

**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 NANTUCKET (ACK) RESIDENTS AGAINST TURBINES AND
VALLORIE OLIVER'S MEMORANDUM OF POINTS AND AUTHORITIES IN
SUPPORT OF MOTION FOR SUMMARY JUDGMENT**

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I. INTRODUCTION

Plaintiffs Nantucket (ACK) Residents Against Turbines and Vallorie Oliver (“Plaintiffs”) submit the following Memorandum of Points and Authorities in support of their Motion for Summary Judgment against the Bureau of Ocean Energy Management (“BOEM”), the National Marine Fisheries Service (“NMFS”), Secretary of the Interior Debra Haaland, and Secretary of Commerce Gina Raimondo (collectively, the “Federal Defendants”) for violations of the Endangered Species Act (ESA), the National Environmental Policy Act (NEPA), and the Administrative Procedures Act (APA).

II. SUMMARY OF ARGUMENT

A. ESA Cause of Action

The federally-listed North Atlantic right whale is considered the most imperiled marine mammal on the planet, with a total population of less than 360 individuals. (NMFS 53319.) Though the species showed some signs of population recovery between 2001 and 2010, those gains have since been lost, and over the last decade, the right whale has been careening toward extinction. (NMFS 53319; NMFS 63323, 63325.) Human-caused “mortality events” now far outpace the whale’s 0.8 “potential biological removal” (PBR) limit, which is “the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population.” *Strahan v. Secretary, Massachusetts Executive Office of Energy and Environmental Affairs*, 458 F.Supp.3d 76, 93 (D. Mass. 2020). (See also BOEM 208678 [Between 2017 and 2020 detected right whale mortalities outnumbered births by a ratio of 3:2].)

The Vineyard Wind offshore wind energy project (the “Project”), along with six other offshore wind farms, will be constructed and operated in an area of the Outer Continental Shelf

(OCS) that is roughly 15 miles south of Martha’s Vineyard and Nantucket Island. (See BOEM 77321.) Recent data developed by NMFS show that since 2015 this small piece of ocean has become a highly-favored foraging area for North Atlantic right whales, as it contains dense concentrations of planktonic copepods known as *Calanus finmarchicus*, which are the whales’ primary (indeed obligate) food source. (NMFS 57137; BOEM 177275, 177281.) Moreover, due to climate change, many of the whale’s *traditional* feeding grounds are no longer productive, as the copepods have migrated in search of colder water. (NMFS 53319.) As a result, a substantial percentage of *all* right whales now spend significant time in the waters south of Nantucket, (including the Vineyard Wind project site), which remain cold and thus able to maintain dense patches of copepods. (NMFS 53319, 53324, 53329; NMFS 6117, 6118.) By installing multiple industrial-scale wind energy projects in this area, BOEM is literally putting right whales and humans on a collision course. And historically, that has not worked out well for the whale.

1. Vineyard Wind Project Exacerbates Threats to North Atlantic Right Whale

The primary threats to the North Atlantic right whale are entanglement in fishing gear (e.g. vertical buoy ropes (VBR) attached to lobster and crab pots), vessel strikes, and reduced access to prey species (lipid-rich copepods). (NMFS 63321-22; NMFS 6117; NMFS 26386, 26397-98.) The Vineyard Wind project promises to make each of these threats worse. First, Vineyard Wind will be placing VBRs and lobster/crab pots at various locations within the Wind Development Area (WDA) to monitor the Project’s impacts on local fisheries.¹ (BOEM 77578, 77288, 77298-99.) Second, construction of the Vineyard Wind project will involve hundreds of vessels transiting back and forth between the WDA and supply ports in Massachusetts and Canada. All told, these vessels will spend tens of thousands of hours traveling through right whale habitat, many of them at speeds

¹ The Vineyard Wind WDA is synonymous with its wind lease area.

high enough to kill a right whale if struck. (NMFS 53320.) Third, the Project involves 102 days of high-impact pile-driving to embed the wind turbines into the sea floor. (BOEM 77426-27.) The pile-driving creates intense, impulsive underwater noise. The noise is expected to drive right whales away from the construction zone, leaving them without access to the copepods that otherwise would be available to them.

Despite these facts and the Project's clear potential to increase stress on right whales, the Biological Opinion (BiOp) prepared by NMFS concludes that the Project will not jeopardize the continued survival of the species or impede its recovery. According to the BiOp, the Project's threats to right whales will be sufficiently reduced by certain protective measures that Vineyard Wind plans to implement. Vessel strikes, for example, will be avoided by placing a lookout on each ship, whose job is to scan the surface of the ocean searching for whales. If one is detected, the lookout must alert the captain of the vessel so that he or she can take evasive action. The BiOp, however, cites no evidence showing that this approach will effectively protect right whales from vessel strikes. What *is* clear is that the lookouts will not be able to detect right whales that are *beneath* the surface of the water. In addition, project vessels are also allowed to travel at night, when lookouts will be useless.

Passive acoustic monitoring or "PAM" is supposed to supplement the ship lookouts by providing real-time data on potential whale calls in the WDA. (BOEM 77452-77455.) However, the BiOp does not require that the vessels themselves be equipped with PAM devices; nor does it require that stationary PAM devices be placed in sufficient number to provide full coverage of the WDA. And no PAM at all will take place along the vessel transit routes between the WDA and the supply ports in Massachusetts and Canada – routes that cut directly through right whale habitat. In addition, the right whales most vulnerable to vessel strikes are mothers and calves, who do not

always communicate via vocalization (they rely on visual contact), which means that PAM will not detect their presence in the WDA. (BOEM 77464.)

But that's not the worst of it. Although the BiOp imposes a 10-knot speed limit on project-related vessels, it makes an exception for "crew transfer vessels". (BOEM 77304.) These vessels make up the largest share of project trips, and they are big and fast – 75 feet long and running at 25 knots. (BOEM 34861.) Data show that a right whale struck by a vessel traveling at 15 knots or more will suffer a lethal injury 100 percent of the time. (BOEM 129897, 129902.) Thus, the Project's high-speed crew transfer vessels pose a significant threat to the whale.

As to pile-driving noise, the BiOp offers two reasons why impacts of such noise on right whales will be minimal. First, Vineyard Wind will initiate each pile driving event with a "soft start" where the pile driving hammer will be throttled back to less than maximum power, thus giving the whales a "warning" of what is to come. (BOEM 34742, 77310, 77458.) The theory is that the "soft start" will convince the whales to leave the construction zone before the full-magnitude pile driving begins. (BOEM 77458.) The "soft start", however, is *purposeful* harassment, a type of hazing, designed to push the listed animals out of their habitat. It thus constitutes an *intentional* take that NMFS cannot authorize under either the ESA or the Marine Mammal Protection Act, as both statutes only authorize *incidental* take activities. There is also no evidence that the "soft start" will actually persuade the whales to leave the action area, especially if the whales are feeding.

Second, the BiOp asserts that each pile driving event will last only about three hours and that once the pile driving episode is over, the whales will be free to return to the area in question and forage to their heart's content. (BOEM 77463.) According to the BiOp, this short-term inconvenience to the whales does not constitute take. (*Ibid.*) NMFS's position is based on the

faulty assumption that the right whales, having been driven out of the WDA by three hours of pile driving, will come back to feed in the WDA once the pile driving stops. (BOEM 77462.) There is no evidence that right whales will behave in this manner, and the BiOp never analyzes what happens when hungry right whales, once denied access to foraging grounds within the WDA, are forced to search elsewhere for food. How far will they have to go? How much energy must they expend? What other threats – including fishing gear and vessels – will they encounter? On these questions, the BiOp is silent.

2. The BiOp's No Jeopardy Determination Defies the Evidence

The BiOp's "no jeopardy" determination runs counter to the evidence and is the product of a flawed analysis. The BiOp's defects fall into four categories:

- (i) Does Not Use Best Data Available. The BiOp fails to engage with the best and most recent scientific data – data which show that the right whale is trending sharply toward extinction, and that the Project will be installed in an area that the few remaining right whales now rely on year-round for food.
- (ii) Inadequate Baseline. The BiOp fails to provide the kind of baseline data necessary to critically assess the Project's impacts on right whales. The ESA requires that a BiOp do more than recite facts pulled from various studies; it must relate those facts to the particular threats posed by the action under review. The threats, in fact, determine what baseline information that must be gathered and analyzed. The BiOp here does not ask the right questions and thus does not identify or describe the baseline conditions that make a meaningful "jeopardy" assessment possible.
- (iii) Inadequate Analysis of Threats and Mitigation Measures. The BiOp does not sufficiently evaluate the Project's threats to the right whale within the context of

the whale's dire and worsening situation. Moreover, the BiOp does not critically interrogate the Project's mitigation measures to determine if they will actually protect right whales from project-related threats or, instead, exacerbate those threats.

- (iv) Inadequate Assessment of Project Impacts on Right Whale Recovery. The BiOp's deficiencies manifest themselves in a failed and superficial analysis of the Project's potential to impede recovery of the right whale. Rather than let the evidence guide the recovery determination, the BiOp summarily declares that the Project poses no impediment to the whale's long trip back from the edge of extinction. This declaration is not supported by the record.

For these reasons, NMFS acted arbitrarily and capriciously by issuing a deficient BiOp; and BOEM acted arbitrarily and capriciously by relying on it when approving the Vineyard Wind Construction and Operations Plan (COP). Both agencies violated the ESA and the APA.

B. NEPA Cause of Action

BOEM approved an Environmental Impact Statement (EIS) that purports to analyze and disclose the Vineyard Wind project's *specific* and *cumulative* impacts on everything from aesthetics and benthic invertebrates to underwater geology and socioeconomic development. The document, however, fails to take a "hard look" at all project impacts as NEPA requires.

First, as to impacts on the right whale, the EIS parrots the flawed analysis and conclusions set forth in the BiOp. (BOEM 68572-68598.) As a result, the EIS, like the BiOp, is deficient as a matter of law.

Second, the analysis relating to air quality is not contained in the EIS itself, but rather is set forth in an appendix to the Construction and Operations Plan (COP) that Vineyard Wind (not

BOEM) prepared – a document that is not governed by NEPA and does not meet NEPA standards. Worse, the technical appendix was heavily redacted on grounds the data constituted “confidential business information.” Although Vineyard Wind later reissued the COP and the air quality appendix in unredacted form, the damage was done. The public had been denied access to the information necessary to inform their comments on the Draft EIS.

