under the MMPA and ESA. (Doc. 100 at pp. 22-23.) Thus, according to Vineyard Wind, hazing of endangered species – no matter how intentional, aggressive, or harmful – qualifies as *incidental take* under the MMPA and ESA as long as it is connected to a larger, legally-sanctioned action. Following this logic, then, Vineyard Wind could use high-speed boats to chase right whales out of the pile driving impact area. But there is not legal support for this. Neither the federal defendants nor Vineyard Wind have cited any statute, regulation, or case demonstrating that *intentional* hazing of an endangered species can be authorized pursuant to an *incidental take* permit under the MMPA and ESA. For this reason, the entire soft start procedure is unlawful.

2. *The Project’s Right Whale “Detection” Measures Are Flawed*

To protect right whales from Level A pile driving noise, the Vineyard Wind project will use PAM to implement three right whale “detection” zones – one for monitoring, one for pre-pile driving “clearance”, and one for pile driving “shut-down”. For example, between June 1 and October 31 – the period when most pile driving is expected to occur – Vineyard Wind must establish a right whale monitoring zone extending 5 km from the pile driving site. (BOEM 77312, 77319.) Within that 5 km area, Vineyard Wind must implement pre-pile driving clearance activities, such as “soft start” hammer drops, to push right whales out and beyond the 5 km boundary. (*Id.*) Note also that the 5 km PAM clearance zone only applies to monopile foundations; the clearance zone for jacket foundations is only 3.2 km. (*Id.*) When “clearance” is achieved, full-power pile driving can commence.

Once pile driving starts, however, the situation changes. Regardless of whether a right whale is detected within the 5 km monitoring zone, no order to shutdown pile driving will be

issued unless that whale comes within 3.2 km of the pile driving site, regardless of the type of WTG foundation (monopile or jacket) being installed. (BOEM 77312, 77319.)

Simple arithmetic shows that these PAM zones – whether for monitoring, clearance, or shutdown – will be insufficient for protecting right whales from the project’s Level A pile driving noise. This is because noise modeling indicates that the project’s Level A noise impact area extends 7.25 km (BOEM 77442) – well beyond the limits of the required zones for monitoring (5km), clearance (5 km/3.2 km), and shutdown (3.2 km). This means that a right whale could be swimming within a large portion of the project’s Level A noise contour (7.25 km) but would not be detected during pre-pile driving *monitoring*; would not be detected during pre-pile driving *clearance* activity; and would not trigger pile driving *shutdown*. Consequently, such a whale would be exposed to Level A pile driving noise, resulting in take and potential jeopardy. The BiOp never discusses this highly-probable scenario.

And, of course, the entire “detect and avoid” program assumes that all right whales that might swim into the monitoring, clearance, and shutdown zones are actively vocalizing and thus capable of being picked up by the PAM equipment. That is a huge and unfounded assumption, given that right whales, like many baleen whales, exhibit a low “call frequency” and often go long periods of time without vocalizing at all. (Barkaszi, et al. (2020).) This is especially true of mother and calf pairs. (NMFS 77464.) Strangely, the BiOp provides no information on right whale call frequency; nor does it examine whether the whale’s low vocalization rate might affect the PAM system’s ability to detect right whales during real-time pile driving events. This alone is a major defect in the BiOp.

According to the BiOp, the solution to the PAM detection problem is the project’s PSO (Protected Species Observer) program, where trained personnel will visually scan the pile driving

area looking for evidence of right whales. The theory is that any whale that slips past the PAM equipment will be detected by the PSOs. PSOs, however, cannot see very far (only about 1.5 km), cannot see in poor light or fog, and cannot see but a few feet under the water's surface. Thus, the chances that a PSO will see *all* right whales that avoid detection by PAM is virtually nil.

This is not to say that PAM and PSOs are not helpful or worthwhile, only that they are insufficient, even when working together, to ensure that all right whales are absent – and stay absent – from the Level A noise impact area during each pile driving event. The PAM equipment, the PAM operator, and the PSOs would have to throw a no-hitter, every day, for 102 days. And that's simply not possible given the inherent limitations of both PAM and PSOs. They do not adequately fill each other gaps; those gaps will always exist; and quiet whales, swimming beneath the water's surface, will find those gaps, go through them, and suffer damage.

The BiOp's other response to concerns about the efficacy of the "detect and avoid" mitigation measures is that pile driving activity will take place during the summer and fall when right whales are less likely to be present in the WDA. (BOEM 77306, 77311-13.) However, recent studies confirm that right whales have shifted their movement and feeding patterns and are now present year-round in the waters south of Martha's Vineyard and Nantucket. According to the Quintana-Rizzo (2021) surveys, August 2019 was one of the busiest months in the RI/MA WEA in terms of right whale presence. (NMFS 53329.) For this reason, the BiOp cannot rely on right whales leaving the WDA during the summer/fall migratory season as they did in the past. All that has changed. The BiOp simply hasn't adjusted to the new right whale conditions off the coast of Massachusetts.

