Good morning!

The BOEM Oregon Intergovernmental Renewable Energy Task Force Meeting will begin at 9:00 am PT.

**Please complete the poll when it appears on your screen.
Select your affiliation and then select "submit."
We will share the poll results later in the meeting.**

For help with technical difficulties, please contact Ariella Dahlin aDahlin@kearnswest.com or 541-659-5852.

BOEM Oregon Intergovernmental Renewable Energy Task Force Meeting

February 25, 2022

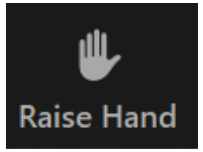
Bureau of Ocean Energy Management (BOEM) Pacific Regional Office

Facilitated by Jamie Damon, Kearns & West

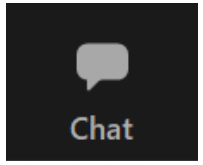
For help with technical difficulties, please contact Ariella Dahlin (aDahlin@kearnswest.com, 541-659-5852) for assistance.
Webinar will be recorded.

Webinar Instructions – Task Force Members

- Click the mute button at the bottom of the screen to mute yourself when not speaking.
- To enter the discussion queue, use the "Raise your hand" button or press *9 on your phone. Please lower your hand once you are done speaking.



- If unable to speak, use the chat to ask questions or for technical assistance. Please refrain from using the chat for sidebar conversations.

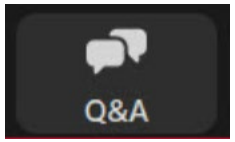


- The Q&A webinar feature is reserved for public attendees. BOEM staff may respond to questions/comments only during the public input opportunities.
- Task Force members are encouraged to keep their webcam on during introductions and discussion portions of the Task Force meeting.
- Closed Captioning is available.

- Contact Ariella Dahlin at aDahlin@kearnswest.com or 541-659-5852 if experiencing technical difficulties.

Webinar Instructions – Public Attendees

- **Public attendees will be muted throughout the Task Force meeting and will not be able to unmute themselves.**
- **Public attendees can share verbal comments during the public input opportunities.**
- **Please use the Q&A webinar feature for questions and input to BOEM.**
  - Questions will be addressed during the public input opportunities.



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Meeting Participation Ground Rules

- Honor the agenda.
- Participate actively and respectfully.
- Be mindful of your speaking time.
- Provide your name and affiliation each time you speak.
- Respect differences of opinion and perspectives.
- Stay on mute when you're not speaking.
- Refrain from using the chat for sidebar conversations.

Welcome and Opening Remarks

Amanda Lefton, BOEM Director

Amira Streeter, Oregon Governor's Office

Meeting Purpose

- **Provide an update to Task Force members on activities relevant to offshore wind energy.**

- **Discuss next steps in the BOEM authorization process, including the identification of "Call Areas" for potential offshore wind leasing consideration in Oregon.**

Agenda

Time (PT)	Topic
9:00 am	Welcome and Opening Remarks
9:15 am	Agenda Review, Meeting Purpose, Task Force Member Introductions
9:35 am	Task Force Member Updates
10:05 am	BOEM's Offshore Wind Energy Leasing and Planning Process
10:35 am	Break
10:45 am	Task Force Roundtable Q&A and Discussion
	Adjourn Morning Session
11:45 pm	Public Input Opportunity I
12:15 pm	Lunch Break

Agenda

Time (PT)	Topic
12:45 pm	State and Federal Studies
1:45 pm	OROWindMap Updates
2:05 pm	Break
2:15 pm	Task Force Roundtable Q&A and Discussion
2:45 pm	Action Items and Next Steps
2:50 pm	Closing Remarks
	Adjourn Afternoon Session
3:05 pm	Public Input Opportunity II

Introductions – BOEM Staff

Pacific Regional Office

- Doug Boren, Regional Director
- Rick Yarde, Office of Environment Regional Supervisor
- Necy Sumait, Office of Strategic Resources Regional Supervisor
- Whitney Hauer, Ph.D., Renewable Energy Specialist
- Jennifer Miller, Renewable Energy Section Chief (Acting)
- Parker McWilliams, Tribal Liaison
- Frank Pendleton, GIS Analyst
- Dave Ball, Regional Historic Preservation Officer
- Desray Reeb, Ph.D., Marine Mammal Biologist
- Abigail Ryder, NEPA Coordinator
- John Romero, Public Affairs Officer

Task Force Member Introductions – Local Elected Officials

Organization	Name
Clatsop County Board of Commissioners	Lianne Thompson Delegate: Amanda Rapinchuk
Coos Bay City Council	Carmen Matthews
Coos County Board of Commissioners	Bob Main Delegate: Melissa Cribbins
Curry County Board of Commissioners	Court Boice
Douglas County Board of Commissioners	Chris Boice
Lane County Board of Commissioners	Jay Bozievich
Lincoln County Board of Commissioners	Kaety Jacobson Delegate: Onno Husing
Port of Newport Board of Commissioners	Walter Chuck Delegate: Jeff Lackey
Tillamook County Board of Commissioners	David Yamamoto

Task Force Member Introductions – Tribal Representatives

Organization	Name
Confederated Tribes of Coos, Lower Umpqua and Siuslaw Indians	Julie Siestreem
Confederated Tribes of Grand Ronde	Briece Edwards
Confederated Tribes of Siletz Indians	Mike Kennedy Delegate: Andrea Sumerau
Coquille Indian Tribe	Kassandra Rippee Delegate: Mark Healy

Task Force Member Introductions – State Representatives

Organization	Name
Business Oregon	Sean Stevens Delegate: Colin Sears
Oregon Department of Energy (ODOE)	Jason Sierman Delegate: Adam Schultz
Oregon Department of Environmental Quality (DEQ)	Marilyn Fonseca
Oregon Department of Fish and Wildlife (ODFW)	Caren Braby Delegate: Delia Kelly
Oregon Department of Geology and Mineral Industries (DOGAMI)	Robert Houston
Oregon Department of Justice (DOJ)	Steve Shipsey
Oregon Department of Land Conservation and Development (DLCD)	Andy Lanier Patty Snow

Task Force Member Introductions – State Representatives continued

Organization	Name
Oregon Department of State Lands (DSL)	Meliah Masiba Delegate: Dana Hicks
Legislative Commission on Indian Services (LCIS)	Patrick Flanagan
Oregon Parks and Recreation Department (ORPD)	Trevor Taylor Delegate: Laurel Hillman
Oregon Public Utilities Commission (OPUC)	Mark Thompson Delegate: Rose Anderson
Oregon State Historic Preservation Office (SHPO)	John Pouley

Task Force Member Introductions – Federal Representatives

Organization	Name
Bonneville Power Administration (BPA)	Julie Peacock
Bureau of Indian Affairs (BIA)	Keith Hatch Delegate: Yvonne Fish
Bureau of Land Management (BLM)	Lenore Heppler
Bureau of Safety and Environmental Enforcement (BSEE)	Cheri Hunter
Department of Defense (DOD)	Steve Sample Delegate: Steve Chung
Federal Aviation Administration (FAA)	Cindy Whitten
Federal Communications Commission (FCC)	Denise Coca Delegate: Gabrielle Kim
Federal Energy Regulatory Commission (FERC)	Michael Tust
National Oceanic and Atmospheric Administration (NOAA)	Kris Wall

Task Force Member Introductions – Federal Representatives continued

Organization	Name
National Park Service (NPS)	Lara Rozzell Delegate: Sarah Quinn
NOAA National Marine Fisheries Services (NMFS)	Keith Kirkendall Delegate: Candace Nachman
U.S. Army Corps of Engineers	Bill Abadie
U.S. Coast Guard (USCG)	John Moriarty Delegate: David Berliner
U.S. Department of Energy (DOE)	Hoyt Battey Patrick Gilman Delegate: Simon Geerlofs
U.S. Department of the Interior (DOI)	Allison O'Brien

Task Force Member Introductions – Federal Representatives continued

Organization	Name
U.S. Environmental Protection Agency (USEPA)	Anthony Barber Delegate: Bridgette Lohrman
U.S. Fish and Wildlife Service (FWS)	Stefanie Stavrakas Delegate: Michele Zwartjes
U.S. Geological Survey (USGS)	Jill Roland

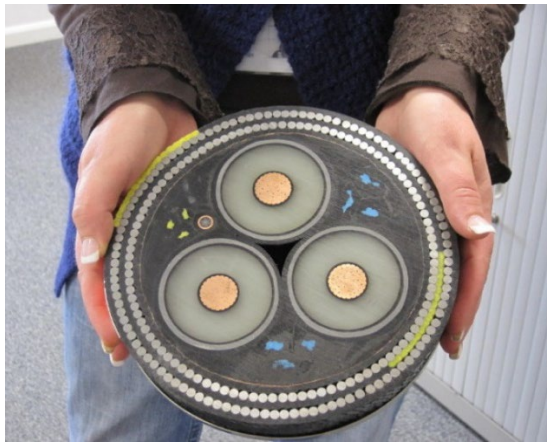
Task Force Member Updates

Jason Sierman
Oregon Department of Energy (ODOE)

HB 2603 – Territorial Sea Plan Part Four Update

BOEM Task Force Meeting

OCMP



DLCD

Marcus Chatfield, Undersea Cable Coordinator
Oregon Coastal Management Program
Marcus.Chatfield@dlcd.Oregon.gov
Direct: (971) 718-4202

Caren Braby
Oregon Department of Fish and Wildlife (ODFW)

Candace Nachman
National Marine Fisheries Service (NMFS)

John Moriarty
U.S. Coast Guard (USCG)

Dave Ball
BOEM Pacific Regional Office

Section 106 Programmatic Agreement Offshore Oregon

Because the program

- is complex
- involves multiple undertakings
- involves phased evaluation

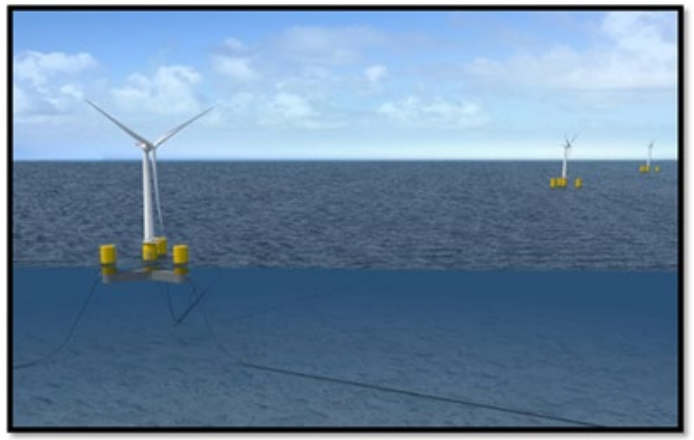
BOEM proposes to establish a standard process for Section 106 review for any offshore wind energy activities under the renewable energy regulations. These include issuance of any leases and grants and approval of any plans submitted under these leases or grants.

see 54 U.S.C. 306108, 36 CFR 800.14(b)(1), and 36 CFR 800.4(b)(2)

Section 106 Programmatic Agreement Offshore Oregon

The Programmatic Agreement will:

- Guide how BOEM and the parties will consult at the decision points under the agency's regulatory authority
- Include an agreed-upon definition of the areas of potential effect
- Include an agreed-upon definition of a reasonable and good-faith effort to identify historic properties
- Identify activities exempted from review (e.g., the collection of vibracores for the purposes of historic property identification when conducted by or under the supervision of a qualified marine archaeologist)
- Administrative items (e.g., expedited and electronic review, special submission directions for certain State Historic Preservation Offices, etc.)



see 36 CFR 800.14(b) and (c)

BOEM's Offshore Wind Energy Leasing and Planning Process

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

BOEM Oregon Task Force Meetings

September 2019:

- Discussed planning approach
- Result: BOEM and DLCD drafted data gathering and engagement plan

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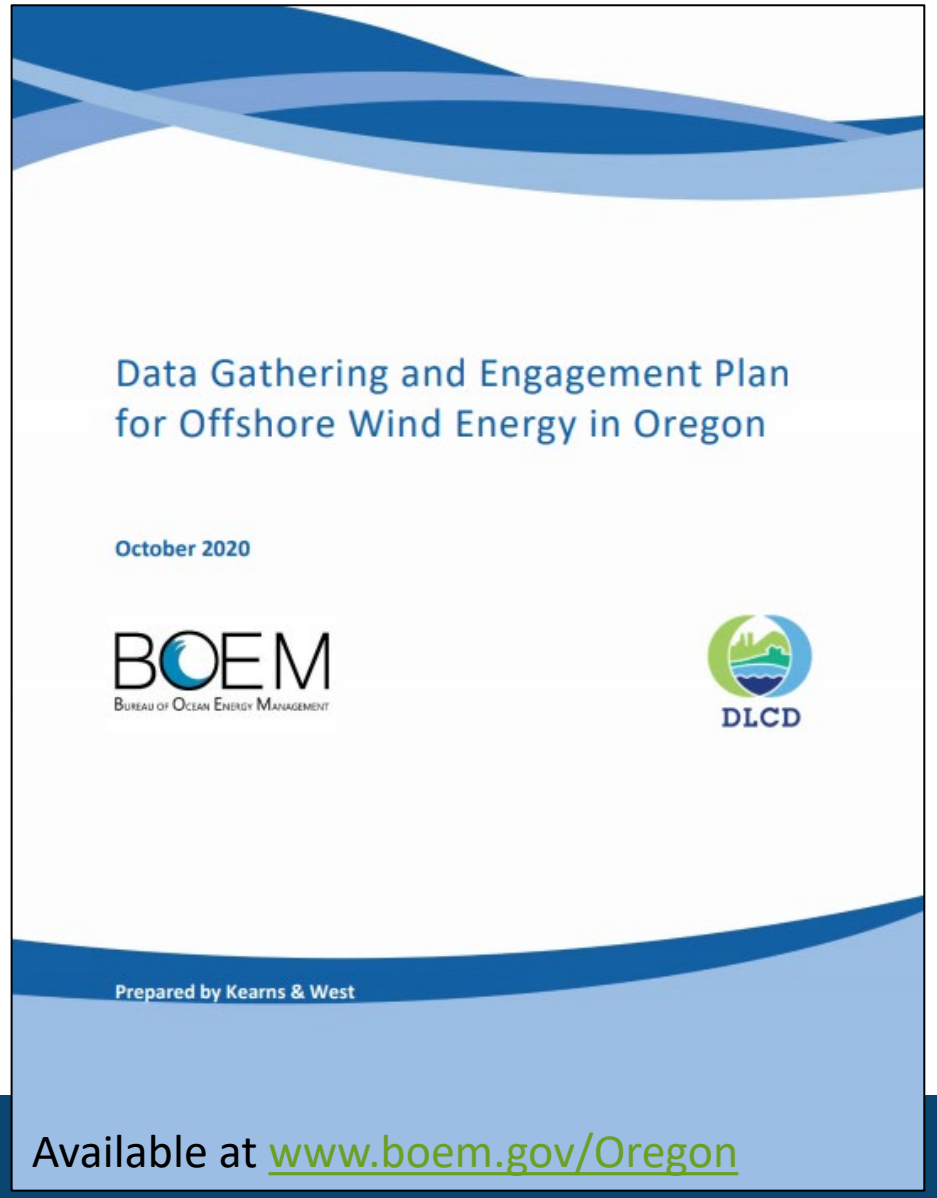
June 2020:

- Discussed draft plan
- Result: BOEM and State of Oregon committed to offshore wind energy planning; finalized plan



Available at www.boem.gov/Oregon

BOEM Oregon Task Force Meetings

September 2019:

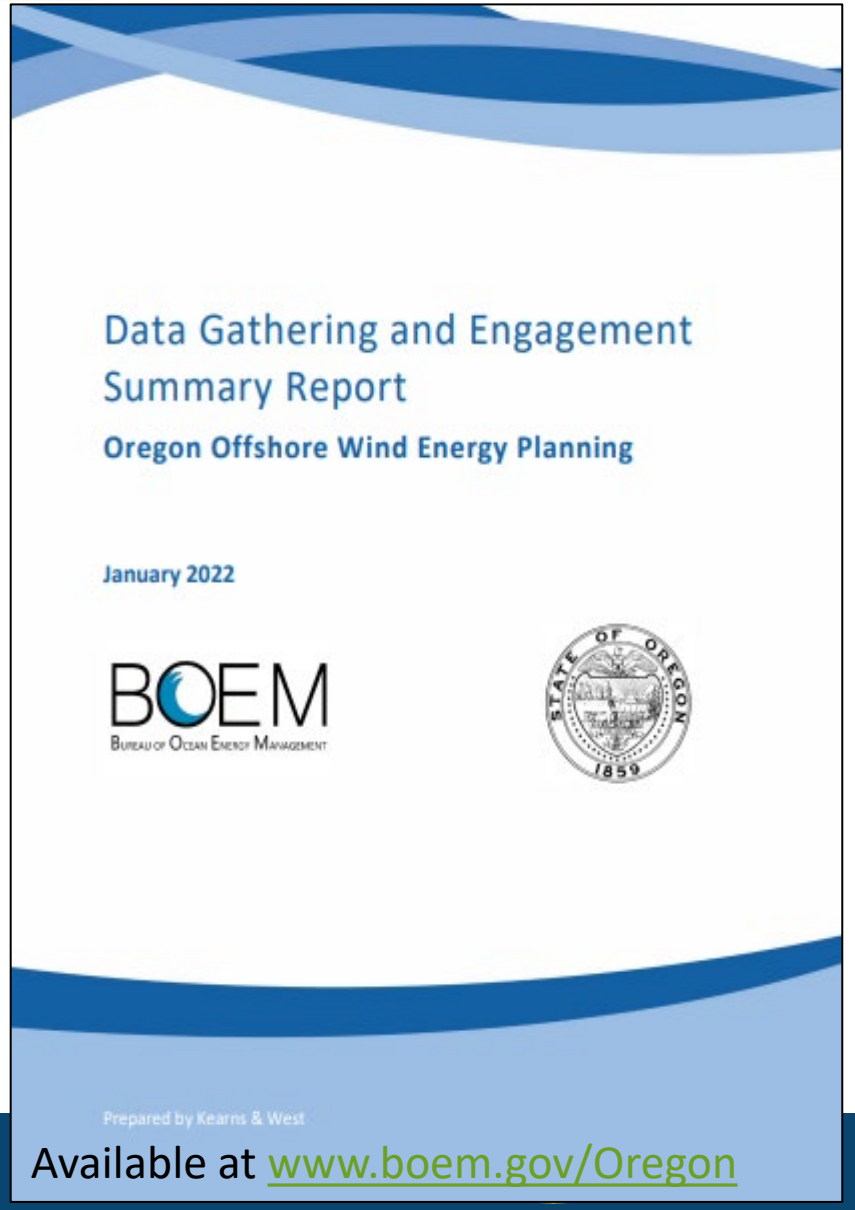
- Discussed planning approach
- Result: BOEM and DLCD drafted data gathering and engagement plan