Third, the EIS fails to provide a full inventory of the Project’s direct and indirect emissions of “criteria” air pollutants (i.e., those regulated under the Clean Air Act) and greenhouse gases (GHGs). (BOEM 34767-69.) In fact, the EIS does not even acknowledge, must less quantify, the air pollutant and GHG emissions that will result from project-related employment and economic growth in New Bedford, Massachusetts and other onshore areas. (See BOEM 34767-69.)

For these reasons, the EIS, like BiOp, is legally deficient, and BOEM acted arbitrarily and capriciously when it issued the Record of Decision (ROD) approving it.

III. FACTUAL BACKGROUND

A. The Vineyard Wind 1 Offshore Energy Project

The Vineyard Wind 1 offshore energy project consists of a wind turbine array capable of generating 800 megawatts (MW) of electricity. (BOEM 68441.) It is located in BOEM Lease Area OCS-A 0501, off the southern shore of Massachusetts. (BOEM 77285). It is part of a concentrated group of seven proposed offshore wind energy projects located about 14 miles south-southeast of Martha’s Vineyard and 14 miles south-southwest of Nantucket. (BOEM 77285; BOEM 68465.)

The Project would be constructed on 65,296 acres within the Vineyard Wind Lease Area, also referred to as the wind development area (WDA). (BOEM 77150) The Project would include up to 84 wind turbines, known as wind turbine generators (WTGs), each designed to generate 14 MW of electricity. (BOEM 77285-77286; BOEM 76799.) Most of the WTGs will be monopiles,

but up to 12 may be jacket foundations, which require more pile driving and thus produce more underwater noise and a larger noise contour. (BOEM 77286, 68443; 77300.)

The project will also include a series of “inter-array” cables that will connect the WTGs to electrical service platforms which, in turn, will be connected to offshore export cables. (BOEM 68445.) These will convey the electricity generated by the WTGs to an onshore transmission facility located in Barnstable, MA. (BOEM 68445, 77289, 77294.) Construction of the Project will take approximately two years to complete, and the project will have an approved operational life of 33-years, after which it must be “decommissioned” (i.e., dismantled). (BOEM 77286, 77293, 77295.)

Constructing the project will require a wide range of vessels of varying size, some with specialized capabilities unique to the installation of WTGs. Project vessels will travel to the WDA from ports in Massachusetts, Rhode Island, and Canada. (BOEM 77293) There will even be a few long-range vessel trips from Europe to the WDA for purposes of transporting large turbine components. (BOEM 77293) According to Vineyard Wind, most of the vessels will be using the port at New Bedford, Massachusetts, which is approximately 50 miles from the WDA. (BOEM 77294). The vessel trips to Canadian ports, while fewer, are much longer, ranging from 440 miles (St. John) to 554 miles (Sheet Harbor). (BOEM 77294) Significant portions of all anticipated vessel routes will transit through right whale habitat.

B. BOEM’s Review and Approval of the Vineyard Wind 1 Project

1. The Vineyard Wind 1 Construction and Operations Plan

Vineyard Wind secured leasehold OCS-A 0501 from BOEM on January 29, 2015, and thereafter prepared a draft Construction and Operations Plan (COP) for the Vineyard Wind 1 project. (BOEM 68786, 69171.) Vineyard Wind submitted the COP to BOEM on December 19,

2017, and then filed an addendum to the COP in May 2019. (BOEM 77282). Submittal of the COP triggered BOEM’s administrative and regulatory duties under NEPA, the Marine Mammal Protection Act (MMPA), and the ESA.

2. BOEM’s NEPA Review of the Project

BOEM prepared the original Draft EIS throughout 2018 and released the document for public review on December 7, 2018. (BOEM 34694-95.) BOEM received hundreds of comments from the public, some of which criticized the Draft EIS for not acknowledging that the Vineyard Wind 1 project was just one of seven large-scale offshore wind energy arrays planned for construction in the RI/MA WEA. (See e.g., BOEM 78669-70.) The comments complained that the Draft EIS, by treating the Project as if it were singular and alone in the middle of the ocean, had underreported the Project’s cumulative impacts.

In an effort to address this issue, BOEM announced that it would be preparing a “supplement” to the EIS which would analyze cumulative impacts from all of the offshore wind energy projects slated for construction in the RI/MA WEA and elsewhere along the Atlantic coast of the United States. (BOEM 197540.) The Supplement to the EIS (“SEIS”) was released for public review and comment on June 12, 2020. (BOEM 57578.)

BOEM released the Final EIS – a combination of the Draft EIS, the SEIS, and some new data – on March 12, 2021. (BOEM 71036). Approximately one month later, on May 10, 2021, BOEM issued a Record of Decision (ROD) approving the EIS. (BOEM 76799-76898.) The ROD reduced the number of WTGs the Project could install from 100 to 84. (BOEM 76799, 76821.)

C. NMFS Review of the Vineyard Wind 1 Project

1. Incidental Harassment Authorization Under Marine Mammal Protection Act

Because the Project has the potential to harm marine mammals protected under the MMPA,

including the North Atlantic right whale, Vineyard Wind needed an Incidental Harassment Authorization (IHA) from NMFS. Vineyard applied for the required IHA on September 7, 2018, but the application was not deemed complete until February 2019. (NMFS 14218.) NMFS published a notice of the proposed IHA in the Federal Register on April 30, 2019. (NMFS 3392.) After receiving comments from the public, NMFS agreed to issue the IHA allowing the incidental taking of 15 marine mammal species (including right whale) by harassment. (See NMFS 3510.) The final IHA approval was announced on June 25, 2021. See, 86 Fed. Reg. 33810. The IHA is valid from May 1, 2023 through April 30, 2024, but may be renewed for an additional year. *Ibid.*

Although the IHA requires Vineyard Wind to implement certain measures to reduce the risk of vessel strikes on whales (NMFS 3496-3499), the focus of the IHA is on the Project's pile driving activities and its potential to expose whales and other marine mammals to **Level A harassment** noise (i.e., noise that can cause auditory damage and long-term hearing loss, also known as "permanent threshold shift" or PTS) and **Level B harassment** noise (i.e., noise that causes behavioral adjustment by the animal and "temporary threshold shift" (TTS) but no auditory injury or permanent hearing loss). (NMFS 3490-3496; BOEM 77438-77440.) In fact, the IHA *only* covers incidental take resulting from pile driving noise. (NMFS 3489.) Take from other project-related activities, including vessel strikes, is not allowed or protected under the IHA. Note, however, that the IHA does authorize "soft start" pile driving as a means of hazing whales and encouraging them to leave the construction zone. (NMFS 3495.)

The IHA sets forth conditions and mitigation measures aimed at reducing pile driving noise impacts on marine mammals (especially right whales). These measures: (i) establish the months when pile driving can take place; (ii) limit pile driving activities to daylight hours (with certain exceptions); (iii) require lookouts on platforms to scan the ocean's surface for whales entering the

pile driving area; (iv) require use of passive acoustic monitoring (PAM) to establish “clearance zones” so that whales are not exposed to Level A noise from pile driving; (v) limit vessels speeds to 10 knots (with certain critical exceptions); and (vi) establish protocols for shutting down pile driving activities when right whales are detected in the clearance zone. (NMFS 3490-96.) The IHA also informs much of the analysis set forth in the BiOp.

2. Consultation and Analysis Under the Endangered Species Act

The IHA is issued under the MMPA and thus it does not authorize take of species listed as threatened or endangered – whether they be whales, birds, turtles, or fish – under the ESA. That requires a separate incidental take permit that NMFS can issue only after completing the ESA Section 7 consultation process. BOEM initiated consultation with NMFS on December 6, 2018 (BOEM 34553), which resulted in NMFS issuing a BiOp and Incidental Take Statement (ITS) on September 11, 2020 (the “2020 BiOp”). (NMFS 16029.) Among other things, the ITS authorized Level B noise “take” of 20 right whales, on grounds that such take would not jeopardize the species or impede its recovery. (NMFS 16027.) The ITS, however, did not authorize Level A noise take of right whales. Nor did it authorize take of right whales from vessel strikes or fishing gear entanglement.

On May 7, 2021, just five days before it issued the ROD for the Vineyard Wind EIS, BOEM reinitiated consultation with NMFS to address a number of new issues that had arisen since the 2020 BiOp was issued. (BOEM 76721.) The re-consultation effort culminated in a new BiOp issued by NMFS on October 18, 2021 (the “2021 BiOp”). (BOEM 16668.) The 2021 BiOp superseded and replaced the 2020 BiOp. The 2021 BiOp – at least with respect to right whales – retained the protective measures set forth in the IHA and did not modify them in any material way.

D. The Current Litigation

Plaintiffs filed the original complaint in this action on August 25, 2021, alleging that the federal defendants violated both NEPA and the ESA. (ECF 1.) At that time, however, BOEM and NMFS were engaged in re-consultation; and while the 2020 BiOp was still technically in place, all parties recognized it would be superseded as soon as NMFS issued the updated 2021 BiOp. The parties, with guidance from the Court, agreed that Plaintiffs would review the 2021 BiOp when it became available and, within 30-45 days, submit a 60-Day Notice of Intent to Sue outlining their objections to the 2021 BiOp, thus triggering the 60-day “cure” period during which no litigation may be filed. Plaintiffs submitted their 60-Day NOI on November 26, 2021, and supplemented it on November 29, 2021. The 60-day “cure” period closed on January 28, 2022, and Plaintiffs filed their First Amended Complaint on February 10, 2022, alleging causes of action against the various federal defendants under NEPA and the ESA. (ECF 59.)

IV. LEGAL STANDARDS

A. Plaintiffs’ Standing

Plaintiffs’ standing to bring this action is established by the facts set forth in the Declarations of Vallorie Oliver and Amy DiSibio, attached to this Motion for Summary Judgment and incorporated herein by reference.

B. The ESA

The purpose of the ESA is to safeguard the ecosystems on which endangered and threatened species depend and to conserve and recover those species so that they no longer require the protections of the Act. 16 U.S.C § 1531(b). The Supreme Court has held that the ESA reflects “an explicit decision to afford first priority to the declared national policy of saving endangered species.” *T.V.A. v. Hill*, 437 U.S. 153, 185 (1978).

This case involves the Federal Defendants’ compliance with Section 7 of the ESA, which “requires federal agencies, in consultation with what is known as the ‘consulting agency,’ to conserve species listed under the ESA.” *National Wildlife Federation v. National Marine Fisheries Service*, 524 F.3d 917, 924 (9th Cir. 2008). Specifically, Section 7 mandates that federal agencies “insure that any action authorized, funded, or carried out by such agency . . . is not likely to jeopardize the continued existence of any endangered species. 16 U.S.C. § 1536(a)(2). See *Strahan v. Roughead*, 910 F.Supp. 358, 365 (D. Mass. 2012).