3. Shutdown “Override” Undermines Noise Protections

Even if a PSO or PAM operator detects a right whale and orders a shutdown of pile driving until the whale leaves the “shutdown zone”, the whale is still not safe, because Vineyard Wind’s lead engineer can “override” the shutdown order if, in his or her opinion, the pile driving must continue to protect human safety or the integrity of the pile itself. (BOEM 77314, 77454.) The federal defendants argue that the “override” is nothing to worry about because the lead engineer’s discretion is not unfettered. (Doc. 97 at p. 37.) He or she must follow certain “procedures” before overriding the shutdown and continuing the pile driving effort. (*Ibid.*) According to federal defendants, “the Federal Register notice approving the IHA [Incidental Harassment Authorization] explains in detail the applicable procedure for determining when shutdown is not practicable for human safety or operational concerns. NMFS 3345.” (*Ibid.*)

Federal defendants’ argument fails for at least two reasons. First, the shutdown override “procedures” are not described or defined in the BiOp. That they can be found in the “Federal Register notice approving the IHA” is immaterial to whether the BiOp, as a stand-alone ESA document, is adequate. Second, a quick review of the Federal Register notice in question reveals that the procedures hardly impinge on the lead engineer’s discretion at all:

In situations when shutdown is called for but Vineyard Wind determines shutdown is not practicable due to human safety or operational concerns, reduced hammer energy would be implemented when practicable. In cases where pile driving is already started and a PSO calls for shutdown, the lead engineer on duty will evaluate the following to determine whether shutdown is technically feasible: (1) Use the site-specific soil data and the real-time hammer log information to judge whether a stoppage would risk causing piling refusal at re-start of piling; and (2) Check that the pile penetration is deep enough to secure pile stability in the interim situation, taking into account weather statistics for the relevant season and the current weather forecast. Determinations by the lead engineer on duty will be made for each pile as the installation progresses and not for the site as a whole.

(NMFS 3545.)

As can be gleaned from the quoted text, the so-called override “procedures” provide no regulatory oversight of the lead engineer’s decision to veto a shutdown order. The procedures simply require the lead engineer to reduce hammer energy when a shutdown request is made, unless doing so is “impracticable” or “technically infeasible”. Note, however, that the procedures still leave it to the lead engineer to determine whether shutdown of pile driving is “impracticable” and “infeasible”. He or she merely must consult “site specific soil data and real time hammer log information to judge whether a stoppage would risk causing piling refusal at re-start of piling.” (*Ibid.*) Given the pressure the lead engineer will be under to finish a pile driving event once it has begun, it is difficult to imagine a scenario where that engineer could not develop a rationale for declaring work stoppage impracticable and/or infeasible. With no regulatory oversight of that decision, one can expect overrides to be routine and for right whales to be exposed to Level A pile driving noise.

E. BiOp’s “No Jeopardy” Finding Relies Entirely the Ability of Project’s Mitigation Measures to Protect Right Whales from Vessel Strikes and Pile Driving Noise

The reason Plaintiffs have focused so extensively on the project’s mitigation measures is that, without their successful implementation, the project will expose right whales to Level A noise take, as well as take by vessel strike. Neither the IHA nor the BiOp authorize such take, and the BiOp’s “no jeopardy” determination assumes *zero* take of right whales. (BOEM 77627-31.) It follows, then, that if the project’s mitigation measures are shown to be ineffective, take of right whales will occur. In such case, the BiOp’s “no jeopardy” finding is null and void.

As shown above, the mitigation measures required under the IHA and BiOp – soft start pile driving, PSOs, PAM, and seasonal restrictions on construction work – will not adequately protect right whales from project-related take from pile driving noise and/or vessel strikes. Thus, the BiOp’s “no jeopardy” finding cannot stand.

F. The Biological Opinion Does Not Analyze Threats to Right Whale Due to Pile Driving “Clearance” Operations

The ESA requires that NMFS evaluate the “effects of the action”. These include “indirect effects” which are “caused by the proposed action and are later in time, but still are reasonably certain to occur.” *Center for Biological Diversity v. Salazar, supra*, 804 F.Supp.2d at p. 1006, quoting 16 U.S.C. § 1536(b)(3)(A); 50 C.F.R. § 402.14(g)(3) and 402.02. In this case, Vineyard Wind’s “soft start” pile driving procedure, which is expressly intended to force right whales to leave the WDA, will have potential indirect effects on these whales, including exposure to threats and loss of foraging habitat. The BiOp, however, does not analyze these impacts. Specifically, pursuant to the IHA and BiOp, Vineyard Wind intends to “protect” right whales from Level A pile driving noise by “clearing” them from the Level A impact zone – which extends 7.25 km from the pile driving site – prior to the start of each pile driving episode. (BOEM 77458.) To accomplish this, Vineyard Wind will use a “soft start” pile driving technique, where the hammer blows are delivered at reduced power and generate only Level B harassment noise – enough to annoy the whales and cause them to leave the area, but not enough to permanently damage their hearing. (BOEM 77458.) That’s the (untested) theory, anyway.

