Portland Audubon · American Bird Conservancy · Oceana · Whale and Dolphin Conservation Kalmiopsis Audubon Society · Cape Arago Audubon Society · Audubon Society of Lincoln City Oregon Chapter of the American Cetacean Society · Native Fish Society · Surfrider Foundation Lane County Audubon Society · Umpqua Valley Audubon Society · Salem Audubon Society · Audubon Society of Corvallis Rogue Valley Audubon Society · East Cascades Audubon Society · Klamath Basin Audubon Society · Redwood Region Audubon Society · Oregon Wild · Coast Range Forest Watch · Oregon Shores Conservation Coalition

October 28, 2021

Dr. Whitney Hauer
Oregon Task Force Coordinator
U.S. Bureau of Ocean Energy Management

Andy Lanier
Marine Affairs Coordinator
Oregon Dept. of Land Conservation and Development

Submitted via electronic mail to: whitney.hauer@boem.gov, andy.lanier@dlcd.oregon.gov

Re: Planning for Offshore wind energy in Oregon in advance of draft call area delineation

Dear Dr. Hauer and Mr. Lanier:

On behalf of our hundreds of thousands of members, we are writing as a group of organizations that advocate for the conservation and sustainable management of our marine resources in regards to the BOEM (Bureau of Ocean Energy Management) - State of Oregon planning process for siting and development of wind energy facilities off Oregon's coast. Collectively, we have local and place-based knowledge as well as specific expertise and decades of experience in marine conservation and management. Both perspectives inform our comments.

Offshore wind energy presents Oregon with an opportunity to transition away from polluting fossil fuels and to address the immense and urgent challenges posed by our climate crisis, which is already impacting marine life. However, the West Coast's renowned California Current marine ecosystem, with its rich upwelling waters, is a crucially important natural resource with significant cultural, ecological, and economic values that must be carefully considered through all phases of siting, design, operation, and eventual decommissioning of any industrial energy development projects. We support responsibly sited offshore wind development that foremost avoids, then minimizes, and then provides meaningful mitigation for impacts to ocean and coastal wildlife and habitats. Because of the exceptionally high values of the California Current marine ecosystem, the notoriously difficult conditions on the Pacific Ocean's outer continental shelf, and the fact that offshore floating turbines are a brand new technology, the highest level of analysis will be needed. If the risk of harm outweighs the benefits, then a "no action" option should remain on the table.

To this end, we request:

1. Provide more opportunities for public and scientific input early in the renewable energy facility siting and planning process to better inform offshore wind energy development;
2. Ensure full compliance with federal and state laws including preparation of a Programmatic Environmental Impact Statement (EIS) before identifying potential development "call areas" and siting of offshore wind facilities in federal waters off Oregon;
3. Ensure full consideration of the high value biological resources in the California Current ecosystem off Oregon and the cumulative impacts multiple projects might pose to wildlife;
4. Fill data gaps to make informed decisions about siting of West Coast projects including the formation of a technical science advisory group;
5. Develop a comprehensive coastwide framework for adaptive management, including robust monitoring and a way to bring new scientific information on board; and
6. Develop a meaningful compensatory mitigation program to fully compensate for environmental harm caused by the implementation of offshore wind facilities, including cable landing and port/terminal sites.

Our groups have a strong interest in the State of Oregon-BOEM process for siting and planning wind energy installations and will continue to offer our perspectives and expert input. Oregon has the opportunity to set a positive precedent for planning for this new industry that could avoid the conflicts that similar processes are facing in other states.

I. SITING PROCESS

Proper siting will be the single most significant decision made in planning for successful wind energy projects. We appreciate that BOEM and the State of Oregon have collaborated and endeavored to engage organizations up and down the coast and also to collect existing data for preliminary analysis to better inform siting of call areas. While appropriate siting can avoid and minimize impacts on birds, fish, and wildlife, and reduce associated conflict in the planning process, it requires data collection and analysis *before* making decisions on call area locations. For this reason, it's imperative that BOEM provides sufficient time to gather data and conduct analyses necessary to make the most informed decisions possible.

