Comments in Response to the Bureau of Ocean Energy Management Notice of Intent to Prepare an Environmental Assessment for Commercial Wind Leasing and Site Assessment Activities on the U.S. Outer Continental Shelf Offshore Oregon 89 FR 11313 (February 14, 2024)

Submitted by Organizations

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I. Introduction

On behalf of [organizations] and our millions of members and supporters, we submit the following scoping comments in response to the Bureau of Ocean Energy Management's Notice of Intent (NOI) to prepare a Draft Environmental Assessment (EA) to consider potential offshore wind leasing on the Outer Continental Shelf (OCS) offshore Oregon.[1]

The urgency to transition away from fossil fuels is undeniable. However, it is imperative that all U.S. offshore wind projects are meticulously sited, developed, operated, and decommissioned responsibly. The Draft EA is a prime opportunity for BOEM to conduct a thorough analysis of the potential impacts of leasing and eventual buildout of offshore wind off the Oregon coast.

Responsible development of offshore wind energy: (i) avoids, minimizes, mitigates, and monitors for adverse impacts on marine and coastal habitats and the wildlife that rely on them, (ii) minimizes negative impacts on other ocean uses, (iii) includes robust consultation with Native American Tribes and communities, (iv) meaningfully engages state and local governments and stakeholders from the outset, (v) includes comprehensive efforts to avoid negative impacts to underserved communities, and (vi) uses the best available scientific and technological data to ensure science-based and stakeholder-informed decision making. Proper siting of wind energy projects is essential to help avoid, minimize, and mitigate offshore wind impacts to the unique habitats and wildlife of the Pacific Coast.

Our organizations support responsible development of offshore wind and the ambitious goals set forth by the Biden-Harris administration. Setting a target to deploy 30 gigawatts (GW) of offshore wind by 2030,[2] along with launching an initiative to deploy 15 GW of floating offshore wind by 2035,[3] demonstrates a commitment to expanding renewable energy sources. Floating turbine technology presents an opportunity to access previously untapped wind energy resources, particularly in the deep waters of the Pacific Coast. Developing offshore wind energy along the Oregon Coast could lessen dependence on fossil fuels.

However, in order to ensure that BOEM assesses the full range of environmental impacts from offshore wind development on cultural and natural resources and enables robust stakeholder engagement in the Oregon OCS, we strongly recommend that BOEM conducts an environmental impact statement (EIS) for leasing, rather than an EA, that examines the full range of potential impacts from site assessment through construction and operation.

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[1] 89 Fed. Reg. 11313 (February 14, 2024). https://www.federalregister.gov/documents/2024/02/14/2024-02985/notice-of-intent-to-prepare-an-environmental-assessment-for-commercial-wind-leasing-and-site

[2] FACT SHEET: Biden Administration Jumpstarts Offshore Wind Energy Projects to Create Jobs, March 29, 2021. https://www.whitehouse.gov/briefing-room/statements-releases/2021/03/29/fact-sheet-biden-administration-jumpstarts-offshore-wind-energy-projects-to-create-jobs/.

[3] FACT SHEET: Biden-Harris Administration Announces New Actions to Expand U.S. Offshore Wind Energy, September 15, 2022. https://www.whitehouse.gov/briefing-room/statements-releases/2022/09/15/fact-sheet-biden-harris-administration-announces-new-actions-to-expand-u-s-offshore-wind-energy/.

On February 7, 2024, BOEM announced the identification of two Final Wind Energy Areas off the Oregon Coast; the Brookings Final WEA is 133,808 acres and approximately 18 mi off the coast, and the Coos Bay Final WEA is 61,204 acres and located approximately 32 miles (mi) from shore. The selection of WEAs represents a crucial step in developing offshore wind particularly because site selection offers the most efficient means of *avoiding* the most serious impacts from development.

During the comment period for Oregon's Draft WEAs in the Fall of 2023, we expressed our concerns regarding the National Centers for Coastal Ocean Studies (NCCOS) Modeling Report's limited incorporation of species into the National Marine Fisheries Service (NMFS) Protected Species Combined Data Layer. Despite the existence of 26 protected species in the Call Area, only five were included due to time constraints acknowledged in the Draft WEA Report.[4] It is imperative to enhance our understanding of habitat utilization by all protected species within both Final WEAs.

BOEM should prioritize the inclusion of these species in the Draft EA to effectively implement measures aimed at avoidance, minimization, mitigation, and monitoring of impacts during site assessment and characterization activities. As the agency proceeds with the development of such measures for leasing in the Oregon Final WEAs, we encourage the agency to consider the best practice recommendations we have included in Attachments 1, 2, and 3. We further encourage BOEM to adopt many of the Environmental Protection Mitigation Measures and Best Management Practices from Appendix D of the Humboldt EA.[5] We expand upon these measures further in Section V.

The Oregon WEAs, located in the northern California Current Ecosystem Large Marine Ecosystem (CCLME) adjacent to the coastal Davidson Current, are part of a unique, rare bioregion that supports high levels of productivity and biodiversity along the West coast of the mainland United States. Climate change is already affecting the marine ecosystem off the Oregon Coast, leading to species displacement, marine heatwaves, harmful algal blooms, and ocean acidification, which impact vulnerable marine species and local communities. For that reason, it is crucially important to consider the risks of additive impacts in these valuable marine ecosystems and to plan for meaningful measures to avoid them and then to implement the mitigation steps.

In light of the challenges facing ocean ecosystems, including climate change impacts and decades of overexploitation, pollution, and habitat degradation, it is paramount to only advance offshore wind when coupled with robust measures to protect the marine environment. Proper environmental analysis is foundational to this effort, ensuring we minimize harm and mitigate impacts on the delicate ecosystems of the Pacific Coast. Our collective aim is to foster the responsible development of offshore wind off the coast of Oregon, while simultaneously protecting imperiled species such as the humpback whale, southern resident killer whale, and leatherback sea turtle. We ask BOEM to integrate our

[4] Draft WEA Report at 122.

