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November 27, 2021 *By E-Mail*

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Re: 60-Day Notice of Intent to Sue: Violations of Endangered Species Act Section 7 – Legally Deficient Biological Opinion for Vineyard Wind Offshore Energy Project and Related Incidental Take Authorization and Incidental Harassment Authorization

To whom it may concern:

This firm represents Nantucket Residents Against Turbines ("ACK Rats"), whose members live and/or own property on Nantucket Island, Massachusetts. The members of ACK Rats will be adversely affected by the proposed Vineyard Wind 1 offshore wind energy project (the "Vineyard Wind Project") recently approved by the Bureau of Ocean Energy Management ("BOEM"). The Vineyard Wind Project will consist of up to 100 wind turbines located on a federal leasehold of 166,866 acres (Lease Area OCS-A 0501), located approximately 14 miles south of Nantucket Island and Martha's Vineyard.

On September 11, 2020, the National Marine Fisheries Service ("NOAA Fisheries") issued a Biological Opinion (BiOp) for the Vineyard Wind Project, granting Vineyard Wind authority to "take" a variety of federally-listed species that reside in or use the Project Area, as that term is defined in the BiOp.[1] On May 24, 2021, ACK Rats submitted to BOEM and NOAA Fisheries a 60-day Notice of Intent to sue letter, identifying defects in the September 2020 BiOp. Unbeknownst to ACK Rats, on May 5, 2021, BOEM requested that NOAA Fisheries reinitiate Section 7 consultation on the Vineyard Wind Project, with a view toward issuing a revised/new BiOp. Re-consultation took place between May 2021 and October 2021; and on October 18, 2021 NOAA Fisheries issued a new BiOp that supersedes the one issued on September 11, 2020. This 60-day notice letter is directed at the new BiOp. However, to the extent the new BiOp incorporates any aspect of the old BiOp issued on September 11, 2020, ACK Rats' NOI letter dated May 24, 2021 still applies and is incorporated by this reference.

The October 18, 2021 BiOp (henceforward, the "2021 BiOp") provides take authority to BOEM and, by extension, Vineyard Wind, for a host of listed species affected by the Vineyard Wind Project. Among these is the North Atlantic right whale ("right whale" or "NARW"), one of the

[1] BOEM is the lead agency for the Vineyard Wind project and NOAA Fisheries prepared the BiOp. The other federal agencies to which this NOI is addressed – U.S. EPA, U.S. Army Corps of Engineers, and the U.S. Coast Guad – will rely on, or have relied on, the 2021 BiOp for purposes of issuing permits for the Vineyard Wind project.

most imperiled animals in the world. Despite the right whale's declining population and rapid slide toward extinction, the BiOp inexplicably determined that the Vineyard Wind project – which is located in one of the last right whale foraging and nursery strongholds on the Atlantic coast and which will involve thousands of miles of vessel trips through right whale habitat – will not jeopardize the species. As explained below, this determination is not supported by the evidence and thus is arbitrary and capricious, resulting in a violation of the Endangered Species Act (ESA). The 2021 BiOp's findings regarding Project-related impacts on other federally-listed species, including the Atlantic sturgeon, three other whale species, and four sea turtle taxa, also lack evidentiary support and thus are arbitrary and capricious.

On behalf of ACK Rats, we have reviewed the 2021 BiOp closely and determined that it fails to meet the legal requirements set forth in the ESA, as interpreted and applied by the federal courts of the United States. Therefore, pursuant to ESA section 11(g)(2)(A)(i), ACK Rats hereby provides the following 60-Day Notice of Intent to Sue NOAA Fisheries and BOEM 60-days over the BiOp. (16 U.S.C. § 1540(g)(2)(A)(i).) If NOAA Fisheries and BOEM do not correct the defects discussed below within the 60-day notice period, ACK Rats will file an action in federal district court and request an order declaring the BiOp invalid.

Procedural Objection to the Vineyard Wind Biological Opinion

BOEM issued the Record of Decision (ROD) for the Vineyard Wind Project and Final EIS on May 11, 2021, and then approved Vineyard Wind's Construction and Operation Plan (COP) on July 15, 2021. Both approvals predated the 2021 BiOp and were based instead on the old BiOp issued on September 11, 2020 – a BiOp that has been superseded and thus is no longer valid.[2] It would thus appear that the ROD and COP must be vacated immediately and then readopted based on the 2021 BiOp. We suggest, however, that BOEM not readopt the ROD or reapprove the COP until NOAA Fisheries corrects the deficiencies described in this letter.

Legal Requirements for Biological Opinions

Under ESA section 7(a)(2), "[e]ach federal agency *shall* . . . *insure* that any action authorized, funded, or carried out by such agency . . . is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the adverse modification of [critical] habitat of such species." 16 U.S.C. § 1536(a)(2) (emphasis added); see also *Water Keeper Alliance v. U.S. Dep't of Def.,* 271 F.3d 21,25 (1st Cir. 2001). To satisfy its duty to protect against jeopardy or adverse modification, agencies must give the benefit of the doubt to the species in question – here,

[2] In fact, the September 2020 BiOp became a legal nullity when Vineyard Wind formally withdrew its entire project application in December 2020. As such, the September 2020 BiOp could not have provided support for the Final EIS, the ROD, or the COP.

the right whale and other species discussed in the BiOp – and to place the burden of risk and uncertainty on the proposed action. *See Sierra Club v. Marsh,* 816 F.2d 1376, 1386 (9th Cir. 1987).

The ESA's substantive protections are implemented, in part, through consultation between the acting agency (here, BOEM) and the agency with jurisdiction over the conservation and recovery of the listed species in question (here, NOAA Fisheries). 16 U.S.C. §1536. When there is evidence that a proposed action may adversely affect a listed species, the wildlife agency (NOAA Fisheries) must prepare a biological opinion that evaluates the impacts of the proposed action on listed species and their critical habitat. If NOAA Fisheries finds that the proposed action is likely to jeopardize a listed species or adversely modify critical habitat, NOAA Fisheries must propose reasonable and prudent alternatives, if available, that will mitigate the proposed action so as to avoid jeopardy and/or adverse modification of critical habitat. 16 U.S.C. § 1536(b); *Idaho Dep't of Fish & Game v. Nat'l Marine Fisheries Service,* 56 F.3d 1071 (9th Cir. 1995).

In addition, ESA section 7(a)(1) mandates that federal agencies "utilize their authorities in furtherance of the purposes of this chapter by carrying out programs for the conservation or endangered species and threatened species listed" under the Act. 16 U.S.C. § 1536(a)(1). Like the duty to avoid jeopardy, the duty to advance and assist the conservation of listed species is discharged, in part, through the acting agency's consultation with NOAA Fisheries. *Id.* A program of "conservation" is one that brings the species to the point of recovery and delisting. 16 U.S.C. § 1532(3).

Finally, when preparing a biological opinion, NOAA Fisheries must use "the best scientific and commercial data available." 16 U.S.C. § 1536(a)(2); 50 CFR Part 402.14(g)(8). Further, the scientific data must support the ultimate conclusions drawn in the biological opinion regarding jeopardy and adverse modification. In other words, a biological opinion is arbitrary and capricious if it fails to "consider the relevant factors and articulate a rational connection between the facts found and the choice made." *Center for Biological Diversity v. U.S. Bureau of Land Management,* 698 F.3d 1101, 1121 (9th Cir. 2012), citing *Natural Res. Def. Council v. U.S. Dep't of the Interior,* 113 F.3d 1121, 1124 (9th Cir. 1997).