We are concerned that timing of the current BOEM process does not allow for all steps of data gathering, analysis, and planning to be completed before call areas are identified. Ideally, the process would first identify important areas to be avoided for ecological, cultural, and social reasons, and then present a synthesis of findings that would point to clear, scientifically and socially supported conclusions about the most appropriate locations for renewable energy facilities that could inform project planning. A good model for this kind of informed and transparent process is the one that the State of Oregon followed in its Territorial Sea Planning process (Part 5) for siting marine renewable energy projects.[1]

[1] State of Oregon, Territorial Sea Plan, Part Five, Marine Renewable Energy Development, 2019: https://www.oregonocean.info/index.php/tsp-home/123-territorial-sea-plan-part-5-marine-renewable-energy-development-2

We strongly support more opportunities for public and scientific input early in the wind facility siting and planning process. We further urge Oregon and BOEM scientists and other specialists to share preliminary findings from data assembled before the formal federal public comment process begins so that interested stakeholders and citizens can become better informed and engage more effectively.

Given the technical nature of the relevant data, we request public, transparent sharing of raw data and analyses, gaps in knowledge, and confidence levels in data and analysis. We also request interpretation of scientific analysis for a lay audience to help the public better understand the complex issues at hand and BOEM's rationale for its siting decisions. A good example of a document that shares findings in an accessible manner is the one prepared by NOAA in consideration of wave energy off Oregon's Coast.[2]

We'd also like to see an analysis for Oregon similar to the one created for southern California that assessed collision and displacement vulnerability of seabirds in order to facilitate informed public discourse and decisions regarding minimization, mitigation, and monitoring of these species.[3]

The importance of siting decisions cannot be overstated because potential wind energy areas in the globally significant California Current ecosystem are exceptionally productive and are crucial for ecosystem services far beyond the narrow footprints of particular projects. For example, salmon that forage offshore ultimately support nutrient transfer to forest ecosystems in the Coast Range and hundreds of miles inland in the Columbia Basin. In addition, consistent summer upwelling in the offshore marine zone provides for fog drip that nourishes terrestrial coastal forests including the renowned redwoods of Oregon's southernmost coast.[4]

II. COMPLIANCE WITH FEDERAL AND STATE ENVIRONMENTAL LAWS

Moving forward, BOEM must comply with relevant federal laws including National Environmental Policy Act (NEPA), Endangered Species Act (ESA), international Migratory Bird Treaty Act (MBTA), Marine Mammal Protection Act (MMPA), and the Magnuson-Stevens Fishery Conservation and Management Act (MSA).

The Department of the Interior has announced its intent to develop many gigawatts of energy through multiple projects off the West Coast, any one of which may have significant impacts on the California Current marine ecosystem. While we appreciate the urgency of proceeding with planning, we urge BOEM to prepare a programmatic EIS to ensure sufficient consideration is given to the critical phase of siting offshore renewable energy facilities. As recognized by the

---

[2] Boehlert, G. W, G. R. McMurray, and C. E. Tortorici (editors), 2008, "Ecological effects of wave energy in the Pacific Northwest," U.S. Dept. Commerce, NOAA Technical Memo. NMFS-F/SPO-92.

[3] Adams et al., 2016, "Collision and Displacement Vulnerability among Marine Birds of the California Current System Associated with Offshore Wind Energy Infrastructure."

[4] Hocking M.D. and T.E. Reimchen, 2002, "Salmon-derived nitrogen in terrestrial invertebrates from coniferous forests of the Pacific Northwest," *BMC Ecology*, 2:4; Johnson, J.A. and T.E. Dawson, 2010, "Climatic context and ecological implications of summer fog decline in the coast redwood region," *Proceedings of the National Academy of Sciences,* 10: 4533-4538; Al Fahel and C.L Archer, 2020, "Observed onshore precipitation changes after installation of offshore wind farms," *Bulletin of Atmospheric Science and Technology*, 1: 179-203.

Council on Environmental Quality (CEQ) guidance, programmatic NEPA review is appropriate when there is a "decision to proceed with multiple projects that are temporally or spatially connected and that will have a series of associated concurrent or subsequent decisions."[5]

A programmatic EIS could provide detail that leads to more informed choices among planning level alternatives (including a no action alternative), help develop broad mitigation strategies, allow for collaboration among federal, state, and local agencies and Tribes, and provide a more appropriate means for evaluating cumulative impacts than at the project level stage. While a programmatic EIS cannot replace site-specific analyses, there can be benefits to a broader look at an offshore renewable energy planning off the West Coast,[6] particularly given the many shared resources and migratory species that use the planning area.

Before siting offshore wind facilities along the West Coast, there must be full consultation and permitting with agencies that implement our federal laws, and consideration of a full range of issues—including impacts throughout project construction (including cable landings, port terminal construction), operations, and decommissioning. The State of Oregon must similarly adhere to laws and policies related to Coastal Zone, Land Use Planning, and Territorial Sea Planning as identified in the Territorial Sea Plan, for the on-shoring portion of wind energy planning including laying cable, building landings, and constructing transmission lines.