Whenever a federal action may affect an ESA-listed species, the agency planning the action must consult with either the U.S. Fish and Wildlife Service (if the species is terrestrial or lives in fresh water) or NMFS (if the species spends all or part of its life at sea). *National Wildlife Federation v. National Marine Fisheries Service*, 524 F.3d 917, 924 (9th Cir. 2008). In this case, the applicable action agency is BOEM and the applicable consulting agency is NMFS, as all potentially affected listed species are tied to the marine environment.

1. Preparation of the BiOp

The consultation process ultimately leads to the preparation of a Biological Opinion (“BiOp”), in which the consulting agency (NMFS) “evaluates the effects of the proposed action on the survival and recovery of listed species and any potential destruction or adverse modification of designated critical habitat.” *National Wildlife Federation v. National Marine Fisheries Service*, 524 F.3d 917, 924 (9th Cir. 2008); *Strahan v. Roughead, supra*, 910 F.Supp.2d at 365-66. “Effects of the action” consist of project impacts – both direct and indirect – that will be added to the environmental baseline. 50 C.F.R. § 402.02. The environmental baseline includes “the past and present impacts of all Federal, State or private actions and other human activities in the action area “and the anticipated impacts of all proposed Federal projects in the action area that have already

undergone formal or early section 7 consultation.” 50 C.F.R. § 404.02.

If the BiOp concludes that the action agency’s proposed project will not jeopardize a listed species or adversely modify a listed species’ critical habitat, no modification to the project is necessary. Otherwise, the BiOp will suggest “reasonable and prudent alternatives” to the project that would be consistent with the action agency’s substantive obligation to avoid jeopardizing a listed species or adversely modifying critical habitat. *Pacificans for a Scenic Coast, et al. v. California Department of Transportation, et al.*, 204 F.Supp.3d 1075, 1083 (ND. Calif. 2016).

If the BiOp determines the action will result in “no jeopardy” but will cause incidental “take” of the listed species in question, NMFS must issue an Incidental Take Statement (ITS). 16 U.S.C. § 1536(b)(4); 50 C.F.R. § 402.14(i). “Take” is broadly defined to include harming, harassing, trapping, capturing, wounding, or killing a protected species either directly or by degrading its habitat sufficient to impair essential behavior patterns. 16 U.S.C. § 1532(19). The ITS must set forth (1) the amount or extent of the incidental take on the species, (2) reasonable and prudent measures (“RPMs”) needed to minimize the amount or extent of take, and (3) the “terms and conditions” that the action agency must follow to implement the RPMs. 16 U.S.C. §§ 1536(b)(4)(i)-(iv).

2. *BiOp’s Substantive Analytical Requirements*

When preparing a BiOp, NMFS must use “the best scientific and commercial data available.” 16 USC § 1536(a)(2); 50 CFR § 402.14(g)(8). In addition, a court “cannot infer an agency’s reasoning from mere silence. Rather, an agency’s action must be upheld, if at all, on the basis articulated by the agency itself.” *Pacific Coast Fed’n of Fishermen’s Ass’ns v. United States Bureau of Reclamation*, 426 F.3d 1082, 1091 (9th Cir.2005) (internal citations and quotations omitted). Moreover, “an agency cannot abdicate its responsibility to evaluate the impacts of an

action on a species by labeling available information ‘uncertain’ because doing so violates Congress’ intent that the agencies ‘give the benefit of the doubt to the species.’” *Natural Resources Defense Council v. Kempthorne*, 506 F.Supp.2d 322, 360 (E.D. Calif. 2007), quoting *Conner v. Buford*, 848 F.2d 1141 (9th Cir. 1988).

3. BiOp is Final Agency Action

The BiOp serves as the wildlife agency’s “de facto approval of the action agency’s proposed project.” *Pacificans for a Scenic Coast, et al. v. California Department of Transportation, et al.*, 204 F.Supp.3d 1075, 1084 (ND. Calif. 2016). For this reason, issuance of a BiOp is a final agency action that is ripe for judicial review. *Pacific Coast Federation of Fishermen’s Ass’ns v. National Marine Fisheries Service*, 265 F.3d 1028, 1034 (9th Cir. 2001).

4. Acting Agency May Not Rely on Deficient BiOp

Just as the consulting agency (here, NMFS) may not lawfully *issue* a deficient BiOp, the acting agency (here, BOEM) may not *rely* on the deficient BiOp when approving an action or making a decision. *Strahan v. Roughead, supra*, 910 F.Supp.2d at 381. To do so is arbitrary and capricious and a violation of the ESA. *Pyramid Lake Paiute Tribe of Indians v. U.S. Dep’t of Navy*, 898 F.2d 1410, 1415 (9th Cir. 1990).

5. Standard of Review

Agency decisions under the ESA are governed by the Administrative Procedures Act, under which an agency’s decision will be overturned if found to be “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.” *Massachusetts v. U.S. Nuclear Regulatory Comm’n*, 708 F.3d 63, 73 (1st Cir. 2013), citing 5 U.S.C. § 706(2)(A). In the ESA context, a wildlife agency (here, NMFS) acts arbitrarily and capriciously if it issues a BiOp that fails “to consider the relevant facts and articulate a rational connection between the facts found and the choice made.”

Center for Biological Diversity v. United States Bureau of Land Management, 698 F.3d 1101, 1121 (9th Cir. 2012), citing *Natural Resources Defense Council v. U.S. Department of Interior*, 113 F.3d 1121, 1124 (9th Cir. 1997).

C. NEPA

1. EIS Required for Major Federal Actions

NEPA requires that impacts of “major Federal actions significantly affecting the quality of the human environment” be considered and disclosed in a detailed EIS. See 42 U.S.C. § 4332(2)(C). NEPA, therefore, “ensures that the agency ... will have available, and will carefully consider, detailed information concerning significant environmental impacts; it also guarantees that the relevant information will be made available to the larger audience.” See *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349, 109 S.Ct. 1835, 104 L.Ed.2d 351 (1989). Under NEPA, the Court must ensure that the acting agency conducted a reasoned analysis of the evidence before it, and that the agency made the evidence available to all concerned. See *Friends of Endangered Species, Inc. v. Jantzen*, 760 F.2d 976, 986 (9th Cir.1985).

2. Standard of Review

When evaluating the adequacy of an EIS, the court applies a “rule of reason” standard to determine whether the EIS contains a “reasonably thorough discussion of the significant aspects of the probable environmental consequences.” *Pacific Coast Federation of Fishermen’s Associations, et al. v. National Marine Fisheries, et al.*, 482 F.Supp.2d 1248, 1250-51 (W.D. Wash. 2007), quoting *Center for Biological Diversity v. USFS*, 349 F.3d 1157, 1166 (9th Cir. 2003). This standard is “applied in the same manner as the arbitrary and capricious standard.” *Center for Biological Diversity v. USFS*, 349 F.3d 1157, 1166 (9th Cir. 2003). “Judicial review consists of ensuring that an agency has taken a **‘hard look’** at the environmental effects of the proposed

action.” *Pacific Coast Federation of Fishermen’s Associations, et al. v. National Marine Fisheries, et al.*, 482 F.Supp.2d 1248, 1250-51 (W.D. Wash. 2007), citing *Idaho Conservation League v. Mumma*, 956 F.2d 1508, 1519 (9th Cir. 1992) [emphasis added].

D. Motions for Summary Judgment

In this case, the Court has directed the parties to resolve all claims via cross-motions for summary judgment. A court shall render summary judgment when no genuine issue as to any material fact exists and the moving party is entitled to judgment as a matter of law. Fed. R. Civ. P. 56(c); see also *Nebraska v. Wyoming*, 507 U.S. 584, 590 (1993). However, when considering a motion for summary judgment in the APA context, the court’s review “is not a determination of whether there is a genuine issue as to any material fact . . . , but rather whether the agency action was arbitrary, capricious, an abuse of discretion, not in accordance with law, or unsupported by substantial evidence on the record taken as a whole. *Wildearth Guardians v. U.S. Fish and Wildlife Service*, 416 F.Supp.3d 909, 924 (D.Ariz. 2019), quoting *Good Samaritan Hosp., Corvallis v. Mathews*, 609 F.2d 949, 951 (9th Cir. 1979).

V. ARGUMENT

A. ESA Cause of Action: The 2021 BiOp is Legally Deficient

1. BiOp Does Not Adequately Engage with the “Best Available” Data

ESA Section 7 requires that a BiOp base its conclusions on the “best scientific and commercial data available”. 16 USC §1536(a)(2); 50 CFR § 402.14(g)(8); see *Blue Water Fishermen’s Ass’n v. National Marine Fisheries Service*, 226 F.Supp.2d 330, 334 (D. Mass 2002) [“It is crucial that the NMFS have the ‘best scientific and commercial data available’ to inform its opinion.”]. The BiOp for Vineyard Wind, however, fails this basic test, as it does not analytically

engage with the “best scientific data” on the current status of the right whale, its slide toward extinction, and its vulnerability to long-term operational noise from offshore wind turbines.

a. Current Status of Right Whales In Massachusetts Wind Energy Area

In July 2021, a group of whale experts, including NMFS biologists from Woods Hole, Massachusetts, published a study 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.) The “wind energy development area” in question is the Rhode Island/Massachusetts Wind Energy Area (RI/MA WEA), which includes the Vineyard Wind 1 leasehold, along with six others. (NMFS 53318-53320.) In one paragraph, the Quintana-Rizzo (2021) study captures the current plight of the North Atlantic right whale in a way that the authors of the BiOp, also from NMFS, could not manage in 400 pages:

The North Atlantic right whale *Eubalaena glacialis* (hereafter referred to as the right whale) is a Critically Endangered migratory species (Cooke 2020). It is also one of the most endangered cetaceans worldwide, with an estimated abundance of 356 individuals (Pettis et al. 2021). The population has been declining since 2010 (Pace et a. 2017, Pettis et al. 2020) due to mortality from entanglements in fixed fishing gear and vessel strikes (Corkeron et al. 2018, Sharp et al. 2019, Pace et al. 2021) and a 40% decrease in calving (Kraus et al. 2016a), including no births in 2018 (Pettis et al. 2020). This decrease in reproduction may be attributable to chronic stress from anthropogenic injury (van der Hoop et al. 2017) and climate-driven changes in food resources (Meyer-Gutbrod et al. 2018, Record et al. 2019).

(NMFS 53319.)