Substantive Defects in the Biological Opinion

The 2021 BiOp is legally deficient for the reasons set forth below:

1. The BiOp is unclear as to the number and size of the wind turbine generators (WTGs). It is critical that this information be stable and reliable, because when the number of WTGs goes down, the size of the WTGs goes up. And the larger the WTG, the more pile driving

it requires. The BiOp must analyze and explain whether the switch from fewer but larger WTGs will alter, one way or the other, the amount and intensity of pile driving in the Project Area.

2. The BiOp never provides the number of estimated vessel miles traveled, which is the only meaningful metric when determining vessel strike risks on North Atlantic right whales and other marine animals, such as the federally-listed Atlantic sturgeon and the four federally-listed sea turtles identified in the BiOp.[3] It is not enough to disclose the number of vessel trips; it is the *length* of those trips that determines whether and to what extent the vessels pose a risk to federally-listed whales, fish, and turtles.

3. The BiOp cites no evidence for the claim that each monopile will require only 3 hours of pile driving. This is a critical omission, given that the BiOp's "no jeopardy" finding and take authorization determinations rely on Vineyard Wind's assertion that no more than 3 hours of pile driving will occur with respect to each monopile.

4. The BiOp indicates that some of the monopiles may be installed via vibratory driving as opposed to impact driving. Yet, the BiOp does not analyze the effects of this pile driving method on right whales or the other federally-listed species known to reside in or use the Project Area.

5. The BiOp does not clearly or adequately disclose how many vessel trips and vessel miles will be required to lay the cables that (1) connect the WTGs together and (2) connect the Project's wind array to onshore transfer facilities. As a result, the BiOp underreports and/or under-analyzes the impacts of vessel strikes on right whales and other federally-listed species.

6. The BiOp admits that procurement for offshore installation activities will require vessel trips from a variety of mainland ports. However, the BiOp also admits that the ports of origin are currently unknown. This makes it impossible to calculate the number of vessel miles that will be traveled to and from the project site for purposes of WTG installation. Without this information, it is likewise impossible to determine the vessel strike risk to right whales and other federally-listed species.

7. The vessel miles traveled issue is especially important in scenarios where procurement ships will be traveling from ports in Canada (e.g., Sheets Port, St. John, and Halifax), as

[3] The four federally-listed sea turtles are (1) the loggerhead sea turtle, (2) the leatherback sea turtle, (3) the green sea turtle, and (4) the Kemp's Ridley sea turtle.

these ports are more than 400 miles from the WGA installation site. Moreover, ships from these ports will travel through seas known to be used by the right whale and other federally-listed species. In failing to account for the vessel miles traveled by ships transiting between the project installation site and Canadian ports, the BiOp underreports the vessel strike risks to right whales, Atlantic sturgeon, and federally-listed sea turtles.

8. The BiOp's "No Jeopardy" determination as to project impacts on right whales is based on the successful implementation of various "detect and avoid" measures. These measures, however, are so diluted by exceptions, qualifications, and loopholes as to be functionally meaningless. Thus, they cannot be used to support any "take" or "no jeopardy" determination. In issuing a BiOp that does not protect right whales from jeopardy, NOAA Fisheries has violated Section 7 of the ESA. 16 U.S.C. § 1536(a)(2).

9. The BiOp is inconsistent and unclear as to when project-related vessels must travel at speeds less than 10 knots. The BiOp refers to so many overlapping exceptions and qualifications to the 10-knot speed limit that one has no idea what rule will be enforced under any given circumstance. Strict compliance and enforcement of the 10-knot vessel speed limit is imperative to reducing vessel strikes on right whales, Atlantic sturgeon, and federally-listed sea turtles. Reduced vessels speeds would also minimize harm to these species (including mortality) if vessel strikes occur.

10. The BiOp indicates that Vineyard Wind will engage in "soft start" pile driving consisting of three single hammer strikes at 40 percent hammer energy, followed by at least a one-minute delay before full energy hammer strikes begin. Although the BiOp does not discuss the purpose of the "soft start" procedure, it is clearly being proposed as a means of "warning" whales and other federally-listed species and encouraging them to leave the action area. Consequently, the "soft start" functions as a form of active, purposeful harassment/hazing that is <u>not</u> incidental to the action in question (i.e., construction and operation of offshore wind farms.) Such purposeful harassment/hazing is a "take" not authorized under the ESA.

11. The BiOp's "take" determinations and "no jeopardy" finding vis-à-vis right whales are based, in part, on the implementation of "seasonal" protections for the species. The BiOp acknowledges, however, that right whales are present in the project action area year-round. Thus, the proposed seasonal protections will not adequately safeguard the resident/non-migratory population of whales. For this reason, the BiOp fails to provide an adequate take analysis and further fails to protect right whales from jeopardy.

12. The BiOp's "take" and "no jeopardy" determinations rely heavily on the ability of vessel-based Protected Species Observers (PSOs) to visually scan the ocean surface and detect right whales at distances sufficient to allow the vessel to alter course and avoid a collision. The BiOp also relies on PSOs to locate whales that might enter the project impact area during pile driving. There is no evidence, however, that PSOs are effective at detecting right whales under these conditions or for these purposes. First, the BiOp only requires two PSOs to be on watch at any given time. Second, the Project Area, as defined in the BiOp, is huge and cannot be surveilled by two PSOs at a time. Third, PSOs cannot see whales more than a few feet below the surface, and many whale strikes happen below the draft-depth of vessels. Fourth, the PSOs will not be able to effectively detect whales on the surface unless the seas are almost completely calm, a situation that rarely occurs in the Project Area. Moderate to high seas – with corresponding swells – will obscure whales during the brief moments when they surface to breathe or feed. Moreover, Nantucket and the seas around it are among the foggiest areas in the entire country, especially during June and July, two of the months when project-related pile driving is scheduled to occur. The fog rolls in quickly, often too fast for the kind of adjustments Vineyard Wind would have to make to avoid collisions with whales. Fifth, unlike some marine mammals, right whales have no dorsal fin, which makes them even harder to detect visually on the water's surface. For these reasons, the BiOp's reliance on the PSO "detect and avoid" measures proposed by Vineyard Wind is misplaced and will result in excessive take of right whales. Such take will also result in jeopardy to the species. Reliance on PSOs to protect other federally-listed species in the Project Area is likewise misplaced.

13. The mitigation measures described in the BiOp provide a "feasibility" exception to pile during limitations, under which Vineyard Wind can continue pile driving even in the presence of right whales or other listed species if halting the pile driving work is not feasible. This exception makes the pile driving protections and limitations meaningless, as it gives Vineyard Wind complete discretion as to when and under what circumstances they can be disregarded. In other words, the BiOp is deficient because it does not define "feasibility" or describe the criteria that must be met before Vineyard Wind can claim that a given pile during limitation is "not feasible."