June 2020:

- Discussed draft plan
- Result: BOEM and State of Oregon committed to offshore wind energy planning; finalized plan

October 2021:

- Discussed the outcome of BOEM's and DLCD's data gathering and engagement
- Result: Finalized summary report



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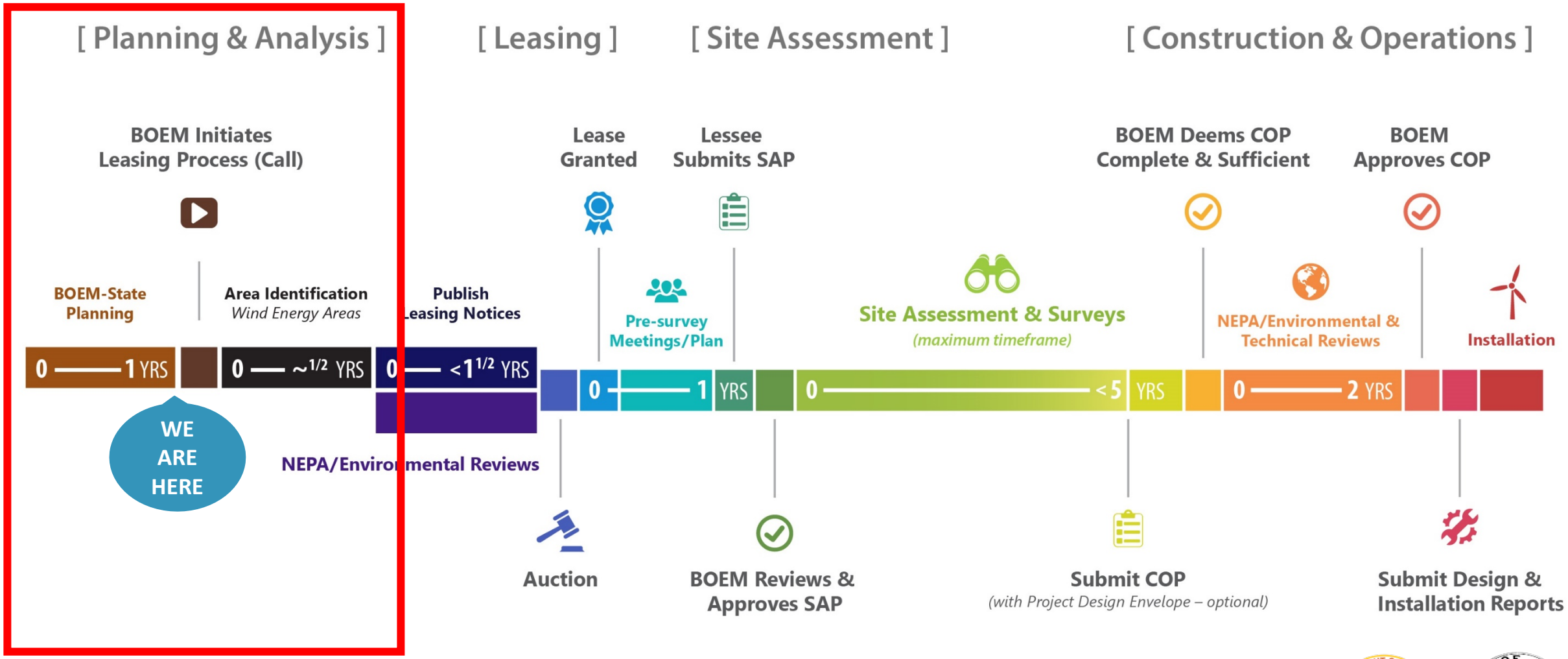
BOEM Offshore Wind Energy Authorization Process



Renewable Energy Process: Calls, Wind Energy Areas and Lease Areas

Call for Information and Nominations (Call)

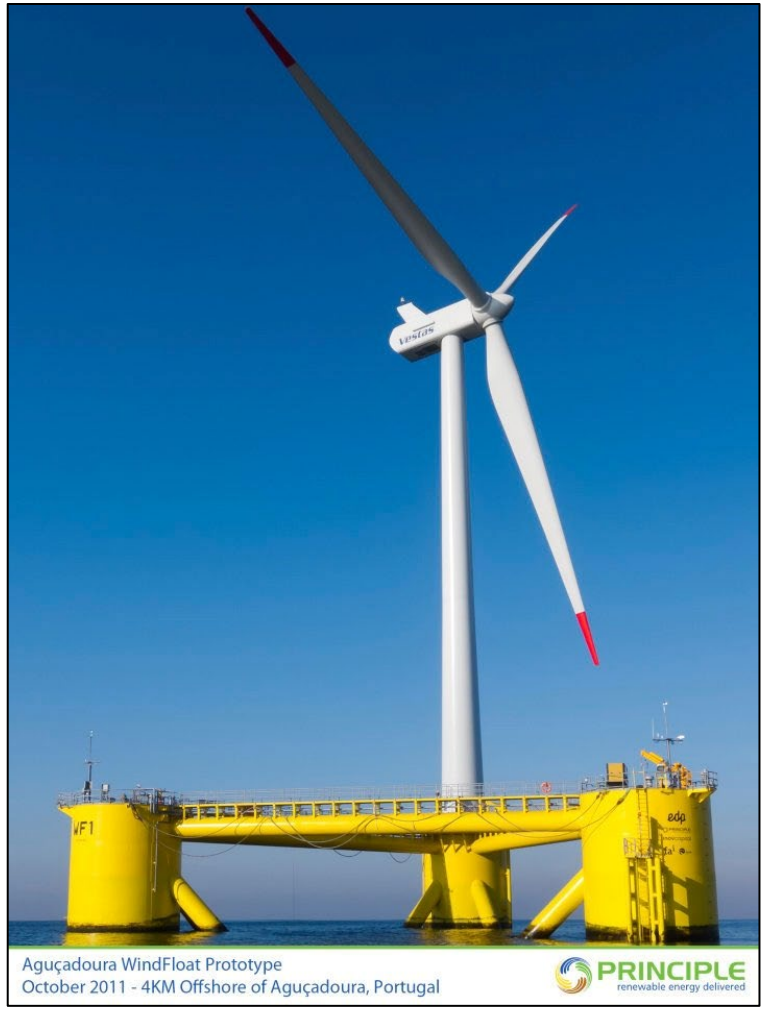
- Calls for formal public comment about the area, uses and concerns
- Requests nominations of interest for development

Wind Energy Area (WEA)

- An area within a Call Area identified by BOEM for environmental review
- Basis for a lease area(s)

Lease Area

- Areas BOEM would offer for lease during a Lease Sale



Call Area Considerations

Guiding Principles

- Establish Call Areas of sufficient size and flexibility for further refinement
- Focus on highest potential for commercial offshore wind energy viability
- Consider 3 gigawatts (GW) for near-term commercial development

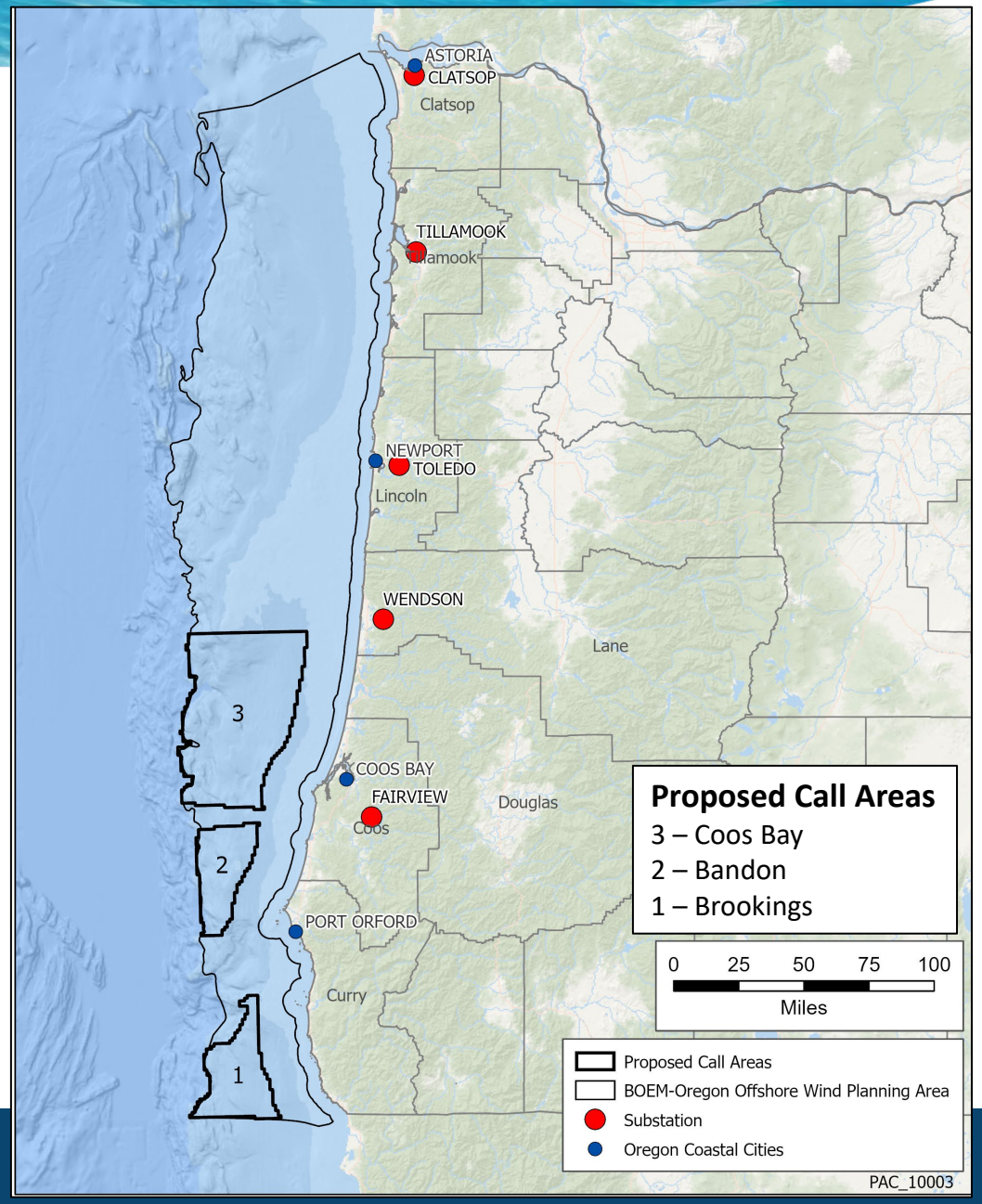
Considerations

- Wind resource and cost of energy
- Transmission
- Depth and slope
- Existing submarine cables
- Marine mammals
- Sea turtles
- Marine birds
- Rock reef habitat
- Submerged landforms
- Tribal input
- Vessel traffic
- Fishing

Proposed Call Areas and Capacity

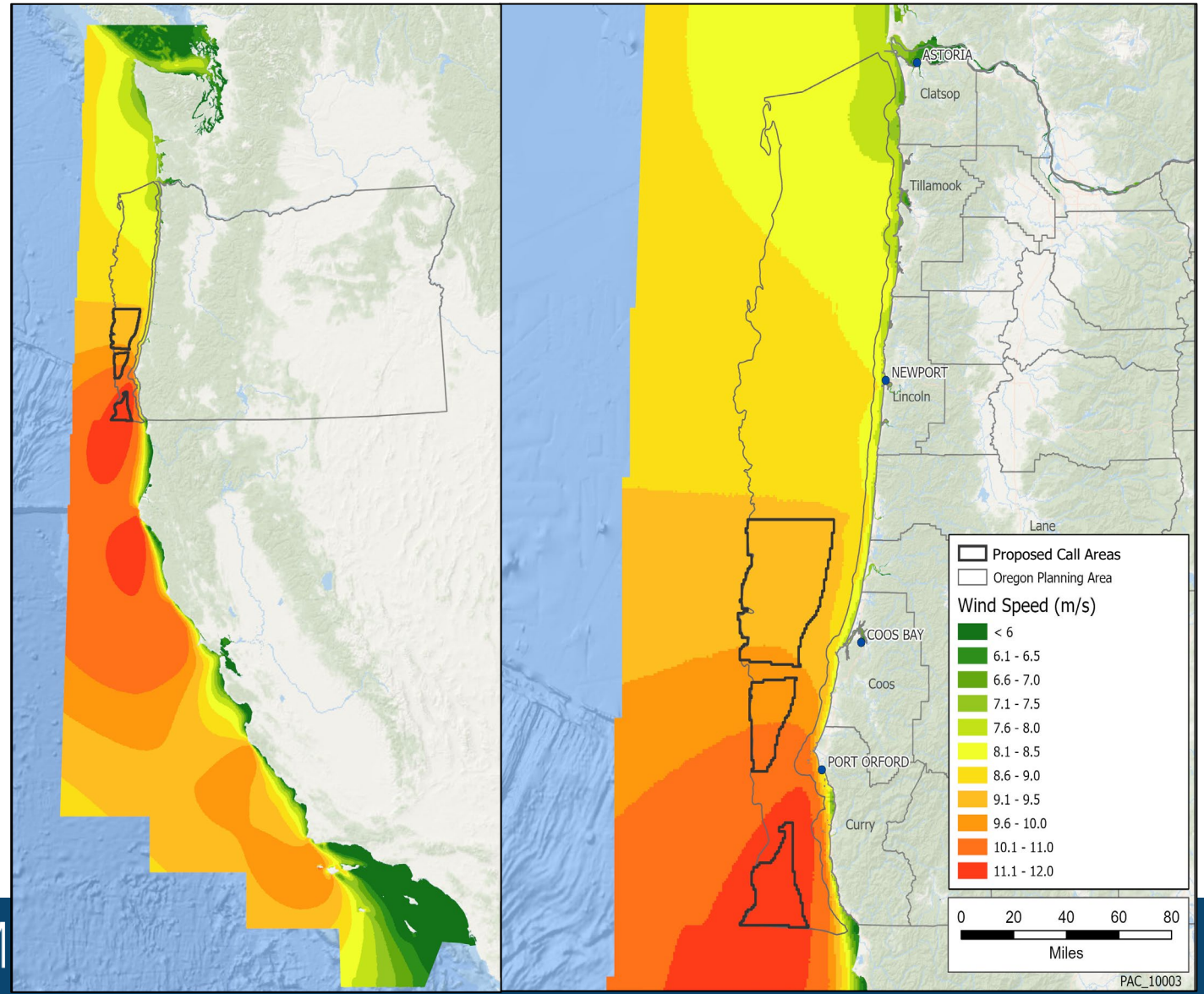
Name	Approx. Offshore Wind Energy Capacity		Area		
	Megawatts	Gigawatts	Acres	Square miles	Square kilometers
Coos Bay	10,597	10.6	871,680	1,362	3,532
Bandon	2,881	2.9	237,440	371	960
Brookings	3,478	3.5	286,720	448	1,159
Total	16,956	17	1,395,840	2,181	5,651

Power density of 3 MW/km^2 (7.8 MW/mi^2) (NREL 2016)