Assuming the “soft start” works as planned, right whales will be denied feeding areas in the WDA for about three hours, which covers the time it takes to complete the soft start procedure, plus the time it takes to finish driving one pile. (BOEM 77458, 77461, 77462.) The BiOp, however, does not analyze what happens to the whales during this 3-hour exclusion period. For example, the BiOp does not assess whether and to what extent whales forced out of the WDA will enter areas with significant vessel traffic and/or high concentrations of fixed fishing gear, including vertical buoy ropes. In its discussion of Vineyard Wind’s proposed surveys of lobster, crab, and black seabass fisheries, the BiOp acknowledges that NMFS Statistical Area 537 contains between

987 and 2,650 vertical buoy rope emplacements, depending on the month. (BOEM 77580.) The BiOp does not, however, evaluate whether right whales pushed out of the WDA during project pile driving might become entangled in these ropes or be struck by fishing vessels.

The BiOp also makes no effort to analyze where the right whales will go to find alternative forage opportunities once they are shut out of the WDA. Finding replacement feeding areas is no simple matter, because a right whale eats only one thing – planktonic copepods (*Calanus finmarchicus*) – and the whale must find these copepods in very dense concentrations; otherwise, they will not serve the nutritional needs of the whale. (NMFS 57137.) Studies show that in recent years, as right whale access to dense accumulations of lipid-rich copepods has diminished, right whales have lost significant body mass, likely affecting reproduction and calving rates. (NMFS 26386, 26397-98.)

The federal defendants point to no section of the BiOp that addresses this issue. Instead, they argue that the whales will simply return to the WDA after each 3-hour pile driving episode is concluded. (Doc. 97 at p. 43; see also BOEM 77462.) There is no evidence that right whales, once subjected to “soft start” Level B noise and pushed out of the WDA, will wait at the edge of the clearance zone for three to four hours and then, like trained spaniels, come racing back into the WDA to feed once pile driving for the day has stopped. Despite the BiOp’s assertions (BOEM 77462-63), no study in the record indicates that right whales will behave in this manner. On the contrary. The evidence indicates that baleen whales like the right whale react unpredictably to repetitious impulsive sound, which is what three hours of pile driving produces. (NMFS 56463, 56466; NMFS 56428-29, 56437, 56440, 56463, 56469, 56494.)

Vineyard Wind offers a different argument, claiming that whales cleared from the WDA during pile driving can swim up and forage at Nantucket Shoals, an area known to support dense

pockets of copepods. (Doc. 100 at p. 21.) But Nantucket Shoals is 12 to 15 miles north of the WDA, and the BiOp does not analyze what threats the right whales might encounter (vessels, fishing gear) on their 12- to 15-mile swim from the WDA to the shoals.

In short, the BiOp's jeopardy analysis does not consider, much less investigate, the impacts of clearing right whales from the WDA during 3-hour pile driving episodes. This analytical failure/omission makes the BiOp deficient as a matter of law.

G. The BiOp Provides an Inadequate Assessment of Project's Operational Noise Impact on Right Whales

Plaintiffs' Opening Brief argued that the BiOp's analysis of the project's *operational* noise impacts on right whales was inadequate. (Doc. 89, at 45-46.) Not only did the BiOp fail to use the Stober noise study – the only document in the record that addresses the underwater noise implications of the industry trend toward using larger and more powerful wind turbines – the BiOp relied instead on the on operational noise data from the BIWF, which has only 5 WTGs, each with a power capacity of 6 MW. Plaintiffs pointed out that noise data from the BIWF could not provide a meaningful or accurate estimate of the underwater noise that would be generated day-in, day-out by Vineyard Wind's wind farm, which may include 57 WTGs, each with a power capacity of 14 MW. (Doc. 89, at 46.) This defect could have been overcome had the BiOp extrapolated the BIWF noise data to a scale that would match the Vineyard Wind project, but the BiOp did not perform such an extrapolation, even though the Stober study shows how such an extrapolation can be done. (NMFS 57135.) As a result, the BiOp's analysis of the project's operational noise impacts on right whales is deficient.