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

the term "practicable" or describe the criteria that must be met before Vineyard Wind can claim that a given pile during limitation is "not practicable."

15. Vessel speed limits are subject to a host of exceptions, qualifications, and loopholes, thereby reducing their ability to protect right whales and other listed species from unauthorized take and jeopardy.

16. The seasonal restriction on pile driving (Jan 1- April 30) does not protect year-round resident whales.

17. The BiOp fails to provide an adequate, complete, and legally compliant analysis of project impacts on the survival and recovery of the right whale. This is an especially glaring omission, given the precarious state of right whale populations in New England. Recent reports – i.e., post-COVID – indicate the right whale is having something of a "baby boom", as 18 calves have been spotted during the last calving season. This likely is the result of COVID-related reductions in large vessels in the area. The BiOp must examine whether this nascent recovery will be impeded or stopped altogether by the Project and the renewal of intense human activity in or near right whale calving areas.

18. The BiOp relies on the 2005 Recovery Plan for the right whale, but that plan is now 15 years old and does not account for recent data showing sharp declines in right whale population numbers.

19. The BiOp fails to acknowledge that the PSOs will not be able to see effectively at night. There is no prohibition on vessels transiting at night; nor does the BiOp prohibit pile driving at night, provided it begins in the daylight hours.

20. The BiOp does not require that PSOs be independent of Vineyard Wind. Without such independence, the PSOs will be subject to "corporate capture" and thus less likely to call for a shutdown of vessel traffic or pile driving when right whales and other listed species may be preset in the Project Area.

21. The BiOp is unclear whether all transit vessels will be assigned PSOs. The PSO requirement seems to apply only to pile driving activities. Transit vessels are allowed to rely on crew members, all of whom will be incentivized to keep boats running, even if whales are detected. This protocol, to the extent it can be called one, provides little assurance that right whales and other federally-listed species will be adequately protected.

22. To protect right whales and other federally-listed species, the BiOp applies a 10-knot speed limit to vessels 65 feet or greater in length. However, Vineyard Wind can circumvent this speed limit by using ships that are 64 feet in length or less. The BiOp fails to assess this contingency or provide mitigation measures or conditions that would address it.

23. The BiOp does not adequately address the project's construction and operational impacts on right whale navigation and communication.

24. The BiOp does not consistently address or analyze impacts on right whales for the entire "Project area" as defined.

25. The BiOp does not clearly or adequately analyze whether the WTGs, when operational, will emit noise or vibrations capable of affecting whales and other federally-listed species.

26. The BiOp fails to adequately assess project-related impacts on right whales in light of recent evidence showing that the species has shifted its feeding grounds to areas in and near the WDA and other portions of the Project Area.

27. The BiOp's no jeopardy determination is based on unsubstantiated and/or outdated whale carcass recovery percentages. As a result, the BiOp underestimates the number of right whales the Project will take and correspondingly fails to make a proper jeopardy finding.

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

29. The data discussed in the BiOp demonstrates that the right whale is in serious peril and headed toward extinction; yet the BiOp concludes that the Project will not hasten this trend nor impede the species' recovery. This conclusion is not supported by the evidence. To the contrary, most of the recent right whale sightings have occurred south of Nantucket Island, precisely where the Vineyard Wind Project is to be installed. This suggests a high likelihood of project-to-whale conflict and interaction, resulting in potential harm to the species.

30. The BiOp admits that human-derived threats to the right whale are worsening but does not factor this trend into the jeopardy analysis.

31. The BiOp admits that "North Atlantic right whales' resilience to perturbations is expected to be very low" but does not address this fact in its jeopardy analysis.

32. The BiOp recognizes that shipping, along with commercial fishing, accounts for most right whale injuries and deaths, but inexplicably concludes that project-related vessels will be able to avoid all contact with the species.

33. The BiOp acknowledges that right whales spend most of their time (72%) within 33 feet of the water's surface, making them "particularly vulnerable to ship strike . . ." Yet, the BiOp's "take" and "no jeopardy" determinations ignore this finding and, in the absence of any evidence or analysis, conclude that no right whales will sustain vessel strikes. This is the quintessence of an arbitrary and capricious determination by a federal agency.

34. The BiOp indicates that right whale "hot spots" are within the Project Area (namely, the offshore export cable corridor or "OECC"). Again, this suggests a high probability of interaction between project-related activities and right whales, leading to adverse impacts, including take and potential jeopardy. Yet the BiOp ignores these facts.

35. The BiOp provides clear evidence of recent mortal vessel strikes on right whales. But then the BiOp disregards this evidence when making determinations as to take and jeopardy. This is arbitrary and capricious.

36. The BiOp fails to assess vessel strike risk to right whales and other federally-listed species in the context of the already-crowded shipping lanes in or near the Project Area. In addition, the BiOp assumes that right whales and other federally-listed species will move out of Project Area as an "avoidance response" to pile drilling noise; however, if this is true, these animals, in their efforts to swim away from the pile driving noise, will likely enter areas of high vessel traffic, increasing the risk of ship strikes. This impact is not analyzed in the BiOp.

37. According to the BiOp, Vineyard Wind has given itself the option of using wind turbines of various sizes, including turbines larger than those originally studied in the EIS. The BiOp must correct this omission by analyzing operational underwater noise generated by the largest turbines contemplated for the Project. To our knowledge, such an analysis has not yet been conducted.

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

39. BiOp improperly and without evidence assumes that PSOs will be able to adequate surveil a right whale clearance zone that is 10 kilometers in size, as is proposed from 5/1 to 5/14 and 11/1 to 12/31.

40. The BiOp, without technical or scientific support, assumes that right whales and other listed species disrupted by pile driving will return to their original locations once the 3-hour pile driving session ends.

41. The BiOp improperly limits its evaluation of vessel strikes to the WDA and OECC. It should include the entire Project Area, which consists of the WDA, the OECC, and the vessel transit corridors.

42. The BiOp admits that it can only predict increases in vessel traffic for the WDA and OECC – not the entire Project Area. The BiOp says that "this is the only portion of the action area that we have an estimate of baseline trips." This leaves out the areas where vessels will be transiting between mainland ports and the WDA. Many of these areas are used by right whales.

43. The BiOp does not clearly indicate whether the proposed "minimization measures" are mandatory and enforceable. The BiOp also relies on measures that Vineyard Wind has volunteered to implement. Such measures, however, are unenforceable by NOAA Fisheries and thus should not influence the analyses set forth in the BiOp.

44. The BiOp lists the Dynamic Management Areas (DMAs) established for right whales between 2014 and 2020. The list shows that the vast majority of these DMAs are located South of Nantucket, in or near the Project Area. This demonstrates that the Project Area is a major right whale population area, thus increasing the likelihood of project-related conflicts with the whales. The BiOp did not take these data into account when making determinations as to right whale "take" and "jeopardy".

45. The BiOp acknowledges that vessel strikes can occur when whales are below the water's surface and cannot be visually detected. Nevertheless, the BiOp's take and jeopardy determinations ignore this fact.

46. The BiOp admits that carcass recovery is a poor means for determining the number of whale deaths. Yet the BiOp uses this metric, despite its unreliability, to conclude that no right whales will be killed by vessel strikes.