We urge careful consideration of the sequencing of the federal and state processes so that projects can be evaluated in their entirety—including ocean, coastal, and terrestrial components—rather than in a piecemeal manner, which would preclude effective consideration of whole-project and cumulative impacts.

III. HIGH CONSERVATION VALUES OF OREGON'S DYNAMIC OUTER CONTINENTAL SHELF

The floating offshore wind projects that BOEM will consider in the near future for the Outer Continental Shelf off California, Oregon, and Washington will be among the first in the world to be sited in one the Earth's four eastern ocean boundary upwelling zones. These nutrient-rich upwelling zones are the globe's most dynamic and ecologically-rich ocean ecosystems for productivity of marine life and fisheries, also supporting abundant seabirds and marine mammals.[7] It will be crucial to protect the processes, patterns, and features that promote this enhanced biological productivity in our upwelling zone—the California Current Marine Ecosystem. Within this zone, Oregon's outer continental shelf has extremely high conservation values for birds, fish, and other marine wildlife.

---

[5] CEQ guidance for Federal departments and agencies on effective use of programmatic NEPA reviews December 18, 2014, p. 14, *available at* https://obamawhitehouse.archives.gov/sites/default/files/docs/effective_use_of_programmatic_nepa_reviews_final_dec2014_searchable.pdf.

[6] *Id.* at 6-7 ("Programmatic analyses have value by setting out the broad view of environmental impacts and benefits for a proposed decision. . . that should result in clearer and more transparent decision-making, as well as provide a better defined and more expeditious path toward decisions on proposed actions.").

[7] Pauly, D., and Christensen, V. 1995, "Primary production required to sustain global fisheries," *Nature* 374:255–257.