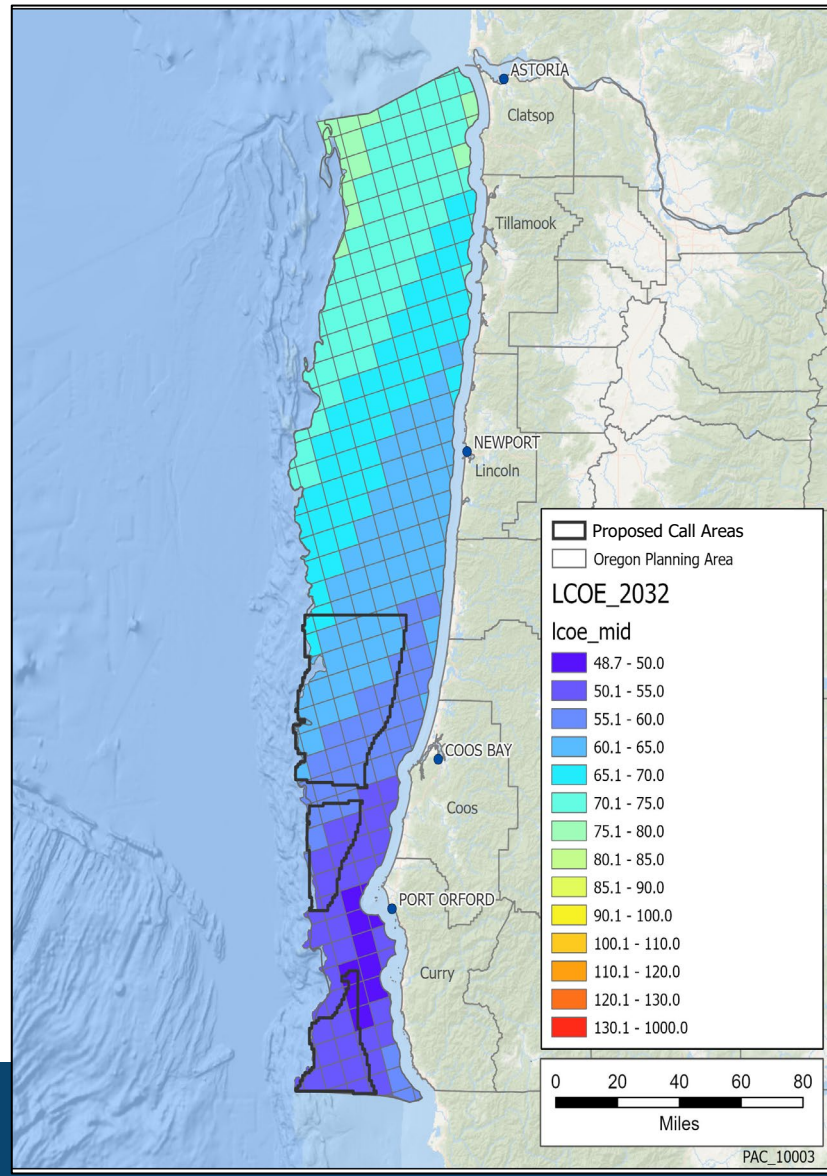


Wind Resource and Cost of Energy

Wind Resource



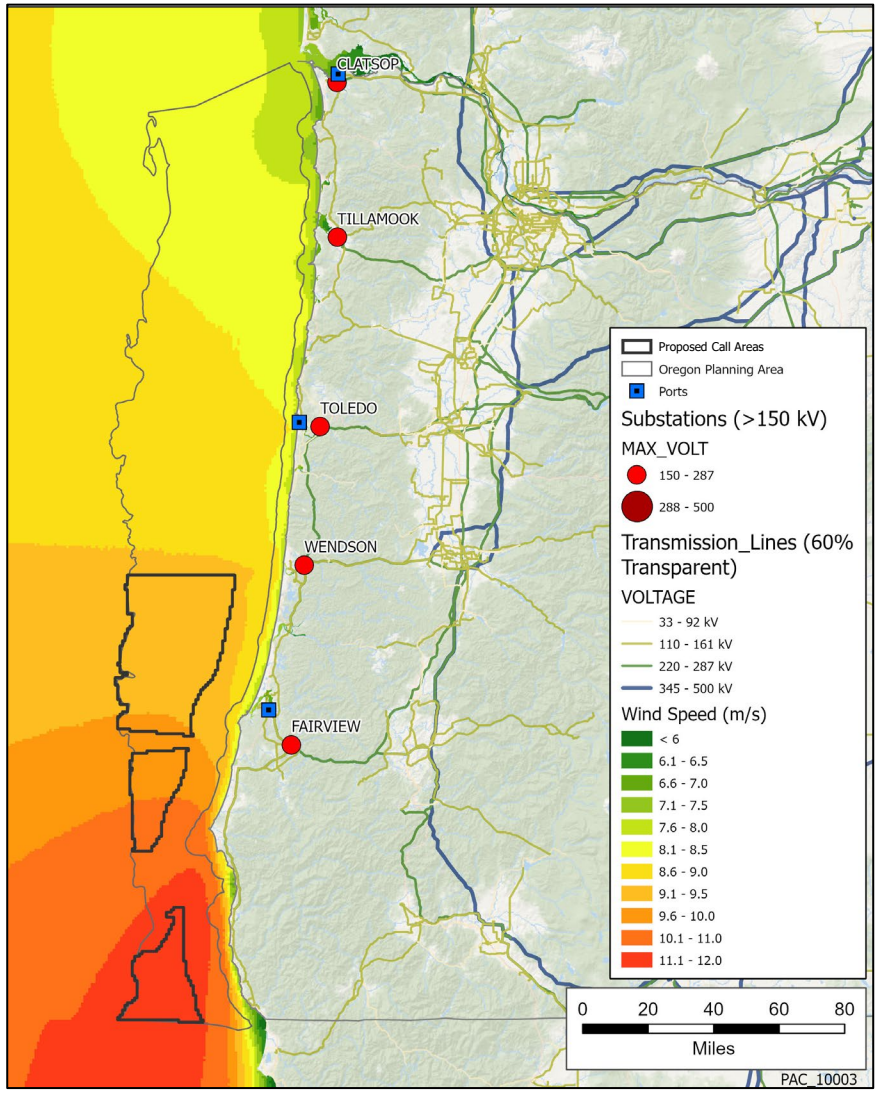
Levelized Cost of Energy



BOEM

Transmission

- **2,625 MW of offshore wind capacity could be integrated into Oregon's power system (NREL 2021)**
  - Without major upgrades to the trans-coastal transmission or significant curtailment of offshore wind generation
  - Distributed amongst five coastal substations
- **Proposed Call Areas close to two of five interconnection points**

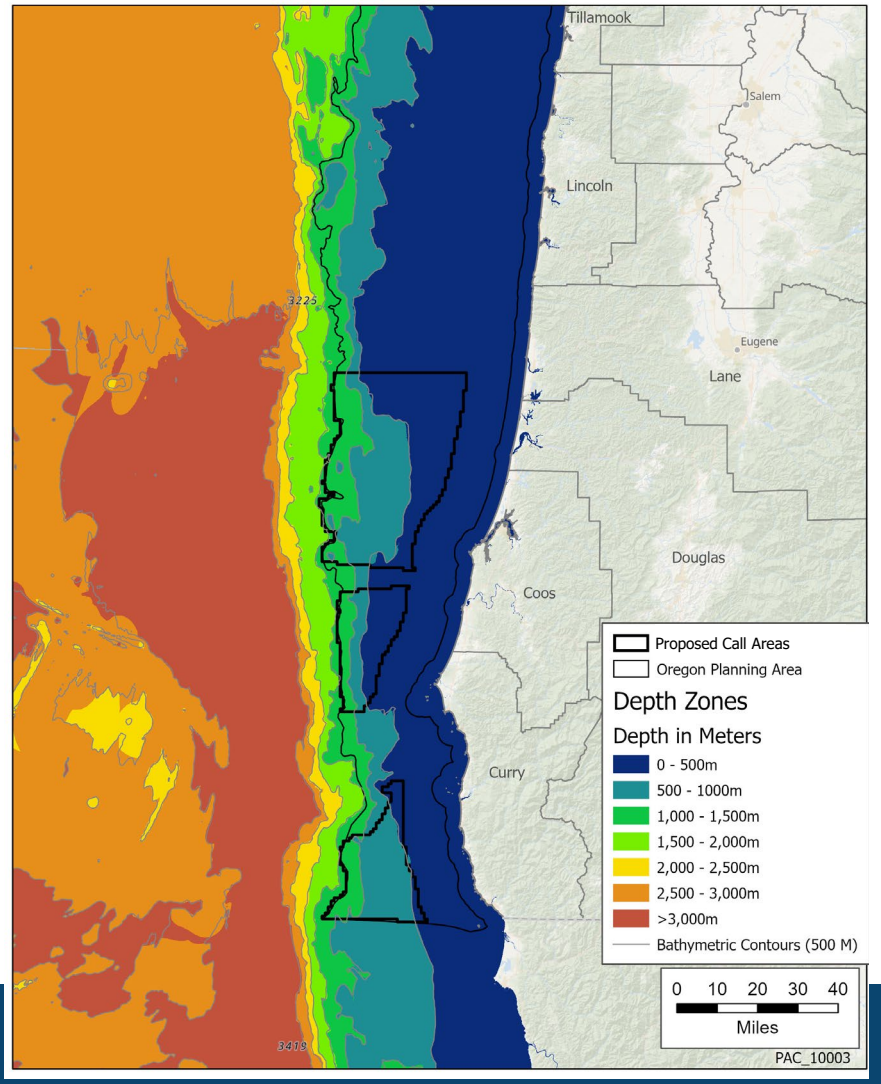


Offshore Wind Point of Interconnection (POI)	Max Capacity (MW)
Clatsop	361
Tillamook	553
Toledo	156
Wendson	613
Fairview	941
Total	**2,625**

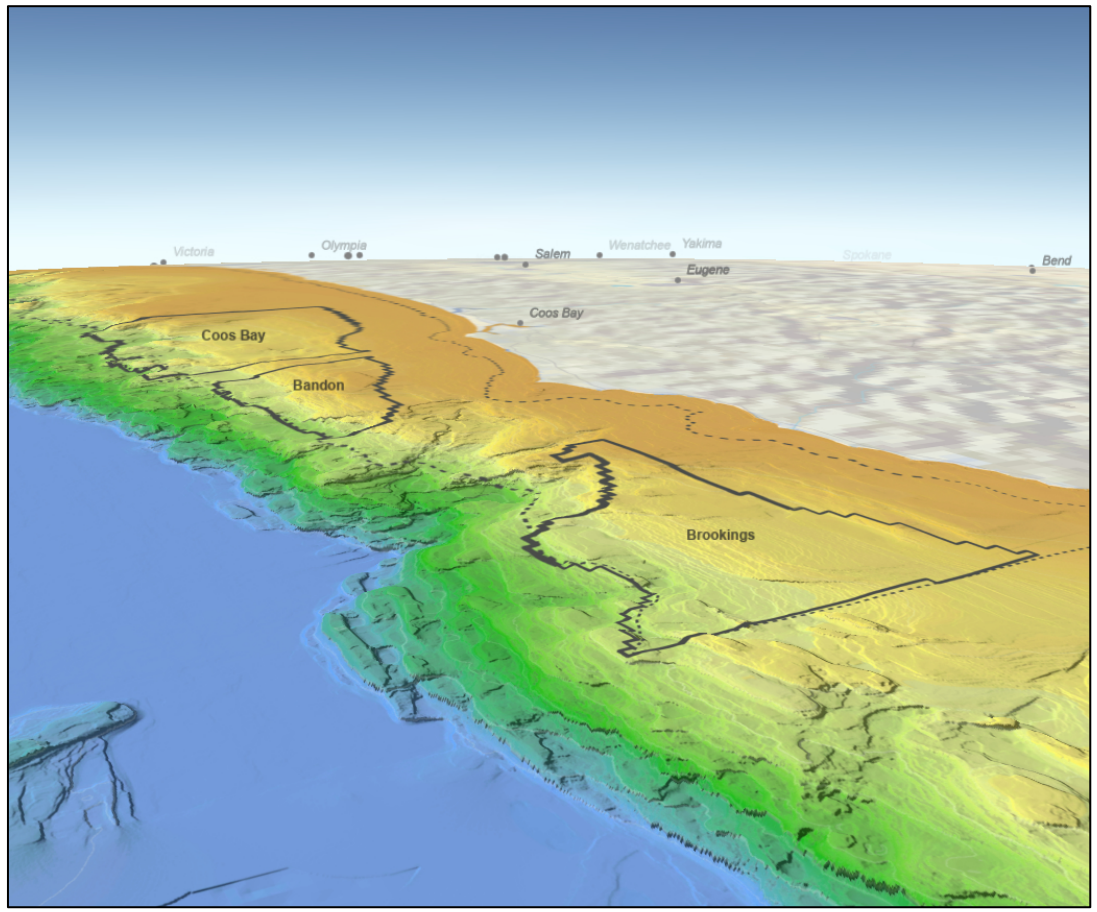
West Boundary: 1,300 m Water Depth

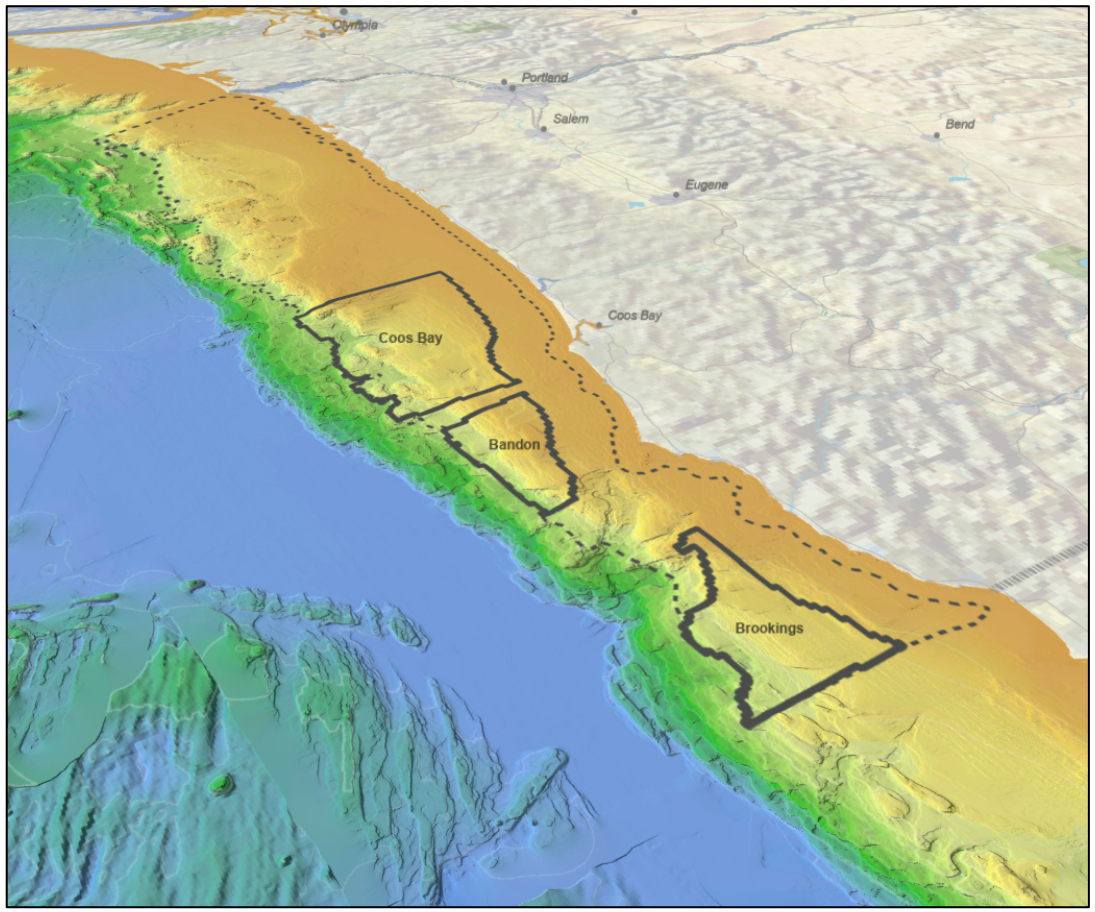
- **Partial OCS Blocks include 1,300 m water depths**
  - Overall parameter used for outreach and engagement for data collection, developed with State and Task Force
  - Westward of continental slope water depths greater than 2,000 m
  - Future round of leasing may consider areas deeper than 1,300 m

