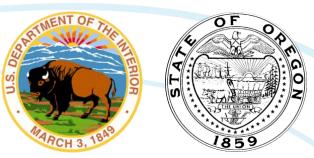
Oregon Offshore Wind Energy Planning Public Webinar May 12-13, 2021

Necy Sumait and Whitney Hauer, Ph.D. Bureau of Ocean Energy Management (BOEM) Pacific Regional Office

Andy Lanier Oregon Department of Land Conservation and Development (DLCD) Facilitated by Jamie Damon, Kearns & West

For help with technical difficulties, please contact Bianca Valdez (<u>bvaldez@kearnswest.com</u>, (210) 325-9455) for assistance. Webinar will be recorded.



Time	Topic
10 min	Introductions, Agenda Review, and Webinar Guidelines
10 min	Welcome and Opening Remarks
20 min	Overview of Offshore Wind Energy Planning in Oregon
20 min	OROWindMap and Data Catalog Update
5 min	Summary and Next Steps
Open	Public Input and Q&A



Webinar Participation Tips

Please join audio by either phone or computer, not both.

Use the Q&A webinar feature to ask <u>substantive questions</u> or to provide <u>feedback</u> during the presentation

Questions will be addressed in the Q&A section

<u>During the Q&A section</u>, use "Raise Your Hand" button to get in the queue; if joined by phone, press *9 to raise hand

- Facilitator will call on you
- Say your name and affiliation before speaking
- For Zoom technical issues, email <u>bvaldez@kearnswest.com</u>
- o or call (210) 325-9455

Meeting recording and presentation will be posted at <u>www.boem.gov/oregon-</u> virtual-meeting-room



Closed Caption

Raise Hand



Meeting Participation Ground Rules

Submit comments and/or questions in the chat feature or verbally during the public input session

Comments for discussion should be raised during the public input session

Be respectful of speaking time during the public input session

Respect differences of opinion and perspectives

Listen and speak with respect



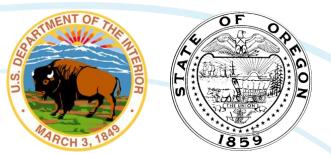
Welcome and Opening Remarks

Necy Sumait, Renewable Energy Section Chief BOEM Pacific Regional Office

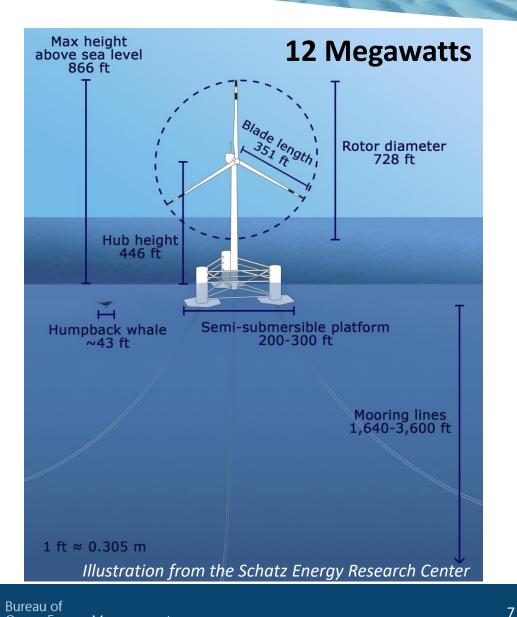


Overview of Offshore Wind Energy Planning in Oregon

Whitney Hauer, Ph.D, Renewable Energy Specialist BOEM Pacific Regional Office



Offshore Wind Energy Resource and Technologies



Ocean Energy Management

Strong and consistent wind energy resource offshore Fixed-bottom foundations • Shallow waters (<60 m) Floating systems • Deep waters (>60 m) Floating offshore wind technology likely for the West Coast

Turbine technology at 12 MW available for deployment



Bureau of Ocean Energy Management (BOEM)



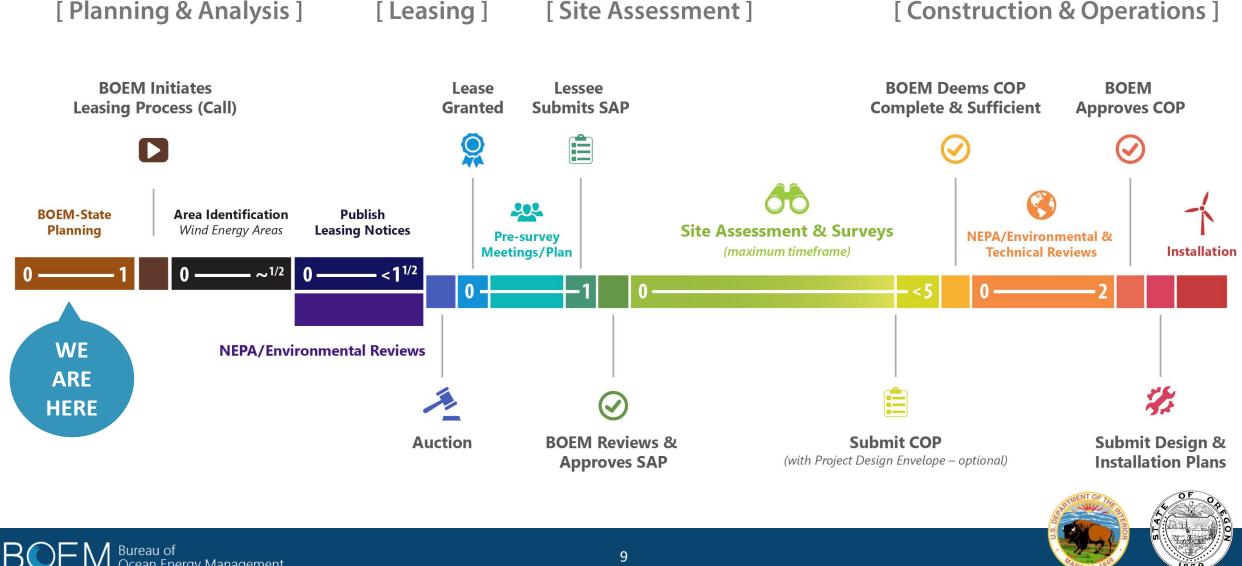
Mission: Manage the development of U.S. Outer Continental Shelf (OCS) energy and mineral resources in an environmentally and economically responsible way.