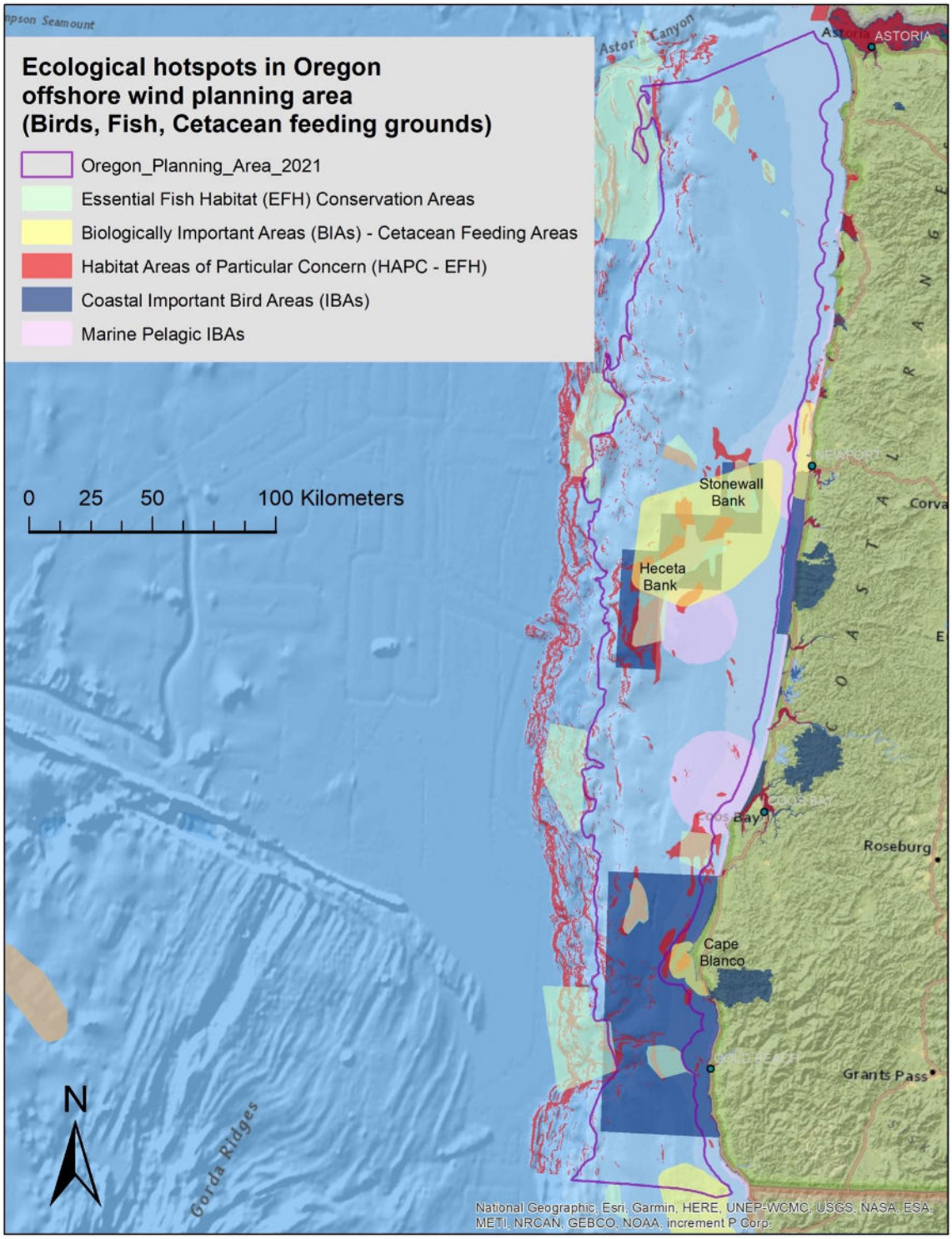

Fig. 1. Ecological hotspots In Oregon offshore wind planning area (birds, fish, and cetacean feeding grounds)