Depth



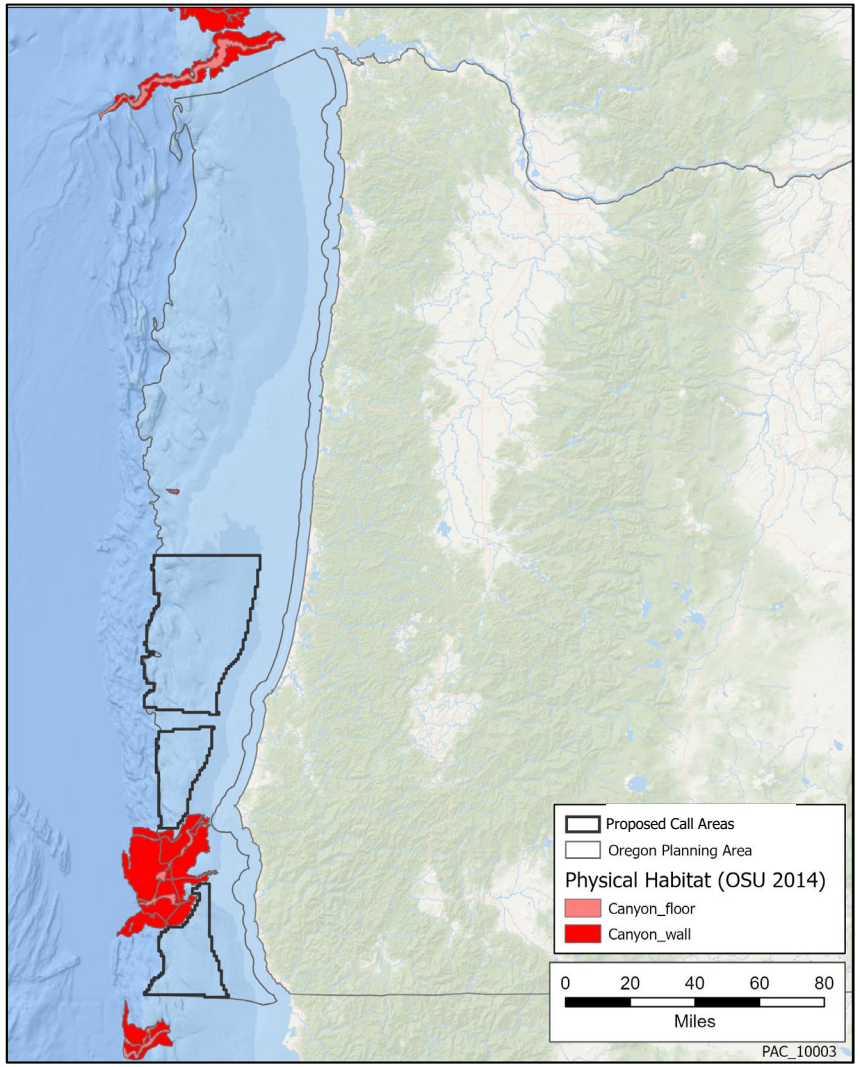
3D View of Water Depth



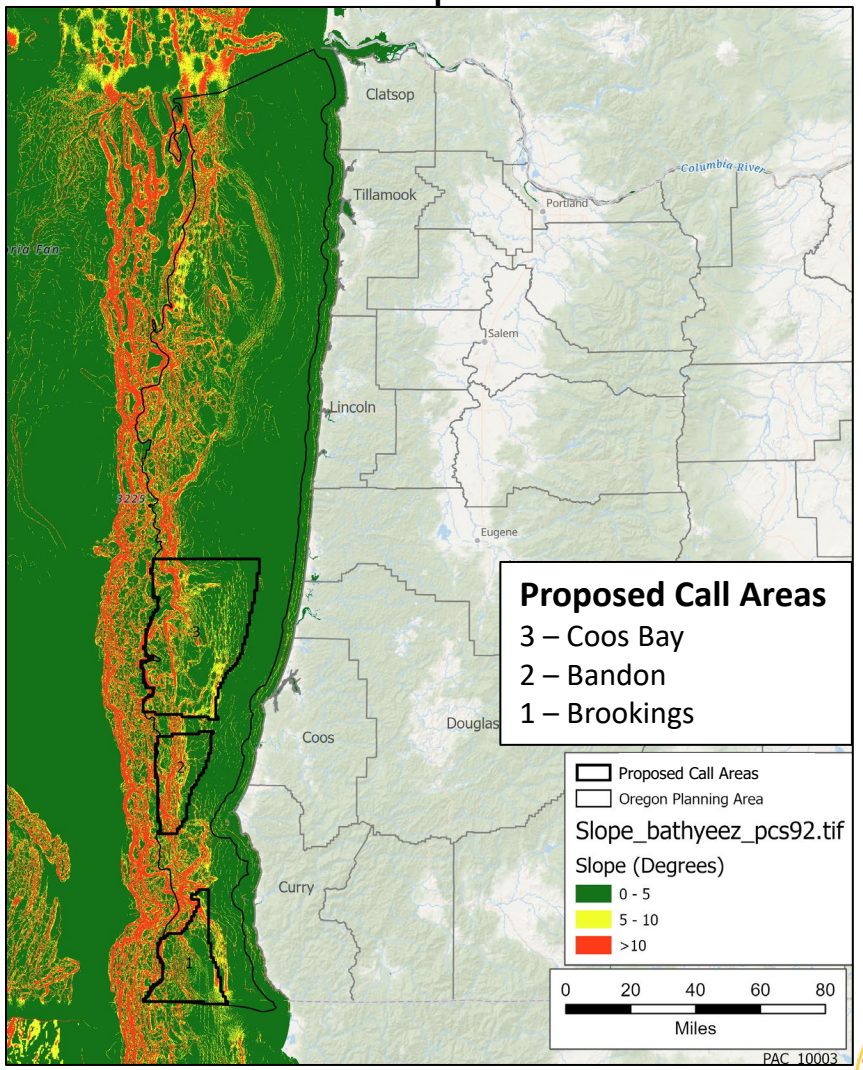


Slope

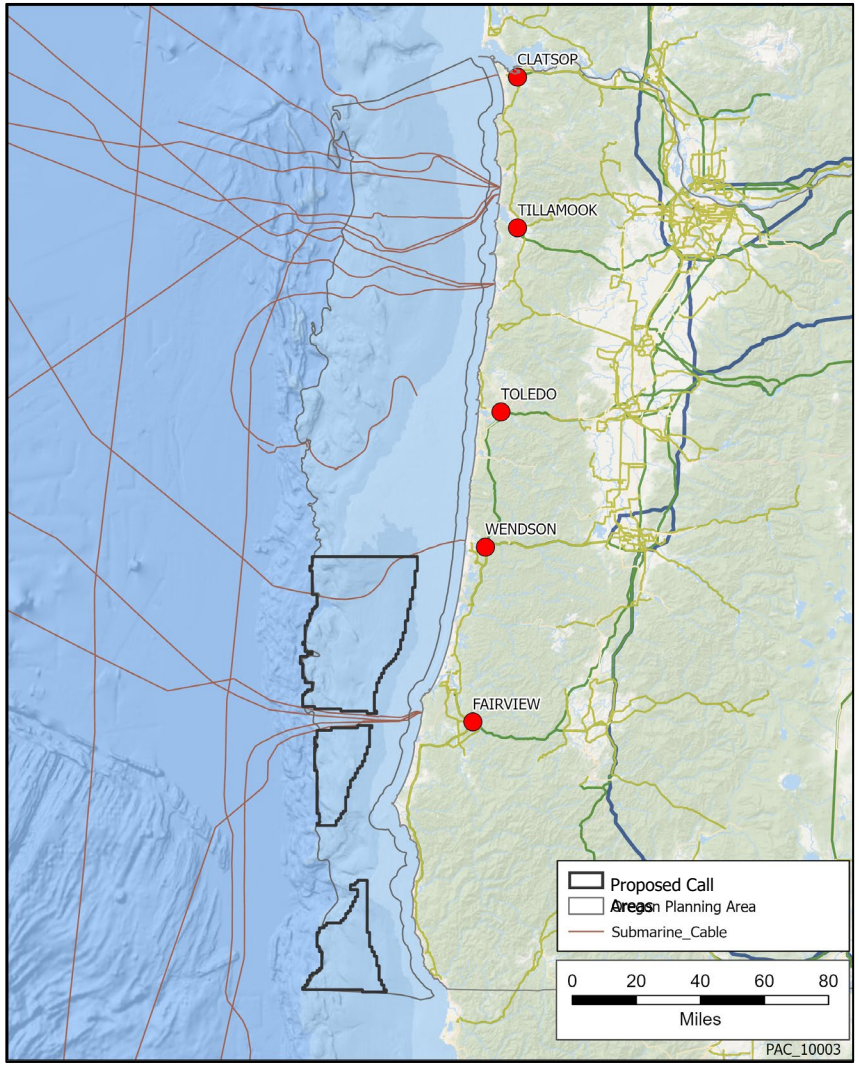
Rogue canyon system



Slope

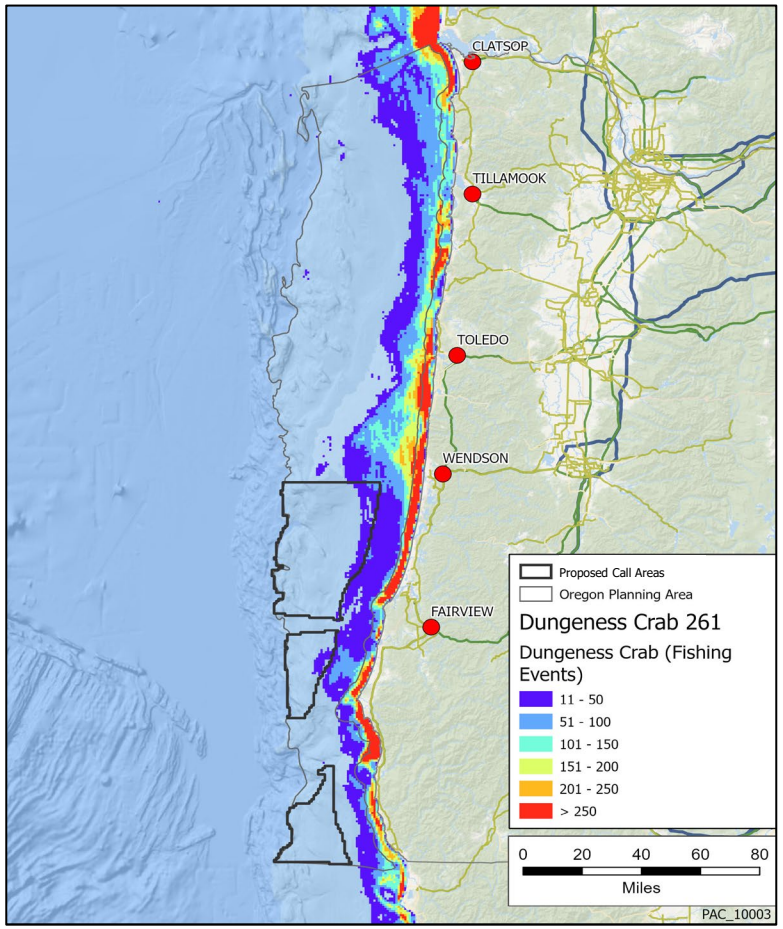


Submarine Cables

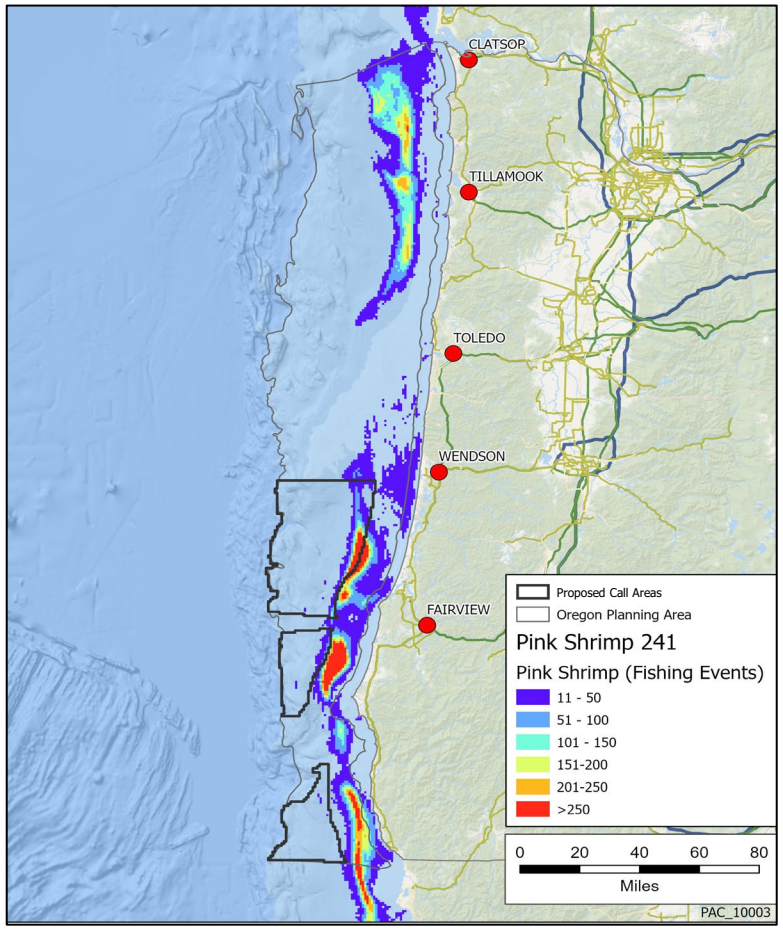


East Boundary: 13.8 mi (12 nmi) from Shore

High-density fishing areas for Dungeness Crab

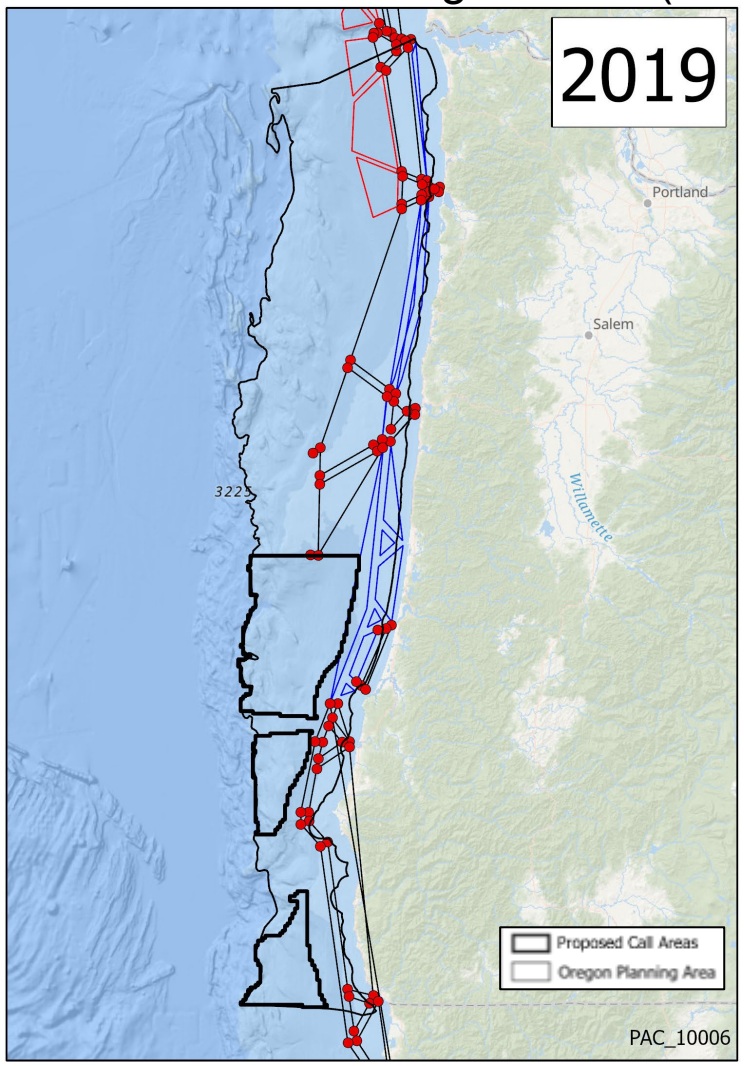


High-density fishing areas for Pink Shrimp



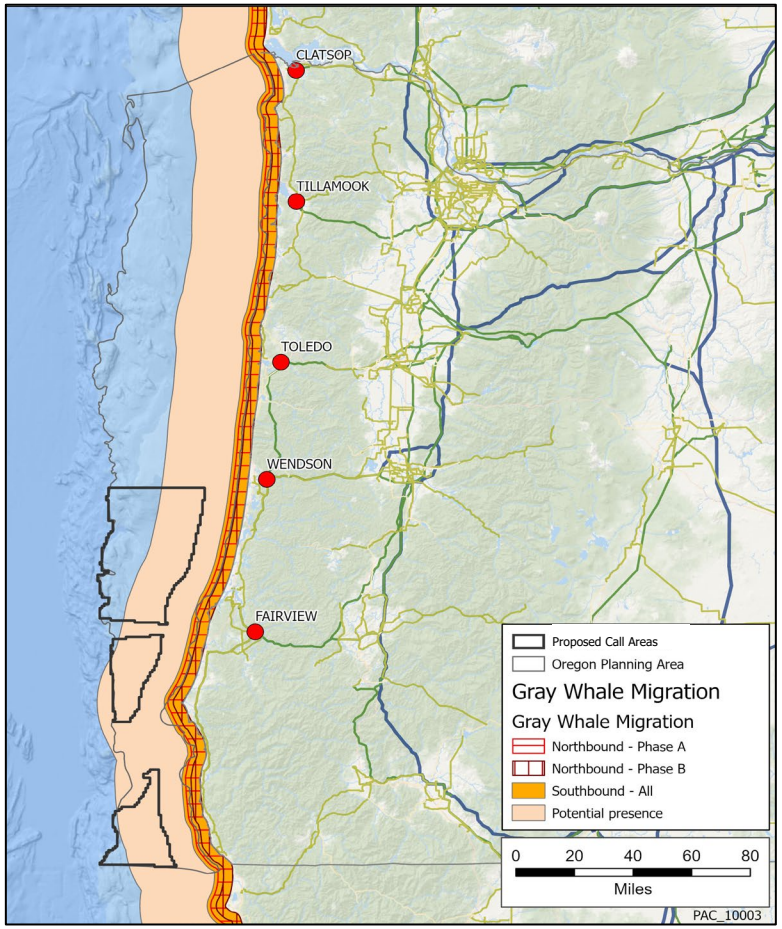
East Boundary: 13.8 mi (12 nmi) from Shore

Crabber/towboat lane agreement (2019)

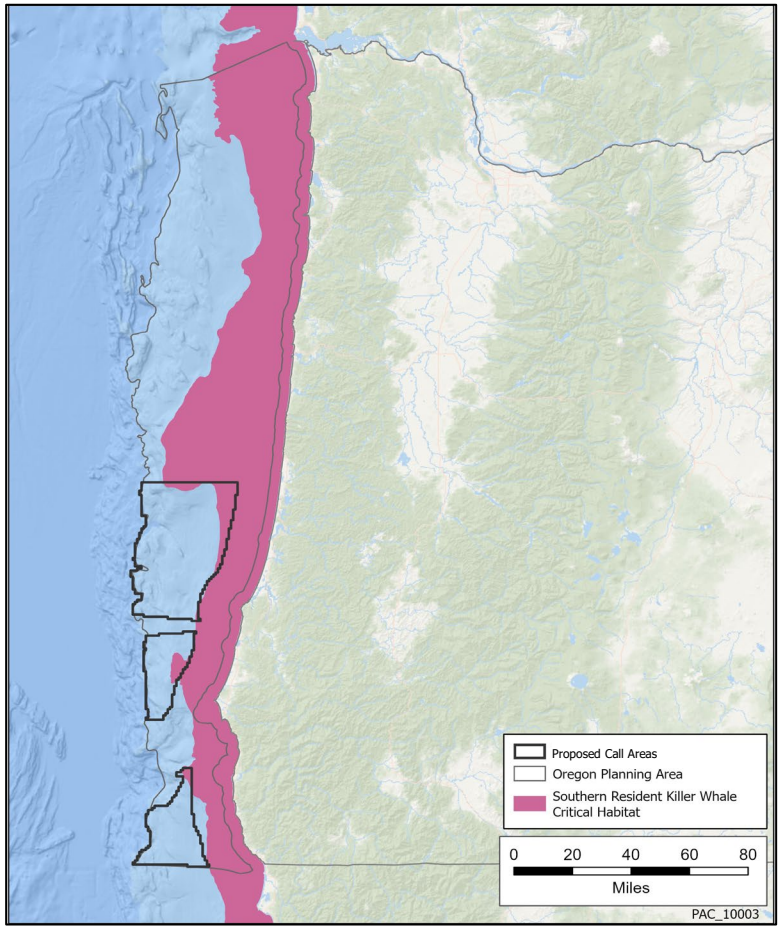


East Boundary: 13.8 mi (12 nmi) from Shore

Gray Whale migratory corridor



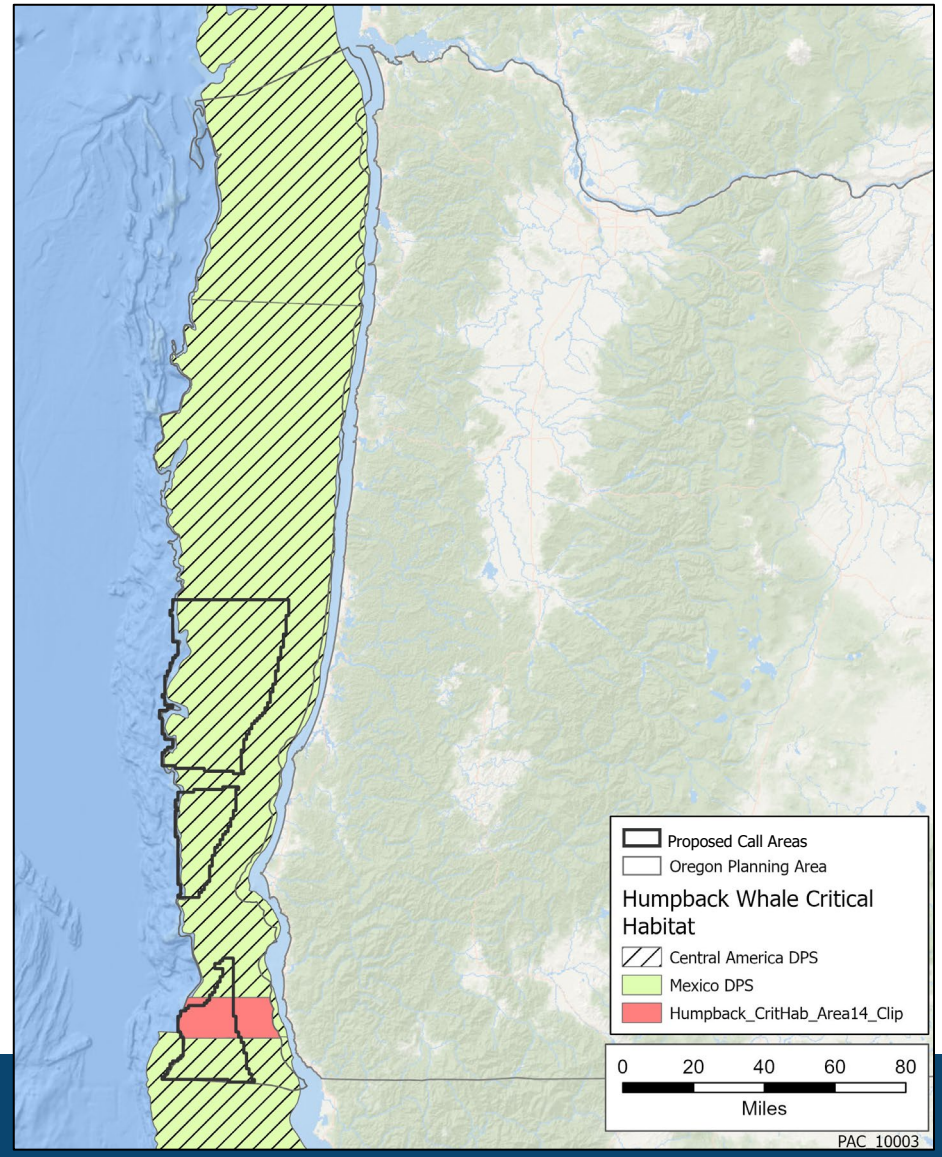
Southern Resident Killer Whale critical habitat