The study goes on to explain that the right whale’s distribution pattern has shifted significantly over the last decade, with more individuals being observed in the waters south of Nantucket and Martha’s Vineyard than ever before. “Since 2010, their [the right whales’] presence has declined in and around once key habitats in the Gulf of Maine and Bay of Fundy, while

sightings have increased in other areas including Cape Cod Bay, Massachusetts Bay, the Mid-Atlantic Bight, and the Gulf of St. Lawrence (NMFS 53319 [internal citations omitted].” According to the study, these shifts in right whale distribution “have been correlated with changes in oceanographic conditions and food supply” and have caused whales to “move into areas with little or no protective measures,” leading to “increased exposure to anthropogenic impacts”. (*Ibid.*)

The regular presence of right whales in southern New England (SNE) fundamentally alters the conservation paradigm for the species and, for that reason, requires greater scientific investigation, especially in light of BOEM’s plan to install multiple industrial-scale offshore wind projects in this very same part of the ocean. (NMFS 53319.)

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

(NMFS 53319.)

The study then identifies the kinds of threats the wind energy projects will impose on right whales:

- “The construction and maintenance of hundreds of wind turbines could cause habitat changes (Wilhelmsson et al. 2006) and influence oceanographic conditions and water column stratification (Brostrom 2008, Paskyabi & Fer 2012, Paskyabi 2015, Segtnan & Christakos 2015).” (NMFS 53319-53320.)
- “Both construction and maintenance activities may also expose right whales to higher levels of vessel traffic as well as increased noise.” (NMFS 53320.)
- “Increased vessel traffic will result in a greater risk of vessel strikes with right whales.” (NMFS 53320.)
- “In addition, low-frequency noise from large ships (20-200 Hz) overlaps acoustic signals used by right whales (Hatch et al. 2012.)” (NMFS 53320.)

- “Collectively, these perturbations could affect the use of this region by right whales as well as influence their migratory movements throughout the mid-Atlantic region (Schick et al. 2009).” (NMFS 53320.)

The purpose of the Quintana-Rizzo (2021) study was to (i) provide “an extended assessment of the distribution, demography, residency, and movements of right whales observed in the SNE region over two survey periods (2011-2015 and 2017-2019),” and (ii) examine the management implications of the survey data in light of BOEM’s program for developing offshore wind energy projects in the RI/MA WEA. (NMFS 53320.) Key findings from the study include the following:

- In its surveys of the RI/MA WEA, the research team identified 327 unique right whales, representing **87 percent** of the total population. (NMFS 53324 [emphasis added].)
- Of these, at least **16 whales were confirmed dead** as of December 2020. (NMFS 53324 [emphasis added].)
- Sighting rates were highest in the span from winter through early spring **but were also high during the summer months** (e.g. August 2019). (NMFS 53329 [emphasis added].)
- Feeding was observed in **all seasons**. (NMFS 53324 [emphasis added].)
- Right whale presence in SNE now extends beyond the December-May period. (NMFS 53324.)
- The seasonal clustered distribution of right whales “varied in space and time and **extended into wind energy lease sites.**” (NMFS 53324-26 [emphasis added].)
- Right whale sightings in Spring of 2011-2015 and Spring 2017-2019 showed that the Vineyard Wind leasehold in WEA Zone 4 overlaps multiple right whale “**hot spots**” – i.e., areas where whales congregate in high concentrations. (NMFS 53321-22, 53326 [Fig. 5 (Hotspot Analysis)].)
- Almost **50% of reproductive females** within the total right whale population utilized the SNE study area within the study period, “which is an important consideration for the species’ conservation since the overall population has declined.” (NMFS 53330.)

Ultimately, the study concluded that “the presence of right whales in SNE during all seasons is an important consideration for the planning and execution of offshore wind development.” (NMFS 53331.) According to the study’s authors, “[m]onitoring and mitigation plans should include protocols for the likely presence of right whales throughout the year”, and

their “increasing 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 acoustic impact” (NMFS 53331.) Finally, the study stated that “[i]ncreased vessel traffic associated with construction and maintenance of turbines also increases the risk of whales being struck.” (NMFS 53332.)

The BiOp, however, barely mentions the Quintana-Rizzo 2021 study and does not engage with its findings. (See BOEM 77394, 77396, 77462.) Nor does the BiOp use the study’s data as context for assessing the Project’s risk to right whale survival and recovery.

b. Threats to Right Whale and the Whale’s Trend Toward Extinction

The Quintana-Rizzo 2021 study, outlined above, represents the most recent and most direct assessment of right whale presence, abundance, and distribution within the Vineyard Wind WDA and the RI/MA WEA as a whole. That the BiOp mentions it so sparingly is both startling and disturbing, especially since the study was conducted over an 8-year period by scientists affiliated with NMFS. But this is not the only instance where the BiOp disregards or glosses over uncomfortable findings in the technical literature.

For example, in April 2019 NFMS convened a meeting of the Atlantic Large Whale Take Reduction Team (TRT) in Providence, Rhode Island to “develop consensus recommendations on a suite of measures expected to achieve a 60-80% reduction in mortalities and serious injuries of North Atlantic right whales in Northeast trap/pot commercial fisheries.” (BOEM 194534.) Following the four-day conference, NMFS produced a “Key Outcomes Memorandum” that discussed, among other things, the importance of a small piece of ocean known as NMFS Statistical Area 537, which happens to be located very near the Vineyard Wind WDA. (BOEM 77411, 194539.) After expressing frustration that the TRT’s right whale density model does not

reflect recent shifts in right whale aggregations and thus cannot accurately predict risks to the species, the memorandum states:

Area 537 (the fishing area south of Nantucket and Martha’s Vineyard) was of particular concern to conservationists, as recent observations suggest that this area has a much higher density of whales and is fished with heavy gear by the offshore lobster fleet.

(BOEM 194539.)

The concerns expressed in the TRT Key Outcomes Memorandum are relevant here because part of Vineyard Wind’s pile-driving strategy – approved by NMFS – is to push right whales out of the pile-driving zone into surrounding waters as a means of reducing noise impacts on the species. Those surrounding waters include Area 537, where lobster fishing with heavy gear, including vertical buoy ropes, is used. (BOEM 77411, 194539.) Consequently, Vineyard Wind’s attempts to create a pile-driving “clearance zone” will force whales into an area known to have fixed fishing gear, thereby increasing the risk of entanglement. The BiOp does not discuss the TRT Key Outcomes Memorandum. Nor does it examine Area 537’s role in the entanglement threats created by the Vineyard Wind project. (BOEM 77579-81.)

Another recent study, this one prepared by the North Atlantic Right Whale Consortium and titled “2020 Annual Report Card,” found that the “calving interval” for right whales in 2020 had increased to 7.6 years, more than twice what it was in 2010 (3 years). (BOEM 208682 [Table 2].) This means that female right whales now give birth only once every 7 or 8 years, whereas 10 years ago, they gave birth to new calves every three years. Thus, it is not surprising that the Report Card also stated that in 2020, “detected mortalities outnumbered births 3:2.” (BOEM 208678.) These important data points, however, did not find their way into the BiOp.

Alarm bells about right whale survival also ring throughout the “US Atlantic and Gulf of Mexico Marine Mammal Stock Assessment 2020,” a technical memorandum issued in July 2021

by the National Oceanic and Atmospheric Administration (NOAA), which oversees NMFS. (NMFS 33652-89.) The stock assessment 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 analyze the 2020 Stock Assessment data and never mentions the right whale PBR of 0.8. Nor does it assess how the shift in whale abundance to the waters south of Martha’s Vineyard and Nantucket – areas which do not currently enjoy the protections of a critical habitat designation – will be affected by the intense development of industrial-scale offshore wind energy projects in this very same area.

c. Wind Turbine Operational Noise Impacts on Baleen Whales

Then there is the matter of noise. What the BiOp never discusses, but what the technical literature emphasizes over and over, is that no one knows how the noise generated by the construction and operation of large-scale wind energy plants will affect large marine mammals, including right whales. (See, e.g., Stone, J.M., S.M. Leiter, et al. “Distribution and Abundance of Cetaceans in a Wind Energy Development Area Offshore of Massachusetts and Rhode Island,” 2017, (NMFS 57138) [“Previous studies on the effects of wind energy development on marine mammals have focused primarily on pinnipeds and harbor porpoise, while the effects of wind farms on large whales, remain untested.”]; see also Quintana-Rizzo (2021) (NMFS 53319) [“effects of offshore wind development on right whales is unknown”].)

The biological impact of *operational* noise from offshore wind farms has only recently caught the attention of scientists, and they worry that the chronic low-frequency noise from large

wind arrays could pose a significant threat to baleen whales, such as the right whale. For example, a study published in March 2021 in the *Journal of the Acoustical Society of America*, titled “How could operational underwater sound from future offshore wind turbines impact marine life?”, analyzed how the trend toward larger wind turbines – and larger wind arrays – affects the total amount of operational noise to which whales would be exposed. (Stober, Uwe, and Frank Thomsen, 2021. (NMFS 57132-57136.) Here are a few key excerpts from the study:

- “For impact pile driving, sound levels increase with pile diameter and thus with overall size and nominal power output. A similar relationship exists between operational noise and wind turbine size.” (NMFS 57132.)
- “Furthermore, it is important to consider that most of the energy of operational noise is in the lower frequency range (i.e., well below 1kHz). Many of the offshore wind farms planned beyond Europe overlap with essential habitats of baleen whales and fishes that are suspected to be sensitive at those frequencies.” (NMFS 57132.)
- “[I]mpact assessment for turbines larger than 6MW has not been performed. Thus, the potential impact of planned offshore wind farms on marine life is unknown.” (NMFS 57132.)
- “With the potentially larger impact ranges for larger wind turbines, impact zones will be more likely to overlap and form one impact area that might cover the whole wind farm.” (NMFS 57135.)

The conclusions drawn by Stober and Thomsen are relevant here because, just prior to release of the Final EIS, Vineyard Wind increased the size of the Project’s wind turbines from 10MW to 14MW (BOEM 197556) – the very trend Stober and Thomsen determined would increase the low-frequency sound field of large-scale wind farms and cause potential impacts to baleen whales. (NMFS 57132-136.) The BiOp, however, makes only passing reference to the Stober and Thomsen study and does not use it to evaluate project-related risk to right whales. (See BOEM 77432.)

These recent studies reveal what NMFS and BOEM have been reluctant to admit, which is that they don’t really know how or to what extent the Project will affect right whales. As the first of its kind, the Vineyard Wind project will be a live, “real-time” experiment – one that will test

whether North Atlantic right whales (population 358 and dropping) can withstand the intrusion of industrial-scale wind farms into their favored feeding ground.

By failing to analyze the Project’s impacts and jeopardy potential in the context of these recent studies, NMFS produced and issued a legally deficient BiOp.