H. The BiOp's "Recovery" Analysis is Flawed

Under Section 7 of the ESA, a Biological Opinion cannot complete its jeopardy determination until it analyzes the proposed action's impacts on (1) the *survivability* of the listed

species in question and (2) the *recovery* of that species, defined as the point where the species' population has improved to a level warranting de-listing. *Center for Biological Diversity v. Salazar*, 804 F.Supp.2d 987, 997-98 (D. Arizona 2011). As the courts have stated repeatedly, survivability and recovery are distinct concepts and require different analyses. *Id.*, at p. 99. An action or project may not create impacts sufficient enough to significantly degrade a listed species' survivability, but those impacts may be enough to undermine recovery of that species, especially when the affected species is already in steep decline or when the action contributes to the known impediments to recovery. *Wild Fish Conservancy v. Salazar*, 628 F.3d 513 (9th Cir. 2010) [Even before a population is extinguished, it may reach a point at which it is no longer recoverable]; see also *Nat'l Wildlife Federation v. National Marine Fisheries Service*, 524 F.3d 917, 931 (9th Cir. 2008) ["a species can cling to survival even when recovery is far out of reach".]

In addition, the wildlife agency must perform "a full *analysis* of the effect of the action on the recovery..." *Center for Biological Diversity v. Salazar*, *supra*, 804 F.Supp.2d at p. 999 [emphasis in original]. The court may not "imply [] an analysis that is not shown in the record." *Ibid.*, quoting *Gifford Pinchot*, 378 F.3d at 1074 and *Nat'l Wildlife Fed'n*, 524 F.3d at 932, n. 10. Finally, "it is impermissible for an agency not to 'incorporate degraded baseline conditions into its jeopardy analysis.'" *Save Our Cabinets v. United States Fish and Wildlife Service*, 255 F.Supp.3d 1035, 1047, (D. Mont. 2017) citing *Nat'l Wildlife Federation*, 524 F.3d at 929.

1. Project Contributes to Threats That Thwart Right Whale Recovery

On page 60 of the Vineyard Wind BiOp, NMFS admits that "anthropogenic mortality" is "limiting the recovery of North Atlantic right whales" and that "currently, none of the species recovery goals . . . have been met." (BOEM 77335.) The BiOp also acknowledges that the two most prominent human threats to the species (vessel strikes and entanglement in fishing gear)

“appear to be worsening”, resulting in “elevated right whale mortalities along the Western North Atlantic Coast.” (*Ibid.*)

As discussed in Plaintiffs’ Opening Brief and in this Reply, the Vineyard Wind project has the strong potential to increase the threat of vessel strikes and fishing gear entanglement relative to the right whale. The project will also subject whales to Level A and Level B pile driving noise, which can physically damage a right whale’s hearing organs and/or alter the whale’s ability to forage or conduct other key life history behaviors, such as avoiding predators or finding mates. In addition, recent studies confirm that the project itself will be constructed and operated in an area that overlaps a right whale “hotspot” – i.e., where right whales congregate to feed on copepods. Thus, the project – both its construction and its operation – will likely affect right whale feeding behavior in this particular area. These are the very concerns voiced by the authors of the Quintana-Rizzo (2021) study. (NMFS 53318-35.) These facts necessarily inform how the project will affect right whale recovery. Yet, the BiOp recovery “analysis” does not dynamically assess the project in the context of the right whale’s current situation.

2. BiOp Relies on Flawed Mitigation Measures to Declare Project No Impediment to Right Whale Recovery

Because the project has the potential to contribute to the very threats and conditions that drive down right whale abundance, one would have expected the BiOp to include a robust analysis of the project’s potential to impede recovery of the right whale, especially since the prospects for recovering this species are quickly dimming. But this expectation is disappointed. The BiOp’s recovery analysis is brief and perfunctory. Rather than test the project’s impacts against each of the recovery goals set forth in the *2005 North Atlantic Right Whale Recovery Plan*, the BiOp leans heavily on the project’s mitigation measures and then summarily declares the project benign in terms of its impediments to right whale recovery. (See BOEM 77631 [project not expected to

reduce likelihood of survival or recovery of right whale].) Here, for example, is the BiOp's short discussion regarding the vessel strike threat:

A number of measures designed to reduce the risk of vessel strike, including deploying lookouts and traveling at reduced speeds in areas where right whales are most likely to occur, as well as the use of PAM to enhance detection of right whales are part of the proposed action. As explained above, we have determined that strike of a right whale by a project vessel is extremely unlikely to occur. No injury (auditory or other) or mortality is expected due to exposure to any aspect of the proposed action during construction, operations, or decommissioning phases of the project.”

(BOEM 77628.)

Plaintiffs have already shown that the project's measures for avoiding vessel strikes on right whales are inadequate, but it bears repeating that (i) lookouts (i.e., PSOs) cannot see underwater or in the dark, (ii) the 10-knot speed limit does not apply to fast-moving crew transfer vessels, and does not apply to any vessel transiting through Nantucket Sound; (iii) PAM only detects whales when and if they are actively vocalizing; (iv) none of the project's vessels will be equipped with PAM systems; and (v) there is no evidence PAM systems will provide adequate coverage of vessel routes.

