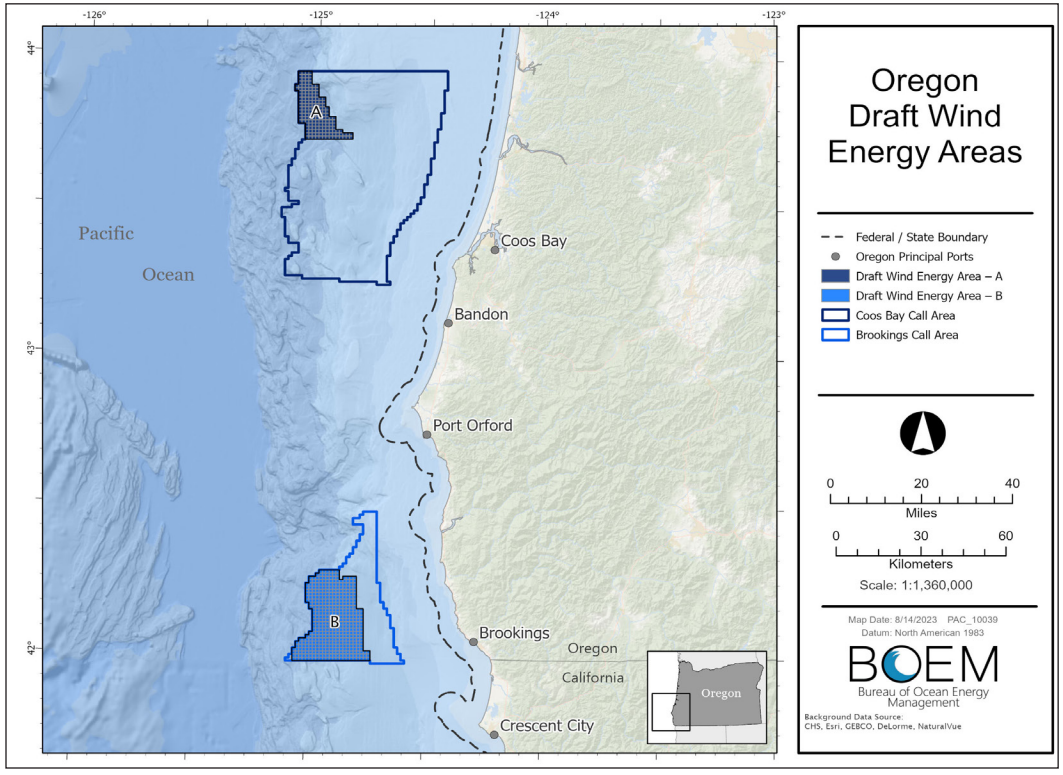
How were the Draft Wind Energy Areas for Oregon identified?



The Oregon coastline holds great potential for wind energy development, as almost the entire area has sustained ideal wind speeds (7-10 m/s).

Finding suitable locations and understanding the costs and benefits can be overwhelming as ocean regions support many industries and contain sensitive natural and cultural resources. NOAA's National Centers for Coastal Ocean Science (NCCOS) partnered with the Bureau of Ocean Energy Management (BOEM) to use spatial science and best available data to develop a spatial model to inform siting of Oregon's draft wind energy areas. Data were gathered from academia, government, industry, Tribal Nations, and local knowledge sources to better understand the ocean ecosystem.

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Spatial Planning Process

1. A 10-acre grid was used to subdivide the Call Area for spatial modeling.
2. Many stakeholders and experts were engaged to identify and collect data. Data were then selected to go into the spatial model and compatibility scores (between 0-1) were assigned.
3. A spatial suitability model was developed to calculate suitability scores for each 10-acre grid cell.
4. A cluster analysis was used to identify groups of cells with the highest suitability.
5. BOEM used these spatial modeling results to inform identification of draft WEAs for public review.