2. Inadequate Description of Baseline Conditions

The BiOp must include a full, accurate, and up to date description of the baseline conditions affecting the listed species. And where baseline conditions “already jeopardize a species, an agency may not take action that deepens the jeopardy by causing additional harm.” *American Rivers v. Federal Energy Regulatory Commission*, 895 F.3d 32, 47 (2018), quoting *National Wildlife Fed’n*, 524 F.3d at 930. Thus, a BiOp’s jeopardy analysis will be deemed arbitrary if it fails to account for effects of degraded conditions on threatened species. In other words, “an agency may not take action that will tip a species from a state of precarious survival into a state of likely extinction.” *National Wildlife Federation v. National Marine Fisheries Service*, 524 F.3d 917, 930 (9th Cir. 2008)

Note also that a “proper baseline analysis is not the proportional share of responsibility the federal agency bears for the decline in the species, but what jeopardy might result from the agency’s proposed actions *in the present and future human and natural contexts*. *Pacific Coast Federation of Fishermen’s Associations v. U.S. Bureau of Reclamation*, 426 F.3d 1082, 1093 (9th Cir. 2005) (emphasis added). In short, the ESA requires that an agency “know roughly at what point survival and recovery will be placed at risk before it may conclude that no harm will result from ‘significant’ impairments to habitat”—and associated populations—“that [are] already severely degraded.” *Id.* At 936, 929.

The 2021 BiOp fails to meet the ESA's minimum standards for describing baseline conditions as they relate to the North Atlantic right whale. For example:

- The BiOp does not adequately describe the importance of the RI/MA WEA (including the Project site) to the right whale, despite data showing that 87 percent of the entire right whale population was observed in the WEA from 2012 to 2019, including a high percentage of the known reproductive females . (See NMFS 53318, 53324, 53330.)
- The BiOp does not adequately describe the importance of the RI/MA WEA and/or the project WDA to right whale foraging and social behavior, even though the most recent studies confirm that over the last eight years, right whales have changed their feeding patterns to correspond with locational shifts by their obligate prey (copepods), and now spend significant time foraging off the southern coast of Nantucket, which includes the WDA. (NMFS 53318-53332.)
- The BiOp does not analyze abundance and location of right whale prey species (copepods) in the WEA, the WDA, or surrounding waters.
- The BiOp does not adequately describe existing vessel speeds, broken down by vessel size, in the waters immediately surrounding the WDA. This is an important omission because the Vineyard Wind "protection" plan for whales is to force them out of the WDA during construction activities (e.g., pile driving) and keep them out until the turbines are installed. If this effort is successful, the whales will be forced to remain in the waters *outside* the WDA for extended periods. The evidence indicates that such waters have heavy vessel traffic and intense fishing activity, none of which is regulated under the BiOp or the IHA. That means the vessels are not subject to the BiOp's 10

knot speed limit, do not have PSOs, and will not be receiving PAM data on whale presence.

- The BiOp does not adequately describe baseline conditions along the transit routes between supply ports and the WDA. For example, the BO does not describe vessel traffic or fishing activity in these areas. Nor does it describe right whale use or abundance in these areas, though the available data indicates that right whales are likely present throughout these transit routes, including those that extend up to the proposed supply ports in Canada more than 400 miles away.
- The BiOp does not provide an accurate or complete accounting of the existing “take” authorizations for right whale.
- The BiOp does not disclose that the right whale’s current “potential biological removal” (PBR) limit is 0.8 (NMFS 33684), which means that, other than natural mortalities, the whale cannot lose even one individual per year and still maintain a viable population. (See NMFS 63325.)

This last omission is especially troubling. Failure to know or disclose the right whale’s survival level renders NMFS’s analysis of project effects on right whale recovery inadequate. *National Wildlife Federation v. National Marine Fisheries Service*, 524 F.3d 917, 936 (9th Cir. 2008) [“NMFS inappropriately evaluated recovery impacts without knowing the in-river survival levels necessary to support recovery.”] Simply put, by failing to discuss and explain the right whales 0.8 PBR, the BiOp cannot – and does not – address the Project’s potential to affect that number or impede recovery of the species, which is one of the fundamental requirements of the Section 7 assessment.

3. *Inadequate Analysis of Project’s Potential to Jeopardize Federally-Listed North Atlantic Right Whale*

Section 7 of the ESA requires federal agencies to “insure that any action authorized, funded, or carried out by such agency . . . is not likely to jeopardize the continued existence of any endangered species. 16 U.S.C. § 1536(a)(2). To “jeopardize the continued existence of” a species means “to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species.” 50 CFR § 402.02.

Note that *survival* and *jeopardy* are not synonymous and should not be confused or conflated. A species may be jeopardized even “if there is no appreciable reduction of survival odds” because “a species can often cling to survival even when recovery is far out of reach.” *National Wildlife Federation v. National Marine Fisheries Service*, 524 F.3d 917, 931 (9th Cir. 2008). In addition, any federal action that impedes *recovery* of a species will also be deemed to jeopardize it. Thus, “NMFS must analyze effects on recovery as well as effects on survival.” *Id.* At 932. “Recovery means improvement in the status of listed species to the point at which listing is no longer appropriate under the criteria set out in section 4(a)(1) of the Act.” 50 CFR § 402.02.

As part of its jeopardy analysis, NMFS must consider whether the mitigations measures – whether framed as Reasonable and Prudent Measures (RPMs) or Reasonably Prudent Alternatives (RPAs) – “are expected to reduce appreciably the likelihood of recovery of the listed species in the wild.” 50 CFR § 402.02. In doing so, “NMFS must conduct a full analysis of [recovery] risks and their impacts on the listed species’ continued existence.” *National Wildlife Federation v. National Marine Fisheries Service*, *supra*, 524 F.3d at 933. NMFS also must tie its recovery metrics to an estimated recovery abundance level or time frame. Otherwise, there is no way for NMFS to rationally conclude that the project or its mitigation measures will not appreciably reduce

the species' chances of recovery. *National Wildlife Federation v. National Marine Fisheries Service*, 184 F.Supp.3d 861, 894 (D.Oregon 2016).

As shown below, the 2021 BiOp does not provide a legally adequate assessment of the Project's potential to jeopardize the North Atlantic right whale. Specifically, the BiOp fails to sufficiently analyze (1) the Project's noise impacts (construction and operational) on right whales; (2) the Project's impacts on right whale foraging and social behaviors; (3) the Project's potential to increase risk of vessel strikes on right whales; and (4) the Project's potential to subject right whales to increased risk of fishing gear entanglement. In addition, the BiOp fails to establish that the RPMs for safeguarding right whales will be effective. Finally, the BiOp's recovery analysis, such as it is, does not discuss right whale recovery in terms of an abundance target.

a. Pile Driving Noise

The BiOp acknowledges that construction of the Vineyard Wind project will require approximately 102 days of pile driving to install the wind turbines on the sea floor. (BOEM 77425-26.) The BiOp also acknowledges that pile driving results in repetitive bursts of high-intensity sound that can have negative effects on marine mammals, including right whales. (BOEM 77461.) More specifically, the BiOp determined that the Project's 102 days of pile driving could expose 1.39 right whales to Level A harassment noise – which is noise that causes auditory injury and permanent hearing loss, known as “permanent threshold shift” or PTS. (BOEM 77445 [Table 7.1.12], 77450 [Table 7.1.16].) Such noise constitutes a “take” under the ESA. (See BOEM 77660.)

Nevertheless, the BiOp contends no take of right whales will occur because Vineyard Wind will implement protective measures that will prevent any right whale from being exposed to Level A pile driving noise. (BOEM 77457.)

The first of these measures is the “soft start”, where each pile driving episode begins with hammer drops at less than maximum intensity, thereby providing a “warning” to whales and encouraging them to leave the WDA. (BOEM 77458.) There is no evidence that this soft start strategy will work as planned, especially if any of the whales are actively foraging. The data indicate that whale behavior in response to noise stimuli varies dramatically among species and even among individuals within a single species. (NMFS 56437, 56463, 56466.) Further, the data indicate that whale behavior in response to noise also varies depending on context. (NMFS 56428-29, 56437, 56440, 56463, 56469, 56494.)

In addition, the soft start is a form of animal hazing and thus constitutes *intentional* harassment rather than *incidental* harassment. As such, it cannot be authorized under either the MMPA or the ESA. See 50 CFR § 18.27(c) (Subchapter B) [MMPA distinguishing “incidental” take from “intentional” take]; see also 16 USC §§ 1538 and 1539 [ESA prohibits all take unless “incidental” to a lawful activity]; see also *Strahan v. Roughead*, *supra*, 910 F.Supp.2d at 367.

The second measure involves the use of Protected Species Observers (PSOs), whose task is to scan the ocean from ship decks and other platforms looking for right whales. (BOEM 77457-77458.) If they see one, they are to alert the lead engineer who must, in turn, halt all pile driving until the whale leaves on its own volition. The PSO strategy has four fatal flaws:

One: Although the Level A impact zone extends 7,253 meters, the BiOp admits that a PSO cannot accurately detect and identify a right whale beyond 1,500 meters. (BOEM 77457-77458.) This means that right whales could be exposed to Level A noise and damage but at distances beyond the detection limit of the PSO.

Two: The PSOs can only detect whales at the water’s surface, and even that is difficult when conditions are sub-optimal – i.e., poor light, bad weather, fog, high seas, large swells. To

make matters worse, right whales have no dorsal fin (BOEM 77330), which makes them even harder to spot. This means that the PSOs, while technically capable of seeing a right whale on the water surface at 1,500 yards, will miss all the whales under the water. And these undetected whales will thus be exposed to Level A pile driving noise.

Three: The BiOp includes an exception to the “stop all pile driving when right whales are detected” rule. The lead engineer can override the shutdown directive and continue pile driving if necessary to safeguard human safety or the integrity of the pile driving installation. (BOEM 77454.) In other words, if the lead engineer believes that halting pile driving due to the presence of right whales will somehow adversely affect the pile driving effort, he or she can keep letting the hammer drop.

Four: While the BiOp generally prohibits pile driving at night, it allows a pile driving episode to continue beyond sunset if begun during the daylight hours. (BOEM 77307, 77454.) Consequently, there will be times when pile driving is taking place in the dark. During such pile driving events, the PSOs will be completely useless, and the pile driving will take place “blind” in terms of visual detection of right whales.