On the issue of pile driving noise and its impact on right whale recovery, the BiOp again focuses on the project's mitigation measures to find that project-related noise creates no drag to recovery: “A number of measures that are part of the proposed action, including seasonal restriction of pile driving and clearance and shutdown measures during pile driving, reduce the potential for exposure of right whales to pile driving noise.” (BOEM 77628.) The BiOp then concludes that “[n]o right whales are expected to be exposed to pile driving noise that could result in PTS [permanent threshold shift] or any other injury.” (*Ibid.*) Again, Plaintiffs have shown that the proposed measures for protecting right whales from Level A pile driving noise (i.e., noise that

will cause PTS) are insufficient to their purpose and will, in fact, leave right whales exposed to dangerous and physically damaging noise levels.

Because the BiOp’s “recovery” determination relies so heavily on the flawed mitigation measures for protecting right whales from vessel strikes and pile driving noise, that determination is itself flawed.

3. *The BiOp’s “Recovery” Analysis Fails to Consider Impacts From “Clearing” Right Whales from Project Area During Pile Driving*

As to whether the project’s pile driving “clearance” activities might force right whales into contact with fishing gear and non-project vessels (e.g., fishing boats) outside the WDA, the BiOp’s “recovery” analysis is dead silent. This particular threat – despite being an obvious consequence of the project’s “soft start” pile driving program – is missed altogether. By failing to consider this threat in its “recovery” calculus, the BiOp violated the ESA.

4. *The BiOp Tests Project Impacts Against “Reclassification” Goals, Not “Recovery” Goals*

Perhaps the strangest thing about the BiOp’s so-called “recovery” analysis, is that it does not actually assess the project in relation to NMFS’s *recovery* goals for the right whale. Instead, the BiOp evaluates the project in relation to four criteria for “reclassifying” the right whale from “endangered” to “threatened”. (BOEM 77630.) After listing these four “reclassification” criteria, the BiOp concludes that:

The proposed action will not result in any condition that impacts the time it will take to reach these goals or the likelihood that these goals will be met. This is because the proposed action will not affect the trend of the species or prevent or delay it from achieving an increasing population or otherwise affect its growth rate and will not affect the chance of quasi-extinction.

(BOEM 77630.)

Then, based on this assessment of project impacts on the “reclassification” goals/criteria, the BiOp leaps to the conclusion that the “effects of the proposed action are not expected to cause

an appreciable reduction in the likelihood of survival and recovery of North American right whales in the wild.” (BOEM 77631.) This entire approach is wrong. The ESA requires NMFS to conduct a “recovery” analysis, not a “reclassification” analysis. For this reason alone, the BiOp is legally defective.

5. *BiOp Makes No Attempt to Identify Right Whale Abundance Goals and Analyze Project’s Potential to Slow Attainment of Those Goals*

Case law establishes that a legally adequate recovery analysis must include a species abundance goal or target, as this enables the wildlife agency (here, NMFS) to assess the proposed action/project for its potential to frustrate or slow down progress toward that goal/target. *National Wildlife Federation v. National Marine Fisheries Service*, 184 F.Supp.3d 861, 894 (D. Oregon 2016) [without identifying “rough” recovery abundance levels and timeframes, NOAA Fisheries cannot logically conclude that action will not appreciably reduce likelihood of recovery]. The Vineyard Wind BiOp does not identify any recovery abundance target for the right whale. It thus comes as no surprise that the BiOp’s recovery “analysis” does not examine whether the project’s impacts on the right whale will hamper attainment of such an abundance target. For these reasons, the BiOp fails to provide a legally-adequate recovery analysis. And in the absence of a proper recovery analysis, the BiOp’s “no jeopardy” determination cannot stand.

6. *Cursory Response by Federal Defendants Cannot Save Deficient Recovery Analysis*

In their Opening Brief, Plaintiff’s argued that the BiOp failed to provide a legally adequate analysis of the project’s impacts on right whale recovery. (Plaintiffs’ Opn.Brf., pp. 41-43.) The federal defendants did not respond to the argument except to assert, without evidence, that the BiOp’s recovery analysis was sufficient. (Doc. 97 at pp. 34-35.) Vineyard Wind did not even do this much, choosing to ignore the issue altogether. The weak responses by the federal defendants and Vineyard Wind indicate that they, too, found little evidence in the record to support the BiOp’s

cursory and flawed recovery analysis. The law is clear that a “no jeopardy” determination cannot be made absent a legally-adequate recovery assessment. *National Wildlife Federation v. National Marine Fisheries Service*, 524 F.3d 917, 931 (9th Cir. 2008). In this case, no such assessment was made. Therefore, the BiOp’s no jeopardy finding fails.