Jurisdiction on the U.S. West Coast

- Federal waters from 3 to 200 nautical miles (i.e., the OCS)
- Excludes National Marine Sanctuaries



BOEM Offshore Wind Energy Authorization Process



BOEM Oregon Intergovernmental Renewable Energy Task Force

Data Gathering and Engagement Plan for Offshore Wind Energy in Oregon

October 2020



Prepared by Kearns & West



Available at www.boem.gov/Oregon

Provides coordination with governmental bodies and input into BOEM's renewable energy leasing process

September 2019 meeting: discussed planning approach

- Result: BOEM and DLCD drafted data gathering and engagement plan
- Oregon Ocean Policy Advisory Council (OPAC) letter to the Governor supports planning

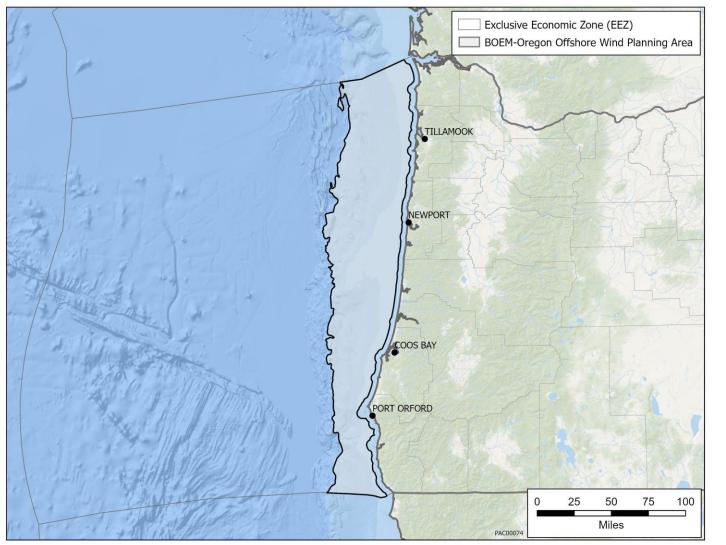
June 2020 meeting: discussed draft plan

 Result: BOEM and the State of Oregon committed to offshore wind energy planning

October 2020: BOEM and DLCD finalized "Data Gathering and Engagement Plan for Offshore Wind Energy in Oregon"



Oregon Offshore Wind Energy Planning



Oregon Offshore Wind Mapping Tool (OROWindMap)

Potential Area for Leasing:

- Federal waters offshore Oregon
- Water depths <1,300 m (4,625 ft)
- Average wind speed >7 m/s (13.6 knots)

Planning Area: State and federal waters, and onshore with pertinent data and information



Oregon Offshore Wind Energy Planning Progress

Material development

 Developed factsheets on planning effort and **OROWindMap**

Website and email information updates

- Regular communication with the Task Force
- Updated webpage www.boem.gov/Oregon
 - Announcements and resources
 - Engagement activities
 - Standing meetings open to the public
 - Email signup at <u>www.boem.gov/OregonUpdates</u>
- Identified ~800 email contacts