47. The BiOp's "reasonable and prudent measures" (RPMs) do not appear to include steps to protect right whales from vessel strikes. Rather, the RPMs appear focused exclusively on pile driving noise impacts.

48. The BiOp's environmental baseline does not account for the other proposed offshore wind projects currently proposed on federal leaseholds adjacent to or in the vicinity of the Vineyard Wind leasehold (Lease Area OCS-A 0501). BOEM and NOAA Fisheries are aware of these nearby projects, as they were the subject of the Supplement to the Environmental Impact Statement (SEIS) that BOEM recently adopted via a Record of Decision on May 11, 2021. These planned offshore wind projects, when combined with Vineyard Wind, will occupy approximately 1,400,000 acres or more than 2060 square miles, which is roughly the size of the state of Delaware. By not including these other offshore wind projects in the environmental baseline, the BiOp grossly underreports the potential impacts on right whales and other listed species from vessel strikes and other human activities connected to the installation and operation of the proposed wind arrays. These facts suggest that NOAA Fisheries should prepare a programmatic BiOp that examines all offshore wind projects in the Rhode Island/Massachusetts ("RI/MA") WEA for impacts on federally-listed species.

49. The Incidental Harassment Authorization (IHA) that NOAA Fisheries issued to Vineyard Wind covers the period from May 1, 2023 through April 30, 2024. (BiOp, 11.) However, the BiOp says that pile driving might begin as soon as June 1, 2021. (BiOp, 11) This suggests that VW may conduct pile driving activities for a full eleven months prior to the effective date of the IHA, whose sole purpose is to ensure that pile driving impacts on marine mammals are minimized. This is a huge and unlawful disconnect.

50. The COP does not restrict the number or location of the VW WTGs. (BiOp, 13.) This is a significant regulatory omission that renders it impossible to fully assess the project's impacts on listed species.

51. According to the BiOp, "BOEM has updated measures to increase the minimum visibility requirements during pile driving, prohibit pile-driving in December unless certain conditions are met, and require additional information in order for crew transfer for vessels to exceed 10 knots in Dynamic Management Areas." (BiOp, 13.) These "updated measures", however, have not been incorporated into the BiOp and thus are unenforceable

under the ESA. Thus, they cannot be used in the BiOp's analysis of project impacts on listed species.

52. The BiOp states that "Concurrent driving (i.e., the driving of more than one pile at the same time) would be occur and is not analyzed in this opinion." (BiOp, 14.) Is this a condition of the COP, the IHA, or the BiOp itself? It does not appear to be the last, which means it likely is not enforceable under the ESA.

53. The entire BiOp relies uncritically on information from Vineyard Wind on a wide range of critical issues, such as whether and how long the project will engage in vibratory pile driving, and how long each pile driving episode – regardless of method – will take.

54. According to the BiOp, 46 vessels may be on site at any given time, but that VW expects that number to be 25 vessels. (BiOp, 17.) The BiOp does not explain this discrepancy. What data is the BiOp relying on? Does the B.O.'s impact analysis assume 43 vessels or 25 vessels?

55. The BiOp states that the number of vessels "involved in the Project Area at one time is highly dependent on the Project's final schedule, the final design of the Project's components, and the logistics solution used to achieve compliance with the Jones Act." In light of these uncertainties, the BiOp should assume the maximum number of vessels – i.e., 43.

56. The BiOp recognizes that compliance with the Jones Act may alter (i.e., increase) the number of vessels needed for the project and likely will increase the number of vessel miles as well. (See BiOp, 18.) Yet the BiOp does not evaluate this contingency, or the impacts associated with it.

57. The BiOp states that some project components will be shipped from Europe to ports on the Atlantic coast of North America, where they will be "marshalled" and then transported to the project site. These "marshalling" ports, however, could be located in Massachusetts, Rhode Island, or Canada. (BiOp, 18.) Given that these ports are at various distances from the project site, the vessel miles traveled will likewise vary substantially depending on which port is used. The BiOp does not compare the vessel miles from MA to the site and the vessel miles from Canada to the site. As a result, the BiOp presents an incomplete and inaccurate picture of the actual vessel-related impacts of the project.

58. The BiOp mentions nothing about use of Passive Acoustic Monitoring (PAM) outside the immediate construction area of the WGTs. This implies that no PAM will be used along

the vessel transit routes between mainland ports and the Project site. As a result, transiting vessels will be relying solely on PSOs to detect whales and avoid collisions. There is insufficient evidence that PSOs will be capable of detecting right whales in the dark, in high seas, or below the water's surface. Therefore, vessels transiting to and from the project construction site will expose whales to greater risk of collision and injury that reported in the BiOp.

59. The BiOp indicates that the IHA is effective for one year and "authorizes harassment due to exposure to pile driving noise as the only type of take expected to result from activities during construction of the Project." (BiOp, 24.) Thus, the IHA is very limited in its scope – both in terms of duration and in terms of the take impact activity covered under the permit. Any take not related to pile driving noise – including vessel strikes – is not covered under IHA. (See BiOp, 24.)

60. According to the BiOp, "There are a number of measures designed to avoid, minimize, or monitor effects of the action we consider part of the proposed action. BOEM has incorporated into the conditions of COP approval the measures that Vineyard Wind is proposing to take, the requirements of the IHA issued by NMFS, and the requirements of the Reasonable and Prudent Measures and Terms and Conditions of the Incidental Take Statement included with our 2020 Biological Opinion." (BiOp, 27.). These various protective measures, however, have not been incorporated as Terms and Conditions of this BiOp, which is the only BiOp currently in existence and the only BiOp that can be enforced. Moreover, only this BiOp – not the COP and not the IHA – can authorize take and mitigate take under the ESA. In other words, unless the mitigation measures are formally included as conditions in this BiOp, they likely cannot be enforced under the ESA.

61. The BiOp states that Vineyard Wind entered into an agreement with the National Wildlife Federation that includes commitments to minimize effects on NARW. (BiOp, 27.) That agreement, however, is between private parties and not enforceable by NOAA Fisheries on any other federal agency. Thus, it should <u>not</u> be considered in the BiOp's analysis; nor should the BiOp imply that the Agreement or its terms have been incorporated into the Incidental Take Statement set forth in the BiOp.

62. The COP allows vessels to travel from November 1 to May 14 at speeds in excess of 10 knots, provided at least one PSO (also referred to as a "Visual Observer") is on board. The BiOp does not provide a scientifically valid reason for abandoning this requirement from May 15 to October 31 given that NARW use and reside in the project area throughout these months. And, as noted above, simple visual observation methods such as those proposed

here are simply incapable of detecting whales in bad weather, choppy seas, or under the water's surface.

63. The COP conditions also rely heavily on the PSO's ability to confirm that all NARWs have been cleared from the transit route and WDA for 2 consecutive days. (BiOp, 29.) The BiOp, however, does not explain how this will be accomplished given that the transit routes in some cases will be 455 miles one-way. Further, there is no way that PAM stations can be set up along the entire transit route – at least there is nothing in the COP or BiOp indicating that this is a requirement or will otherwise take place. In short, there is no evidence showing that the measures proposed for protecting NARWs from vessel strikes will be effective.