I. NMFS and BOEM Acted Arbitrarily and Capriciously

As shown above, the BiOp for the Vineyard Wind project is deeply flawed and does not satisfy ESA requirements or standards. It fails to use the best available scientific and commercial data; its analyses proceed from an inaccurate and incomplete understanding baseline conditions; its “no jeopardy” determination relies on facially inadequate mitigation measures; and its assessment of project impacts on right whale recovery is deficient. For these reasons, NMFS acted arbitrarily and capriciously when it adopted the BiOp, and BOEM acted arbitrarily and capriciously when it relied on the BiOp and approved the Vineyard Wind project.

IV. THE VINEYARD WIND ENVIRONMENTAL IMPACT STATEMENT VIOLATES NEPA

A. EIS Provides Inadequate Analysis of Project’s Impacts on North Atlantic Right Whale

1. Inadequate Discussion of Existing Conditions Regarding Right Whale

As pointed out in Plaintiffs’ Opening Brief, the EIS’s analysis of project impacts on the right whale is defective because it relies almost entirely on the flawed analysis set forth in the BiOp. Doc. 89, at 53. For example, to comply with NEPA, an EIS impact assessment must proceed from an accurate description of existing conditions, which is similar to the ESA concept of “baseline”. *Great Basin Resource Watch v. Bureau of Land Management*, 844 F.3d 1095, 1101 (9th Cir. 2016); see also *Half Moon Bay Fishermans’ Mktg. Ass’n v. Carlucci*, 857 F.2d 505, 510 (9th Cir. 1988). Plaintiffs argued that the EIS fails this basic requirement, as it downplays the importance of the Vineyard Wind WDA as a feeding and habitat area for the right whale;

downplays the imminent peril of extinction now facing the right whale; and fails to disclose that due to human-caused fatalities, low calving rates, and ever-lengthening calving intervals, right whale mortalities now outpace births by a ratio of 3 to 2. (BOEM 208678.) Doc 89, at 53.

Federal defendants respond by stating that the EIS adequately describes existing conditions as to the WDA and the right whale. (Doc. 97 at p. 51-52.) Well, let's see.

- Does the EIS disclose that, due to a shift in right whale feeding and movement patterns, approximately 87 percent of all right whale individuals, including more than 50 percent of reproductive females, have been observed in the RI/MA WEA between 2011 and 2019? (NMFS 53324, 53330.) No, it does not.
- Does it disclose that 16 of the 323 unique right whale individuals observed in the RI/MA WEA between 2011 and 2019 were confirmed dead as of December 2020? (NMFS 53324.) No, it does not.
- Does it disclose that right whale observations from 2011-2015 and 2017-2019 confirmed that the Vineyard Wind WDA is a right whale “hotspot”? (NMFS 53321-22, 53326.) No, it does not.
- Does it disclose that the waters in and surrounding the WDA are very popular with the lobster fishing fleet and thus, in some areas, contain significant concentrations of fixed fishing gear, including vertical buoy lines, that can entangle right whales? (BOEM 194539.) No, it does not.
- Does it disclose that anthropogenic mortalities, combined with low calving rates and long calving intervals, have caused right whale deaths to outnumber right whale births 3:2? (BOEM 208678.) No, it does not.

- Does it disclose that the right whale’s PBR rate has fallen to 0.8, meaning that the species cannot absorb even one human-caused death per year and maintain its already disturbing low population? (NMFS 33684.) No, it does not.
- Does it disclose that, according to marine biologists who have studied the issue, right whales now rely heavily on the RI/MA WEA for food year-round, including during those months when project construction activities will take place? (NMFS 53319, 55324, 55329, 53331.) No, it does not.

By not disclosing this critically important “existing conditions” data, the EIS fails as a public information document, and fatally undermines its own *impact* analysis. Federal defendants’ arguments to the contrary simply do not hold up under scrutiny.¹¹ The record evidence cited by federal defendants only serves to display the EIS’s blasé attitude toward right whale conditions and the importance of the waters south of Martha’s Vineyard and Nantucket to the whale’s continue survival and recovery.

2. *EIS Repeats Errors of BiOp as to Noise and Vessel Strike Impacts on Right Whales, and Mitigation for Those Impacts*

Like the BiOp, the EIS mixes its discussion of project *impacts* on right whales with its discussion of *mitigation measures* for those impacts. (BOEM 34858-59.) Thus, the quality and accuracy of the EIS’s analysis of pile driving noise and vessel strikes on right whales is directly determined by the adequacy of the mitigation measures recommended to address those impacts. As Plaintiffs’ have shown, the proposed (and now adopted) mitigation measures for minimizing pile driving noise impacts on right whale are facially flawed and cannot/will not provide right whales sufficient protection from Level A noise exposure and permanent threshold shift (PTS).