Potentially Impacted Marine Mammals

- **Humpback whale critical habitat**
- **Endangered Species Act (ESA)-Listed species:**
  - Killer and sperm whales
  - Humpback, blue, fin, sei and gray whales

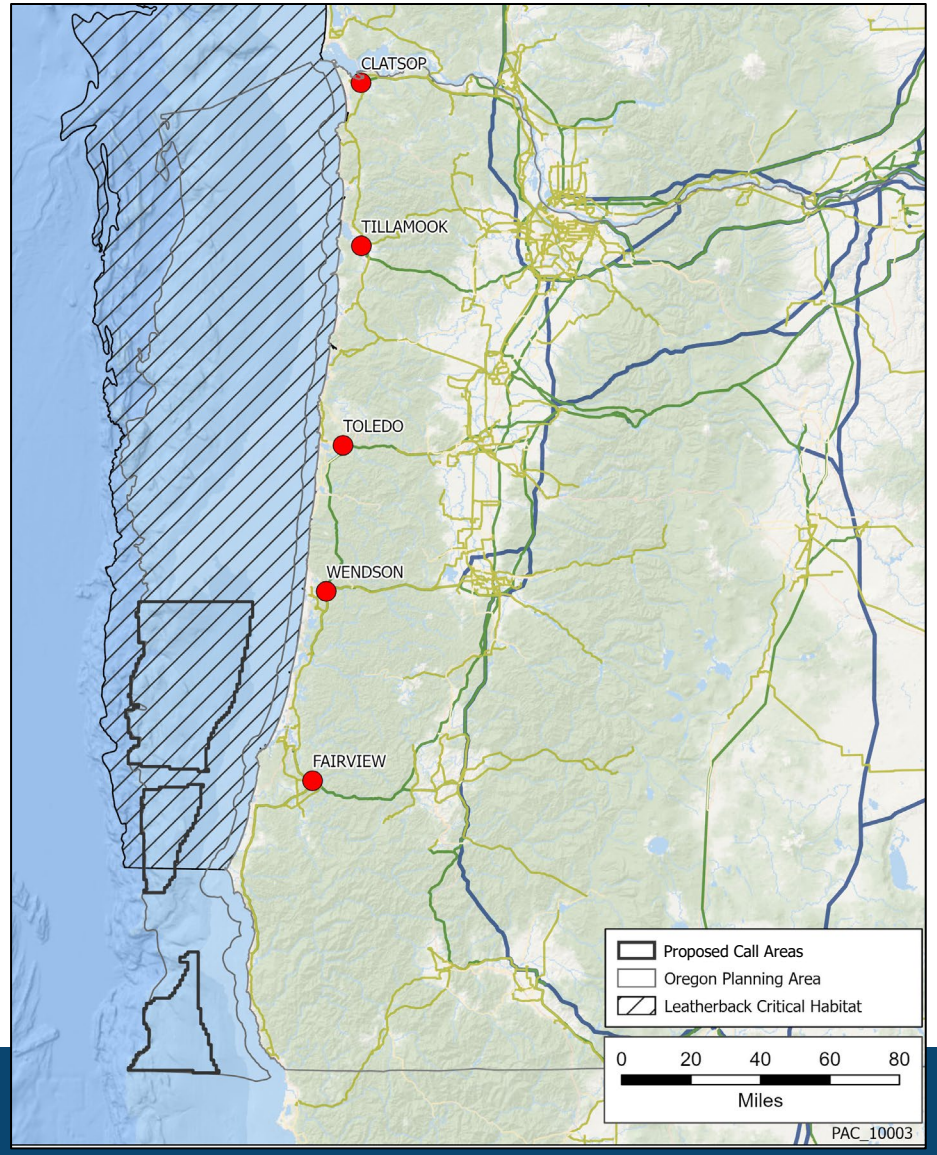
Humpback Whale critical habitat



Potentially Impacted Sea Turtles

- **Leatherback sea turtle critical habitat**
  - Expands from shore to 2,000 m water depths
- **ESA-Listed species:**
  - Leatherback, Loggerhead and Ridley sea turtles

Leatherback Sea Turtle critical habitat



Potentially Impacted Marine Birds

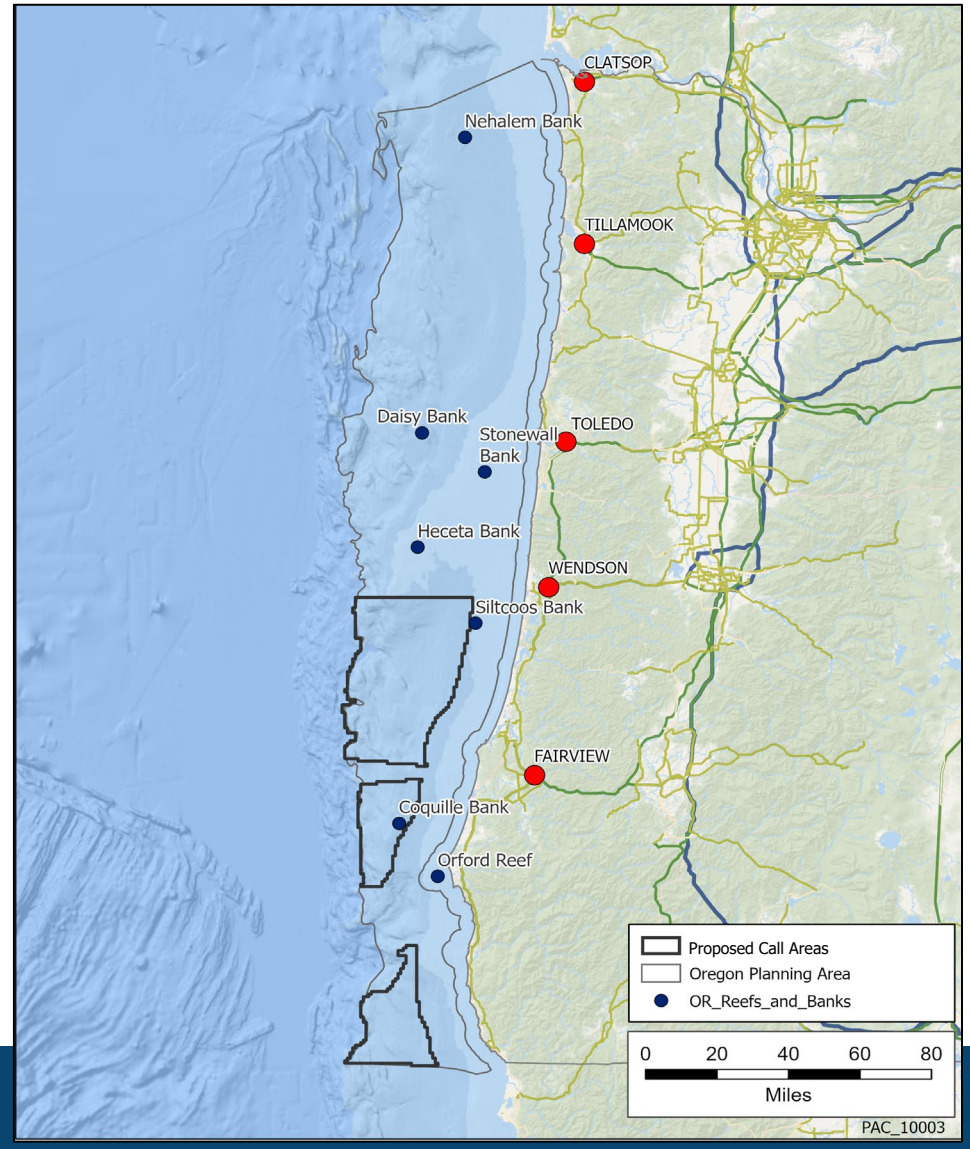
- **13.8 mi (12 nmi) from shore**
  - Avoid areas of high marine bird densities
- **ESA-Listed Species offshore Oregon**
  - Short-tailed Albatross (endangered)
  - Hawaiian Petrel (endangered)
- **ESA-listed species with potential nearshore/onshore activities**
  - Marbled Murrelet (threatened)
  - Western Snowy Plover (threatened)
- **Migratory birds**
  - Black-footed Albatross, Pink-footed Shearwater, and others

Short-tailed Albatross

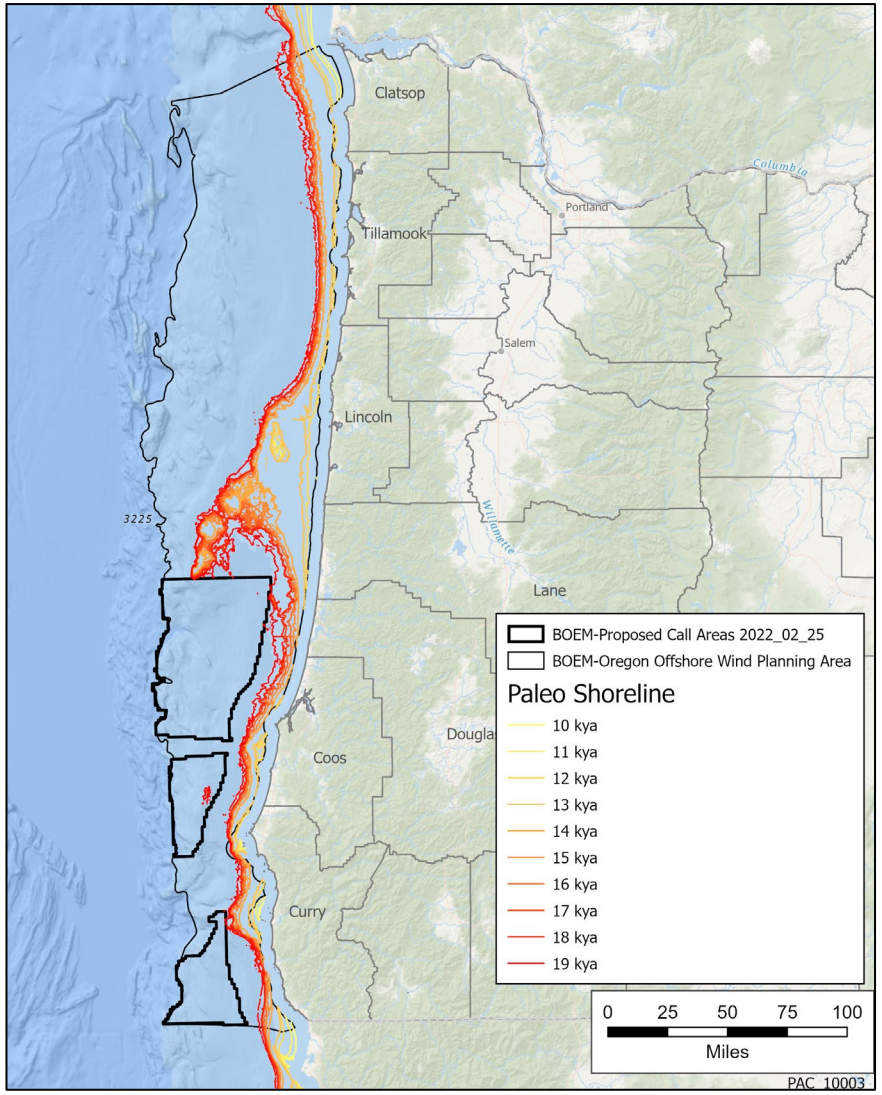
Rock Reef Habitat

- **Excluded areas: Heceta and Stonewall Banks**
  - Proposed Call Areas south of Heceta Bank
- **Continue coordination with State to further define rock reef habitat**

Rock reefs and banks



Submerged Landforms



Tribal Considerations for Offshore Wind Siting

- **Viewshed**
- **Submerged landforms**
- **Migratory species**
  - Whales and birds
  - Fish (e.g., lamprey, salmon, tuna)
- **Resident species (and habitats)**
  - Rock reef habitat
  - Crab and shellfish habitat
- **Project siting and onshore infrastructure**

BOEM Invited Engagement with Tribes

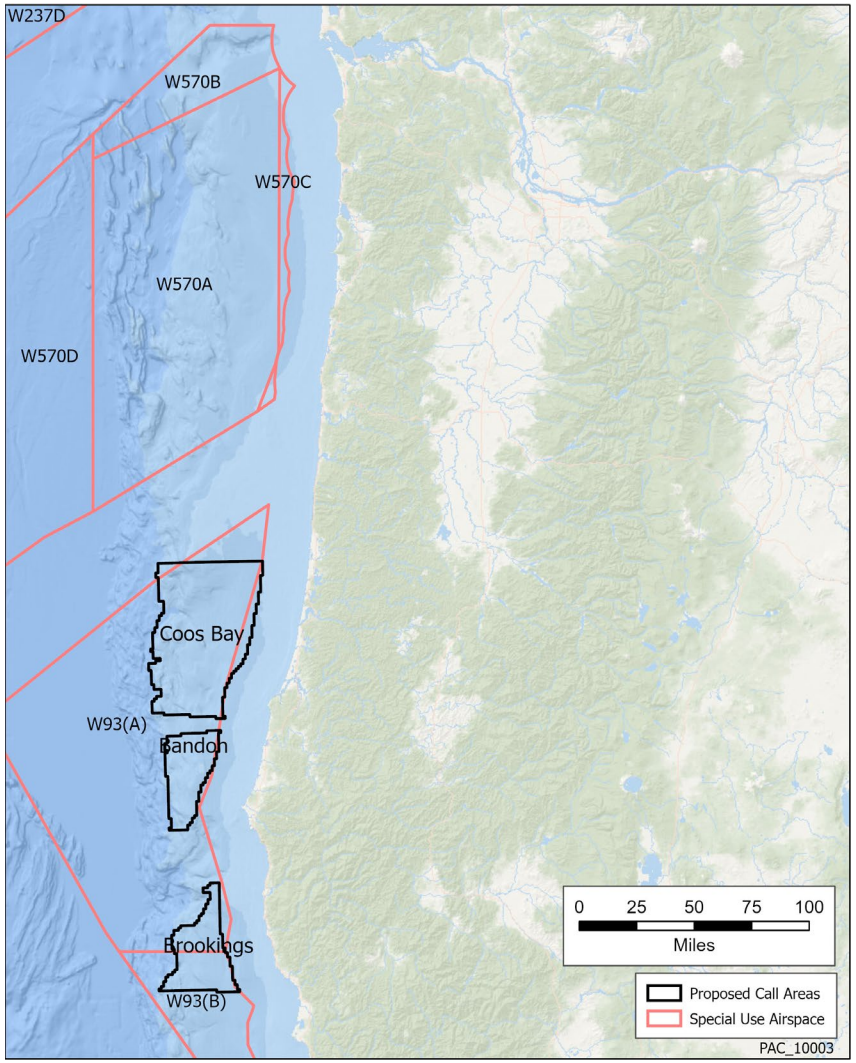
- 9 Tribes in Oregon
- 2 Tribes in California
- 5 Tribes in Washington

BOEM-Tribal Meetings

- Coquille Indian Tribe: Staff meeting March 2021
- Confederated Tribes of the Coos, Lower Umpqua and Siuslaw Indians (CTCLUSI): Staff meeting November 2021

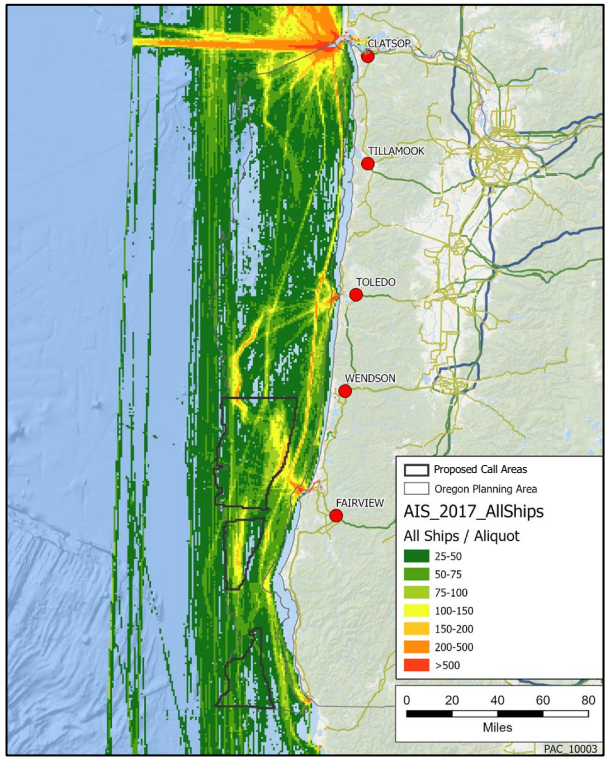
Department of Defense (DoD) Considerations