64. The BiOp does not explain how use of real-time PAM will detect whales at a sufficient distance from vessels to enable the vessel captains to take evasive action and prevent a collision.

65. The BiOp indicates that crew transit vessels – of whatever length – may travel at speeds above 10 knots, provided a PSO is on board and real time PAM is being used. This measure provides inadequate protection/mitigation against vessel strikes. First, crew transit vessels represent a majority of the vessels to be used during project construction, which means that the speed limit does not even apply to most of the boats that might collide with a whale. Second, as pointed out above, neither PSOs nor PAM is likely to provide adequate protection against vessel strikes on whales, especially since there is no indication that PAM can take place during the entire length of the transit route. Third, even if the crew transit vessels are less than 65 feet – and nothing in the BiOp says they will be – the danger they pose to whales will remain significant because vessel speed – not size – is what determines whether and how seriously a whale is struck by a passing boat.

66. The map on p. 47 (Figure 2) [Vessel Routes from Canadian Ports] shows vessels passing along the eastern edge of designated NARW critical habitat in the Bay of Fundy. This suggests that ships transmitting through this location may in fact cross into NARW critical habitat and adversely modify it. For this reason, the BiOp should have addressed this contingency. It failed to do so. (See BiOp, 53.)

67. The BiOp admits that NARW feeding grounds have shifted "with fewer animals being seen in the Great South Channel and the Bay of Fundy and more animals being observed in Cape Cod Bay, the Gulf of Saint Lawrence, and mid-Atlantic, and South of Nantucket. (BiOp, 56.) This shows that the NARW and the Project are on a collision course. This

problem will only be exacerbated by the other 7 wind projects slated for construction adjacent to Vineyard Wind. The BiOp, however, does not analyze this cumulative impact.

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

69. The BiOp states that "[u]pdated photo-identification data support that the annual mortality rate changed significantly, and the new information reports a faster rate of decline than previously estimated." (BiOp, 58.) Yet, the BiOp never examines whether the project – singly or cumulatively – will exacerbate this situation and accelerate the mortality rate. Nor does the BiOp assess whether the project will impede recovery of the species, given the challenges to recovery that already exist. Put differently, the BiOp does not assess qualitatively and critically whether the existing state of the NARW population and the dynamics that define it will worsen with implementation of the VW project. Instead, the BiOp is fixated on numeric data – e.g., the mathematically-derived estimate for the number of whales that will sustain Level B hearing impacts – rather than using the quantitative data to effectively evaluate the project's actual impacts on the species.

70. The BiOp indicates that female adult mortality is the main factor influencing the NARW's poor population growth rate. (BiOp, 58.) The BiOp does not, however, explain why the adult female mortality rate is so high or whether project-related activities are among the types of anthropogenic impacts that affect adult female mortality.

71. On page 59, the BiOp acknowledges that NARWs vocalize at low source levels, "which may put North Atlantic right whales at greater risk of communication masking compared to other species." But then, in the next sentence, the BiOp tries to back away from this conclusion: "However, recent evidence suggests that gunshot calls with their higher source levels may be less susceptible to masking compared to other baleen whale sounds." The BiOp should clarify that gunshot calls are made only by young males, primarily during mating season. The other types of calls – screams, blows, upcalls, warbles and down calls – are used by males and females, adults and juveniles for a larger range of communication needs. Thus, the BiOp should not imply that, because gunshot calls are less susceptible to masking, the project will not obstruct/obscure NARW vocalizations or otherwise impede NARW communication. The evidence indicates the opposite conclusion.

72. The BiOp acknowledges the NARW remain the Gulf of Maine and South of Nantucket year-round. (See e.g., BiOp, 59.). Yet, the impact analysis and mitigation measures continue to assume that the NARWs in these areas are migratory and will exit the project area for half the year. This renders the BiOp analytically deficient.

73. Unlike toothed whales, baleen whales such as the NARW do not use echolocation to locate prey or to navigate. Instead, the NARW relies much more on its ability to see under water. Not only do NARW mothers maintain visual contact with their calves, NARWs generally use vision to identify heavy concentrations of zoo plankton for foraging. The BiOp, however, never analyzes whether the project's construction activities or daily operations will create turbidity sufficient to degrade the NARWs visual acuity.

74. The BiOp admits that vessel sounds "may limit communication space as much as 67 percent compared to historically lower sound conditions." (BiOp, 60.) The BiOp, however, does not explain what such a reduction in "communication space" means in terms of NARW behavior, life history stages, and reproductive success. Nor does the BiOp address whether the vessel noise from project activities will make this situation worse and further shrink the NARW's communication space.

75. The BiOp recognizes that vessel strikes and fishing gear entanglement are now the biggest threats to NARW. The BiOp also states that "the total annual North Atlantic right whale mortality exceeds or equals the number of detected serious injuries and mortalities." (BiOp, 60.) According to the BiOp, "these anthropogenic threats appear to be worsening." (BiOp, 60.) Again, however, the BiOp fails to use these data as context for evaluating the project's impacts, and more specifically, its potential to add to the anthropogenic threats that currently plague the NARW.

76. The BiOp states: "Given the above information, North Atlantic right whales' resilience to future perturbations is expected to be very low. (Hayes et al. 2018a.)" Despite this statement, the BiOp later concludes that major construction projects in NARW habitat – such as the refuge area south of Nantucket – will pose no jeopardy risk to the NARW. This conclusion is unsound and unsupported.

77. The BiOp states that the total female NARW population will drop to 123 by 2029, and that prey densities are also on the decline, further hastening the NARW's slide toward extinction. These facts would suggest that any project-related impact on NARW could be devastating, given the extremely low population numbers and the current mortality trends. Yet the BiOp downplays this threat.

78. At p. 65, the BiOp indicates that the International Maritime Organization, to address vessel strikes in Canadian waters, amended the Traffic Separation Scheme in the Bay of Fundy to remote vessels around high use areas. The BiOp should assess whether a similar re-routing effort would reduce project-related vessel strike risk. If it would reduce such risk, then the BiOp should require it as a reasonable and prudent measure.

79. The Canadian government recently extended its seasonal speed restriction to vessels greater than 13 m in length. (BiOp, 65.) The BiOp should impose the same restriction on the VW project and all subsequent offshore wind projects that involve vessel trips through NARW habitat.

80. The BiOp briefly summarizes the recovery goals for the NARW but does not evaluate whether the Vineyard Wind project – individually or cumulatively – will impede achievement of these goals.

81. According to the BiOp, the Kemp's ridley sea turtle is experiencing declines in nests and in total population. As with the data on NARW population trends, the BiOp does not place the project's impacts within the context of the turtle's current population dynamics, leaving the reader without a meaningful assessment of whether the project will, in fact, impede recovery of this species.

82. The BiOp acknowledges that the NARW's obligate prey species are copepods, but it does not really address whether the project will affect the density, amount, or location of copepods or whether changes to any of those key indicators will adversely affect NARW foraging.

83. The BiOp does not examine whether NARW, in their efforts to avoid the offshore wind complex south of Nantucket, will forego areas where the whales currently forage for copepods. (See BiOp, 116.)