[5] Humboldt Wind Energy Area Final Environmental Assessment, Appendix D. https://www.boem.gov/sites/default/files/documents/renewable-energy/state-activities/App-D-Typical-Mitigation-Measures.pdf

recommendations below in the Draft EA, and additionally incorporate by reference our prior comments on offshore wind leasing off the Oregon Coast.[6]

II. BOEM Should Not Delay Thorough Environmental Review of all Phases of Offshore Wind Development

A. An Environmental Impact Statement

Early National Environmental Policy Act (NEPA) review can highlight, at the beginning of the process, resource and user concerns that could slow–or prevent–eventual project approval, therefore enabling more informed decision-making from all parties. Early environmental review can also ensure that choices about which areas are determined to be appropriate or inappropriate for wind energy development are explained to the public for better understanding of decision making. Conducting an EIS, rather than an EA, at this stage advises the agency and other stakeholders of the concerns from all stages of offshore wind development.[7]

We encourage the agency to consider how a programmatic EIS conducted at the outset of BOEM's process could provide greater efficiencies and more proactively consider environmental conflict. A PEIS during the siting phase would assess potential environmental impacts across multiple lease areas in a region, enabling decision-makers to consider broader ecological implications of cumulative development and set clear expectations for the development process by adopting programmatic measures at the earliest stage aimed at reducing impacts during all phases of development.

The Draft EA will "... consider the potential environmental impacts associated with site characterization surveys (biological, archeological, geological, and geophysical surveys and core samples) and site assessment activities e.g., installation of meteorological buoys) that are expected to take place following leasing."[8] BOEM limits the scope of the Draft EA to these actions rather than including construction, operations, and decommissioning based on the justification that the issuance of an OCS renewable energy lease does not authorize any OCS activities.[9]

We are disappointed that BOEM has truncated and disjointed the Oregon NEPA review, separating the potential impacts of the leasing process from the potential impacts of construction and operation, which

[6] See eNGO comments on the Call for Information and Nominations at Call for Information and Nominations– Commercial Leasing for Wind Energy Development on the Outer Continental Shelf Offshore Oregon at https://www.regulations.gov/comment/FS-2023-0014-1859
See eNGO comments on the Draft Wind Energy Areas–Commercial Leasing for Wind Power Development on the Oregon Outer Continental Shelf (OCS) at https://www.regulations.gov/comment/BOEM-2023-0033-0694
See eNGO comments on the Draft Wind Energy Areas–Commercial Leasing for Wind Power Development on the Oregon Outer Continental Shelf (OCS) at https://www.regulations.gov/comment/BOEM-2023-0033-0597
[7] See 40 C.F.R. § 1508.1(g) (defining "effects" to include direct, indirect, and cumulative effects, as well as aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative. Effects include beneficial as well as detrimental effects)
[8] 89 FR 11313
[9] *Id.*

belies the relationship between these actions. Although the inherent purpose of the leasing process is to allow development of commercial wind projects, the identification of WEAs and issuance of leases do not happen in a vacuum. These actions are directly tied to reasonably foreseeable[10] future activities, including subsequent site characterization and assessment, and consideration of plans for construction and operation of specific projects. Indeed, setting the foundations for later stages is the very reason for leasing, and all of these phases are part of the same process. BOEM should, for all future offshore wind leases, prepare an EIS, rather than an EA, which covers not only site characterization and assessment activities but also eventual construction and operation, at the lease sale stage.

1. Consideration of Transmission

As we highlighted in our comments to BOEM on the Draft WEAs,[11] BOEM should also consider transmission within the Draft EA due to the unique challenges presented by transmission in the Oregon WEAs, particularly because of their distance from large load centers. Due to the location of the WEAs, small coastal communities may bear the brunt of the impacts of development. Further, environmental considerations are also important to consider regarding transmission siting, and earlier consideration may help to avoid the most serious impacts. For example, the presence of green sturgeon, a species known for its sensitivity to electromagnetic fields in aquatic environments, poses a concern in areas where offshore wind energy infrastructure may be developed. These sturgeon, which are among the largest and longest-lived fish, spawn in the Rogue River and potentially the Umpqua River, indicating a need for careful consideration of potential impacts from energy projects near these areas. The installation of onshore cables for energy transmission, particularly near the mouths of these rivers, could impact green sturgeon populations. Therefore, thorough assessments and mitigation measures should be implemented to minimize any adverse effects on this species.

To address transmission concerns now, collaboration with other agencies regarding transmission scenarios within the EA analysis is recommended, ensuring mitigation strategies are established in anticipation of impacts. Coordination with the Department of Energy and review of transmission studies, including the West Coast Offshore Wind Transmission Study[12] and Schatz Center study,[13] can aid in identifying viable scenarios and informing mitigation efforts.

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[10] 40 C.F.R. § 1508.1(aa)(defining "reasonably foreseeable" to mean "sufficiently likely to occur such that a person of ordinary prudence would take it into account in reaching a decision.")

[11] eNGO comments on the Draft Wind Energy Areas can be accessed at https://www.regulations.gov/comment/BOEM-2023-0033-0694

[12] https://www.pnnl.gov/projects/west-coast-offshore-wind-transmission-study#:~:text=The%20West%20Coast%20Offshore%20Wind,nation%27s%20West%20Coast%20through%202050

[13] Zoellick, J.a, G. Adamsa, A. Mustafab, A. Coopermanc, R. Anilkumarb, P. Duffyc, A. Sparksd, S. Kramerd, S. Trushd, S. Bernsteind, C. Butlerd, A. Portere, A. Herathe, M. Cesarioe, E. Wallacha, C. Ingvoldsena, D. Wakemana, C. Chamberlina, and A. Jacobsona. (2023). Northern California and Southern Oregon Offshore Wind Transmission Study, Volume 1. Cal Poly Humboldt, Arcata, CA: Schatz Energy Research Center. schatzcenter.org/publications/

a - Schatz Energy Research Center, Cal Poly Humboldt

b - Quanta Technology, Inc.

c - National Renewable Energy Laboratory

d - H. T. Harvey & Associates

e - Mott MacDonald

2. A Regional Programmatic Environmental Impact Statement

On December 20, 2023, BOEM announced its intent to prepare a programmatic Environmental Impact Statement for future leasing off the coast of California.[14] We encourage BOEM to leverage this effort in California and to expand the scope to analyze the impacts of leasing, construction, and operations of offshore wind development along the entire West Coast in order to comprehensively evaluate impacts across the CCLME. As we have already argued above, as well as in our comments on the California PEIS,[15] leasing is reasonably foreseeable off the coast of Oregon. We also flag that the unsolicited lease request off the coast of Washington state may initiate the offshore wind process in the state.[16] The potential for direct, indirect, and cumulative impacts of offshore development across this region would be best assessed comprehensively through programmatic approach.