Special Use Airspace

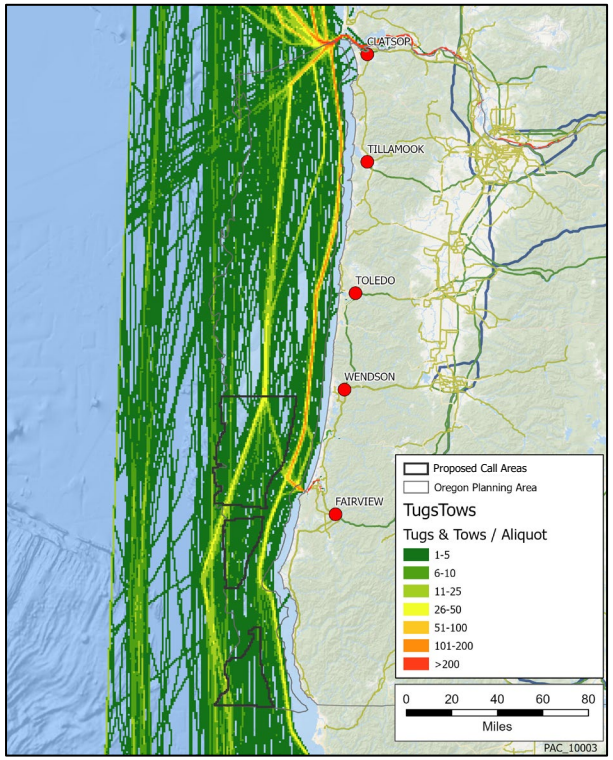


Vessel Traffic

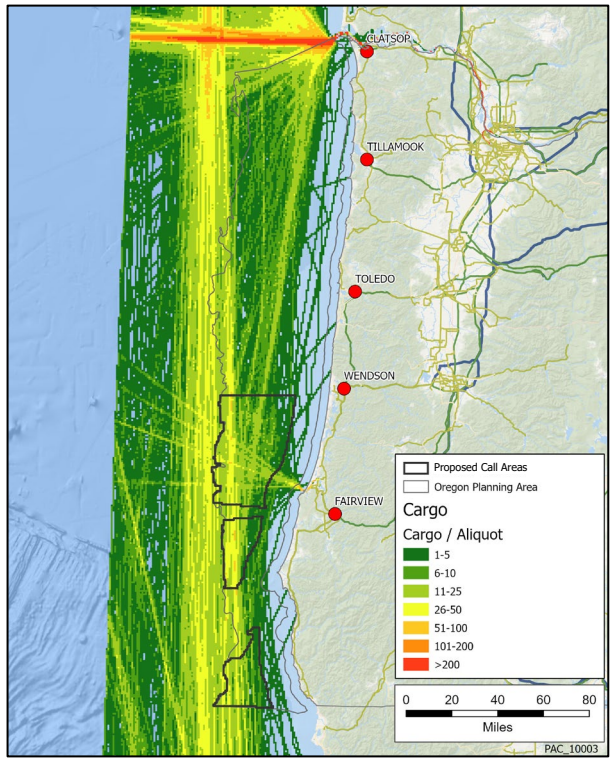
All Ships



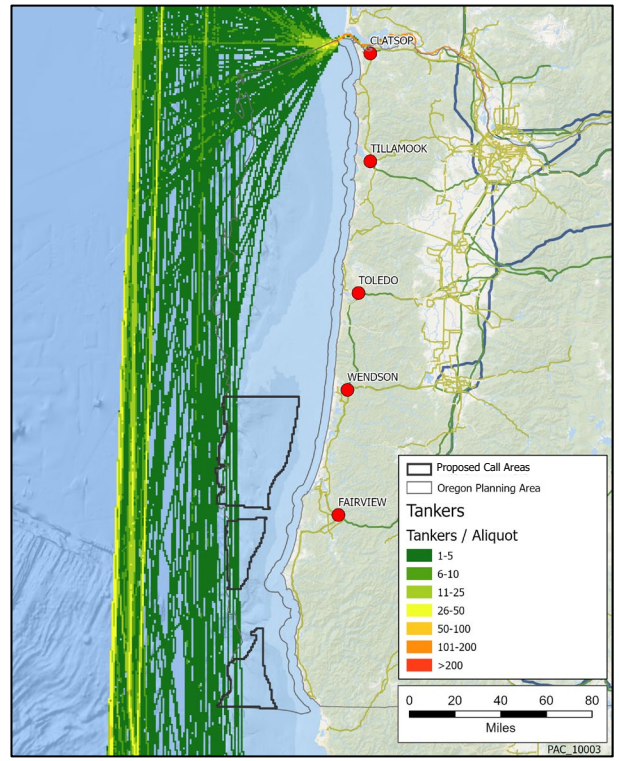
Tugs & Tows



Cargo

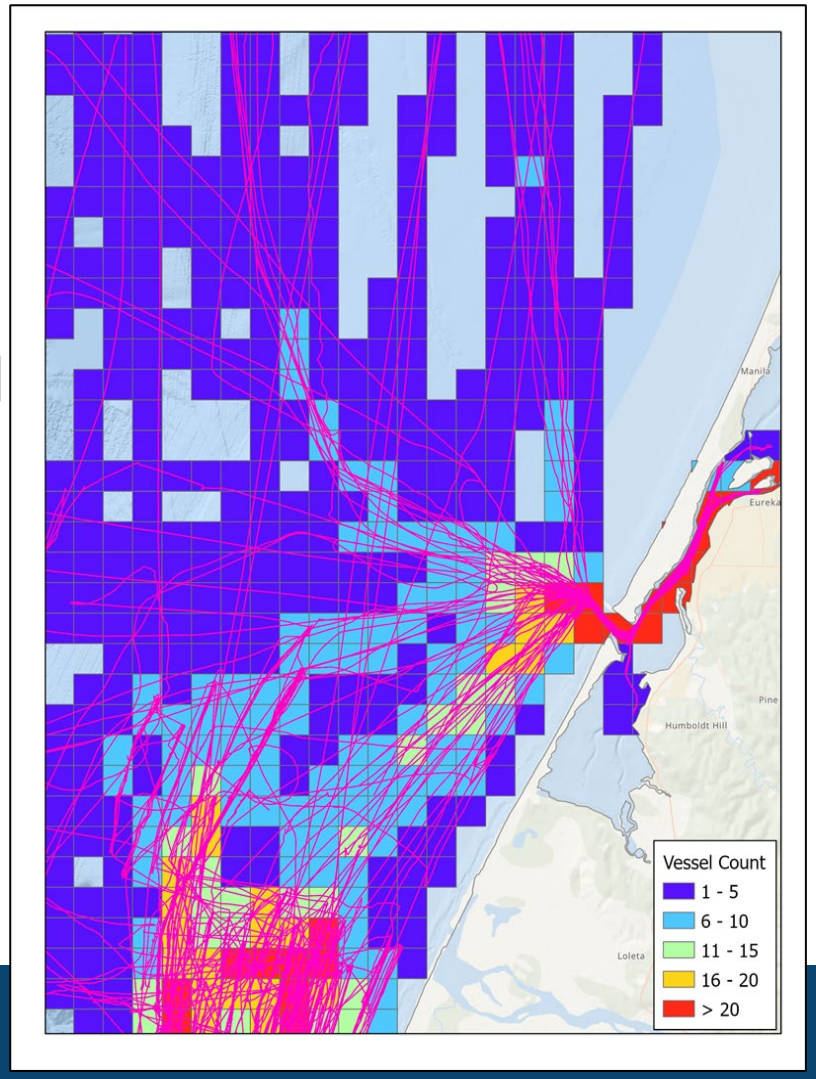


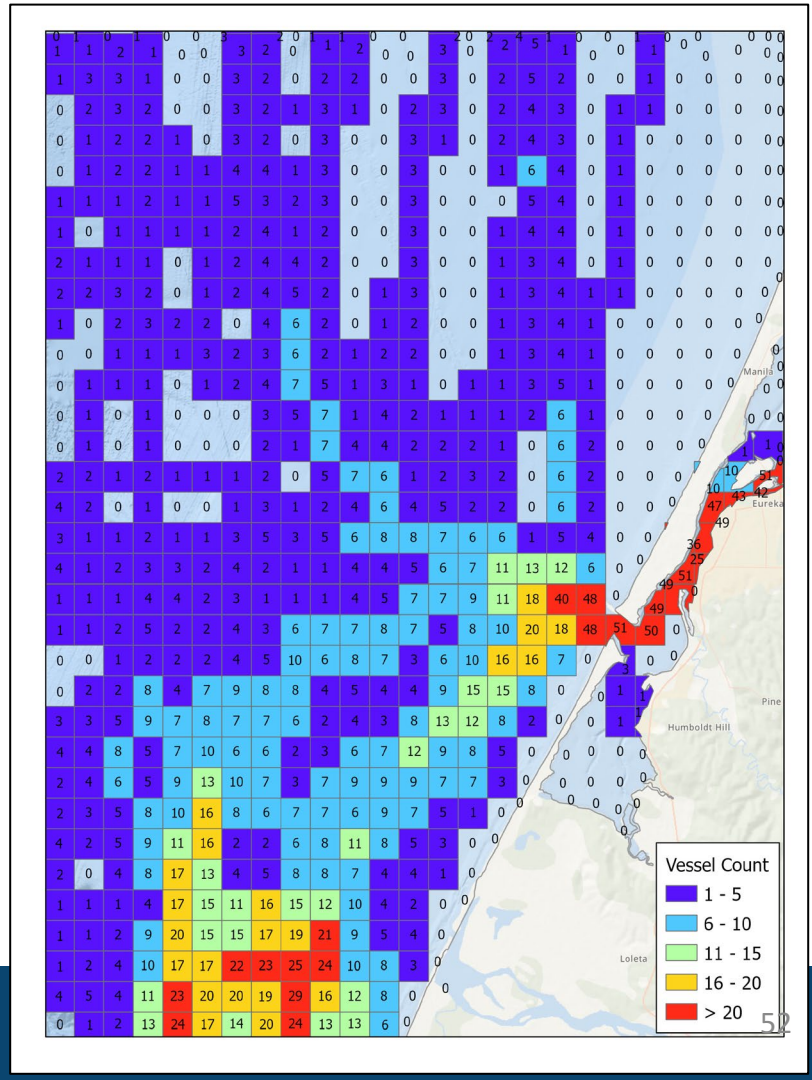
Tankers



Density Grids

- **What's in the Vessel Monitoring System (VMS) boxes?**
  - # Fishing events for VMS fisheries
- **But it could be**
  - # Fishing events for non-VMS fisheries
  - Km fished / Square km
  - Pots / Hours / Days Fished
  - Ex-Vessel Value
- **Other Considerations**
  - Search area
  - Can be symbolized many ways





Dungeness Crab

Annual Average Landings for Oregon 2009-2018

Species	Average (2009-2018)	Pct of Ave. Annual Value
Dungeness crab, ocean	$51,069,066	34%
Pink shrimp	$24,515,456	16%
Sablefish	$14,454,592	9%
Pacific whiting (hake)	$13,861,405	9%
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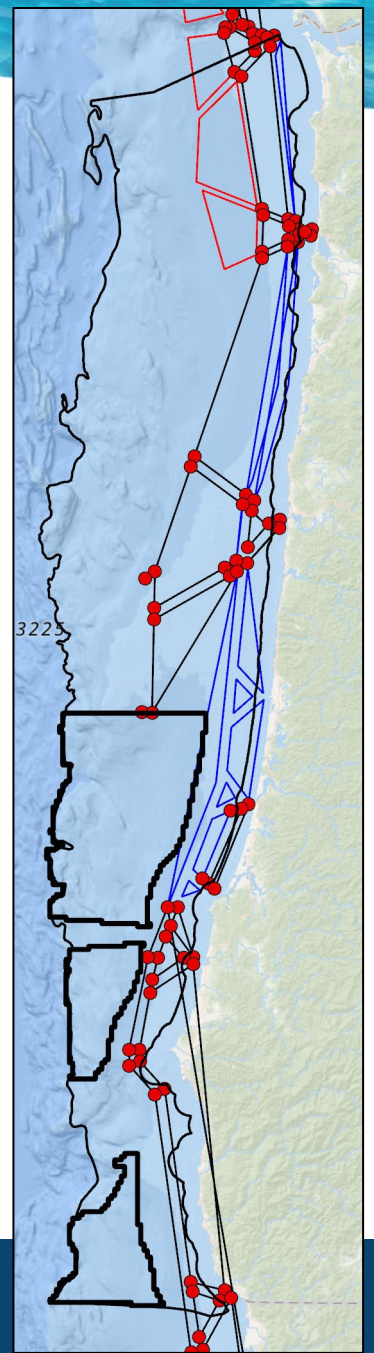
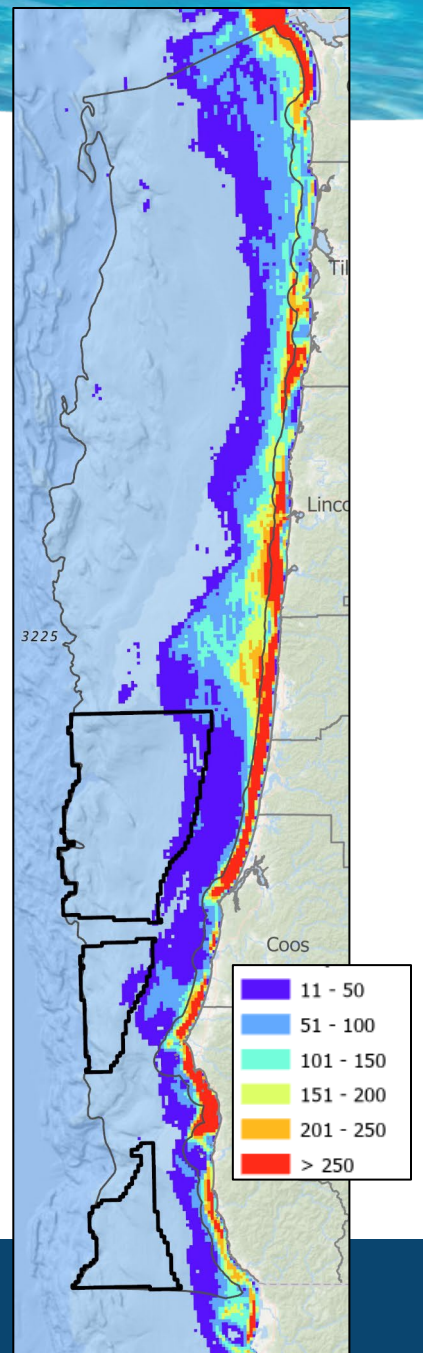
Chinook salmon	$8,934,733	6%
Dover sole	$5,012,667	3%
Petrale sole	$3,700,788	2%
Pacific sardine	$3,767,394	2%
Hagfishes	$1,485,950	1%
Pacific halibut	$1,208,864	1%
Widow rockfish	$1,140,691	1%
Yellowtail rockfish	$921,566	1%
Shortspine thornyhead	$775,114	1%
All other species	*$7,613,932*	*5%*
Total	**$152,372,563**	**100%**

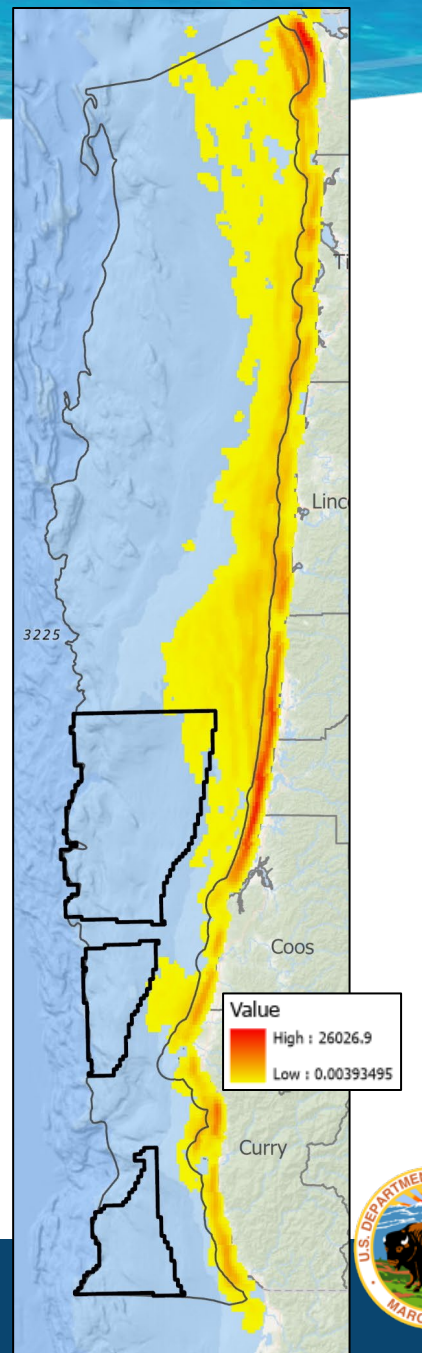
Crab/Tow Lanes



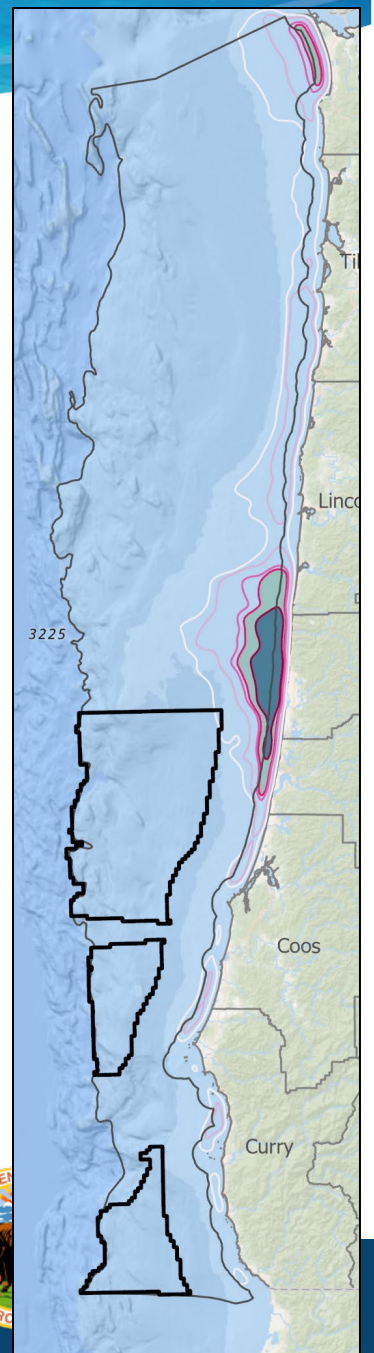
VMS 2010-2017



ODFW 2018-2020



TSP 2012



Pink Shrimp

Annual Average Landings for Oregon 2009-2018

Species	Average (2009-2018)	Pct of Ave. Annual Value
Dungeness crab, ocean	$51,069,066	34%
Pink shrimp	$24,515,456	16%
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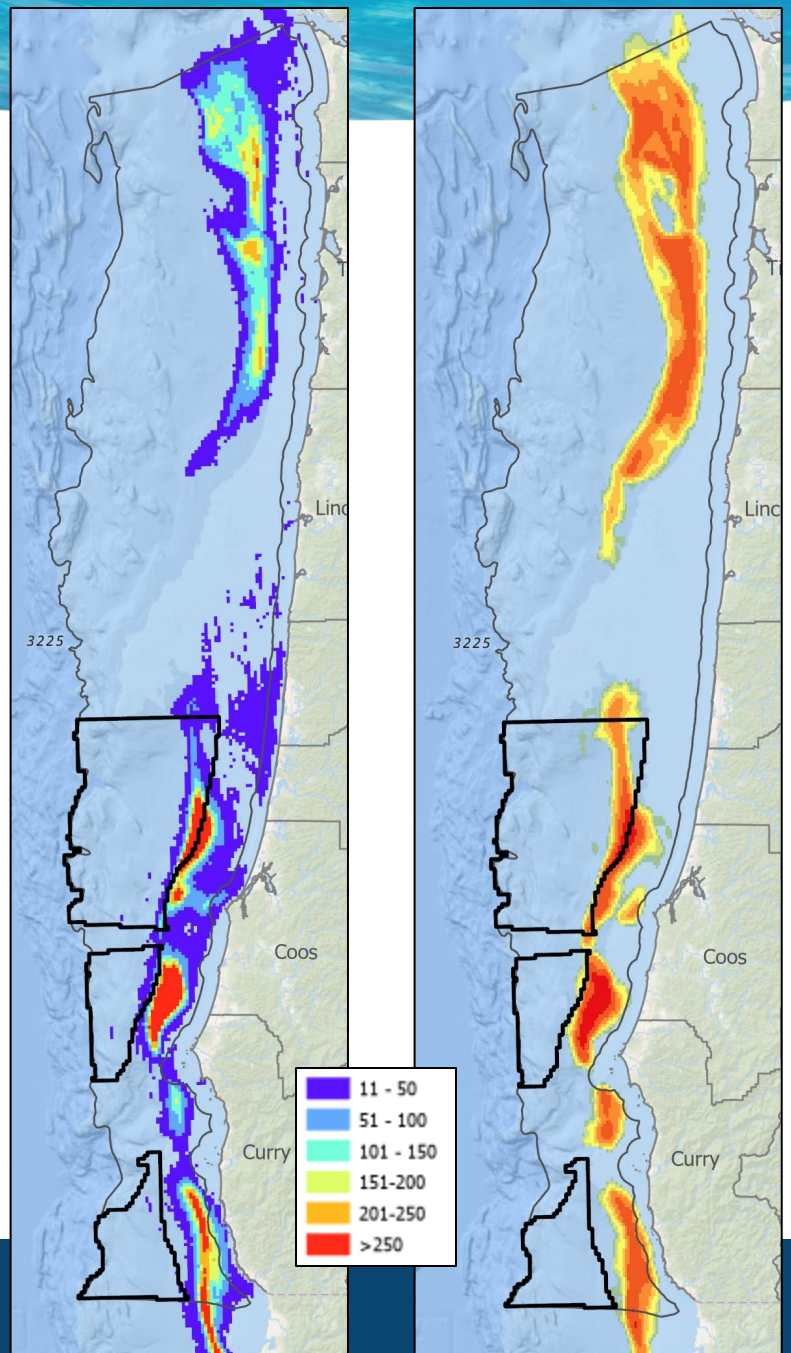
VMS 2010-2017 ODFW 1995-2020