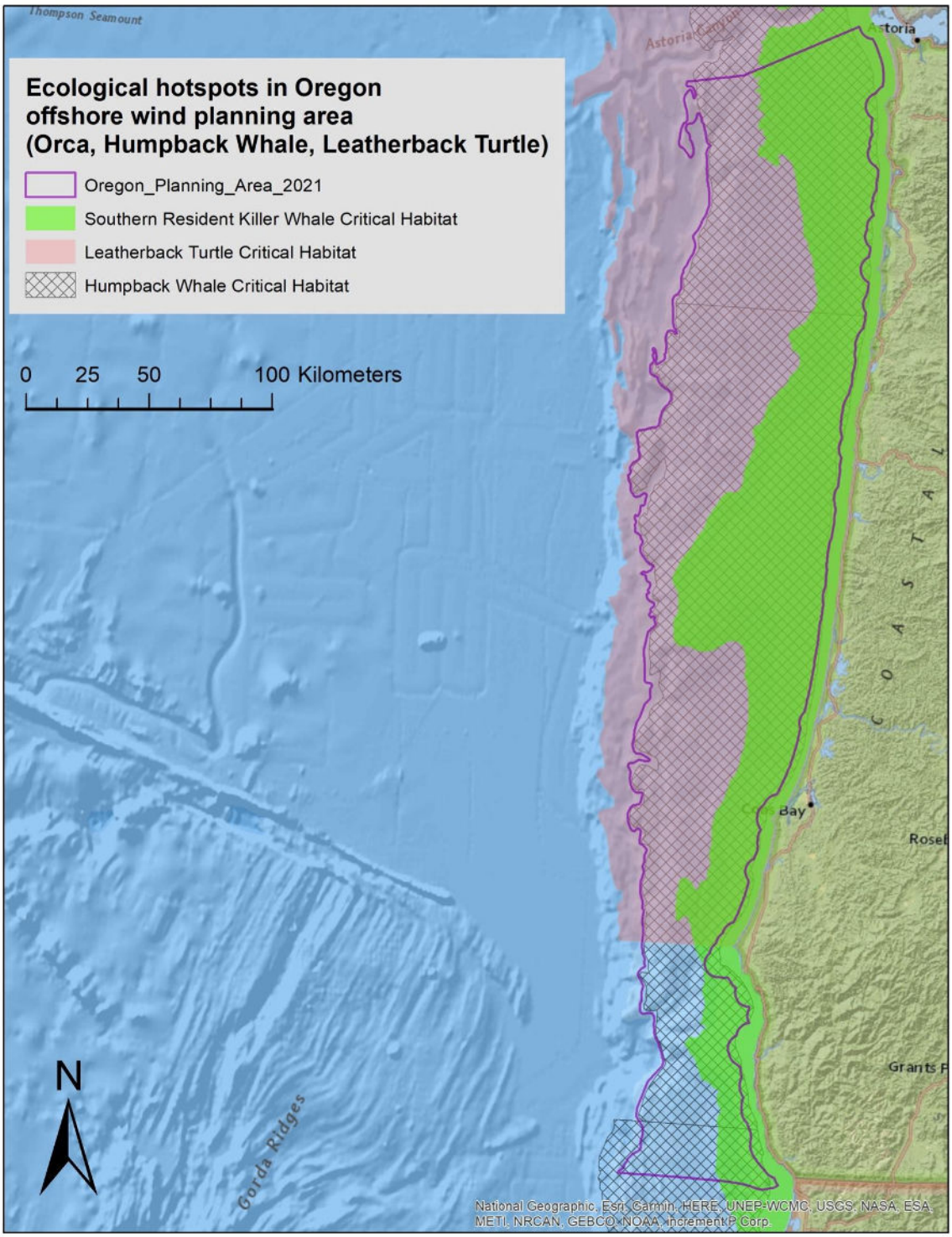

Fig. 2. Ecological hotspots in Oregon offshore wind planning area (orca, humpback whale, and leatherback turtle)

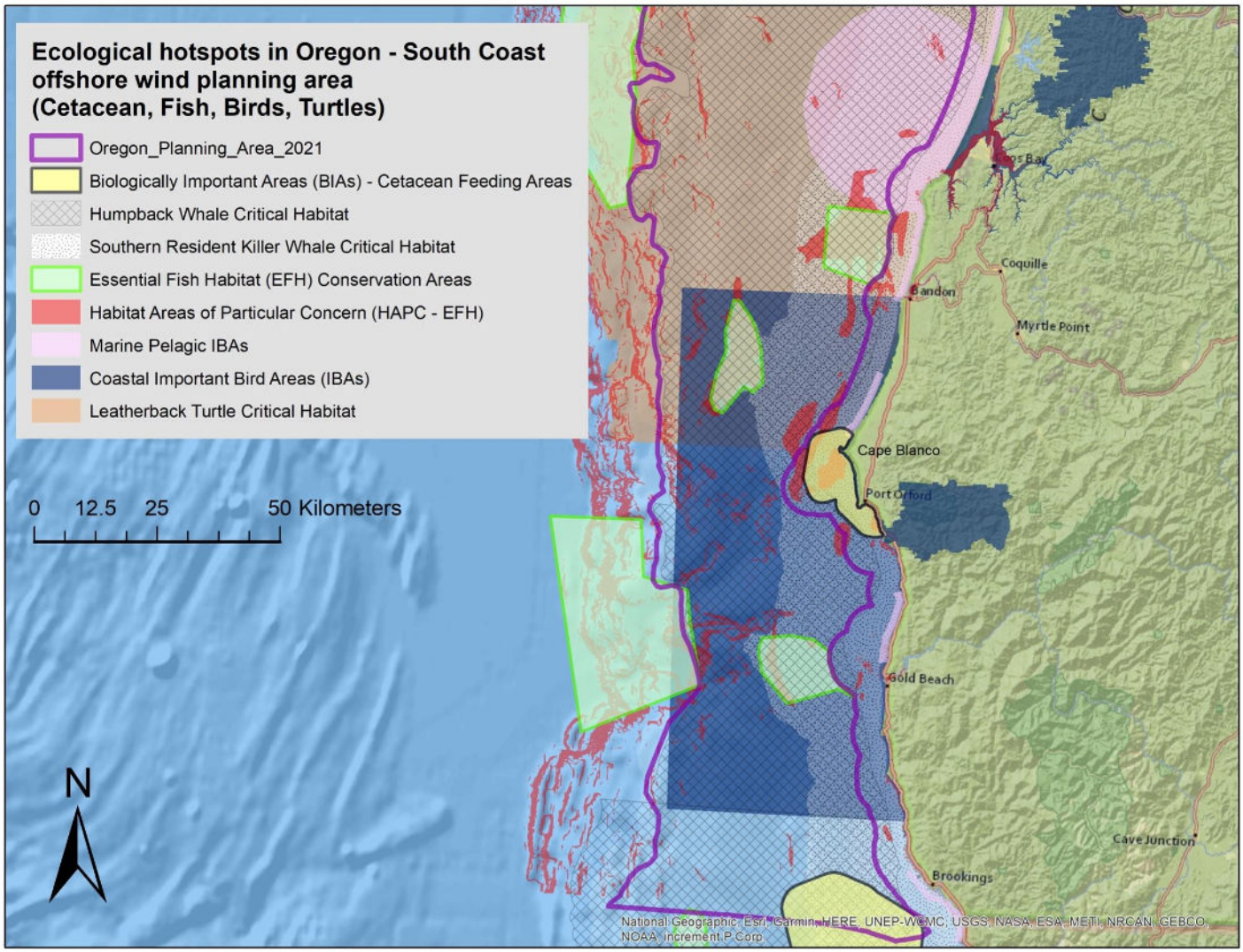

Fig. 3. Ecological hotspots in Oregon, South Coast offshore wind planning area (cetaceans, fish, birds, turtles)