Natural Resources Data: Wildlife and Habitat Data Used in Spatial Modeling

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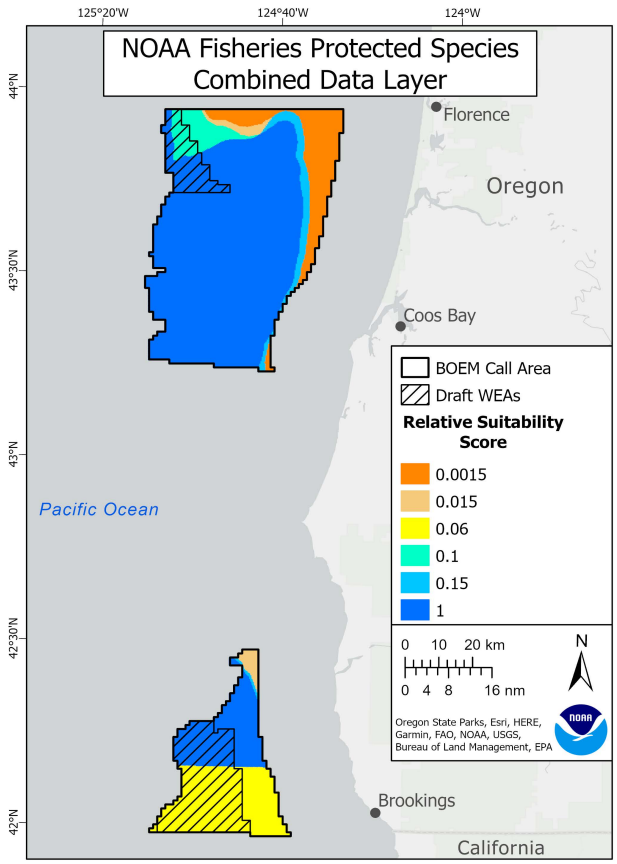
We closely collaborated with state and federal agencies (Oregon Department of Fish and Wildlife, NOAA Fisheries, U.S. Geological Survey (USGS)) to collate data on protected species and their habitats. To identify potential conflicts, we created combined data layers using the best available data for pertinent ESA-listed marine mammals and sea turtles, birds and sensitive habitats. These datasets were utilized to create the Natural Resources submodel.

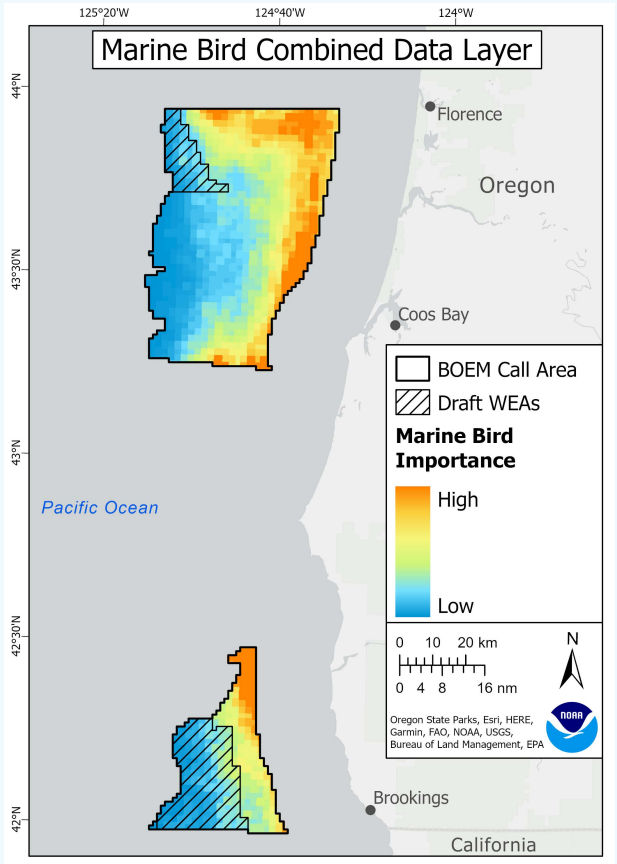


This layer scores protected species based on their status, population size, and trend. The data layer includes consideration of pertinent species protected under the Endangered Species Act and Marine Mammal Protection Act that may occur within the Call Areas.