Sablefish

ODFW Kernel Density Effort
VMS 2010-2017

Annual Average Landings for Oregon 2009-2018

Species	Average (2009-2018)	Pct of Ave. Annual Value
Dungeness crab, ocean	$51,069,066	34%
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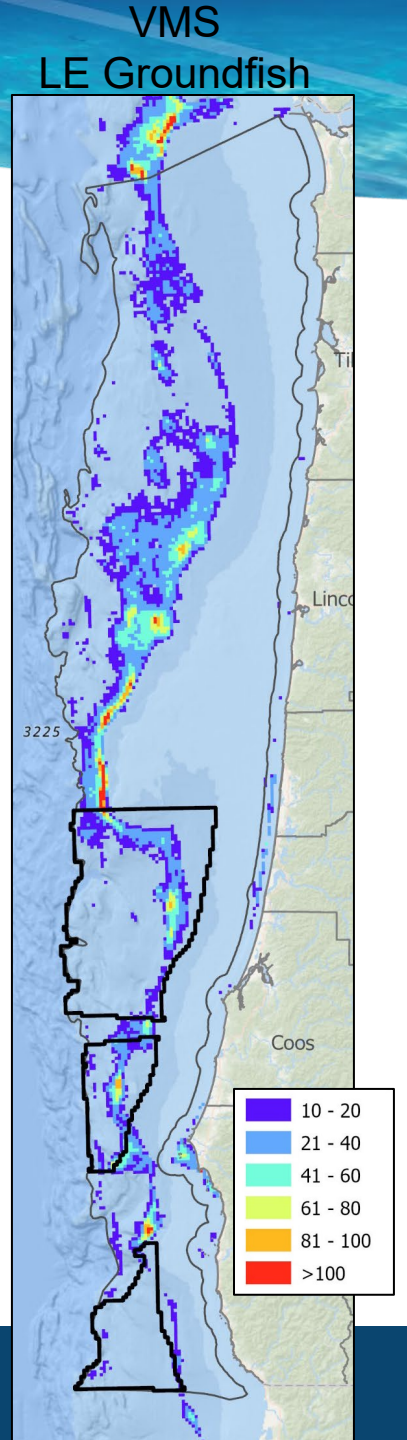

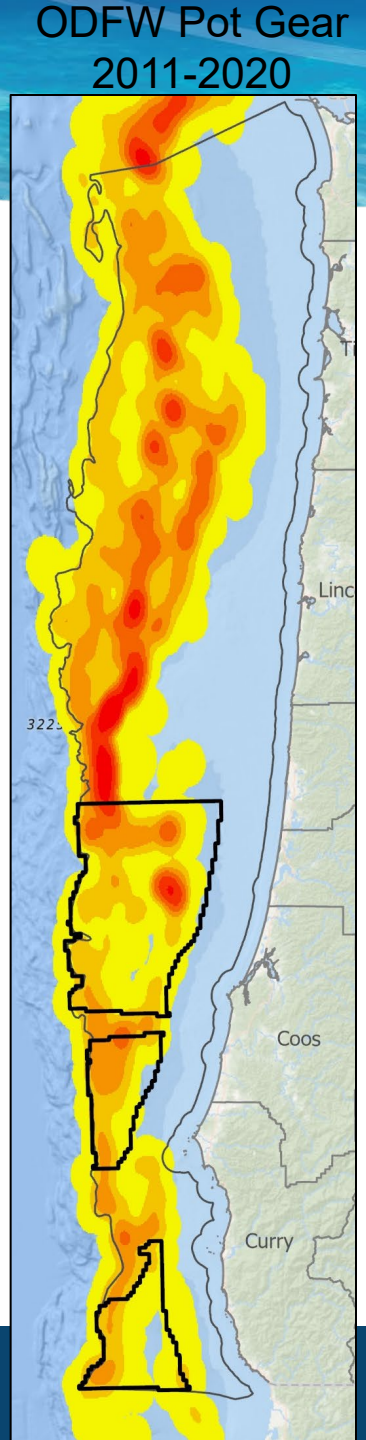

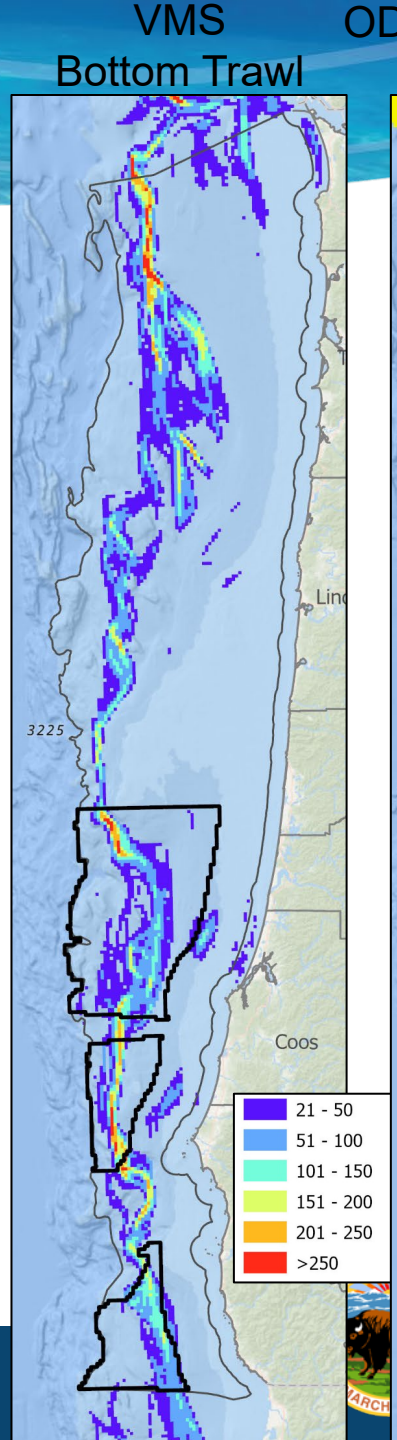

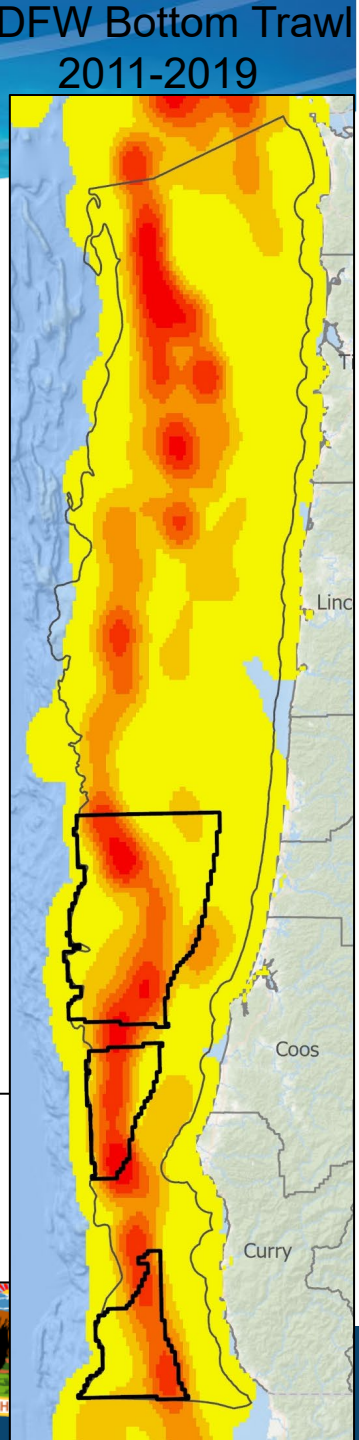

Whiting

Annual Average Landings for Oregon 2009-2018

Species	Average (2009-2018)	Pct of Ave. Annual Value
Dungeness crab, ocean	$51,069,066	34%
Pink shrimp	$24,515,456	16%
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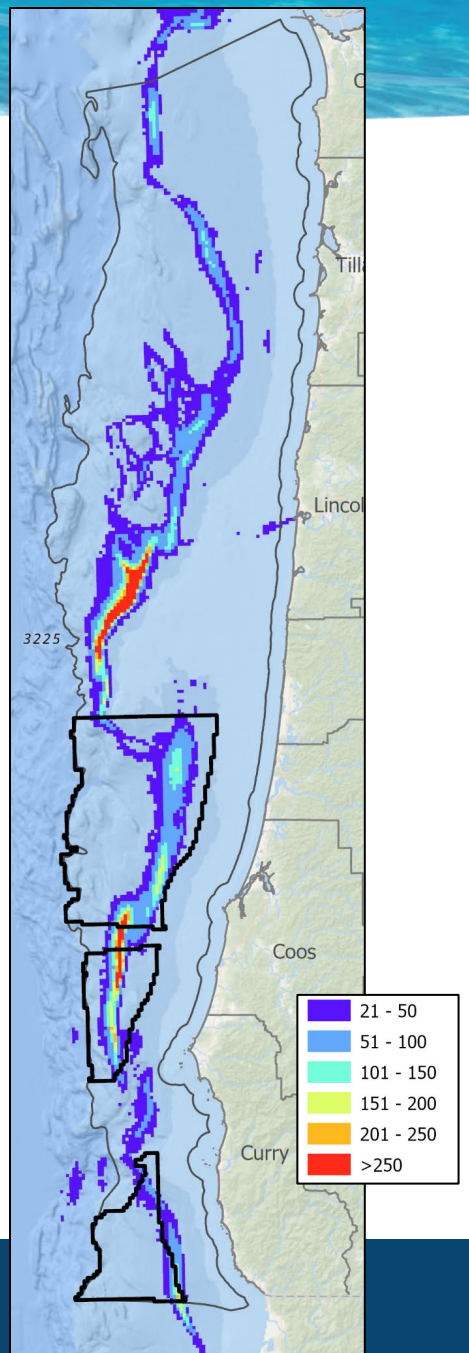
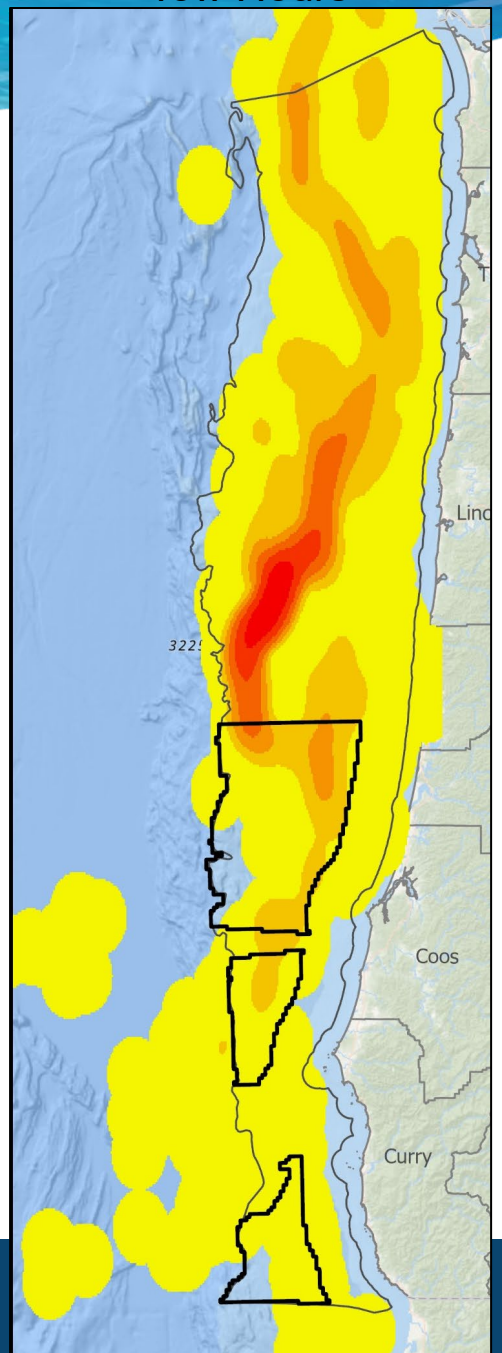
VMS 2010-2017



ODFW 2011-2019 Tow Hours



Whiting Mothership

NOAA Fisheries Resource Analysis and Monitoring

Annual Average Landings for Oregon 2009-2018

Species	Average (2009-2018)	Pct of Ave. Annual Value
Dungeness crab, ocean	$51,069,066	34%
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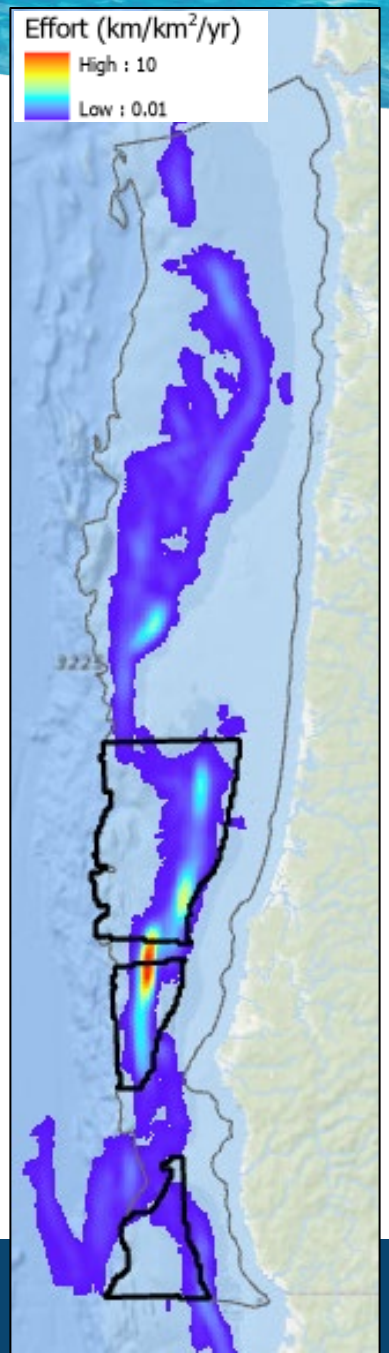
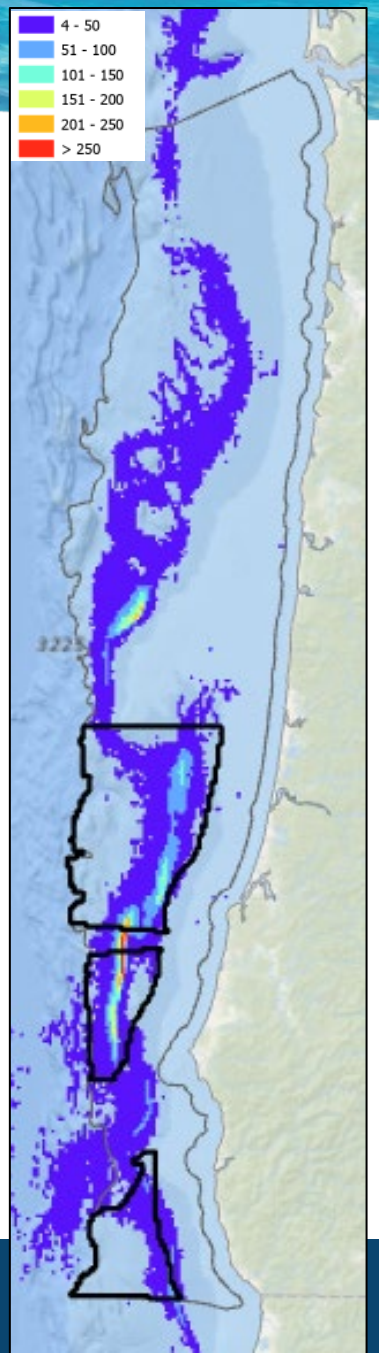
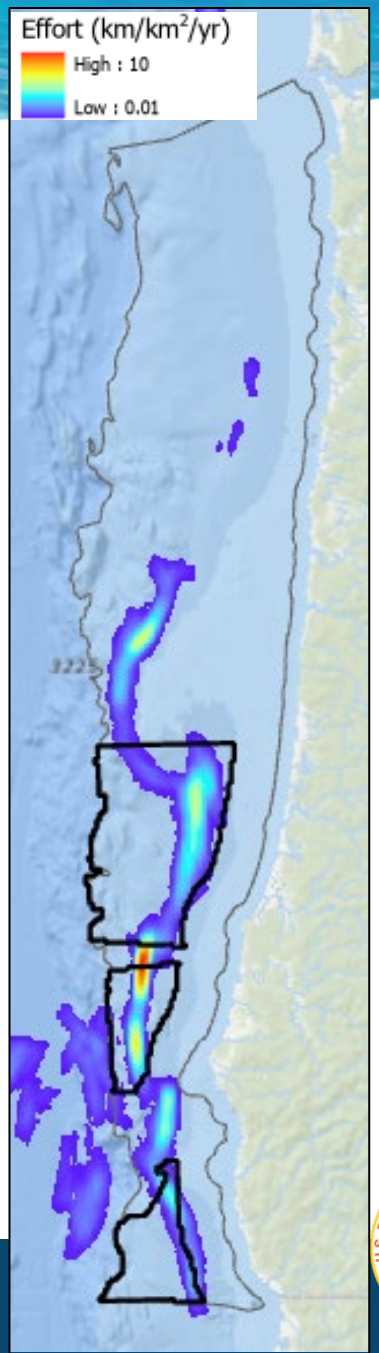
FRAM 2011-2015