National Audubon, Portland Audubon, and Birdlife International have identified several coastal and marine hotspots for birdlife off the Oregon Coast. These include over 15 nearshore "Important Bird Areas" (IBAs) and two large, globally important offshore IBAs —Cape Blanco, Heceta Bank—that extend into waters where wind turbines are expected to be placed. Nearly 100 species of birds, including the endangered Short-tailed albatross and other seabirds of conservation concern, come from all around the Pacific to forage in Oregon's productive offshore waters owing to upwelling of cold, nutrient-rich water and the resulting high primary productivity that forms the basis for abundant food webs.[8]

[8] National Audubon Society, Important Bird Areas: https://www.audubon.org/important-bird-areas/state/oregon

This nutrient-rich water also attracts many species of marine mammals, including several that are listed under the federal ESA, are Oregon species of conservation concern, and are highly vulnerable to human activity. Oregon coastal waters are included in federally designated critical habitat for Southern Resident killer whales and two Distinct Population Segments (DPS) of humpback whales. A resident population of gray whales (the Pacific Coast Feeding Group) forages off the coast in the spring and summer, and "Biologically Important Areas" (BIAs) have been identified off Oregon for both humpback and gray whales.

In addition to birds and marine mammals, Oregon's ocean also hosts critical habitat for other federally endangered or threatened marine species including leatherback sea turtles and green sturgeon. Further, sensitive and ecologically important habitats for managed fish species have been designated and protected under the MSA as Essential Fish Habitat (EFH) conservation areas and Habitat Areas of Particular Concern (HAPC). Any offshore development should avoid these unique and important habitats and conservation areas. Furthermore, BOEM must consult with the National Marine Fisheries Service to ensure any offshore wind development and operations do not directly impact ESA-listed species, are not likely to destroy or adversely modify critical habitat, or adversely affect EFH.

Given the dynamic nature of the California Current marine ecosystem off Oregon's coast, sophisticated spatial planning will need to identify the areas that are the most important ecologically —such as areas that provide habitat for threatened and endangered species and bathymetric features that contribute to upwelling and thereby provide habitat for foraging of many species—in order to specify areas to be avoided and areas where impacts to the ocean ecosystem can be minimized.

Some offshore oceanographic features are already well-known to create important zones of high productivity, including the Astoria Submarine Canyon, Heceta and Stonewall Banks, and the advective upwelling zone south of Cape Blanco.[9] In these areas, biophysical processes, such as upwelling linked to established subterranean features, advective currents and eddies, predictably entrain high levels of primary production that result in exploitation by larger fishes and other marine organisms. We have concerns about siting offshore developments in the vicinity of such productive features.

The maps we've created (Fig. 1-3), based on available data, highlight areas of particular importance and concern, but we encourage further synthesis and analysis of data to identify potential additional hotspots and areas of significance for marine life.[10]

Moreover, the dynamic nature of the California Current Marine Ecosystem presents unique challenges for marine spatial planning. El Niños, Pacific Decadal Oscillations, or other

---

[9] Suryan, R. M., E. M. Phillips, K. J. So, J. E. Zamon, R. W. Lowe, and S. W. Stephensen, 2012, "Marine bird colony and at-sea distributions along the Oregon coast: Implications for marine spatial planning and information gap analysis." Corvallis: Northwest National Marine Renewable Energy Center, Report No. 2.

[10] Briscoe, D. K., S.M. Maxwell, Raphael Kudela, Larry B. Crowder, Donald Croll, "Are we missing important areas in pelagic marine conservation? Redefining conservation hotspots in the ocean," *Endangered Species Research*, Vol. 29 (2016): 229-237.

atmospheric cycles, for example, can alter oceanographic processes and spatially shift zones of high productivity or of devastating hypoxia and thereby significantly shift foraging areas through time. In addition, climate change is already shifting marine life distribution and may also alter atmospheric cycles in unknown ways.[11] Modeling analysis will be needed to account for and evaluate these possible scenarios.

It will also be important for developers and regulators to identify ways to site turbine arrays to minimize impacts to birds, fish and other animals that migrate to or through state and federal waters off Oregon on a regular basis. There are several species of birds, fish, and marine mammals that migrate through different parts of the California Current through different phases of their life histories. Given the current push to install a series of wind energy facilities off the West Coast, BOEM must consider cumulative impacts of these multiple projects to wildlife. Several of the long-lived species, with limited annual reproductive capacity, may be especially vulnerable to collision or displacement in their repeated back and forth migrations through wind turbine installations.