Mapping tool development

OROWindMap



	B	
Data Sharing	g for Oregon Offshore Wind Plan	ning
Land Conservation and D to inform potential leasin (Task Force), BOEM and I outlines the activities BO	rgy Management (BOEM) and the State of Oregon (the State), to beetopenent (DLCD), are committed to offshore wind energy plan g decisions. In partnership with the BOEM Oregon Intergovernm DLCD developed the Data Gethering and Engagement Plan for OS. EVAL due to the State will conduct to gather information to inform th The plan can be found at: <u>work-beam gev/Oregon</u> .	ming with a data gathering process ental Renewable Energy Task Force hore Wind Energy in Onegon, which
The DLCD, in partner		
to provide public acca Tool (OROWindMap), collected data and inf		B
to inform the planning		
sets will help inform t are the criteria for inc		
Data sets depict or human uses t	Oregon Offshore Renewable	Energy
development in	BOEM-OREGON OFFSHORE WIND PLANNING E	FFORTS
 Data sets includ Oregon; however 	Official Minister Minister In Course	Discolary Barry
> Data sets are ge	Offshore Wind Energy Planning in Oregon The Bureau of Ocean Energy Management (BOEM) and	Planning Area BOEM is responsible for regulating offshore of
format with coo	the State of Oregon (the State) are committed to offshore	uses in federal waters, extending from 3 naut
Data sets includ required for met	wind energy planning with a meaningful and effective	offshore to the edge of the Exclusive Econom
at http://wcodp	data-gathering and engagement process to inform potential offshore wind energy leasing decisions.	at 200 nm offshore Oregon. The planning are leasing offshore Oregon extends to water dep
If there is an inf	This effort includes outreach and engagement with	meters (4,265 feet), where the average wind meters per second (13.6 knots). However, dat
not geospatial	research organizations and potentially interested and	will include environmental information, ocean
Portal (WCODP)	affected parties to gather data and information to inform leasing decisions. BDEM and the State, led by the Oregon Department of Land Conservation and Development	pertinent information along the entire coast, state waters, as it relates to offshore wind en
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when it was create	waters offshore Oregon that may be suitable for offshore	routes and landfall, points of interconnection ports for installation and operation will also b
at a minimum, the I	wind energy development. In partnership with the BOEM	ports for enclanation and operation will also e
• Tele	Oregon Intergovernmental Renewable Energy Task Force (Task Force), BOEM and DLCD developed the Data	Offshere
 Abstract / Descrit Use Limitations / 	Gathering and Engagement Plan for Offshore Wind Energy in	
Bounding Box Co	Oregon, which outlines the activities BOEM and the State	
Latitude/Longitue	will conduct for the outreach and engagement effort. The	
 Keywords Date Published 	plan can be found at: www.boem.gov/Oregon.	FR 5
If the metadata me	BOEM Oregon Intergovernmental	
Committee (FGDC)	Renewable Energy Task Force	
geospatial motada	The Task Force provides coordination among federal, Tribal, state, and local governmental bodies regarding potential	
	renewable energy activities in federal waters offshore Oregon. It serves as a forum to:	
	Discuss stakeholder issues and concerns.	
	 Exchange data and information about biological and physical resources, ocean uses and priorities. 	
	 Facilitate early and continual dialogue and collaboration opportunities. 	5 pm
-		

- BOEM manages nearly 2.5 billion acres of offshore energy and mineral resources in federal water
- Oregon Governor Kate Brown signed SB 1547 into law, which set a 50% renewable portfolio standard IRPS requirement for the State to achieve by 2040
- · According to the National Renewable Energy Laboratory, more than 58 gigawatts of technically energy resource exist in federal waters offshore Oregon

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Information-gathering

Outreach goal

- Interested and affected parties are informed of the data and information gathering process
- Have meaningful dialogues to provide input in the planning process

Target audience

- Coastal communities
- Ocean users
- Research organizations
- Tribes

Flexible in a virtual environment

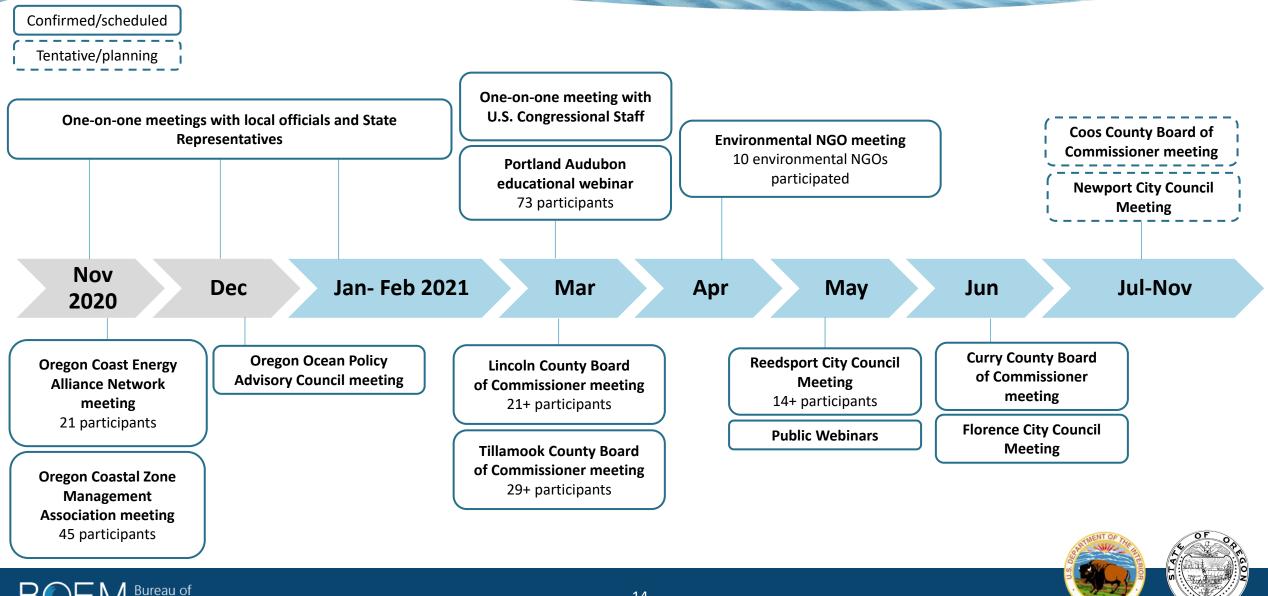
- Present when invited and request time at standing meetings
- Convene focused conversations
- Available for follow-up discussions