III. Data Availability

High quality information on current conditions and trends is needed in order to accurately assess effects of offshore wind development and identify monitoring and mitigation targets. Surveys conducted as part of the site assessment and characterization process can represent an important contribution to baseline understanding of benthic habitat conditions in the region.[17] However, such data are most valuable if they are made accessible to stakeholders for scientific and monitoring applications.[18]

To help maximize the value of site assessment surveys, all biotic and abiotic data acquired during the site assessment and characterization process should be made publicly available. To ensure accessibility, data should be published in standardized repositories following best practices.[19] This includes registering a Data Management Plan prior to assessment activities, curating metadata for sampling and synthesis efforts in accordance with standard conventions, and publishing datasets in a user-friendly format via existing platforms according to FAIR (Findability, Accessibility, Interoperability, and Reuse) principles.[20]

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[14] 88 FR 88107

[15] See eNGO comments on the Notice of Intent to Prepare a Programmatic Environmental Impact Statement for Future Offshore Wind Energy Development Related to California's 2022 Leased Areas at https://www.regulations.gov/comment/BOEM-2023-0061-0161
See eNGO comments on the Notice of Intent to Prepare a Programmatic Environmental Impact Statement for Future Offshore Wind Energy Development Related to California's 2022 Leased Areas at https://www.regulations.gov/comment/BOEM-2023-0061-0130

[16] Trident Winds Unsolicited Lease Request https://tridentwinds.com/wp-content/uploads/2022/04/2020-04-12_twinc_ow_boem-ulr_public_v1.pdf

[17] Franco A, Quintino V, Elliott M. 2015. Benthic monitoring and sampling design and effort to detect spatial changes: a case study using data from offshore wind farm sites. Ecological Indicators 57: 298-304.

[18] Allen MC, Campo M. 2020. Ecological Monitoring and Mitigation Policies and Practices at Offshore Wind Installations in the United States and Europe.

[19] Michener WK. 2015. Ecological data sharing. Ecological informatics 29: 33-44.

[20] https://www.go-fair.org/fair-principles/

IV. Ecological Considerations for Site Assessment and Characterization

A. Birds

With its unique geography, including a steep shelf that fosters upwellings rich in fish, the Oregon Coast attracts a diverse range of pelagic avian species, including ESA-listed species like the short-tailed albatross, and marbled murrelet. A number of procellariiform seabirds, including Pink-footed Shearwater, Sooty/Short-tailed/Flesh-footed Shearwaters, Black-footed Albatross, and especially Leach's Storm-Petrel, all forage in areas that overlap directly with the Oregon Final WEAs. Notably, nearly half of the West Coast seabird breeding population finds sanctuary in the state of Oregon, emphasizing the significance of the coastal and offshore areas of this region, and nearly 100 species of birds migrate across the Pacific to forage in Oregon waters.

Historically, BOEM has determined that the impacts from site characterization and site assessment will be negligible for birds. Nevertheless, BOEM should consider the full scope of potential impacts to birds occurring in and around the areas under consideration for offshore wind development offshore Oregon, be transparent in its analysis of these impacts, and provide clearly outlined standard operating conditions for avoiding and minimizing impacts within the NEPA analyses.

1. Key Species

a. Marbled Murrelet

At-sea densities of the Marbled Murrelet are highest along the central and south coasts of Oregon, especially near the Coos Bay WEA.[21] While they primarily forage near the coast during nesting seasons, little is known about their behavior outside of these periods. They may be displaced by wind installations, especially during their flightless molt period in late summer and fall. Increased ship traffic from wind installations could further disrupt their habitats. Research into their fall and winter distribution and behavior, as well as identifying foraging hotspots during breeding seasons, is recommended to minimize disturbance. Mapping critical prey abundance and upwelling refugia should also be considered in spatial analyses to avoid impacting their foraging areas.

b. Leach's Storm Petrel

The Leach's Storm Petrel, a sensitive species in Oregon, has seen a global population decline of 30% over 50 years, with an estimated 482,000 nesting in Oregon. Most breed on islands off the south coast, particularly between Bandon and Brookings, forming the largest breeding congregation on the West Coast. Telemetry data suggests they transit the proposed Brookings WEA from nesting to foraging areas, raising concerns about potential impacts. Given their vulnerability to artificial lighting and "medium" vulnerability to offshore wind collision, their proximity to the Brookings WEA warrants early

[21] Strong CS, 2020. "Marbled Murrelet population monitoring in Conservation Zone 3, Oregon, during 2020," Annual Report to the U.S. Fish and Wildlife Service. Crescent Coastal Research, Crescent City, California. 27 p.

consideration in the BOEM process. We urge continued research, including satellite tagging, and consultation with experts to minimize impacts.

c. Short Tailed Albatross

The federally endangered Short-tailed Albatross, known to forage in Oregon's offshore waters, was not included in the NCCOS seabird sub model due to low sample size. However, satellite-tagged juveniles have been detected in both WEAs off southern Oregon.[22] As recovery efforts for this species progress, they may become more common in WEAs, increasing the risk of impacts.[23] Given their long lifespan and limited reproductive capacity, albatross populations are vulnerable to collision or displacement from wind energy infrastructure, especially considering their reliance on wind currents for flight. More telemetry studies are needed to better understand their behavior and location, and we recommend supporting tagging studies for Short-tailed Albatross and developing strategies to minimize impacts on this protected species in WEAs.

d. Tufted Puffin

The Tufted Puffin, classified as an Oregon sensitive species, is experiencing a significant decline in population.[24] These birds, known for foraging in offshore continental shelf waters, are obligate burrow nesters, and have an unclear winter range. Tufted puffins have been documented at European wind farms to have high vulnerability to displacement from wind energy arrays.[25] These birds nest on offshore sea stacks near the Brookings WEA,[26] however, their offshore foraging hotspots and commuting routes remain unidentified. We recommend further research into their year-round distribution and behavior in areas affected by offshore wind development, including during site characterization and assessment activities.

2. Primary Risks to Birds from Site Assessment and Characterization

a. Vessel Traffic

Site assessment and characterization surveys will result in additional vessel traffic. Waterbirds and waterfowl are particularly vulnerable to disturbance from vessel traffic, as these species flush in

[22] Orben, RA., O'Conner AJ, Suryan, RM, Ozaki K, Sato F, Deguchi T. 2018, "Ontogenetic changes in at-sea distribution of immature short tailed albatrosses *Phoebastria albatrus*," *Endangered Species Research* 35: 23-37. https://doi.org/10.3354/esr00864

[23] U.S. Fish and Wildlife Service. 2020. "Short-tailed Albatross (*Phoebastria albatrus*), 5-year review: Summary and evaluation. Anchorage, Alaska." Available at: https://www.st.nmfs.noaa.gov/Assets/nationalseabirdprogram/doc4445.pdf

[24] Pearson SF, Keren I., Hodum PJ, Drummond BA, Hipfner JM, Rojek NA, Renner HM, and Thomas SM, 2023, "Range-wide changes in the North American Tufted Puffin Fratercula cirrhata breeding population over 115 years," Bird Conservation International, 33, e24. https://doi.org/10.1017/S0959270922000193.