84. According to the BiOp, NARWs spend 72 percent of their time in the upper 33 feet (10 meters) of water. (BiOp, 118.) This, in part, explains why they are so susceptible to vessel strikes. (BiOp, 118.) Again, however, the BiOp makes no effort to correlate this information with the project's anticipated impacts related to vessel movements.

85. The BiOp acknowledges that due to warming deep waters in the Gulf of Main, the distribution of right whales has changed. (BiOp, 118.) The BiOp further explains that these changes in water temperature have altered when and where late stage corepods concentrate in great numbers. This, in turn, is affecting right whale feeding behaviors.

This information is critical for understanding the current and evolving condition of the NARW population in New England, but the BiOp does little to assess how these dynamics of right whale feeding behavior and movement patterns intersect with human activities associated with the Vineyard Wind project.

86. The BiOp discloses that NARW depend on the high lipid content of calanoid copepods "and would not likely survive year-round only on the ingestion of small, less nutritious copepods in the area. (BiOp, 119.) Despite this information, the BiOp does not investigate whether and to what extent the MA/RI WEA, including the VW leasehold, currently supports calanoid copepods. If such copepods are currently found in abundance within the WEA, the BiOp should (but doesn't) assess whether the project during construction and operation will cause NARW to avoid the area and forego an excellent and perhaps necessary feeding ground.

87. The BiOp even suggests that the shift in calanoid copepod populations is precisely what has brought more NARW into southern New England and, more particularly, into the waters south of Nantucket where the VW project lease is located. Given these facts, it is reasonable to conclude that the project site and the entire RI/MA WEA now support a greater concentration of calanoid copepods than they did previously, making them an important foraging region for the NARW. If this is true, then the project – singly and cumulatively – has the potential to cut whales off from the very food resource they need to survive. Yet the BiOp does not examine this potential impact. These data correspond with results from recent aerial surveys of the RI/MA WEAs, which show that NARW occurrence in these areas has increased markedly since 2017. (BiOp, 119.)

88. Quintana-Rizzo, et al. (2021) concluded that "the mixture of movement patterns within the population and the geographical location of the study area suggests that the area could be a feeding location for whales that stay in the mid-Atlantic and north during the winter-spring months and a stopover site for whales migrating to and from calving grounds." (BiOp, 119.). According to the BiOp, this finding indicates that the Project site and RI/MA WEA generally function as a NARW feeding "hotspot" that whales rely on year-round. This conclusion undercuts many of the analytical assumptions in the BiOp and casts doubt on the "seasonal" protections incorporated into or imposed upon the project. In short, the recent data show that there is no "season" when NARW are not using the RI/MA WEA. (See BiOp, 120 [discussing Kraus et al. (2016)]. "These data suggest an increasing likelihood of species presence from September through June." (BiOp, 120.) Yet, most of the project's mitigation measures for reducing impacts to NARW apply only from November 1 to May 15.

89. The BiOp attempts to downplay evidence of mating in the RI/MA WEA, even though numerous recent studies show that NARW surface active groups (SAGs) have been observed in the area. It is well-established that one of the major functions of SAGs – if not the primary function – is mating. Rather than assume that the occurrence of SAGs in the WEA likely means some level of courtship and mating is going on, the BiOp side-steps this issue and lets it drop. This is incautious and unacceptable. If the project site and the WEA as a whole support both foraging and mating by NARW, the importance of these locations to NARW survival and recovery increases substantially. Correspondingly, the project's potential to interfere or impede critical whale behaviors – of which foraging and mating are two – likewise increases substantially.

90. On page 121, the BiOp makes the following admission: "In summary, we anticipate individual right whales to occur year round in the action area in both coastal, shallower waters as well as offshore, deeper waters. We expect these individuals to be moving throughout the action area when copepod patches of sufficient density are present, and calving during the winter months in southern waters of the action area." This statement, by itself, demonstrates that the Project's "seasonal" avoidance measures will be insufficient to adequately protect the NARW as a species – a species with only 300 individuals and a declining population of adult females.

91. The BiOp discusses the Ship Strike Reduction rule, which requires ships equal to or greater than 65 ft in length to slow to 10 knots in seasonal management areas (SMAs). This rule, however, provides incomplete and inadequate protection against vessel strikes in the action area. First, it applies only to relatively large ships – i.e., those that are 65-feet long or greater – when the BiOp admits that vessel speed, not vessel size, is what determines whether a vessel strike will occur and whether the injury sustained by the whale in question will be life threatening. Also, the Rule applies only when vessels are traveling through SMAs, which are limited in size and disappear once the defined "season" comes to a close. As the scientific data cited in the BiOp make clear, NARW use the action area year-round and are not confined to particular locations within the RI/MA WEA. Therefore, the protective reach of the Ship Strike Reduction rule, by its very terms, does not adequately cover the project's potential vessel strike risks to NARWs using the waters south of Nantucket.

92. On p. 144, the BiOp states that in 2021, "NMFS Supplemented the DMA (Dynamic Management Area) program with a new slow zone program which identifies areas recommended for 10 knot speed reductions based on acoustic detection of right whales." This Slow Zone program, however, is voluntary. (BiOp, 141), and the data show that

compliance with voluntary rules and programs, while variable, tends to be quite low. Thus, it is unlikely that NMFS New Slow Zone program will result in tangible protective benefits of the NARW.

93. On page 141, the BiOp explains that the environmental baseline for the Vineyard Wind project would include "all proposed federal actions" but only if they had "already undergone section 7 consultation." Because the seven other offshore wind projects proposed for the waters south of Nantucket (i.e., adjacent to or near Vineyard Wind 1) have not yet been subjected to Section 7 review, they are not included in the baseline. And because the seven other wind projects require federal action, the potential impacts of these projects fall outside the federal regulations' definition of "cumulative effects." This is a huge hole in the overall take/jeopardy analysis and can only be filled with a programmatic BiOp that covers all of the offshore wind projects proposed for the RI/MA WEA. By issuing individual BiOps on a project-by-project basis, NOAA Fisheries will fail to capture the combined effects of the multiple offshore wind projects slated for the RI/MA WEA, including effects on NARW.

94. The BiOp seems not to understand the difference between presenting data and conducting an analysis. While the BiOp does plenty of the former, it rarely engages in the latter. As a result, the BiOp does not engage in a dialogue with data to ascertain how various facts interact and influence each other.

95. The BiOp acknowledges that "there are a number of lease areas geographically close to OCS-A 0501 where the proposed project will be built and three lease areas are adjacent to OCS-A 0501." (BiOp, 145.) This confirms that a programmatic BiOp should be prepared for all of the offshore wind projects in this WEA.

96. The BiOp fails to assess the Project's total noise/sound impacts, where project-related noise sources are combined to reflect simultaneous implementation activities. For example, the BiOp does not combine vessel noise with pile driving noise, even though vessel use will likely be occurring during pile driving activities. This is an analytical defect.

97. The BiOp does not indicate whether ongoing U.S. Navy operations are included in the Environmental Baseline for purposes of analyzing the project's impacts on whales and other listed species. Failure to include such naval operations would be legal error.