Each meeting

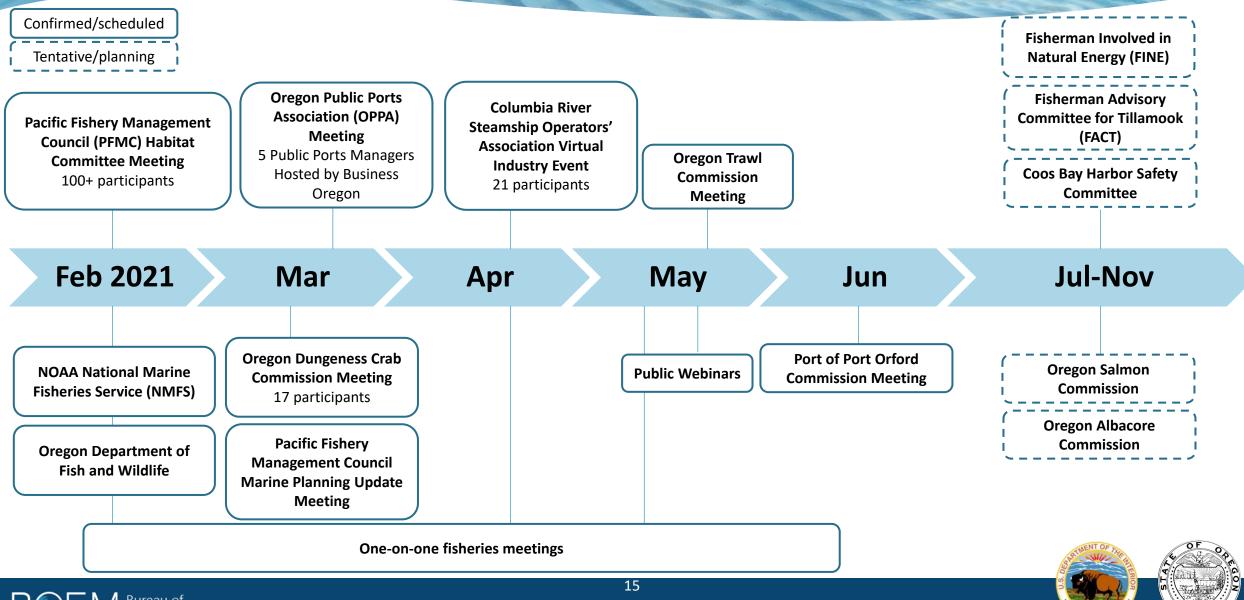
- Invite comments and participation in the data gathering and review
- Solicit other groups to engage



Planning Progress: Coastal Communities and General Public



Planning Progress: Ocean Users



Planning Progress: Research Organizations

OROWindMap Introductory Webinar

- Functionality of OROWindMap
- ~140 Participants
- Recording available at <u>www.boem.gov/Oregon</u>

Request

 Participation in a data review working group





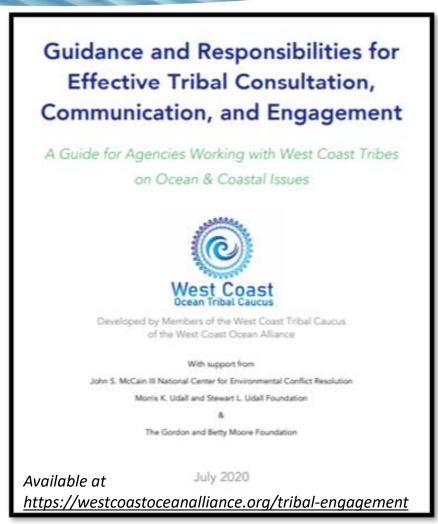
Planning Progress: Tribes

Engagement to Date

- West Coast Ocean Tribal Caucus guidance incorporated into Plan
- Engagement invitation letters to 9 federally recognized Tribes in Oregon (Feb 2021)
- Staff-to-staff meeting with Coquille Indian Tribe (Mar 2021)
- West Coast Ocean Alliance Ocean Energy Roundtable (Mar 2021)
- Regular updates for West Coast Ocean Tribal Caucus

Forthcoming

- Engagement invitation letters to federally recognized Tribes outside of Oregon
- Outreach to Tribal organizations





Selected Studies to Inform Wind Energy Planning on the West Coast



Cultural & Archaeological Studies	PAGE
Information Synthesis Studies	PAGE
Physical Oceanography & Geology Studies	PAGE
Resource, Technology & Infrastructure Studies	PAGE
Socioeconomic Studies	PAGE

Biological Studies

Ongoing (2014–2021) — Potential Impacts of Submarine Power Cables on Crab Harvest