[25] Kelsey et al., 2018; Welker J and Nehls G., 2016 "Displacement of seabirds by an offshore wind farm in the North Sea," *Marine Ecology Progress Series*, 554: 173-182.

[26] Naughton et al. 2007.

response to oncoming vessels.[27] These impacts are especially pronounced from traffic outside of designated shipping lanes, which is the case for site characterization activities.[28]

Regular disturbance from vessel traffic can decrease energy reserves for birds. Species with the longest flight initiation distances (i.e., most responsive to vessel traffic like loons and sea ducks) also tend to be those species with the largest wing loadings compared to other marine birds,[29] meaning the birds that are more likely to expend extra energy in response to vessels also waste more energy with each takeoff relative to birds with lower wing loadings.[30]

Additionally, increased vessel traffic can ultimately result in a loss of habitat for affected marine birds if they are regularly disturbed and thereby displaced from important foraging grounds. Furthermore, gulls and other offshore seabirds occurring within offshore Oregon WEAs can be attracted to wakes and turbulence created from objects like vessels in the marine environment.[31] Diverting from fruitful foraging grounds to investigate artificially created marine turbulence creates an ecological trap for these individuals by which they expend critical energy.

Although smart siting of the WEAs can reduce aggregate risk for marine birds, the risk to individual bird species could still be high. In particular, risks to the most sensitive species should be further considered in the Draft EA. Though some marine bird species occur almost entirely outside the Final WEAs, they may be impacted by site assessment and characterization activities nonetheless. The threatened marbled murrelet, which forages in coastal waters and has virtually no overlap with the WEAs, is known to be sensitive to vessel disturbance. Both marbled murrelet and other alcids such as tufted puffins experience a regular flight feather molt. When this occurs, these birds are completely flightless for more than a month and are particularly vulnerable to vessel strikes. Site characterization studies related to potential transmission corridors and vessel transit to and from the lease areas must include plans to avoid harm to these birds.

b. Light

Some birds are susceptible to light-driven attraction (phototaxis), where birds are attracted to light sources which may result in disorientation and energy depletion. Leach's Storm-Petrel in particular,[32] and

[27] Schwemmer P, Mendel B, Sonntag N, Dierschke V, Garthe S. 2011. Effects of ship traffic on seabirds in offshore waters: implications for marine conservation and spatial planning. Ecological Applications 21:1851–1860.
[28] *Id*.
[29] Crawford H. Greenwalt. 1962. Dimensional relationships for flying animals. Smithsonian miscellaneous collections 144.
[30] Fliessbach KL, Borkenhagen K, Guse N, Markones N, Schwemmer P, Garthe S. 2019. A Ship Traffic Disturbance Vulnerability Index for Northwest European Seabirds as a Tool for Marine Spatial Planning. Frontiers in Marine Science 6:192.
[31] Schwemmer P, Mendel B, Sonntag N, Dierschke V, Garthe S. 2011. Effects of ship traffic on seabirds in offshore waters: implications for marine conservation and spatial planning. Ecological Applications 2:1,851-1,860; Lieber L, Langrock R, Nimmo-Smith WAM. 2021. A bird's-eye view on turbulence: seabird foraging associations with evolving surface flow features. Proceedings of the Royal Society B: Biological Sciences 288:rspb.2021.0592, 20210592.
[32] Wilhelm SI, Dooley SM, Corbett EP, Fitzsimmons MG, Ryan PC, Robertson GJ. 2021. Effects of land-based light pollution on two species of burrow-nesting seabirds in Newfoundland and Labrador, Canada. *Avian Conservation & Ecology* 16: 12. https://doi.org/10.5751/

procellariiforms in general,[33] are exceedingly vulnerable to harms from light disorientation (*phototaxis*), which is not only a concern during construction and operations from lighting on turbine infrastructure, but also due to lighting on vessels during all phases of offshore wind. We stress that phototaxis creates conditions in which the bird numbers that are attracted will scale as the square of the range from which they are drawn,[34] thereby greatly increasing potential for adverse impacts. More research and monitoring is needed to measure distances at which this phototaxis operates in seabirds (especially the susceptible procellariiforms).[35]

B. Marine Mammals and Sea Turtles

A number of marine mammals and sea turtles inhabit the waters offshore of Oregon, including threatened and endangered species, as well as species experiencing Unusual Mortality Events (UMEs). Climate change impacts, such as marine heat waves, may also cause temporary or permanent shifts in habitat for cetaceans and possibly increase their presence in the Oregon WEAs. Given the vulnerable statuses of these species as well as gaps in our knowledge about those species, we urge BOEM to consider and incorporate the best available scientific information about marine mammals and sea turtles into its environmental analysis and develop a plan to incorporate additional information that becomes available while the leasing and development process is underway. NMFS consultation would be needed to consider potential impacts on listed species and their critical habitat (where applicable) from offshore wind development. This analysis may lead to the implementation of additional measures to minimize impacts. It is important to emphasize that noise and vessel traffic are significant concerns for many of these species, and efforts to mitigate impacts will be necessary throughout all phases of offshore wind activities. We direct the agency to review our Call[36] comments from 2022 which contain a multitude of data sources and in-depth information about these species, their habitats, and pre-existing threats, summarized below.

1. Key Species

a. Blue Whales

[33] At least 56 species of Procellariiformes, more than one-third of them (24) threatened, are vulnerable to grounding caused by lights. See the synthesis in: Rodríguez A, Holmes ND, Ryan PG, Wilson KJ, Faulquier L, Murillo Y, Raine AF, Penniman JF, Neves V, Rodríguez B, Negro JJ. 2017. Seabird mortality induced by land-based artificial lights. *Conservation Biology* 31:986–1,001.