Combined data layer source: NOAA Fisheries' West Coast Region, 2022

Data in this layer:

- Leatherback sea turtles - critical habitat (foraging)
- Southern Resident killer whales - critical habitat
- Humpback whales, Mexico Distinct Population Segment - critical habitat (foraging)
- Humpback whales, Central America Population Segment - critical habitat (foraging)
- Blue whales - Biologically Important Area (foraging)

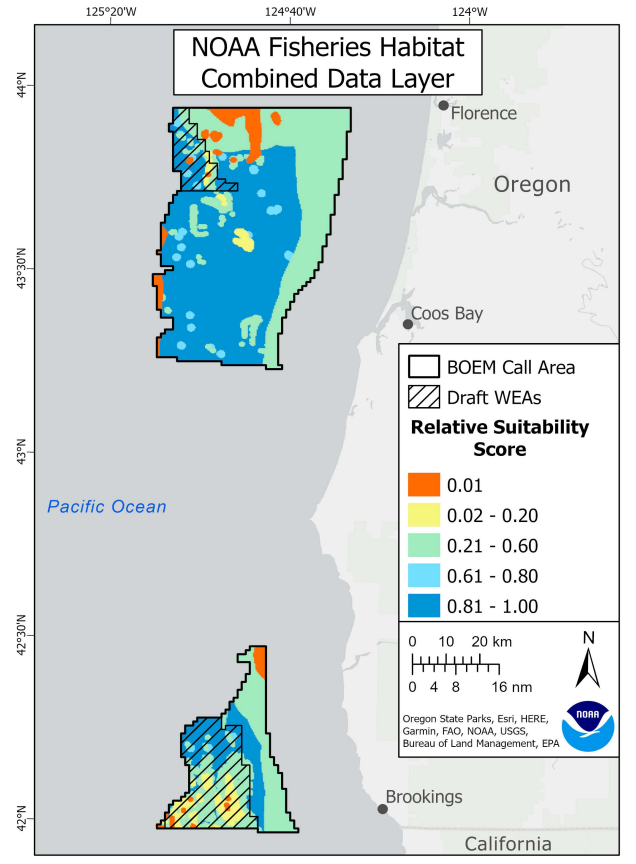


This layer was created using data on bird density and vulnerability to offshore wind energy. Relative population density for 30 bird species and 12 taxonomic groups was combined using vulnerability ratings based on sensitivity to offshore wind.

Combined data layer source: U.S. Geological Survey, NOAA NCCOS, BOEM, 2022

Data in this layer:

- Adams et al. 2017. Collision and displacement vulnerability among marine birds of the California Current System associated with offshore wind energy infrastructure.
- Kelsey et al. 2018. Collision & displacement vulnerability to offshore wind energy infrastructure among marine bids of the Pacific Outer Continental Shelf.
- Leirness et al. 2021. Modeling at-sea density of marine birds to support renewable energy planning on the Pacific Outer Continental Shelf of the contiguous United States.



This layer is based on the sensitivity of several habitat types to offshore wind energy. Habitat layers were combined to determine the relative suitability for habitats across the Call Areas.

Combined data layer source: NOAA Fisheries' West Coast Region and Northwest Fisheries Science Center, 2022

Data in this layer:

- Essential Fish Habitat Conservation Areas (NOAA Fisheries & Pacific Fishery Management Council, 2020)
- Rocky reef groundfish Habitat Areas of Particular Concern, Mapped & Probable; Continental Shelf Break (Surficial Geologic Habitat Version 4.0, Goldfinger et al. 2014, NOAA Office of Coast Survey, 2019)
- Deep-sea coral habitat suitability (Cross-shelf modeling of deep-sea corals and sponges, Poti et al. 2020)
- Methane Bubble Streams (Johnson et al. 2015, Rainer H13118 2018, Riedel et al. 2018, Merle et al. 2021)