This two-part research effort is to learn more about whether the electromagnetic fields (EMF) emitted from subsea powertransmission cables may affect the movement and harvest of commercial crab species. The first part was conducted by the University of California, Santa Barbara, which collected data on red rock crab in the Santa Barbara Channel and Dungeness crab in Puget Sound. The second part will collect and analyze additional data, and is scheduled to begin in 2020. <u>Study Profile 2</u>: https://www.boem.gov/pc-14-02/ Study Profile 2: https://www.boem.gov/pc-19-02-profile/

Ongoing (2014–2020) — Year-round and Diel Patterns in Habitat-use of Seabirds off Oregon

This study by Oregon State University and the U.S. Geological Survey will provide information about the distribution, movements and behaviors of Oregon seabirds and identify patterns in their habitat use 24/7. New data collected with state-of-the-art tracking devices will be integrated with existing data to map and predict the distribution of species and their potential vulnerability to renewable energy devices. Study Profile: https://www.boem.gov/pc-14-03/

Ongoing (2015–2020) — Data Synthesis and High-resolution Predictive Modeling of Marine Bird Spatial Distributions on the Pacific OCS

This study by the National Oceanic and Atmospheric Administration and U.S. Geological Survey is synthesizing 50 years of seabird survey data off California, Oregon, and Washington, and combining it with information about environmental and oceanographic conditions to predict the occurrence and abundance of seabirds at sea. The resulting predictive maps of seabird distributions will provide critical information for renewable energy siting and evaluation of potential environmental effects of management actions and project approvals. <u>Study Profile</u>: https://www.boem.gov/pc-15-01/

Ongoing (2016–2021) — Analysis of Long-term Seabird Colony Legacy Data in the Pacific Northwest as a Regional Baseline

This study by the U.S. Fish and Wildlife Service is summarizing data regarding the abundance and distribution of birds in seabird breeding colonies along the coasts of Oregon and Washington. It will provide an environmental baseline against which to evaluate potential effects of offshore energy projects on seabird colonies and populations. <u>Study Profile</u>: https://www.boem.gov/pc-16-06/

PAGE 1 OF 9

Bureau of Ocean Energy Management

Available at www.boem.gov/Oregon

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 Passive acoustic monitoring to understand the distribution of marine mammals

 Whale movement video animation around floating offshore wind and simulations to inform entanglement risk to whales

Seafloor mapping and site characterization surveys

 Metocean resource data collection with LIDAR buoys in California

- Oregon offshore wind grid integration to inform the potential value of offshore wind energy to the Oregon power system
- Floating offshore wind resource and costs to inform planning efforts



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Offshore Wind Energy Opportunities and Considerations

Opportunities

- World-class wind energy resource offshore Oregon
- Coastal resiliency and reliability
- Economic growth opportunity

Planning Considerations

- Space-use conflicts with ocean users
- Maritime communities
- Coastal viewsheds
- Marine mammals and birds
- Cultural and archaeological resources
- Potential export cable routes
- Transmission

BOEM and **DLCD** are seeking your input

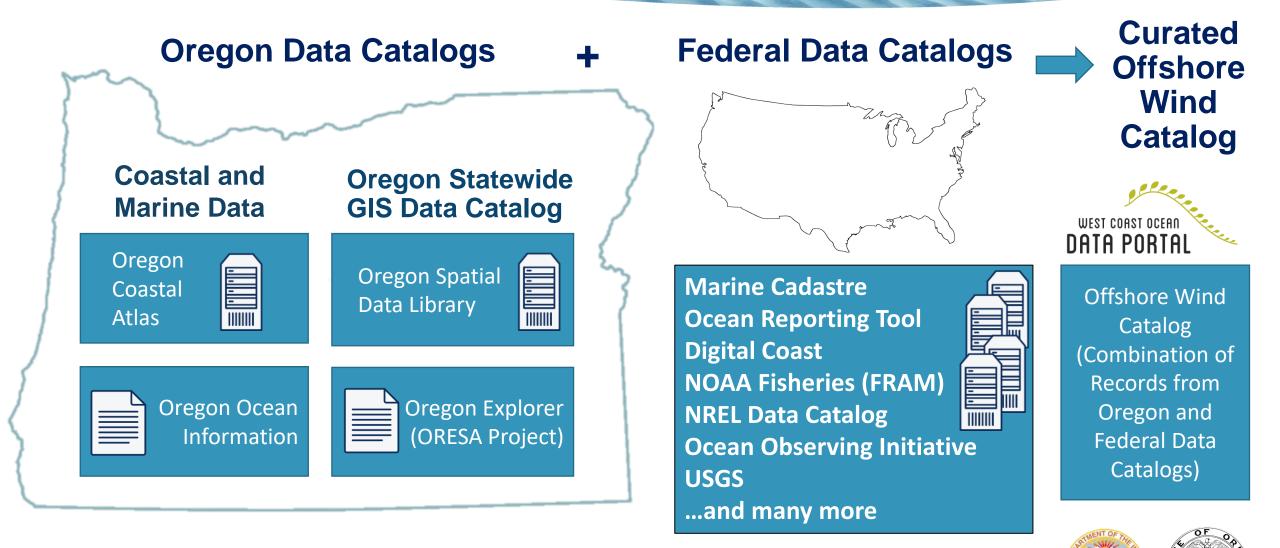


Oregon Offshore Wind Mapping Tool (OROWindMap) and Data Catalog Update

Andy Lanier, Marine Affairs Coordinator Oregon Department of Land Conservation and Development