¹¹ Note that Vineyard Wind, in its Cross-Motion for Summary Judgment, did not address any of Plaintiffs’ arguments regarding the EIS’s analysis of impacts to the right whale.

The same holds for vessel strike impacts. The mitigation measures discussed in the EIS, such as the 10-knot speed limit, are so full of exceptions (e.g., crew transfer vessels need not comply) and other defects that they will be unable to protect right whales from vessel strikes and any mortality/serious injury deriving therefrom.

3. Inadequate Analysis of Cumulative Impacts on Right Whale

The Draft EIS for Vineyard Wind treated the project in isolation, as if it were the only large-scale offshore wind facility planned for the RI/MA WEA. This, of course, is false. The Vineyard Wind 1 project is only one of seven offshore wind facilities that will be built in the RI/MA WEA. Plaintiffs and others submitted comments to BOEM stating that the Draft EIS needed to analyze the project's impacts – especially those on right whales – in connection with the impacts anticipated to occur when the other six wind arrays are constructed and begin operating. In response, BOEM agreed to prepare a “supplement” to the Draft EIS that would include the required “cumulative” analysis (the “SEIS”). (See, BOEM 57578.)

The problem, however, is that neither the SEIS nor the FEIS actually analyzes the cumulative effects of seven industrial-scale wind energy projects on the right whale. For example, neither document bothers to estimate the total number of pile driving days that would be required to install all seven projects; nor do they analyze how many vessel trips would be needed to construct and operate the seven projects. The SEIS and FEIS do not discuss whether and to what extent having so many wind turbines concentrated in a popular (and possibly obligate) right whale foraging area might affect right whale feeding and movement patterns. The SEIS and FEIS do acknowledge that all seven wind projects will generally have similar impacts on right whales. (See, e.g., BOEM 68576-88, 68589, 68602-03, 69020-31.) NEPA, however, requires more than stating the obvious. The purpose of a cumulative impact assessment is to *analyze* those combined,

synergistic effects and discern whether they will result in significant damage to the resource in question (here, right whales). The SEIS and FEIS provides no such assessment, and federal defendants offer no evidence to the contrary. (See Doc. 97 at p. 58.)¹²

B. EIS Provides Inadequate Analysis of Project’s Impacts on Air Quality and GHG Emissions

1. EIS Does Not Compare Project Emissions of Criteria Pollutants to NAAQS Thresholds

In their Opening Brief, Plaintiffs argued that the Draft EIS, SEIS, and Final EIS fail to compare the project’s air emissions against the National Ambient Air Quality Standard (NAAQS) thresholds for each criteria pollutant, including those for nitrogen oxide (NOx), volatile organic compounds (VOCs), and carbon monoxide (CO) – all of which are precursors to ozone. (Doc. 89, at 50-52.)

The federal defendants counter by claiming that “the FEIS contains specific figures regarding the emission of Clean Air Act (“CAA”) criteria pollutants, such as carbon monoxide, sulfur dioxide, particulate matter smaller than 10 microns, particulate matter smaller than 2.5 microns, nitrogen oxide, ozone, and lead. BOEM_0068850-52.” (Doc. 97 at p. 47.)¹³ However, while the FEIS does provide emissions figures for each CAA criteria pollutant, those figures are not compared to the NAAQS thresholds. The standards are not provided at all. So the reader is

¹² Vineyard Wind provided no response to any of Plaintiffs’ arguments regarding the EIS’s analysis of project impacts on right whale, including the argument regarding cumulative impacts. Thus, Vineyard Wind has waived its right to respond to those arguments in the future.

¹³ Vineyard Wind provided no response to any of Plaintiffs’ arguments regarding the EIS’s failure to compare project emissions against the applicable NAAQS thresholds. Thus, Vineyard Wind has waived its right to respond to those arguments in the future.

left with a bunch of numbers that are meaningless. For example, the FEIS describes the project's offshore construction emissions as follows:

For Alternative A alone, construction emissions are estimated to be 1,116 tons of CO, 4,961 tons of NO_x, 172 tons of PM₁₀, 38 tons of SO₂, and 122 tons of VOC. Note that both NO_x and VOC are ozone precursors and these emissions may contribute to some increase in ozone production during construction. BOEM anticipates **minor** air quality impacts due to the construction and installation of Alternative A alone.” (BOEM 68850.)

These emissions figures explain nothing in terms of whether the project will result in an “exceedance” of any human health benchmark for air pollutants. In failing to compare project emissions of CAA criteria pollutants to the applicable NAAQS standards, the Final EIS withheld critical health information from the public and therefore violated NEPA.