[34] Deakin Z, Cook A, Daunt F, McCluskie A, Morley N, Witcutt E, Wright L, Bolton M. 2022. A review to inform the assessment of the risk of collision and displacement in petrels and shearwaters from offshore wind developments in Scotland. Scottish Government: Riaghaltas na h-Alba. ISBN: 978-1-80525-029-6 (web only) https://www.researchgate.net/profile/Zoe-Deakin-2/publication/366139542_A_review_to_inform_the_assessment_of_the_risk_of_collision_and_displacement_in_petrels_and_shearwaters_from_offshore_wind_developments_in_Scotland/links/6393231e484e65005bf86842/A-review-to-inform-the-assessment-of-the-risk-of-collision-and-displacement-in-petrels-and-shearwaters-from-offshore-wind-developments-in-Scotland.pdf

[35] At least 56 species of Procellariiformes, more than one-third of them (24) threatened, are vulnerable to grounding caused by lights. See the synthesis in: Rodríguez A, Holmes ND, Ryan PG, Wilson KJ, Faulquier L, Murillo Y, Raine AF, Penniman JF, Neves V, Rodríguez B, Negro JJ. 2017. Seabird mortality induced by land-based artificial lights. Conservation Biology 31:986–1,001.

[36] eNGO comments on the Request for Information and Nominations: Commercial Leasing for Wind Energy Development on the Outer Continental Shelf Offshore Oregon can be accessed at https://www.regulations.gov/comment/BOEM-2022-0009-0221.

Blue whales, which are both state and federally listed as endangered, have exhibited relatively stable population numbers in the region since the 1990s.[37] However, the total annual potential biological removal (PBR) for this stock in the United States is only 1.23 whales, indicating any human-caused mortality exceeding this level could impact population levels significantly.[38] Unfortunately, current human-caused mortality, including entanglements in fishing gear and vessel strikes, surpasses this threshold, with observed mortalities indicating a fatality rate higher than the PBR.[39] The probability of detecting these mortalities is low, suggesting actual death rates may be higher. Notably, offshore wind energy development poses a potential threat to blue whales, as impacts on even a single individual could have population-level consequences.

While the Oregon WEAs do not overlap with current blue whale Biologically Important Areas (BIAs), research indicates high blue whale density in these areas, especially during summer and fall, and particularly in the Brookings WEA.[40] Long-term tracking suggests blue whales exhibit foraging site fidelity and rely on historical patterns of resource availability.[41] As the southern portion of the Brookings WEA is a foraging area for blue whales, they are more likely to return, increasing the risk of impacts.

b. Gray Whales

Pacific gray whales are currently undergoing a UME with evidence of poor body condition and starvation among the population.[42] The Eastern North Pacific (ENP) population has declined 24 percent since 2016 to about 20,580 individuals.[43] The Western North Pacific (WNP) population, listed as endangered, has been documented along the ENP migration route.[44] While the Oregon WEAs do not intersect with gray whale feeding areas, most of the Brookings and half of the Coos Bay Call Areas overlap with migration routes. Activities like site assessment and vessel transits within these areas pose risks such as vessel strikes and entanglements, which could exacerbate existing stressors on the population and individuals.[45]

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[37] Calambokidis, J., and J. Barlow. 2020. Updated abundance estimates for blue and humpback whales along the U.S. West Coast using data through 2018. U.S. Department of Commerce, NOAA Technical Memorandum, NMFS-SWFSC-634. 20 pp. [51] Carretta, J.V. et al. 2020. U.S. Pacific Marine Mammal Stock Assessments: 2019, U.S. Department of Commerce. NOAA Technical Memorandum NMFS-SWFSC-629. Blue whale: Eastern North Pacific Stock

[38] Carretta, J.V. et al. 2020. U.S. Pacific Marine Mammal Stock Assessments: 2019, U.S. Department of Commerce. NOAA Technical Memorandum NMFS-SWFSC-629. Blue whale: Eastern North Pacific Stock

[39] *Id.*

[40] As indicated by OROWindMap, with data from Becker, E.A. et al. 2020. Habitat-based density estimates for cetaceans in the California Current Ecosystem based on 1991-2018 survey data, U.S. Department of Commerce, NOAATechnical Memorandum NMFS-SWFSC-638; and the Navy Marine Species Density Database for U.S. Pacific & Gulf of Alaska

[41] Abrahms, B. et al. 2019. Memory and Resource Tracking Drive Blue Whale Migrations. *Proceedings of the National Academy of Sciences* (116)12:5582–5587. https://doi.org/10.1073/pnas.1819031116.

[42] Christiansen F, et al. 2021. Poor body condition associated with an unusual mortality event in gray whales. *Mar Ecol Prog Ser* 658:237-252. https://doi.org/10.3354/meps13585

[43] Stewart, J.R. and D.W. Weller. 2021. Abundance of eastern North Pacific gray whales 2019/2020. U.S. Department of Commerce, NOAA Technical Memorandum NMFS-SWFSC-639.https://doi.org/10.25923/bmam-pe91.

[44] Mate, BR et al. 2015. Critically endangered western gray whales migrate to the eastern North Pacific. *Bio. Lett.* 11(4):20150071,d oi: 10.1098/rsbl.2015.0071

[45] Becker, E.A., et al.2016. Moving towards Dynamic Ocean Management: How Well Do Modeled Ocean Products Predict Species Distributions? *Remote Sensing* (8)2: 149, https://doi.org/10.3390/rs8020149

c. Humpback Whales

The Final Wind Energy Areas (WEAs) lie within Critical Habitat for the ESA-listed Central America (endangered) and Mexico (threatened) Distinct Population Segments (DPS) of humpback whales. BOEM must consider that humpback whales are likely to move between the BIAs that are located to the North and South of the WEAs. Recent research indicates humpback whales prefer continental shelf and slope habitats, with sightings off Oregon spanning most months (except January) and peaking in August. Density models demonstrate high concentrations of humpback whales in the summer and fall. In fact, research suggests that the humpback is the most spatially and temporally widespread baleen whale off the Oregon coast. Prey-switching by humpback whales in response to variations in ocean conditions is also important to consider in offshore wind development, as whales may vary their distribution and foraging behavior between years to follow prey, requiring adaptability in mitigation measures.[46]

d. Southern Resident Killer Whales

The Southern Resident killer whale (SRKW) DPS has been listed as endangered under the ESA since 2005[47] and under Canada's Species at Risk Act (SARA) since 2003.[48] The Oregon Fish and Wildlife Commission just recently listed the SRKW under the State Endangered Species Act, as well.[49] With only 74 individuals remaining and a declining population trend spanning over a decade, this genetically distinct community of orcas exclusively relies on salmon as their primary prey.[50] As the only Resident population to inhabit the CCE and coastal waters off Washington, Oregon, and Northern California, SRKW spend a significant portion of the year in these regions.[51] Recognized as one of the marine species most at risk of extinction by the National Marine Fisheries Service (NMFS), they face numerous significant threats to their survival, including prey depletion, high toxicant loads, anthropogenic noise, vessel impacts, and oil spill risk.[52] Additional development in their habitat, and any impacts to their primary prey, Chinook salmon, will increase risk to this highly endangered population.