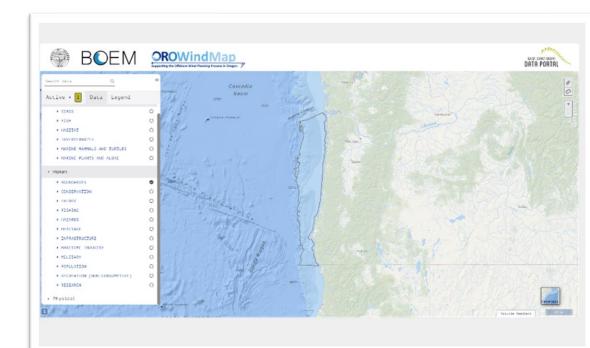
Offshore Wind Data Catalog Organizational Plan



Catalog & Oregon Offshore Wind Mapping Tool

The Oregon Offshore Wind Mapping Tool (OROWindMap), found at <u>https://offshorewind.westcoastoceans.org</u>, has been developed to provide visualization capabilities for data that has been discovered through the catalog compiled and curated on the West Coast Ocean Data Portal.

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Data Layers: Administrative Boundaries



BOEM

OROWindMap



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Data Layers: Territorial Sea Plan & Visual Resources



BOEM **Supporting the Offshore Wind Planning Process in Oregon**





Data Layers: Marine Fisheries

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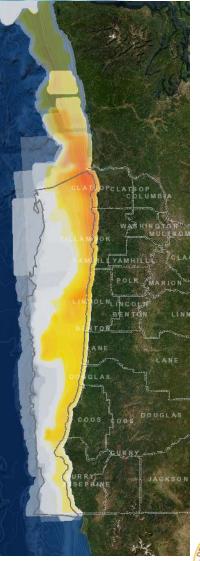
NOAA Fisheries





BOEM Bureau of Ocean Energy Management







Data Layers: Marine Transportation



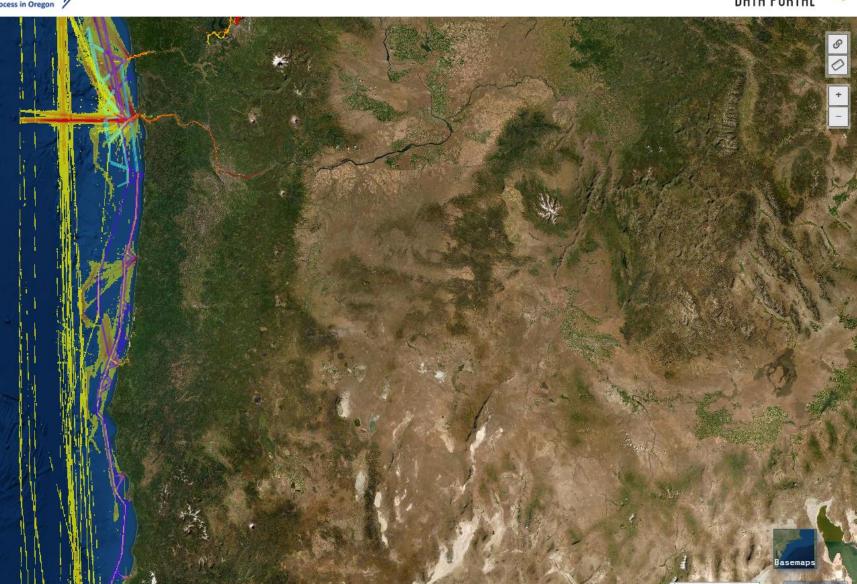






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Data Layers: Infrastructure



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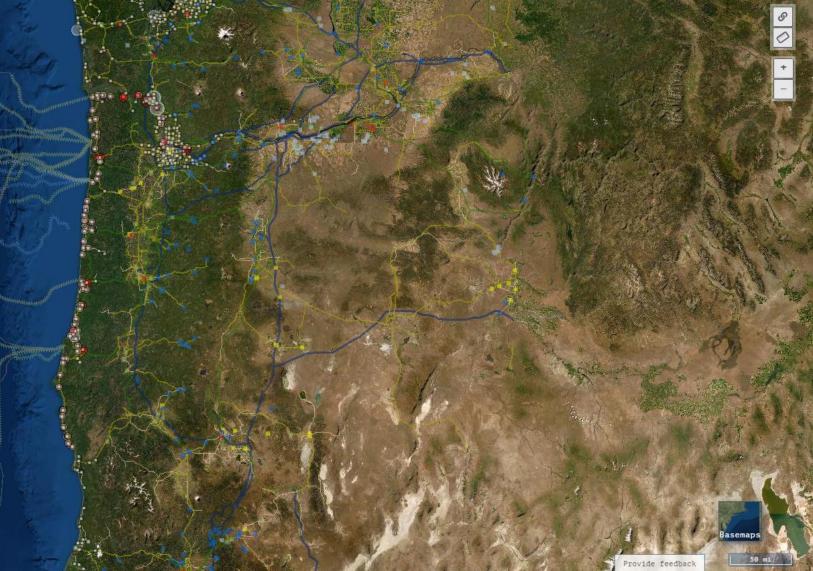
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Data Layers: Military Use