The third “protective” measure involves the use of Passive Acoustic Monitoring (“PAM”) to supplement the PSOs. PAM involves the installation of listening devices that can detect whale vocalizations and other noises indicating the presence of whales within the audio surveillance range of the PAM equipment. (BOEM 77455.) The noise data is then interpreted by an expert who is supposedly trained to discern the species of the whale making the sounds detected. (BOEM 77455.) The BiOp requires the PAM operator to alert the lead engineer whenever the sound data indicate a right whale is present within the action area. (BOEM 77455.)

There are three major flaws with relying on PAM to protect right whales from the Project's Level A pile driving noise.

One: The Level A exposure limit for right whales extends 7,253 meters (or 7.25 km) from the pile driving source.² (BOEM 77442.) However, for most of the year (June 1 to October 31), the BiOp only requires PAM coverage up to 5 km from the pile driving source, leaving much of the Level A exposure area outside the PAM detection limit. (BOEM 77453, 77457; NMFS 3511.) The BiOp attempts to rationalize this by stating that PAM coverage must extend to 10 km during the winter and spring when right whale presence in the area is heaviest, thereby providing them sufficient protection from Level A noise. (See BOEM 77451, 77453, 77454-455, 77457.) But this assumes there will be no whales present in the pile driving area from June 1 through October 31, which the latest data show is not the case. To the contrary, the most recent surveys conducted by Quintana-Rizzo et al (2021) indicate that right whale presence in the RI/MA WEA, which includes the project development area (WDA), is quite high during the summer and extends into the fall. (NMFS 53329, 53331.) This finding is consistent with the growing body of evidence that right whale migration and behavior patterns have shifted dramatically due to environmental conditions. (BOEM 77331.) Right whales now spend time in the Vineyard Wind WDA year-round. (NMFS 53324, 53329, 53331.) For this reason, NMFS's decision to let Vineyard Wind shrink the PAM coverage area to 5 km during the summer and fall will expose right whales to Level A noise and damage, resulting in a take for which no authorization has been granted.

Two: There is no guarantee that PAM will detect all right whales that swim into the pile-driving exclusion area. The underwater soundscape in this part of the ocean is quite noisy, due to ship traffic and other sources of sound, both natural and man-made. (BOEM 77418-19, 77422-24.)

² This number assumes 6 dB of sound attenuation. (BOEM 77442.)

PAM was never intended to be a perfect backstop capable of catching every possible sound a right whale might make. In addition, right whale mothers and calves – the two most vulnerable types of right whale – do not generally communicate via sound but rather stay in visual contact with one another. (BOEM 77464.) As a result, mother-calf pairs entering the pile driving area may be difficult if not impossible to detect via PAM.

Three: Even when the PAM operator detects a right whale and notifies the lead engineer, the lead engineer can override the shut-down directive and continue pile driving if he or she determines that cessation of work will threaten human safety or the integrity of the pile driving effort. (BOEM 77464; NMFS 3493-3494.) In such cases, neither the PSOs nor the PAM operator can sufficiently protect right whales from being exposed to Level A pile driving noise.

For the foregoing reasons, there is no support for the BiOp’s conclusion that the required pile-driving protection measures will preclude Level A harassment of right whales. Worse, the very measures that NMFS and Vineyard Wind have developed to “protect” right whales from pile driving noise – i.e., enforced whale clearance zones – will expose them to other “take” threats, including vessel strikes and fishing gear entanglement.

This requires a short explanation.

Even if the “soft start” strategy effectively pushes all right whales out of the Level A exposure zone (i.e., 7.25 km from the pile driving area), there is no evidence the whales will be safe. On the contrary, there is considerable evidence that the whales will be exposed to increased threats from fishing gear entanglement and vessel strikes. For example, Area 537 is one of the most heavily fished areas in the Massachusetts OCS with hundreds perhaps thousands of VBR trap/pots for lobster and crab. (BOEM 77581; BOEM 194539.) By forcing right whales out of the WDA, the Vineyard Wind soft start program will drive the whales right into this network of fishing

ropes, heightening the threat of entanglement. The threat of vessel strikes against whales will also increase outside the WDA, as vessels in this area are not subject to the BiOp's 10 knot speed limit; nor are they required to have a PSO onboard looking for whales.

In addition, to the extent the soft start forces feeding whales to leave and try to locate food elsewhere, the loss of foraging opportunity, in itself, may be damaging, especially given data showing that malnutrition has caused female North Atlantic right whales to lose weight and exhibit signs of reduced physical health. (NMFS 26386-26401.) The BiOp contends that right whales which have been prevented from foraging in the WDA during pile driving will simply come back and resume feeding once the pile driving stops. (BOEM 77460-63.) There is, however, no evidence to support this argument. For example, the BiOp cites Goldbogen et al. 2013a and Melcon et al. 2012 for the proposition that “exposed animals will be able to return to normal behavioral patterns (i.e., socializing, foraging, resting, migrating) after the exposure ends,” claiming these two studies reflect the “best available information”. (BOEM 77462.) In fact, however, the Goldbogen and Melcon studies focus on *blue whales* exclusively, not *right whales* (NMFS 8424, et seq. [Goldbogen]; NMFS 39898, et seq. [Melcon].) The Goldbogen article discusses blue whale “lunge feeding”, which has nothing to do with right whale responses to noise; and the Melcon study addresses blue whale responses to *mid-frequency* sound, whereas right whales hear at a *low-frequency*. (NMFS 8424 [Goldbogen]; NMFS 39898 [Melcon].) More importantly, neither study asserts that whales, once exposed to harassment-level noise, will quickly return to normal behaviors once the noise comes to a stop.

The more relevant studies indicate that “low-frequency-sound” whales, such as the right whale (BOEM 77335), behave unpredictably to repeated pulse noise, such as pile driving, which means NMFS has no way of knowing whether the right whales, once driven off their preferred

feeding grounds and forced to find food elsewhere, will return to the WDA to restart their foraging effort. (See NMFS 56428-29, 56437, 56440-41, 56448, 56463, 56466, 56469.)

Unfortunately, the BiOp never discloses, much less analyzes, the impacts of pushing right whales out of the WDA for three to six hours at a time (each pile driving event takes about 3 hours, and Vineyard Wind has given itself the option of conducting two such events per day). For this reason alone, the BiOp is deficient.

b. Project-Related Vessel Strikes

Though the BiOp acknowledges that vessel strikes are a significant cause of right whale mortality, it provides an inadequate analysis of the Project's vessel strike risk to right whales.

First, the BiOp never discloses how many vessel trips through right whale habitat will be required during each of the three phases of the Project (construction, operation, and decommissioning). Instead, the BiOp simply indicates that a maximum of 63 vessel trips will take place per each day of construction, or approximately 1,555 vessel trips per month. (BOEM 77503.) The BiOp also fails to "synch-up" project-related vessel trips with the times of year when right whale abundance in the project area is at its highest. More important, it does not reveal how many of the trips will be made by crew transfer vessels, which travel at 25 knots per hour and are not subject to the BiOp's 10-knot speed limit. (BOEM 77524-25.) These vessels pose a significant strike risk to right whales.

Second, the BiOp does not quantify the combined number of *miles* the project vessels will travel through right whale habitat. And vessel *miles* – more so than vessel *trips* – is the better metric for measuring right whale exposure to vessel strike risk. The BiOp indicates that most of project vessels will transit between ports on the Massachusetts coast (primarily New Bedford) and the WDA – a trip of approximately 50 miles one-way. (BOEM 77294.) But the BiOp does not

identify the number of vessel trips that will transit along this 50-mile route, so we are left to guess the total vessel miles to be traveled. Nor does the BiOp disclose how many of these trips will be made by high-speed crew transfer vessels. In addition, the Project will also require that some vessels travel between ports in Canada and the WDA, which are much longer trips, covering more than 440 miles, much of it through right whale habitat. (BOEM 77294.) Again, however, the BiOp does not quantify the total vessel miles required for this aspect of the Project. Likewise, the BiOp provides no vessel mile data for project *operations* or for *decommissioning*. Without these data, there is no way to assess the Project's vessel strike risk to right whales.

Third, as alluded to above, the BiOp fails to assess any increase in vessel strike risk due to Vineyard Wind's efforts to force right whales out of the WDA during pile driving activities. The project's "soft start" hazing procedure is intended to push the whales away from the pile driving zone into surrounding waters. (BOEM 77458.) These waters experience heavy vessel traffic, posing a strike risk to whales – a risk that would not exist if the whales were allowed to remain in the WDA. The BiOp is silent on this issue.

Fourth, the BiOp's vessel strike "avoidance" measures are unproven and facially inadequate. The first measure requires that project vessels travel no more than 10 knots while transiting to, from, and/or within the WDA. (BOEM 77525.) The measure is consistent with data showing that vessel collisions with whales tend to cause serious injury or death when the vessel is traveling in excess of 10 knots. (BOEM 77519, 77524.) The problem, however, is that the 10-knot speed limit does not apply to crew transfer vessels which, according to the EIS will be 68 to 98 feet long and have "operational speeds of 25 knots." (BOEM 34861, 77304.) In fact, under certain circumstances crew transfer vessels can even disregard the 10-knot speed limit in designated Dynamic Management Areas (DMAs) and Seasonal Management Areas (SMAs) – which are

special protection zones that NMFS establishes to reduce vessel strikes on right whales. (See BOEM 77304-77305, 77415-416.) The BiOp provides no rationale for exempting these vessels from the 10-knot speed limit.

Worse, the EIS indicates that these large and fast crew transfer vessels will account for the lion's share all the Project's vessel trips. (BOEM 34746.) In other words, the vast majority of project-related trips will be made by vessels traveling well over 10 knots per hour, effectively gutting whatever "protective" benefits the speed limit was supposed to provide.

The BiOp's second line of defense against vessel strikes consists of PSOs on all vessels transiting between the WDA and landside ports in Massachusetts and Canada. (BOEM 77524-26.) Like the PSO's retained to scan the ocean during pile driving, the vessel-assigned PSOs will not be able to detect right whales swimming below the surface. This is a potentially fatal limitation, since submerged right whales spend much of their time in the top 30 feet of the water, which is well within the draft depth of most vessels needed for the project, thus increasing the whales' risk of being hit. (NMFS 6117.) Rough seas and high swells will make detecting whales even more difficult. Also, unlike the pile-driving PSOs, the vessel-assigned PSO's will not have the benefit of an elevated platform from which to scan the ocean's surface, which means the effective distance of their observational abilities will be reduced from 1,500 meters to 1,000 meters (1km). (BOEM 77524-25.) In addition, the BiOp imposes no restrictions on vessel travel at night or in the dark predawn hours. (BOEM 77304-77306.) PSOs will be completely useless on vessels traveling during these periods. Finally, PSOs are only effective if the captain, upon being notified of a right whale near the vessel, can quickly take evasive action and avoid colliding with the whale. This task is easier to accomplish when the vessel is traveling less than 10 knots per hour but becomes increasingly difficult when the vessel is traveling in excess of 10 knots. By allowing "crew

transfer” vessels to travel at 25 knots, the BiOp renders the PSO program largely ineffectual for these kinds of ships.