IV. DATA GAPS AND ADAPTIVE MANAGEMENT

We are concerned that significant data gaps remain that will make it difficult to make informed decisions about siting of West Coast projects. For example, existing studies regarding impacts of offshore wind energy development on seabird, fish and marine mammal populations in the North Sea and Atlantic Ocean may not be directly transferable to species and conditions in the California Current.

Several studies are underway to address existing data gaps on marine mammal abundance and distribution off the Oregon Coast, particularly for large baleen whale species. However, much is still unknown about how large whales use Oregon waters and how their distribution changes in response to changing ocean conditions. Predictive models are being developed for select whale species along the West Coast but will need more robust baseline data and time to be assessed for accuracy.[12] In addition, these models may not include rare, highly endangered species that use state and federal waters off Oregon's coast, including North Pacific right whales and Southern Resident killer whales. While these models, when developed, will ideally provide information on where whales are likely to be, continued monitoring will be required to confirm whale presence and abundance off Oregon.

We are also concerned that modeled data may not include sufficient raw data to adequately consider avian use of offshore areas in winter or to determine important foraging grounds. For example, the wintering distribution of the ESA listed Marbled Murrelet is poorly understood though, in Oregon, these birds may use waters further offshore, potentially in the offshore wind planning area. Knowledge of foraging grounds will be especially important for dynamic soaring seabirds (albatrosses and shearwaters) and well as for breeding birds that generally stick close to breeding colonies but that may be compelled to travel farther afield to deeper

[11] Marisol Garcia-Reyes, et al., 2015, "Under Pressure: Climate Change, Upwelling, and Eastern Boundary Upwelling Ecosystems," *Frontiers in Marine Science,* 2: 109.

[12] Becker, Elizabeth A., et al. 2019 "Predicting Cetacean Abundance and Distribution in a Changing Climate." Edited by Maria Beger. *Diversity and Distributions* 25, no. 4: 626–43.

waters if there are marine heat waves that impact nearshore foraging opportunities. The need to document potential foraging areas may be particularly important for obligate burrow nesters (e.g. Leach's Storm Petrel) that have limited opportunities to change their breeding sites.

In addition, we are concerned that the aerial survey results from the Pacific Continental Shelf Environmental Assessment (PaCSEA) are not adequate to draw conclusions about less abundant species or to identify pattern shifts in response to anomalous ocean conditions. Tracking and radar studies are needed to develop better understanding of species of greater abundance as well as migratory pathways and habitat used by less-studied, smaller and rare marine birds in the area, including murrelets. These radar studies, in conjunction with lidar technology attached to buoys, should proceed as soon as possible to provide useful baseline data for proper siting of wind farm arrays.

There also needs to be a robust process to add new scientific information so that agencies can be prepared to adaptively manage turbine arrays into the future. Post-construction collision and entanglement monitoring will be important to minimize impacts to birds, fish, and wildlife and to adaptively manage facilities. However, evaluation of such data will depend on gathering sufficient and meaningful baseline data, as well as developing adequate methodologies and a monitoring plan for the turbine array's projected life cycle from the very start of project permitting and development.

While the OroWindMap data portal currently includes data from the most readily available sources, additional survey and tracking data must be pursued and incorporated from the Oregon Biodiversity Information Center, Oregon's research colleges and universities, the Oregon Department of Fisheries and Wildlife, and NOAA Fisheries bycatch datasets and protected species surveys. Oregon's vital marine resources demand a more robust and transparent system for monitoring and tracking so that agencies will be well prepared to manage wind energy facilities adaptively into the future.

We encourage the creation of an independent expert technical working group, including scientists outside of government agencies (i.e. from academia and the NGO community), to help BOEM determine data gaps and research needs for Oregon's birds, fish, and wildlife; to help identify best practices for wind energy location, deployment, operation; and to develop the expertise to evaluate the need for adaptive management actions into the future. As an example, the State of Maine has established an "environment and wildlife" working group with scientists from agencies, academia, and NGOs.[13] Closer to home, Oregon's Ocean Policy Advisory Council (OPAC) has a Science and Technical Advisory Committee that serves to provide independent scientific input.[14]

---

[13]Maine Offshore Wind, Environment and WIldlife Working Group, https://www.maineoffshorewind.org/advisory-committee-working-groups/

[14] Oregon Ocean Scientific and Technical Advisory Team, https://docs.google.com/document/d/1uUDXw-qJusAO0kGMN0r4FdXkhPZWBwTt/edit#

We also encourage BOEM to tap the expertise of an organization such as NOAA's California Current Integrated Ecosystem Assessment Project for assistance with analysis to inform marine spatial planning and consideration of cumulative impacts of the multiple wind energy projects likely to be developed in the larger California Current marine ecosystem. There is a need for a regional approach to address broader issues that span the entire California Current ecosystem, including impacts to species that migrate through the ecosystem, and shifts in oceanographic processes and distributions of species related to climate change.