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OROWINDAD Supporting the Offshore Wind Planning Process in Oregon



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Data Layers: Physical Setting



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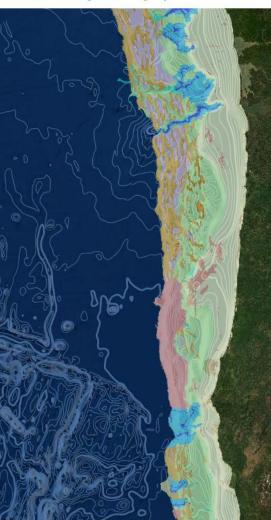
Data Layers: Substrate, Landform, Samples







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Data Layers: Wind Resource

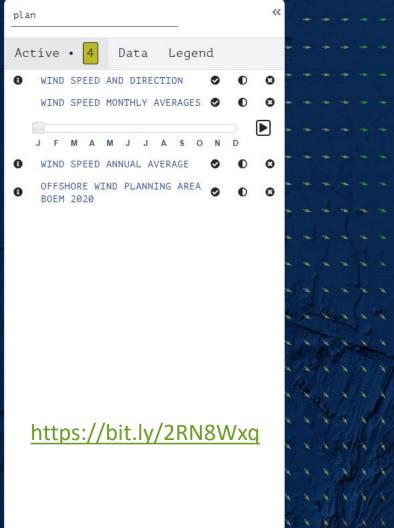








Provide feedback





Data Layers: Fish













Average, Monthly Predictions for Shortfin Mako Sharks (Isurus oxyrinchus), California Current System, 1998-2016

Average, Monthly Predictions for Common Thresher Sharks (Alopias vulpinus), California Current System, 1998-2016

Average, Monthly Predictions for Swordfish (Xiphias gladius), California Current System, 1998-2016

Average, Quarterly Predictions for Albacore (Thunnus alalunga), California Current System, 1995-2018

Average, Quarterly Predictions for Sardine (Sardinops sagax), California Current System, 1995-2018

Average, Quarterly Predictions for Clubhook Squid (Onychoteuthis borealijaponica), California Current System, 1995-2018

Average, Quarterly Predictions for Anchovy (Engraulis mordax), California Current System, 1995-2018

Data Layers: Seabirds



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Additional Data Resources on Seabird abundance from NOAA, USGS, and BOEM (Coming Soon)

Predicted summed standardized abundance of 16 seabird species in the California Current System

California Current System predicted seabird abundance, Winter California Current System predicted seabird abundance, Summer California Current System predicted seabird abundance, Fall California Current System predicted seabird abundance, Spring

Predicted average abundance of common murres in the California Current System Predicted average abundance of California gulls in the California Current System Predicted average abundance of black-footed albatross in the California Current System Predicted average abundance of Bonaparte's gulls in the California Current System Predicted average abundance of Brandt's cormorants in the California Current System Predicted average abundance of brown pelicans in the California Current System Predicted average abundance of Cassin's auklets in the California Current System





Data Layers: Marine Mammals









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	PACIFIC HARBOR SEAL HAULOUT COUNTS (ODFW 2011)	0	O	o	

Additional Data Resources from the NOAA Southwest Fisheries Science Center (Coming Soon)

Baird's Beaked Whale Summer/Fall Density, California Current Small Beaked Whale Guild Summer/Fall Density, California Current Blue Whale Summer/Fall Density, California Current Common Bottlenose Dolphin Summer/Fall Density, California Current Dall's Porpoise Summer/Fall Density, California Current Fin Whale Summer/Fall Density, California Current Sperm Whale Summer/Fall Density, California Current Short-beaked Common Dolphin Summer/Fall Density, California Current Risso's Dolphin Summer/Fall Density, California Current Pacific White-sided Dolphin Summer/Fall Density, California Current Northern Right Whale Dolphin Summer/Fall Density, California Current Long-beaked Common Dolphin Summer/Fall Density, California Current Humpback Whale Summer/Fall Density, California Current

Data Layers: Deep Sea Corals and Marine Plants



OROWindMap



Active 5 Data Legend © SEAGRASSES (MARCH 2015) • • • © KELP SURVEYS, ODFW, 1990, 1996, 1999, 2010 • • • • • © CANOPY-FORMING KELP, 1989- 2014 • <	Sear	rch data Q			
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https://bit.ly/3vWme9w

BOEM



Portal Development Next Steps

Data Catalog

- OROWindMap Data Library Page (for browsing the catalog)
- Data Updates for:
 - Marine Birds Predictive Models (NOAA, USGS, BOEM)
 - Marine Mammals Predictive Models (NOAA)
 - West Coast Fisheries Closures (CSUN)
 - Planning Analysis layer (CSUN)

Software Upgrades

- Area Calculation Tool
- Individual Logins
- User Groups



Got Data?

What?

Ocean Characteristics Biological, Physical, Human Use

Where?