98. At times, the BiOp suggests that all of the project's impacts on NARW and other marine mammals are covered under the Incidental Harassment Authorization (IHA) that NMFS issued pursuant to the Marine Mammal Protection Act. The IHA, however, only covers

impacts from pile driving; it does not cover impacts and potential take related to activities other than pile driving, such as vessel strikes, that may occur outside the pile driving impact area. (See BiOp, 165.) The BiOp should be clear on this point and then assess whether effects not covered under the IHA may jeopardize or result in take of listed species.

99. On pages 179-180, the BiOp states 'PSOs are expected to reasonably be able to detect large whales at distances of approximately 1.5 km from their station…." For this proposition, the BiOp cites Roberts, et al. 2016. We have reviewed the Roberts study and it does not appear to support the BiOp's statement. Moreover, even if a PSO, standing on a raised platform, could detect a large whale 1.5 km away, that does not mean that the PSO is capable of detecting whales below the water's surface or hidden from view by large swells of rough seas.

100. On page 181, the BiOp indicates that, based on right whale density estimates, the project will expose only one right whale to noise above the Level A harassment threshold. Yet it is unclear whether the IHA authorizes Level A harassment of any right whales. Nor is it clear whether the BiOp fills that gap and authorizes take on NARW due to Level A noise impacts.

101. The IHA and BiOp constantly refer to the use of Passive Acoustic Monitoring (PAM) of whale calls as a means of supplementing the PSO effort to detect NARWs that might enter the pile driving impact area. However, the BiOp does not describe how the RAM will be conducted; nor does it assess whether PAM can be used in this particular application, especially where vessel noise and pile driving noise may mask the vocalizations of the whales.

102. The BiOp acknowledges that approximately 20 NARW will be taken by virtue of Level B noise impacts. Yet the BiOp never analyzes the extent to which this level of take will affect the current population dynamics of the NARW. That is, the BiOp does not explain why the take of 20 NARW through Level B noise harassment will not jeopardize the ability of the 300 remaining right whales to remain viable as a population. Nor does it explain why such take would not impede recovery of the species. Such explanations are critical given that the NARW appears headed toward extinction, absent radical reductions in anthropogenic threats.

103. On page 184, the BiOp states that the project will use a "soft start" approach to pile-driving, which is intended to gently alert marine mammals of the heavier, noisier work to come later and to encourage those mammals to avoid the project action area: "[G]iven sufficient notice through use of soft start, marine mammals are expected to move away

from a sound source that is annoying prior to exposure resulting in a serious injury and avoid sound sources at levels that would cause hearing loss." (BiOp, 184.) There are serious flaws in this analysis and the assumptions that underlie it. There is no indication that this "soft start" pile-driving approach will actually trigger an avoidance reaction in marine mammals, especially where, as here, the underwater sound environment is already noisy. It is just as likely that the soft start will have no effect on NARW behavior at all, given that NARW do not typically respond to noise events or noise sources the way some other whale species do. The more probable outcome is that NARW will not be "moved" by the soft start and won't actually leave the action area until the pile-driving noise reaches painful/harmful levels. In fact, if the action area holds dense pockets of calanoid copepods, the NARWs will likely remain in the action area to feed, even if it means putting up with potentially damaging noise levels. And even if the soft start does not cause NARW and other marine mammals to leave the action area, such forced avoidance of a major foraging area may itself constitute take; yet the BiOp does not assess this potential impact.

104. The BiOp states that whales will not sustain permanent damage from the project's pile-driving activities. This statement that the whale will be exposed to pile driving noise for only a short period of time. (See, e.g., BiOp, 185.) The reality, however, is that the Project's pile-driving activities will likely go on for weeks – long enough for the whales to consider the noise source permanent. This likely will encourage more long-term behavioral changes in the whales. This fact is exacerbated by the very real possibility that the adjacent wind farms will begin pile driving prior to or soon after VW completes its pile driving activities, thus lengthening the overall time that NARWs and other marine mammals are exposed to pile driving noise impacts and must engage in avoidance behaviors which, in term, may result in loss of foraging opportunities.

105. The BiOp also assumes that the project will engage in pile-driving for a maximum of 3 hours per day. According to the BiOp, pile driving of such short duration will not be overly disruptive to NARWs. (See, BiOp, 185.) There is no evidence to support this conclusion. First, we are not aware of any requirement or condition that restricts Vineyard Wind to a maximum of 3 hours of pile driving per day. So, the exposure period could be much greater. Second, the whales will have no idea that the pile driving noise that is warding them off foraging grounds in the action area will come to an end in 3 hours. Rather, the whales will hear the pile driving noise, wait for a short period to see if it will stop and then, when it doesn't, they will move in search of another location to feed, not to return. There is no evidence to suggest that the whales will just "wait it out" on the periphery of the action area and then re-enter the action area once the 3-hour pile driving episode has concluded. To expect that to happen is ludicrous.

106. The BiOp cites a number of studies that use population consequences of disturbance (PCoD) models and states: "Nearly all PCoD studies and experts agree that the infrequent exposures of a single day or less are unlikely to impact individual fitness, let alone lead to population level effects." As noted above, however, the project's pile driving noise will not cease after a single day, but will go on for many days on end, for at least 3 hours each day. It is unclear whether the studies cited in the BiOp addressed this kind of situation. In addition, the BiOp seems to assume that impacts that degrade individual fitness will not, by themselves, "lead to population level effects." This may be true in some contexts, with some species. But when the affected species is the NARW, whose entire population stands of approximately 300, any loss of individual fitness may, in fact, have significance consequences for the population as a whole. This BiOp, however, does not discuss this possibility.

107. The BiOp assumes that a NARW, once discouraged by pile driving noise from foraging in the action area, will soon find ample foraging opportunities at another nearby location. This assumption, however, is not supported by analysis or evidence.

108. The BiOp makes a similar unsupported conclusion regarding the project's potential to trigger "stress responses" in right whales. Despite documented evidence that right whales show increase stress hormones in response to chronic noise, the BiOp nevertheless concludes that the pile-driving and vessel noise associated with the project's construction will not increase NARW stress. This conclusion is unsupported.

109. On page 193, the BiOp acknowledges that vessel noise "has the potential to disturb marine mammals and elicit an alerting, avoidance, or other behavior. The BiOp also states that vessel noise can mask whale vocalizations, thus interfering with the animal's "ability to find prey, find mates, socialize, avoid predators, or navigate." Despite these facts, the BiOp then states that "[b]ased on the best available information, ESA-listed marine mammals are either not likely to respond to vessel noise or are not likely to measurably respond in ways that would significantly disrupt normal behavior patterns that include, but are not limited to, breeding, feeding or sheltering." (BiOp, 193.) These two statements are incongruous, making the BiOp internally inconsistent and confusing. Further, the BiOp does not cite or reveal the technical sources that constitute the so-called "best information" on which the BiOp's conclusion is based.

110. The BiOp's entire discussion of existing vessel traffic in the action area is highly suspect because it relies on automatic identification system (AIS) tracking of ships to determine the number of vessels in a given area over a given period of time. As the BiOp acknowledges, most vessels less than 65 ft in length do not have or use AIS, which means

they would not be included in the "existing" vessel traffic baseline. (See BiOp, 229.) The BiOp even admits "vessel traffic is significantly more than described." Yet, the BiOp does not opt for a different method of determining existing vessel traffic.