Though we appreciate the exclusion of critical habitat from the WEAs, concerns remain regarding the potential impacts of site assessment and characterization activities and vessel traffic on the SRKW DPS. With SRKW vulnerable to vessel collision and acoustic disturbances, careful consideration of timing for site activities is crucial to minimize impacts.

Oregon coastal waters serve as crucial migration routes connecting high-use feeding areas, necessitating

[46] Meynecke J-O, de Bie J, Barraqueta J-LM, Seyboth E, Dey SP, Lee SB, Samanta S, Vichi M, Findlay K, Roychoudhury A and Mackey B (2021) The Role of Environmental Drivers in Humpback Whale Distribution, Movement and Behavior: A Review. Front. Mar. Sci. 8:720774. doi: 10.3389/fmars.2021.720774

[47] 70 FR 69903

[48] S.C. 2002, c.29

[49] https://www.dfw.state.or.us/news/2024/02_Feb/021624.asp

[50] Population data from Center for Whale Research

[51] Krahn, M.M. et al. 2004. 2004 status review of southern resident killer whales (Orcinus orca) under the Endangered Species Act. NOAA Technical Memorandum NMFS-NWFSC-62, U.S. Department of Commerce, Seattle, Washington; Reynolds, J.E. H. Marsh & T.J. Ragen. 2009. Marine Mammal Conservation. Endangered Species Research. 7:23-28.

[52] *Id.* and Scales, K. L. et al. 2017. Should I Stay or Should I Go? Modeling Year-Round Habitat Suitability and Drivers of Residency for Fin Whales in the California Current. *Divers. Distrib.* 23, 1204–1215. doi: 10.1111/ddi.12611

unobstructed passages for safe movement, communication, and foraging activities. SRKW migrating along the Oregon Coast will be at increased risk of vessel collision, acoustic impacts, and ultimately potential impacts to their prey base from potential cable installations. BOEM must carefully consider timing of site characterization activities, including increased vessel traffic and acoustic testing, to avoid times when SRKW are most likely to be present in order to minimize impacts to these rare whales.

Moreover, as wind developers consider potential corridors for onshoring, it will be important to consider impacts to nearshore habitat, including estuaries, for Chinook salmon, as a factor for conserving SRKW.

e. Fin Whales

Fin whales are listed under ESA and occur in both pelagic and coastal waters, where they feed on krill and fish. Current research suggests that only some fin whales undergo long distance migrations while some individuals remain resident. Data off the Oregon Coast indicates fin whale observations peak in December and individuals vary in their use of coastal waters, with residency to local areas and movements between continental shelf waters in the winter and offshore in the summer.[75] This variability in movements make BIAs difficult to define and thus they were not designated, although BIAs are currently being considered as a result of new research. The SWFSC density models, available in OROWind Map, suggest high fin whale density on the western half of the Coos Bay Call Area.

f. North Pacific Right Whale

The potential overlap of endangered North Pacific right whale habitat with the Oregon WEAs remains uncertain. This exceptionally rare marine mammal species is critically endangered, with fewer than 500 individuals in the North Pacific and an estimated 30 in the Eastern North Pacific population.[53] Limited knowledge exists regarding their distribution and habitat preferences. Since 1950, only a few sightings of North Pacific right whales have been reported in the region, including in Washington, California, British Columbia, and Alaska.[54] Habitat preference models suggest Southern California as a potential calving area, indicating that offshore Oregon waters may serve as a migratory corridor. However, further research is needed to better understand the extent of their usage of this area, representing a significant data gap.

g. Harbor Porpoise

No specific habitat areas are designated for harbor porpoises offshore Oregon, despite their status as a strategic species in the state.[55] These small cetaceans are particularly vulnerable to noise and disturbance. While primarily coastal, they can be found in highly productive areas, bays, estuaries, and

[53] Wright D.L. et al. 2018. Acoustic detection of North Pacific right whales in a high-traffic Aleutian Pass, 2009-2015. *Endang Species Res* 37:77-90. https://doi.org/10.3354/esr00915

[54] Ford, J.K.B. et al. 2016. Recent observations of critically endangered North Pacific right whales (Eubalaena japonica) off the west coast of Canada. *Mar Biodivers Rec* 9, 50.https://doi.org/10.1186/s41200-016-0036-3;NOAA Fisheries: Four Endangered North Pacific Right Whales Spotted in the Gulf of Alaska. Accessed June 26, 2022.

[55] Oregon Conservation Strategy, Strategic Species, Accessed June 26, 2022.

further offshore near Heceta Bank and Cape Blanco, extending to the 200m isobath.[56] Their habitat use is influenced by site-specific environmental conditions, such as tide flow, which affect their foraging behavior.[81]

The Oregon WEAs may intersect with harbor porpoise distribution, even in offshore regions. Site assessment and characterization activities within the WEAs, including geophysical surveys, transmission cable construction, and vessel traffic for operations and maintenance, could impact these animals. Studies have shown that harbor porpoises have abandoned habitat in response to various types of pulsed sounds, indicating their high sensitivity to acoustic disturbances.[83] Thus, the potential impacts of offshore wind development activities on harbor porpoises in Oregon must be carefully considered. In fact, evidence of the acoustic sensitivity of the harbor porpoise has led scientists to call for a revision to the NMFS acoustic exposure criteria for behavioral response.[57]

h. Small Beaked Whales

Significant uncertainty surrounds density estimates of small beaked whales, such as *Mesoplodon* spp. and Cuvier's beaked whales, due to limited research on these species and their habitat preferences. Passive acoustic monitoring plays a crucial role in informing abundance and density estimates for these elusive, deep-diving species, as demonstrated by recent research on Cuvier's beaked whales off the U.S. West Coast.[58] This information should be integrated into BOEM's analysis of offshore wind development in deep waters. Emerging evidence suggests that beaked whales may have relatively restricted ranges,[59] making them particularly susceptible to any impacts associated with offshore wind energy development occurring within their habitat.

i. Additional Marine Mammal Species

Numerous other marine mammals inhabit the deep waters off Oregon's continental shelf, potentially overlapping with WEAs and may face impacts from site assessment, cable-laying, and vessel activities. Among these are ESA-listed species such as sei whales, sperm whales, and Guadalupe fur seals.