Oregon, West Coast

Geospatial

Ideal, but not required Geospatial Service

Metadata

How was it made? Where does it live?

www.boem.gov/OROWindMapInfo

Data Sharing for Oregon Offshore Wind Planning

The Bureau of Ocean Energy Management (BOEM) and the State of Oregon (the State), led by the Oregon Department of Land Conservation and Development (DLCD), are committed to offshore wind energy planning with a data gathering process to inform potential leasing decisions. In partnership with the BOEM Oregon Intergovernmental Renewable Energy Task Force (Task Force), BOEM and DLCD developed the *Data Gathering and Engagement Plan for Offshore Wind Energy in Oregon*, which outlines the activities BOEM and the State will conduct to gather information to inform the Task Force and offshore wind energy leasing decisions. The plan can be found at: www.boem.gov/Oregon.

The DLCD, in partnership with BOEM, is developing a data catalog and map viewer within the West Coast Ocean Data Portal to provide public access to the best available data throughout the planning process. The Oregon Offshore Wind Mapping Tool (OROWindMap), which can be found at https://offshorewind.westcoastoceans.org, has been developed to compile the collected data and information. This powerful planning tool accesses relevant datasets and provides visualization capabilities to inform the planning process for offshore wind energy leasing in federal waters offshore Oregon. The inclusion of new data sets will help inform the public, the State, and the Bureau of Ocean Energy Management during the planning process. Below are the criteria for inclusion of new data sets in OROWindMap.

- Data sets depict coastal and ocean characteristics (e.g., biological, physical) or human uses that are relevant to planning for offshore wind energy development in federal waters offshore Oregon.
- Data sets include the State (and its Territorial Sea) or federal waters offshore Oregon; however, data that encompasses the entire West Coast are ideal.
- Data sets are geospatial, ideally in a GIS format, but may be in a tabular format with coordinates.
- Data sets include standards-compliant metadata. The basic information required for metadata is outlined below, and more information can be found at <u>http://wcodp.readthedocs.io/</u>.

If there is an information product that is relevant to this process but is not geospatial or tabular, please contact the West Coast Ocean Data Portal (WCODP) Administrator at <u>portal.westcoastoceans@sccwrp.org</u>.

Metadata help document the details of data sets, including who created it, when it was created, and why it was created. All data in OROWindMap have, at a minimum, the following metadata associated with them:

	 Contacts
act / Description	- Originator
mitations / Constraints	- Publisher
ling Box Coordinates in	- Distributor
de/Longitude (decimal degrees)	 URLs for data download, web
orde	services kml web application

Keywords
 Date Published

Title
Abstra

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> services, kml, web application, documentation

If the metadata meet the requirements of the Federal Geographic Data Committee (FGDC) endorsed standards (<u>https://www.fgdc.gov/metadata/</u> <u>geospatial-metadata-standards</u>), then it will meet the WCODP requirements





The State and BOEM are seeking:

Available data and information from research organizations, governmental bodies, environmental groups, OSW industry, and interested and affected parties.

A Data Review Working Group will be convened to gather and review data that identifies existing environmental information and uses to inform OSW planning in Oregon.

Existing archives of data from TSP amendments and other ocean planning related processes will form the foundation of information to build on.

The purpose will be to identify new records for inclusion in the Data Catalog and OROWindMap Tool, and help to provide contextual information with existing information products.

Virtual meetings during summer (July, August)

Contact: Andy Lanier



Continue data gathering and engagement throughout BOEM's authorization process

Data Review Working Group

Fall 2021: BOEM Oregon Task Force Meeting

- Present the results of the 12-month effort
- Seek input from the Task Force

Winter 2021-2022: BOEM Oregon Task Force Meeting

Review draft Call Area(s) with the Task Force

Following the Task Force Meetings

- BOEM to publish Call for Information and Nominations (Call) in the Federal Register
 - Describes geographically distinct areas (Call Area(s))
 - Requests comments and information relevant to BOEM's review to identify Wind Energy Areas which are subject to environmental review prior to leasing
 - Invites submission of nominations of interest for commercial wind leases

Discussion and Next Steps

Explore OROWindMap at offshorewind.westcoastoceans.org

Share relevant data (see <u>www.boem.gov/OROWindMapInfo</u>)

Stay informed and connected about Oregon offshore wind activities and any scheduled Task Force meetings

- Visit the BOEM Oregon webpage at <u>www.boem.gov/Oregon</u>
 - Standing meetings open to the public
 - Sign up for announcements at <u>www.boem.gov/OregonUpdates</u>

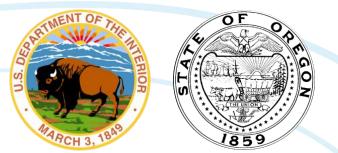
Let Whitney Hauer (<u>whitney.hauer@boem.gov</u>) and Andy Lanier (<u>andy.lanier@state.or.us</u>) know if there are other organizations, groups, or members of the public that BOEM and DLCD should engage with for offshore wind energy planning



Whitney Hauer, Ph.D. | BOEM Oregon Task Force Coordinator whitney.hauer@boem.gov | 805-384-6263

Necy Sumait | BOEM Pacific Renewable Energy Chief necy.sumait@boem.gov | 805-384-6320

Andy Lanier | Oregon DLCD Marine Affairs Coordinator andy.lanier@state.or.us | 503-934-0072



Public Input and Q&A Facilitated by Jamie Damon, Kearns & West