2. Air Emissions Data Cannot Be Hidden in an Appendix to a Non-NEPA Document

The federal defendants also believe they are excused from placing these key emissions data in the EIS so long as the data are “contained in the draft COP, which is directly referenced in the DEIS.” (Doc. 97 at p. 48.) According to federal defendants, NEPA and its implementing guidelines allow agencies to “incorporate material into an [EIS] by reference.” (*Ibid.*) There is a key limitation, however, to the *type* of material that an EIS can reference. The following statement from *Kern v. United States Bureau of Land Management*, 284 F.3d 1062 (9th Cir. 2002) is instructive:

Tiering, or avoiding detailed discussion by referring to another document containing the required discussion, is expressly permitted by federal regulation [quoted regulation (40 C.F.R. § 1502.20) omitted]. However, tiering to a document ***that has not itself been subject to NEPA review is not permitted***, for it circumvents the purpose of NEPA.

Kern v. United States Bureau of Land Management, *supra*, 284 F.3d at p. 1073. (Emphasis added.)

Thus, regardless of whether the practice is called “tiering” or “incorporation by reference”, BOEM may not sidestep its duty to prepare a NEPA-compliant air quality impact analysis by

directing readers to the air emissions data in the “draft COP.” The draft COP is not a document prepared pursuant to NEPA; nor has it been subjected to NEPA review. For these reasons, it cannot be used as a substitute for a full, robust, and NEPA-compliant air quality assessment in the EIS itself. *Kern v. Bureau of Land Management, supra*, 284 F.3d at p. 1073.

3. *Plaintiffs Withdraw Claim Regarding Redacted Air Quality Data*

Plaintiffs Opening Brief argued that critical project-related air emissions data had been redacted from COP Appendix B and withheld from members of the public who wished to track down and review that data. (Doc. 89 at 51.) Federal defendants and Vineyard Wind have provided evidence that the redactions occurred in the 2017 version of the COP but were restored in the 2018 version to which the Draft EIS referred. (Doc. 97 at p. 48; Doc. 100 at p. 29-30.) Plaintiffs are satisfied with and accept federal defendants’ and Vineyard Winds’ explanation. Therefore, Plaintiffs withdraw their claim regarding alleged unlawful redactions of project-related air emissions data.

4. *The EIS Does Not Analyze Onshore Emissions or Emissions from Project-Related Economic Growth*

The EIS limits its air quality impacts analysis to emissions from the project’s offshore activities. Most of these relate to vessel trips and the pollutants generated thereby. As Plaintiffs pointed out in their Opening Brief, however, the project’s emissions are not limited to those from vessels and other offshore operations. (Doc. 89 at 52.) A significant amount of project-related work will take place at the various ports where construction staging will take place. *Ibid*. The EIS does not account for these emissions; nor does it account for the landside mobile emissions from the many employees who will work on the project or provide support for the project.

It is not that BOEM and Vineyard Wind have no idea how many jobs the project will generate. They talk about it all the time. The EIS itself states that project construction jobs will

result in 2,371 full-time employment (FTE) positions in Massachusetts alone. (BOEM 68635-36.) The EIS was required to account for, quantify, and analyze the CAA “criteria” pollutants and greenhouse gas (GHG) emissions that these new employees will generate. It failed to do so. As a result, the EIS’s air quality assessment is deficient.

Federal defendants respond by arguing that the project’s “indirect” air quality impacts *were* analyzed in the EIS. (Doc. 97 at p. 50.) But the only evidence they cite is the following sentence: “Primary emissions sources would be increased commercial traffic, air traffic, public vehicular traffic, combustion emissions from construction equipment, and some fugitive emissions.” Doc. 97 at p. 50. But a laundry list of onshore “emission sources” is not an impact analysis. Then the federal defendants claim they were absolved from analyzing or quantifying the emissions from such sources because they “are expected to be minor”. (*Ibid.*) But in the absence of any data on the onshore emissions in question – including those from project employees driving to and from work each day – it is impossible for BOEM to declare such emissions “minor”. The EIS simply omitted the required analysis, and it is deficient for that reason.

C. BOEM Acted Arbitrarily and Capriciously When It Approved the EIS

As shown, the Vineyard Wind EIS does not include an adequate analysis of the project’s impacts on the North Atlantic right whale and air quality/GHG emissions. Thus, the EIS fails to comply with NEPA, and BOEM acted arbitrarily and capriciously when it approved it.

V. CONCLUSION

For the reasons discussed above, the court should grant Plaintiffs’ Motion for Summary Judgment on its ESA, NEPA, and APA causes of action, and deny the Cross-Motions for Summary Judgment filed by Federal Defendants and Vineyard. Plaintiffs also request that the BiOp, Final EIS, and Record of Decision for the Vineyard Wind project be set aside.

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CERTIFICATE OF SERVICE

I hereby certify that this document filed through the CM/ECF system will be sent electronically to the registered participants as identified on the NEF on October 19, 2022.

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