Sei whales, often found in deeper waters, have an uncertain population estimate and face similar

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[56] Tynan, C. T. et al. 2005. Cetacean distributions relative to ocean processes in the northern California Current System. *Deep Sea Research Part II: Topical Studies in Oceanography,* 52:145-167. https://doi.org/10.1016/j.dsr2.2004.09.024 [81] Holdman, A.K., J.H. Haxel, H. Klinck, L.G. Torres. 2019. Acoustic monitoring reveals the times and tides of harbor porpoise (Phocoena phocoena) distribution off central Oregon, U.S.A. Marine Mammal Science (35): 1, 164-186. https://doi.org/10.1111/mms.12537

[57] Tougaard, J., A.J. Wright, P.T. Madsen. 2015. Cetacean noise criteria revisited in the light of proposed exposure limits for harbor porpoises. *Marine Pollution Bulletin.* (90):196-208, https://doi.org/10.1016/j.marpolbul.2014.10.051

[58] Barlow, J. et al. 2021. Acoustic-based estimates of Cuvier's beaked whale (*Ziphius cavirostris*) density and abundance along the U.S. West Coast from drifting hydrophone recorders. *Mar. Mam. Sci.* (38)2: 517–538, https://doi.org/10.1111/mms.12872 [86] Foley, H.J. et al. Residency and movement patterns of Cuvier's beaked whales Ziphius cavirostris off Cape Hatteras, North Carolina, USA. *Marine Ecology Progress Series*, 660, pp.203-216, https://doi.org/10.3354/meps13593 [87] Forney, K.A. et al. 2017. Nowhere to go: noise impact assessments for marine mammal populations with high site fidelity. *Endang Species Res* 32:391-413. https://doi.org/10.3354/esr00820

[59] Foley, H.J. et al. Residency and movement patterns of Cuvier's beaked whales Ziphius cavirostris off Cape Hatteras, North Carolina, USA. *Marine Ecology Progress Series*, 660, pp.203-216, https://doi.org/10.3354/meps13593

threats to blue and fin whales, including vessel strikes and entanglement.[60] Guadalupe fur seals, listed as threatened, undertake long journeys from their breeding grounds off Mexico's Guadalupe Island[61] and have experienced Unusual Mortality Events due to malnutrition linked to ocean warming.[62] Additionally, various small cetaceans may inhabit the northern CCE year round, including Transient and Offshore orcas,harbor porpoises, bottlenose dolphins, long-beaked common dolphins, Dall's porpoises, Risso's dolphins, Pacific white-sided dolphins, short-finned pilot whales, and northern right whale dolphins., inhabit the northern California Current Ecosystem year-round.[63] while pinnipeds like northern elephant seals, California sea lions, and harbor seals may also be impacted by offshore activities.Pinnipeds likely to overlap with the WEAs include northern elephant seals, Guadalupe fur seals, and northern fur seals, which seasonally travel through and forage in deeper waters.[64] California sea lions and Steller sea lions may also travel and forage in open ocean waters, and harbor seals may be impacted by project-related activities closer to shore.

j. Sea turtles

All sea turtles are protected under the federal ESA and Oregon ESA. The Oregon WEAs represent important habitat for three species of sea turtle: leatherback, loggerhead, green turtles. The loggerhead and green turtles are listed as threatened under the ESA, while the leatherback are designated as endangered. Leatherback sea turtles are of particular concern for potential interactions with offshore wind development off Oregon, and the Coos Bay WEA falls entirely within their federal critical habitat. Limiting anthropogenic disturbances to sea turtles within the WEAs is paramount for conservation of the larger population. Given the vulnerable statuses and the gaps in our knowledge on the impacts of offshore wind energy development on sea turtles, the best scientific information must be considered in the Draft EA and the development of mitigation measures.

2. Primary Risks to Marine Mammals from Site Assessment and Characterization

a. Vessel Traffic

Increased vessel traffic associated with all phases of offshore wind energy development poses an increased vessel collision risk for sea turtles and marine mammals, particularly baleen whales.[65] The risk of serious injury and mortality from vessel collisions increases significantly with vessel speeds of 10 knots or greater.[66]

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[60] *See* NOAA Fisheries species directory: Sei whale.

[61] NOAA Fisheries species directory: Guadalupe fur seal.

[62] NOAA Fisheries 2015–2021 Guadalupe Fur Seal Unusual Mortality Event in California, Oregon and Washington

[63] NOAA Fisheries species directory, marine mammals.

[64] *Id.*

[65] Rockwood, R. C., Calambokidis, J., & Jahncke, J. (2017). High mortality of blue, humpback and fin whales from modeling of vessel collisions on the US West Coast suggests population impacts and insufficient protection. *PloS one*, *12*(8), e0183052.

[66] Conn, P. B., & Silber, G. K. (2013). Vessel speed restrictions reduce risk of collision-related mortality for North Atlantic right whales. *Ecosphere, 4*(4), 1-16.

b. Noise

Noise impacts on marine mammals and sea turtles is a concern during site assessment and characterization for offshore wind development. This phase involves various activities, including high-resolution geophysical (HRG) surveys using sonar and echosounders to map the seabed. These surveys generate noise, albeit at lower levels compared to other phases like pile driving or seismic airgun surveys used in oil and gas exploration. However, noise from geophysical surveys can still have impacts on marine species, including behavioral changes and potential damage to hearing and sensory abilities if emitted in close proximity to the animals. It is essential to implement mitigation measures during site assessment to minimize these impacts on marine ecosystems.

C. Benthic Habitat

Bottom disturbance associated with seafloor and sub-bottom sampling, metocean buoy anchoring, and recovery of lost survey equipment has potential to impact benthic resources. It is particularly important to protect biogenic structural habitat, which is comprised of three-dimensional structures created by slow-growing living organisms (e.g., corals, sponges) that support a high density and diversity of marine species, and Habitat Areas of Particular Concern (HAPC), which are subsets of Essential Fish Habitat that have a particularly important ecological role in fish life cycles or are especially sensitive, rare, or vulnerable to degradation.

BOEM's environmental analysis should address data gaps concerning benthic habitats and species potentially impacted by offshore wind projects. While some general data on benthic habitats in the WEAs exist, comprehensive surveys within the WEAs are necessary to identify areas with high species diversity and density. This includes ground truthing of existing mapping and filling data gaps for substrate and biological communities. For example, as highlighted in the NCCOS Report, the location of methane seeps–often an indication of biodiversity– are mostly uncertain and require validation.[67] Updated biological surveys may also be required in specific areas to ensure minimal impact on benthic communities. These surveys will inform the development of effective avoidance, minimization, and mitigation measures to protect the benthic ecosystem.