The BO’s third line of defense against vessel strikes is PAM. But recall that the BiOp-required PAM array only provides 10 km of coverage (as measured from the pile driving area) during the winter and spring, and 5 km of coverage during the summer and fall. (BOEM 77311-77313, 77319, 77453.) Given that the transit routes between the WDA and offloading ports in Massachusetts and Canada are about 80 km (50 miles) and 708 km (440 miles) long, respectively, PAM will cover only a small fraction of the vessel transit area, leaving right whales vulnerable to collision during more than 80 percent of each vessel trip to and from port. (NMFS 77294; see NMFS 77512 [Fig. 7.2.3 – Vessel Traffic Routes from Canadian Ports].)

ESA section 10(a)(2)(B)(ii) requires NMFS to find that “the applicant *will* ... minimize and mitigate the impacts” of a taking. 16 U.S.C. § 1539(a)(2)(B)(ii) (emphasis added). In addition, “[m]itigation measures supporting a biological opinion’s ‘no jeopardy’ conclusion ... must address the threats to the species in a way that satisfies the jeopardy and adverse modification standards.” *National Wildlife Federation v. National Marine Fisheries Service*, 184 F.Supp.3d 861, 873, quoting *Center for Biological Diversity v. Rumsfeld*, 198 F.Supp.2d 1139, 1152 (D.Ariz. 2002). In short, the ESA prohibits NMFS from relying on unproven, unreliable, or facially ineffective mitigation measures that do not adequately address the action’s threat to the species. As shown above, the Project’s take “avoidance” measure are in no way adequate to protect right whales from Level A pile driving noise or vessel strikes.

c. Operational Noise

A growing body of data indicates that chronically elevated levels of low-frequency noise, such as that created by vessel traffic, reduces right whale “communication space” by more than 65

percent. (NMFS 8751, 8756, 8758-59.) This adversely affects a host of right whale behaviors, including navigation, prey and predator detection, and social interactions, resulting in reduced “fitness”. (NMFS 8760.)

The Vineyard Wind project will install up to 84 wind turbines in right whale habitat, and the turbines will be larger than originally reported, because Vineyard Wind has opted to switch from 10 MW WTGs to 14 MW WTGs. (BOEM 197556.) These will generate near-constant noise for the 33-year life of the project. Like vessel noise, the noise from the turbines falls within the low-frequency range that right whales can hear. (NMFS 57132.)

A recent study published by Uwe Stober and Frank Thomsen in the *Journal of the Acoustical Society of America*, titled “How could operational underwater sound from future offshore wind turbines impact marine life?” (NMFS 57132-57136), concluded that the growing trend of larger and larger offshore wind turbines – a trend Vineyard Wind is perpetuating – will increase chronic operational noise of commercial-size wind farms, resulting in potentially significant impacts on baleen whales, such as the right whale. (NMFS 57132, 57135 [Stober and Thomsen].) The BiOp mentions this study but does not engage with it. (See BOEM 77432.) Nor does the BiOp independently address the impact that the Stober study identified. (BOEM 77470.) Instead, the BiOp relies on an older study by Elliot et al. that measured operational noise from the Block Island Wind Farm (BIWF). (BOEM 77432, 77464.) Such reliance is suspect because the BIWF consists of only 5 WTGs, each with a 6 MW capacity, whereas the Vineyard Wind project will have 84 WTGs, each with a 14 MW capacity. (NMFS 27989, 27993, 28061; NMFS 77470.) In short, their noise “signatures” are not comparable.

d. Increased Stress Due to Loss Foraging Opportunities

Recent studies show that the Vineyard Wind WDA supports a significant portion of the

entire right whale population, at least during certain times of year, and likely supports a substantial number of right whales all year round. (NMFS 53324-53332.) Though the BiOp does not analyze copepod abundance within the WDA – another “baseline” omission – the constant and increasing presence of right whales in the WDA suggests strongly that the area is rich in copepods and is a preferred feeding ground for the whale. (NMFS 53319-53335.) The BiOp, however, does not assess the extent to which Vineyard Wind’s efforts to clear the pile driving zone of right whales will reduce the whale’s foraging opportunities. And while the waters proximate to the WDA likely contain copepods, the BiOp does not analyze or confirm their abundance; nor does the BiOp address how much energy the whales will expend looking for these alternative sources of zooplankton, or whether this search for food will bring the whales into contact with vessels and fishing gear. Failing to include this information renders to BiOp inadequate.

e. Entanglement in Fishing Gear

The scientific literature establishes that entanglement in fishing gear is the primary human-caused threat to right whales. (See, e.g., BOEM 194536; NMFS 53319.) Data in the record indicate that the WDA and its surrounding waters – including NMFS Statistical Area 537 – are heavily favored areas for lobster and crab fishing, both of which rely on VBRs. (BOEM 77580; BOEM 194539.) In other words, the project area and its immediate surroundings already pose a significant risk of gear entanglement for right whales.

For some inexplicable reason, the BiOp is requiring Vineyard Wind to conduct a fisheries research study by placing lobster and crab trap/pots in the WDA, thereby adding to the already-extensive proliferation of VBR fishing gear in the area. (See BOEM 77298, 77578-80.) Thus, the Project would contribute to the ongoing threat of fishing gear entanglement in two ways. First, it would directly add to the existing amount of fishing gear (including VBR) in the WDA that might

entangle right whales. Second, through its pile driving procedures, the Project would force whales out of the WDA into waters known to have a high concentration of VBR gear.

The BiOp does not adequately assess either threat. Instead, the BiOp just concludes – without sufficient evidence – that the Project will have a negligible effect on fishing gear entanglement of right whales. Such a bare conclusion is inadequate under the ESA. (BOEM 77581.)

4. BiOp's Recovery Analysis Fails to Account for Project's Synergistic Impacts on Right Whales, and Fails to Include an Abundance Goal

The ESA requires that a BiOp evaluate whether the federal action under review will impede recovery of any affected listed species. *National Wildlife Federation v. National Marine Fisheries Service*, 524 F.3d 917, 924 (9th Cir. 2008). The BiOp here fails to satisfy this mandate. Rather than assess the whale's recovery prospects in light of the Project's multiple and synergistic threats to the species, the BiOp, in one short paragraph, simply waves its wand and declares the Project benign. (BOEM 77630.) Given the evidence in the record, much of it in the BiOp itself, this conclusion is simply not supportable.

The BiOp admits that the North Atlantic right whale's "resilience to future perturbations is expected to be very low," and that, at the current rate of decline, the number of female right whales will fall to just 123 by 2029. (BOEM 77336.) It is hard to see how the Vineyard Wind project will do anything but hasten the whales' downward spiral. During its two-year construction period, the Project will (i) expose right whales to Level A pile driving noise; (ii) force the whales out of their preferred feeding grounds and require them to expend more energy looking for food; (iii) increase the risk of vessel strikes on right whales; and (iv) increase the risk of right whales becoming entangled in fishing gear. And during its 33-year operational life, the Project will subject right

whales to constant vessel traffic, as well as chronically high levels of low-frequency noise from the wind turbines, making it more difficult for the whales to conduct normal behaviors.

When these stressors are considered in combination and synergistically – something the BiOp never does – it becomes clear that the Vineyard Wind project will further degrade right whale recovery, which is already hampered by (i) an incredibly small population (approximately 360 individuals), (ii) the continuing loss of whales to fishing gear and vessel strikes, (iii) the dwindling numbers of reproductive females, (iv) the reduction in calving rates and the increase in calving interval, (v) evidence of diminished right whale prey species and foraging opportunities, and (vi) data showing that right whales are literally withering away physically. The evidence could not be more clear: the North Atlantic right whale is quickly heading towards oblivion. (NMFS 63323 [Right whales are predicted to go extinct in 30 years if long-term average mortality is not significantly reduced]; see also, BOEM 77333.)

When the Project threats are analyzed against this backdrop, one cannot square the BiOp’s conclusion that the Project will not jeopardize the species or impede its recovery. (BOEM 77630-31 [Project will not affect survival or recovery potential of right whale].) The disconnect between evidence and conclusion is so stark it borders on cognitive dissonance

In addition, the BiOp never assesses right whale recovery in terms of an abundance target, as the law requires. *National Wildlife Federation v. National Marine Fisheries Service*, 184 F.Supp.3d 861, 894 (D.Oregon 2016) [without identifying “rough” recovery abundance levels and time frames, NOAA Fisheries cannot logically conclude that action will not appreciably reduce likelihood of recovery]. For this reason alone, the BiOp is legally deficient.

In failing to draw a rational connection between its “no jeopardy” finding – including its “recovery element” – and the best available scientific evidence, NMFS has issued a legally

defective BiOp, resulting in a violation of the ESA. *Center for Biological Diversity v. United States Dep't of Interior*, 113 F.3d 1121, 1124 (9th Cir. 1997); 16 USC § 1536(a)(2); 50 CFR § 402.14(g)(8). And BOEM by *relying* on the defective BiOp, also violated the ESA. *Pyramid Lake Paiute Tribe of Indians v. U.S. Dep't of Navy*, 898 F.2d 1410, 1415 (9th Cir. 1990).

B. The Vineyard Wind EIS is Legally Inadequate

1. Key Environmental Information Relegated to Non-EIS Documents

NEPA requires that all impact analyses be set forth in the EIS document itself. *Kern v. United States Bureau of Land Management*, 284 F.3d 1062, 1073-1074 (9th Cir. 2002); see also *Highway J Citizens Group. V. United States Dep't of Transp.*, 656 F. Supp. 2d 868, 887 (E.D. Wis. 2009). The Vineyard Wind EIS flouts this rule by relegating key environmental information to documents outside the EIS itself.

Specifically, the EIS's air quality analysis provides very little information regarding the Project's anticipated emissions of "criteria" pollutants – i.e., those air pollutants regulated under the Clean Air Act. These include carbon monoxide (CO), sulfur dioxide (SO₂), particulate matter smaller than 10 microns (PM₁₀), particulate matter smaller than 2.5 microns (PM_{2.5}), nitrogen oxide (NO₂), ozone (O₃), and lead. In fact, the Draft EIS text does not provide any "criteria pollutant" emissions numbers for the project at all. (BOEM 34766-69.) Instead, the Draft EIS indicates that these data are set forth in the Construction and Operations Plan (COP) prepared by Vineyard Wind. (BOEM 34767-69.) This violates NEPA's mandate that key environmental information, including and especially impact-related data, be set forth in the EIS itself, not other documents.