Additionally, we call for BOEM to commit to the development of a comprehensive coastwide adaptive management plan.[15] With an adaptive management framework—incorporated into the permitting process—BOEM will be able to better account for the current uncertainty of bird and wildlife responses to offshore wind projects and to learn from management actions.

Undertaking a comprehensive adaptive management approach for offshore wind development in the Pacific will require BOEM, wind energy developers and State partners to dedicate sufficient time, resources, and flexibility in between installment of individual projects to monitor, analyze, and adapt new methods based on measured impacts. Ideally, this will allow for sharing of lessons learned in siting, mitigation, and post-construction monitoring. This would reduce uncertainty for subsequent projects and increase the likelihood of their success.

V. MITIGATION

In planning for wind energy project siting and operations, BOEM should foremost avoid and then minimize harm to ocean and coastal wildlife, but there remains the potential that a significant number of birds and marine mammals will ultimately be impacted by offshore wind energy facilities in Oregon through collisions with turbines, noise and activity associated with development and operation, and displacement from areas of use. Compensatory mitigation should be provided for this loss, and particularly for species of conservation concern and those impacted in greater numbers.

We recognize that the agencies are still in a very early stage of planning. However, given that a regulatory framework must be identified and a process developed to provide appropriate compensatory mitigation, it is best to begin to address this issue now. Developing meaningful compensatory mitigation takes time from initial concept, through planning and implementation, to success—particularly for long-lived and slow-reproducing species such as seabirds. For this reason, we urge the agencies to begin planning for the compensation portion of the mitigation hierarchy now, as part of the full process of considering offshore wind development.

VI. SUMMARY

Oregon has exceptional marine natural resources with tremendous ecological, economic, and cultural values. These cherished values demand a thoughtful and rigorous approach to siting offshore wind facilities.

---

[15] Williams, B.K. "Adaptive management of natural resources--framework and issues," 2011, *Journal of Environmental Management,* 92(5):1346-53.

We hope you will consider our substantive recommendations, and we look forward to continued engagement in this process. We thank you for considering our comments and request that BOEM and DLCD include them as part of the public record.

Sincerely,

Joe Liebezeit, Staff Scientist & Avian Conservation Manager
Portland Audubon

Ann Vileisis, President
Kalmiopsis Audubon Society

Colleen Weiler, Jessica Rekos Fellow
Whale and Dolphin Conservation

Ben Enticknap, Pacific Campaign Manager & Senior Scientist
Oceana

Joel Merriman, Bird-Smart Wind Energy Campaign Director
American Bird Conservancy

Lindsay Adrean, Northwest Program Officer
American Bird Conservancy

Charlie Plybon, Oregon Policy Manager
Surfrider Foundation

Paul Engelmeyer, Tenmile Creek Sanctuary Manager
Portland Audubon

Harv Schubothe, President
Cape Arago Audubon Society

Dawn Villaescusa, President
Steve Griffiths, Conservation Chair
Audubon Society of Lincoln City

Diana Wales, President
Umpqua Valley Audubon Society

David Harrison, Conservation Chair
Salem Audubon Society

Dave Mellinger, Co-President
Jim Fairchild, Conservation Chair
Audubon Society of Corvallis

Debra Schlenoff, Conservation Chair
Lane County Audubon

Pepper Trail and Juliet Grable, Conservation Co-chairs
Rogue Valley Audubon Society

Tom Lawler, Conservation Chair
East Cascades Audubon Society

Darrel Samuels, President
Klamath Basin Audubon Society

Gail Kenny, Board President
Redwood Region Audubon Society

Mark Sherwood, Executive Director
Native Fish Society

Joy Primrose, Oregon Chapter President
American Cetacean Society

Danielle Moser, Wildlife Program Coordinator
Oregon Wild

Max Beeken, Co-director
Coast Range Forest Watch

Phillip Johnson, Executive Director
Oregon Shores Conservation Coalition