Potential bottom-disturbing activities from anchoring could impact important benthic resources and BOEM should prioritize avoidance of anchoring in these areas. BOEM should require an anchoring plan and require that anchoring sites include a buffer of sufficient distance to fully protect sensitive habitat from anchors and related infrastructure. BOEM should also require lessees to avoid intentional contact within hard substrate, rock outcroppings, seamounts, or deep-sea coral/sponge habitat during site assessment and characterization activities.

[67] NCCOS Report at 136. https://www.boem.gov/sites/default/files/documents/renewable-energy/state-activities/Oregon_WEA_Draft_Report_NCCOS.pdf

V. Mitigation and Monitoring Measures

Strong mitigation measures are essential to protect wildlife during all phases of offshore wind energy development. Specifically during site assessment and site characterization, BOEM must consider risks from vessel collision, noise impacts, and the potential for habitat displacement posed by these activities. Site assessment and characterization may involve high-resolution geophysical (HRG) survey equipment operating at frequencies that could injure or harass wildlife, and survey and auxiliary vessels which pose a risk of collision and disturbance. The following measures are designed to first avoid, and then minimize and mitigate potential impacts during the site assessment and characterization phase of offshore wind energy development in offshore Oregon. Incorporating these and other recommendations at the very outset of planning offshore wind development in offshore Oregon will help set expectations early for developers and other stakeholders as to what will be required.

- BOEM should require a coordinated regional approach to site characterization surveys in order to reduce cumulative impacts from survey activities (e.g., noise, vessel traffic) and avoid unnecessary duplication across adjacent leases.

- Site characterization activities result in increased vessel traffic and underwater noise that can disturb sensitive species of fish, marine mammals, and birds. BOEM should consider these impacts to sensitive species and require appropriate mitigation measures as necessary.

We also advise that BOEM embrace the recommendations included in Attachment 1, which includes, in part, mitigation recommendations for marine mammals and sea turtles during site assessment and characterization.

In summary, we recommend the following:

- Prohibit site characterization activities during times of highest risk for marine mammals and sea turtles;
- Require diel restrictions on site assessment and characterization activities;
- Require robust clearance zone and exclusion zone distances prior to activities that could injure or harass large whales;
- Require shutdown of activities if large whales are detected visually or acoustically;
- Require robust monitoring protocols during pre-clearance and when site assessment and characterization activities are underway;
- Require mandatory 10-knot vessel speed restrictions on all vessels in all areas[68] except in limited circumstances, as well as other vessel-related measures while underway;
- Require underwater noise reduction to the fullest extent feasible; and
- Require mandatory reporting of all large whale, and sea turtle detections.

[68] Unless an 'Adaptive Plan' to modify vessel speeds is developed based on monitoring methods that must be proven equally or more effective following a scientific study design.

We also recommend BOEM consider Attachment 2, "Offshore Wind Energy: Potential Impacts, Monitoring Needs, and Recommended Mitigation Measures for Bats and Birds."

Although siting plays a significant role in avoiding the most profound impacts, and we expect limited impacts from site assessment and site characterization to birds and bats, we again urge BOEM to consider impacts to birds and bats in the Draft EA. We also recommend the following additional measure:

- At relevant seasons, or if present in large concentrations, BOEM should consider measures that avoid, minimize, and or mitigate site characterization activities, in particular high-frequency vessel transits, during times when certain bird species may be vulnerable to undue behavioral disturbance or physical harm (see Section IV.A.2.a).
- To mitigate any light-driven attraction (phototaxis) on birds during the vessel operations and buoy placements during site characterization activities, measures that minimize lighting impacts on avian species [should] be implemented where feasible, including minimizing lighting the onshore facility at night, using down-shielded light fixtures, as well as aiming light upward and using the longest permissible off cycles.

We also direct BOEM to incorporate robust monitoring measures during all phases of the offshore wind process, including during site assessment and characterization. We direct the agency towards this report produced by a multitude of experts and environmental nonprofits, "Monitoring of Marine Life During Offshore Wind Energy Development-Guidelines and Recommendations," which includes region-specific guidance for the Pacific Coast (Attachment 3).[69]

The agency should also adopt measures to mitigate impacts to benthic habitat including requiring the creation of an anchoring plan and measures to buffer benthic impacts from sensitive habitats.

As Oregon's WEAs are located within the same bioregion as the Humboldt leases, we assume BOEM may look to the previously conducted EA for the Humboldt WEA conducted in 2022.[70] Though we largely agree with the environmental protection mitigation measures and BMPs within Appendix D, we want to direct BOEM to also incorporate the following changes (in line with our recommendations in Attachment 1) if the agency adopts these measures for Oregon.

- BOEM has not included vessel speed restrictions for sea turtles. All project-associated vessels must slow to 4 knots, except for reasons of safety, while transiting through areas of visible jellyfish aggregations or floating vegetation lines or mats to improve protection for sea turtles.
- BOEM's BMPs only require one protected species observer (PSO) while noise-producing equipment is operating. We ask for a minimum of four PSOs following a two-on, two-off rotation so that each PSO is responsible for scanning no more than 180° of the horizon.

[69]NRDC. (2023). "Marine Life Monitoring Guidelines for Offshore Wind Energy Projects." Retrieved from https://www.nrdc.org/sites/default/files/ow_marine-life_monitoring_guidelines.pdf

[70] Humboldt Wind Energy Area Final Environmental Assessment, Appendix D. https://www.boem.gov/sites/default/files/documents/renewable-energy/state-activities/App-D-Typical-Mitigation-Measures.pdf

- Appendix D also indicates that surveying could occur at night if determined by a PSO.[71] We recommend that site assessment and characterization activities must not be initiated within 1.5 hours of civil sunset.
- BOEM should also require quarterly reports of PSO sightings data to be made publicly available.

VI. Conclusion

We thank BOEM for their consideration of these comments and urge them to incorporate the above recommendations into the Draft EA. We also reiterate our recommendation for a broader analysis which evaluates impacts from all stages of offshore wind development–to enable responsible, inclusive, and transparent decision making. We urge BOEM to use these comments, as well as our previous comments, to promote responsible offshore wind development offshore Oregon.

Sincerely,
[Organizations]

[71] Humboldt EA Appendix D at 5.