But it gets worse.

It turns out that the key emissions data in the COP Air Quality Appendix (Appendix III-B), the document to which the Draft EIS refers readers interested in learning about the Project's air quality impacts, were redacted by Vineyard Wind. (See BOEM 1529-1540, 1542-1557, 1559-1578, 1582-1594.) Thus, this information was unavailable during the public review and comment period on the Draft EIS. Only after that period closed did Vineyard Wind restore the redacted air quality data to Appendix III-B. BOEM, of course, allowed this unlawful manipulation of key impact information to occur, resulting in a violation of NEPA and the APA. 40 CFR § 1501.12 [“Agencies shall not incorporate by reference material based on proprietary data that is not available for review and comment.”].)

So, not only did the BOEM place key environmental impact information in documents outside the DEIS and SEIS – which by itself is a violation of NEPA – the technical appendices that were supposed to house this information were redacted and inaccessible to the public. This is absolutely contrary to the public transparency policies that inform and govern the NEPA process. 40 CFR § 1501.12.

2. EIS Provides Inadequate Analysis of Project Specific Air Quality and GHG Impacts

NEPA requires that an EIS evaluate both direct and indirect effects. 40 C.F.R. §§ 1502.16, 1508.8, 1508.25. In *South Fork Band of W. Shoshone v. U.S. Dep't of Interior*, 558 F.3d 718, 725 (9th Cir. 2009), the court stated that the “air quality impacts associated with transport and off-site processing of the five million tons of refractory ore are prime examples of indirect effects that NEPA requires be considered.” Here, however, the Vineyard Wind EIS fails to provide an adequate analysis of the Project's direct and indirect impacts on air quality and GHG emissions.

First, the EIS does not provide sufficient data as to the Project's *direct* emissions of “criteria” pollutants (i.e., those regulated under the CAA and for which specific NAAQSs have

been established). 42 U.S.C. §§ 7407-7410. Nor does the EIS compare the Project's direct emissions against the NAAQSs for the criteria pollutants in question – CO, SO₂, PM₁₀, PM_{2.5}, NO₂, O₃, and lead. (BOEM 34765-69; BOEM 197735-36; BOEM 68849-52.) In addition, the EIS makes no effort to quantify or analyze the Project's *indirect* emissions – i.e., those attributable to the Project but not immediately caused by it. (*Id.*) These would include emissions from Project-related activities onshore, including vehicle emissions from employees associated with the Project. For example, Vineyard Wind anticipates that Project construction will generate 2,371 full-time employment (FTE) positions (BOEM 68635-36.) Yet, the EIS does not account for the emissions these new employees will produce.

BOEM made the same error with respect to GHG emissions. The EIS fails to disclose the Project's direct and/or indirect GHG emissions or compare those emissions to any analytical threshold. (See BOEM 68852-53.) The EIS also fails to disclose that when the wind stops and the turbines cannot generate electricity, the shortfall must be made up by electricity generated by fossil-fuel fired energy plants lest the grid become unstable and unreliable. The EIS does not account for AQ or GHG emissions associated with this aspect of the Project's practical operations.

3. EIS Provides Inadequate Analysis of Project Impacts on Right Whale

While the BiOp is supposed to assess the Project's potential to jeopardize listed species and/or modify their critical habitat, the BiOp is not, strictly speaking, a public disclosure document. This is why the EIS, to comply with NEPA, must contain its own "hard look" analysis of project-related impacts on listed species.

The EIS for the Vineyard Wind Project, however, falls well short of providing a "hard look" at Project impacts on the North Atlantic right whale. For this reason, it is legally deficient.

a. Inadequate Description of Baseline Conditions Regarding Right Whale

To comply with NEPA, it is “essential that the agency describe the environmental baseline from which the impacts can be measured and evaluated.” *American Rivers v. Federal Energy Regulatory Comm’n*, 201 F.3d 1186, 1195 & n. 15 (9th Cir. 1999). “Without establishing . . . baseline conditions . . . there is simply no way to determine what effect [an action] will have on the environment and, consequently, no way to comply with NEPA.” *Half Moon Bay Fishermen’s Mktg. Ass’n v. Carlucci*, 857 F.2d 505, 510 (9th Cir. 1988). Like the BiOp, the Vineyard Wind EIS provides an inadequate description of baseline conditions as they relate to the right whale and its habitat in and near the WDA.

For example, the EIS does not disclose that the right whale’s PBR has fallen to 0.8, which means that the species cannot afford to lose even one individual to human causes per year; otherwise the whale will continue to slide toward extinction. The EIS also does not mention or discuss the importance of NMFS Statistical Area 537, which is adjacent to the project WDA. It also does not disclose that right whale hotspots overlap and surround the WDA. (See NMFS 53326.) And while the EIS does provide some information about current vessel traffic in the WDA, it does not provide any such information for the Project’s vessel transit routes, which make up the majority of project-related vessel miles. (See BOEM 68597.) Likewise, the EIS includes little to no data on fishing activity in and near the WDA, even though record indicates that lobster fishing in this area is intense. With regard to ambient underwater noise, the EIS is silent. And, finally, the EIS fails to provide any meaningful data on right whale prey abundance (copepods) in the WDA and surrounding waters.

b. EIS Does Not Adequately Analyze Vessel Strike Impacts

Although the EIS does provide some information as to the number, type, size, speed, and trip frequency of the vessels needed for the Project (BOEM 34861), it does not calculate the number of vessel miles required for the construction, operation, and decommissioning of the Project. Thus, the EIS omits a key metric for evaluating vessel strike risk on whales. The EIS also fails to analyze how many project-related vessel trips will traverse identified right whale “hotspots”. And the EIS does not assess increased potential for vessel strikes when right whales are “hazed” and forced to move out of the WDA into unregulated waters.

c. EIS Does Not Adequately Analyze Impacts on Fishing Gear Entanglement

The EIS does not assess the impacts of the Project’s lobster and crab fisheries monitoring program, which involves the use of VBRs – the very kind of fishing gear that entangles whales and causes serious injury and mortality. (See BOEM 77578-79.)

In addition, the EIS does not disclose that Vineyard Wind’s strategy of forcing right whales out of the WDA in advance of pile driving events will push the whales into nearby waters that are heavily fished for American lobster and Jonah crab, both of which use VBRs. Nor does the EIS analyze whether whales entering these heavily fished waters will be exposed to increased risk of VBR entanglement.

d. EIS Does Not Adequately Analyze Pile Driving Noise Impacts

The EIS misleadingly suggests that right whales will not be exposed to pile driving noise resulting in Level A harassment. (BOEM 8593-94.) The EIS, like the BiOp, assumes that PSOs and PAM will preclude right whales from being exposed to Level A pile driving noise. (BOEM 34858-59; BOEM 68592.) As shown above in Plaintiffs’ arguments regarding the BiOp, this assumption is baseless.

e. EIS Does Not Adequately Analyze Loss of Foraging Habitat

Although the EIS did not assess the amount or quality of right whale foraging habitat in the WDA – which is itself a fatal flaw under NEPA – the BiOp and technical literature indicate that right whales feed in parts of the WDA (NMFS 53318-53335) , indicating the presence of abundant, and properly massed, copepods. The EIS and BiOp both fail to analyze the extent to which losing access to this feeding area during the Project’s two-year construction will affect right whales or their fitness. The EIS does not address whether substitute foraging area exist nearby, or whether such substitute areas are located where whales could be exposed to fishing gear entanglement or vessel strikes.

f. EIS Does Not Adequately Analyze Operational Noise Impacts

The EIS does not analyze how much underwater noise the Project’s 84 WTGs will generate; nor does it assess what impacts such noise will have on right whales, other than to say they will be “negligible”. (BOEM 197594.) The EIS also fails to provide a cumulative analysis of this same impact. That is, it does not consider the combined underwater noise of the seven industrial-scale offshore wind farm clustered together in the Massachusetts WEA.

g. EIS Mitigation Measures Are Inadequate

The EIS must evaluate the effectiveness of the selected mitigation measures. *Neighbors of Cuddy Mountain v. U.S. Forest Serv.*, 137 F.3d 1372, 1380-81 (9th Cir. 1998). The EIS relies on the same unproven and facially ineffective “avoidance” measures that the BiOp adopted.

When preparing and EIS and drawing conclusion regarding impacts and mitigation measures, the federal agency may not rely on “a critical assumption that lacks support in the record.” *Natural Resources Defense Council v. United States Environmental Protection Agency*, 966 F.2d 1292, 1305 (9th Cir. 1992). As plaintiffs have shown, both NMFS and BOEM made

critical assumptions regarding the efficacy of the mitigation measures intended to avoid impacts to right whales (i.e., the vessel speed limit, the PSOs, and PAM) – assumptions that are not supported by evidence in the record.

h. EIS Provides Inadequate Analysis of Cumulative Impacts on Right Whale

When assessing cumulative impacts, the EIS must provide “some quantified or detailed information,” because without it, “neither the courts nor the public, in reviewing the [agency’s] decision, can be assured that the [agency] provided the hard look that it is required to provide.” *Neighbors of Cuddy Mountain*, 137 F.3d at 1379. The EIS makes no attempt to describe, quantify, or analyze the cumulative impacts of the various RI/MA WEA offshore wind projects, of which there will be at least seven, on the North Atlantic right whale.

It is clear from the evidence that most if of these project leaseholds support either resident or migratory right whales. Given that all of these projects will at the least require pile driving and hundreds of vessel trips over thousands of miles of right whale habitat, one can reasonably conclude that the impacts on the whale will be significant and could lead to continued stress on the animal and even increases in mortality – the very things the species cannot absorb. In failing to address cumulative impact of the various RI/MA offshore wind energy projects on the right whale, the EIS is fatally deficient.

For the foregoing reasons, the Vineyard Wind EIS fails to satisfy the minimum requirements of NEPA, and BOEM was arbitrary and capricious when it issued the ROD approving it.

VI. CONCLUSION

In light of the above, Plaintiffs respectfully request that the Court set aside the Biological Opinion and Final EIS challenged herein, vacate BOEM's adoption of the Vineyard Wind ROD, and find that BOEM's reliance on the defective Biological Opinion was unlawful. Further, Plaintiffs seek interim injunctive relief to protect the North Atlantic right whale until such time as the federal defendants have complied with the applicable ESA and NEPA mandates.

DATED: July 25, 2022

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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 July 25, 2022.

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