111. The BiOp states that project-related "vessels traveling from Europe are large slow-moving construction/installation or cargo vessels that travel at slow speeds of approximately 10-18 knots." (BiOp, 234.) In the context of vessel strikes – and vessel strike avoidance – 10 to18 knots is not slow. Any vessel, especially a large one, that travels in excess of 10 knots poses a significant risk of vessel strikes on NARW.

112. On page 237, the BiOp indicates that, on average, 25 vessels will be involved in construction activities on any given day, 7 of which will be transiting to and from ports while the others remain at the action area. The vessel strike risk assessment, however, should have been based on the maximum number of expected vessels per day, not the average. Vessel strikes are, in part, a function of vessel traffic and congestion within a defined space, so if on a given day when 40 or 45 vessels are in the action area (as opposed to the daily average of 25), the risk of vessel strike on that day would be substantially higher than the "average" day assumed in the BiOp.

113. On page 241, the BiOp explains that the NARW, unlike most baleen whales "seem generally unresponsive to vessel sound, making them more susceptible to vessel collisions." In light of this, the BiOp should apply a different, more sensitive metric for determining whether project-related vessel trips will create a "take" level risk for NARW. Also, the fact that NARW do not respond to vessel noise with avoidance behavior suggest that the species may not react as expected to soft start pile-driving noise either. In other words, in NARW generally do not respond to noise cues with avoidance behaviors, then the project's pile-driving mitigation program – which is based on the assumption that whales will leave the action area once soft start pile driving begins – is flawed and will not achieve the hoped-for result.

114. The BiOp suggests that compliance with the 10-knot vessel speed limit has generally been good – over 80%. However, the data underlying this conclusion come from AIS records, and we know that only ships 65 feet or longer employ AIS; smaller vessels do not. Thus, there is no way to tell whether the non-AIS vessels are complying with the 10-knot speed limit. (See BiOp, 242.)

115. The BiOp, on page 243, offers two insights that bring into question many of the document's analytical assumptions and many of the project's mitigation/protection measures. First, the BiOp states that large whales do not have to be at the water's surface

to be struck, because studies show that a whale swimming at a depth one to two times the vessel draft is subject to "pronounced propeller suction-effect." (BiOp, 243.) This "suction effect may draft the whale closer to the propeller, increasing the probability of propeller strikes." This suggests that whales well below the water's surface – i.e., well below where they can be detected visually by PSOs – are still vulnerable to vessel strikes. For this reason, the entire PSO approach to detecting and avoiding whales is likely to be ineffective.

Second, the BiOp states that, according to a recent study, vessel speed, not vessel size, determines the severity of a vessel strike. Thus, all vessel types, even the smaller crew transport ships that will be used for the project, have the potential to cause significant injury to a right whale if those vessels are traveling in excess of 10 knots. The project's mitigation measures, however, assume that small vessels pose a negligible risk of collision. Thus, those measures do not require such vessels to adhere to the 10-knot speed limit that applies to larger vessels (>65 feet). Clearly, then, there is a disconnect between the mitigation measure, on one hand, and the risk/impact that the measure is supposed to address, on the other.

116. The BiOp should explain whether and how the Jones Act might affect the number of vessels needed for the project and, more importantly, the number of miles these vessels will travel. Without this information, it is possible that compliance with the Jones Act may increase substantially project-related vessel activity, thereby, increasing the risk of vessel strikes.

117. The BiOp claims that its vessel strike calculations likely overestimate the risk because "most vessels once in the WDA will be stationary or moving extremely slow." Even if the BiOp's assumptions regarding vessel speeds in the WDA were true – and there is no supporting data provided on this question – the real threat comes from vessels traveling to and from the WDA, because such transiting vessels will likely be moving at speeds greater than 10 knots.

118. The BiOp explains that whales at a depth greater than vessel draft can still be pulled by hydrodynamic force into a collision with the ship in question. (BiOp, 248.) This fact undermines much of the project's whale protection strategy. Yet, later on the same page, the BiOp states, "We expect that a PSO will be able to detect whales at least 1 km away from the vessel in good daylight conditions, which provides ample opportunity for notification to the captain and for the captain to make changes in course." Again, these two statements from the BiOp cannot be reconciled. On one hand, the BiOp indicates that whales swimming well below the surface can be struck by vessels. On the other, the BiOp states that PSOs, who can only detect whales on the surface of the water

(and only under "good daylight conditions," whatever those are), will be able to warn the ship captains in plenty of time to take evasive action and avoid striking the whale. The BiOp has nothing at all to say about whales that may be under the surface (i.e., undetectable by a PSO) but still in danger of being struck by a vessel. Such whales will be left unprotected by the mitigation protocols incorporated into the Project.

119. The BiOp suggest that the shortcomings of the PSO measures will be rectified by use of PAM. Again, however, the BiOp does not explain how PAM will be used in the WDA, to say nothing of how it will be implemented outside the WDA where ships will be traveling back and forth between the project site and the mainland supply ports. Moreover, studies show that NARW often go long stretches without vocalizing at all, which means that PAM would be useless in trying to detect such whales.

120. The exceptions to the 10-knot vessel speed limit largely render the speed limit ineffectual. For example, the 10-knot maximum does not apply in Nantucket Sound, which is where many NARW are to be found. In addition, the 10-knot speed limit does not apply to crew transit vessels, which is the most common and numerous vessel type used for the Project. The speed limit also does not apply to vessel activity between May 15 and October 31, even though data show that NARW increasingly stay in the waters off New England, including the project action area, all year round. For these reasons, the 10-knot speed limit does not protect whales to the extent assumed in the BiOp, rendering the BiOp inadequate as a matter of law.

121. The BiOp does not analyze the Vineyard Wind project's potential to cause take of federally-listed bird species, resulting in a major omission.

Conclusion

As discussed herein, NOAA Fisheries and BOEM cannot rely on the BiOp issued on October 18, 2021, for purposes of authorizing Vineyard Wind to take of federally-listed species incidental to the Vineyard Wind Project. Further, the BiOp's deficiencies render it incapable of supporting a "no jeopardy" finding as to project-related threats and impacts to the right whale.

In summary, the BiOp is substantively deficient and does not meet the minimum legal requirements of the ESA. By adopting the BiOp and authorizing Vineyard Wind to take and jeopardize the survival of federally-listed species, including the right whale, NOAA Fisheries has acted arbitrarily and capriciously in violation of federal law. Note also that BOEM may not "abrogate its responsibility to ensure that its actions will not jeopardize right whales merely by relying on a biological opinion." *Strahan v. Roughead*, 910 F.Supp. 358, 381 (D.Mass. 2012). This

is especially true when the biological opinion is flawed. *Id. See also Wild Fish Conservancy v. Salazar*, 628 F.3d 513, 532 (9th Cir. 2010).

If NOAA Fisheries does not correct the deficiencies described herein within the 60-day notice period provided by statute, ACK Rats will file suit in federal court and request an order invalidating the BiOp. Thank you for your attention to this matter.

Sincerely,

David P. Hubbard
Gatzke Dillon & Ballance, LLP
Counsel for ACK Rats

Cc: ACK Rats Board of Directors
Vallorie Oliver