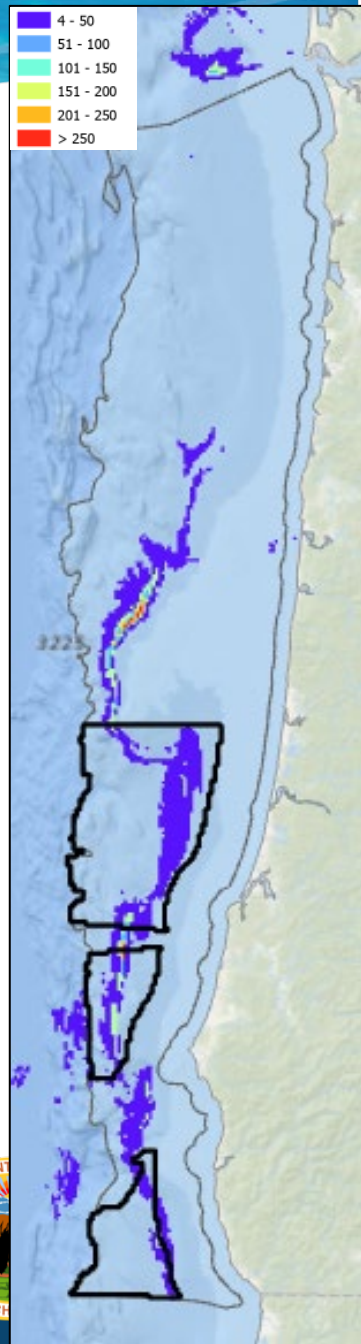
VMS 2011-2015



FRAM 2016-2017



VMS 2016-2017



Albacore Tuna

Annual Average Landings for Oregon 2009-2018

Species	Average (2009-2018)	Pct of Ave. Annual Value
Dungeness crab, ocean	$51,069,066	34%
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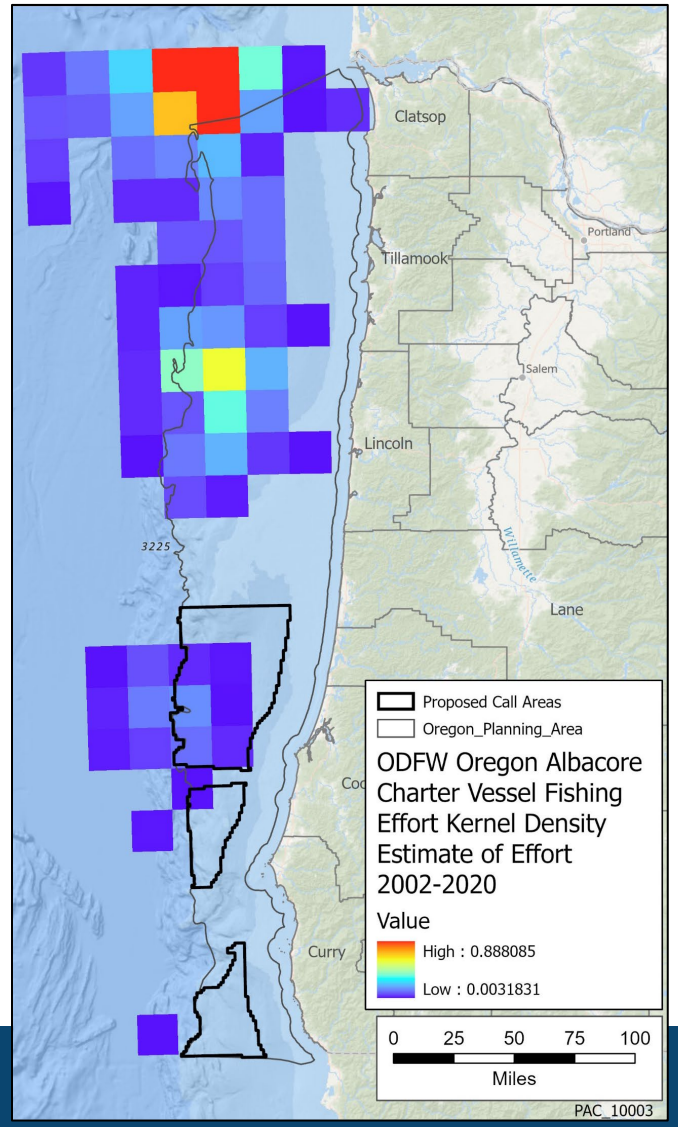

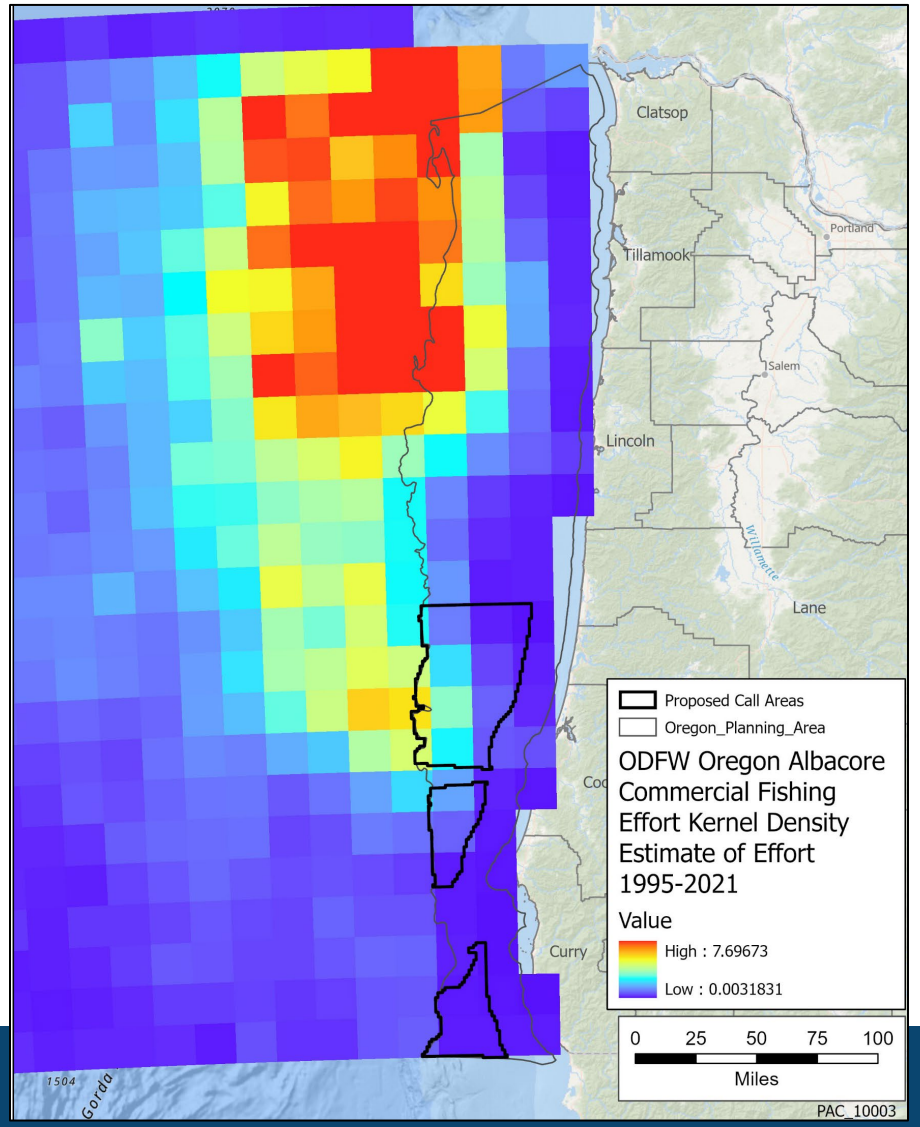

Salmon

Annual Average Landings for Oregon 2009-2018

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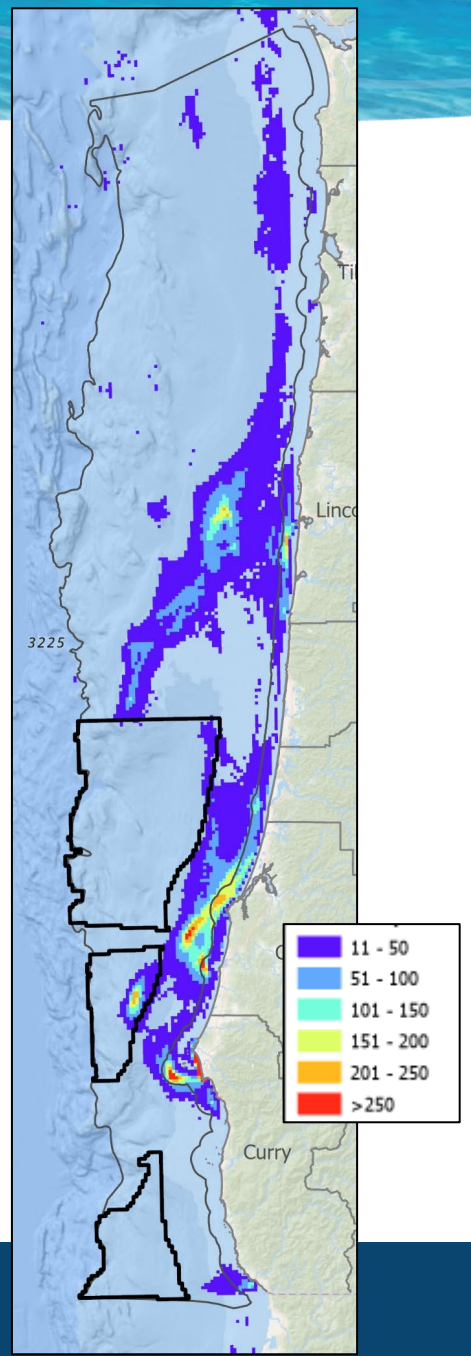
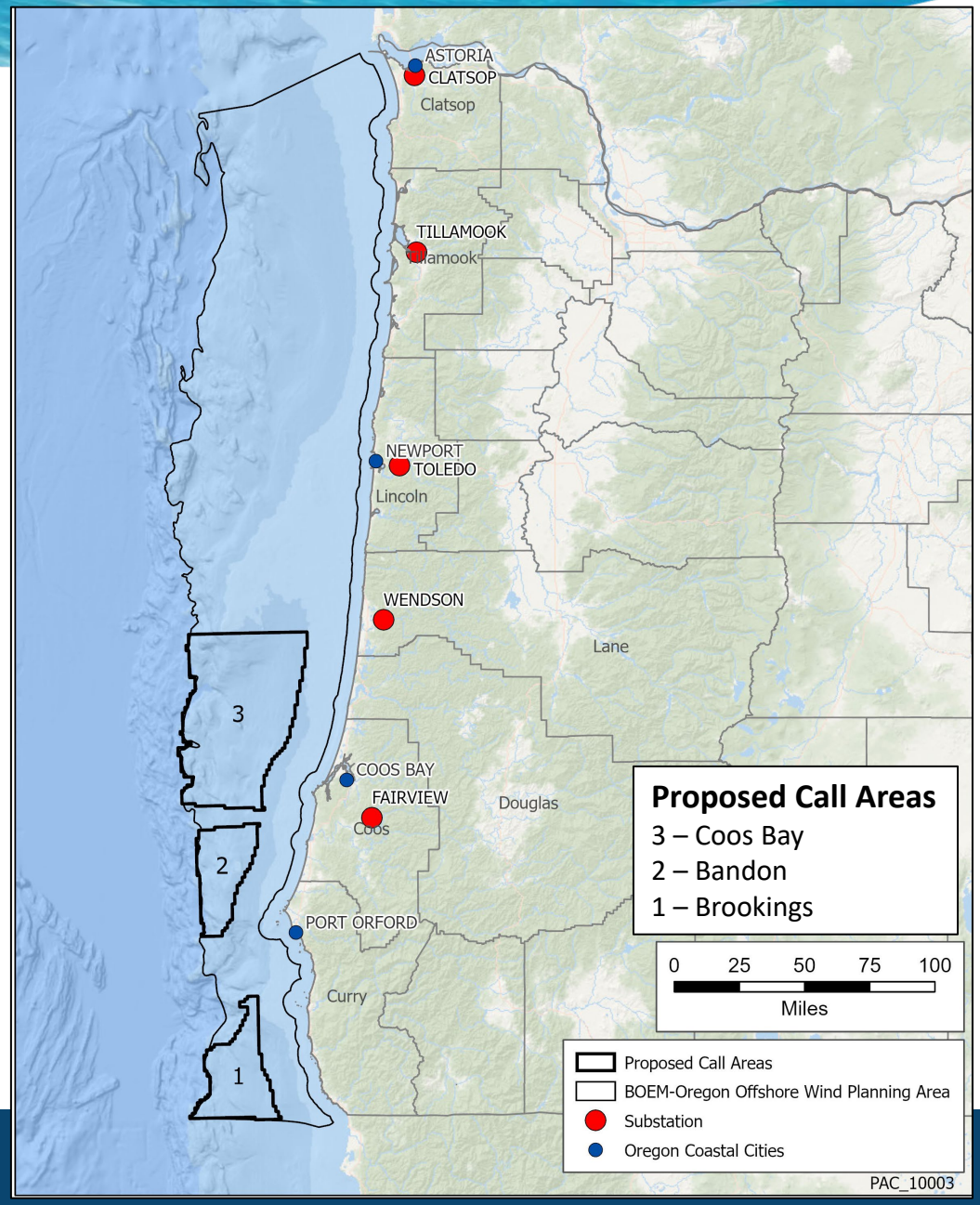
VMS 2010-2017



Summary: Guiding Principles and Proposed Call Areas

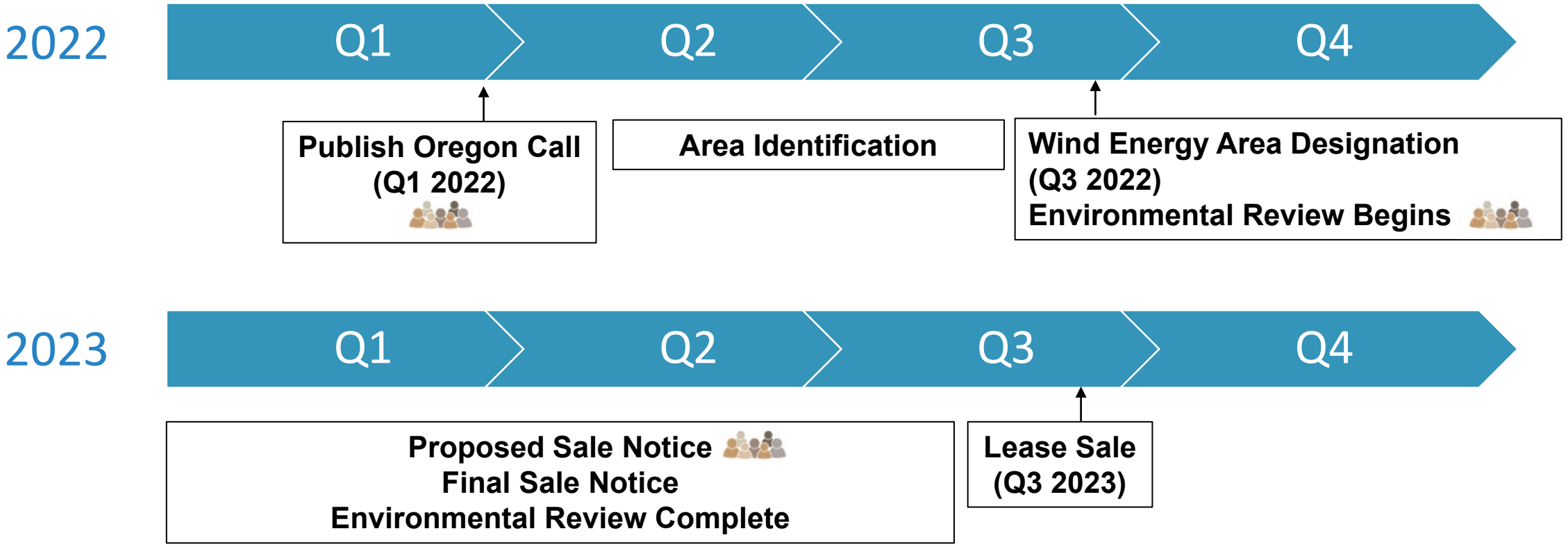
Guiding Principles

- Establish Call Areas of sufficient size and flexibility for further refinement
- Focus on highest potential for commercial offshore wind energy viability
- Consider 3 gigawatts (GW) for near-term commercial development



Proposed Schedule

Implementing the U.S. DOI's Offshore Wind Leasing Path Forward



= Public comment

Break

Meeting will resume at 10:45 am

Task Force Roundtable Q&A and Discussion

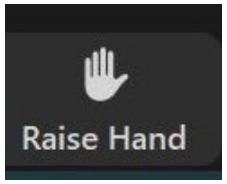
Task Force Meeting Morning Session Adjourned

Public Input Opportunity

Interested members of the public are encouraged to provide input

Process Guidelines for Public Input Opportunity

- **Public input opportunity: 11:45 am – 12:15 pm**
- **Raise your hand to join the public input queue.**



- **The facilitator will call on you when it is your turn to speak. You will then be unmuted.**
  - If you are a phone call-in user, dial *9 on your phone to raise hand.
- **Provide your name and affiliation before you speak.**
- **When providing input, please:**
  - Respect time limits as assigned.
  - Use respectful language.

Lunch Break

Meeting will resume at 12:45 pm

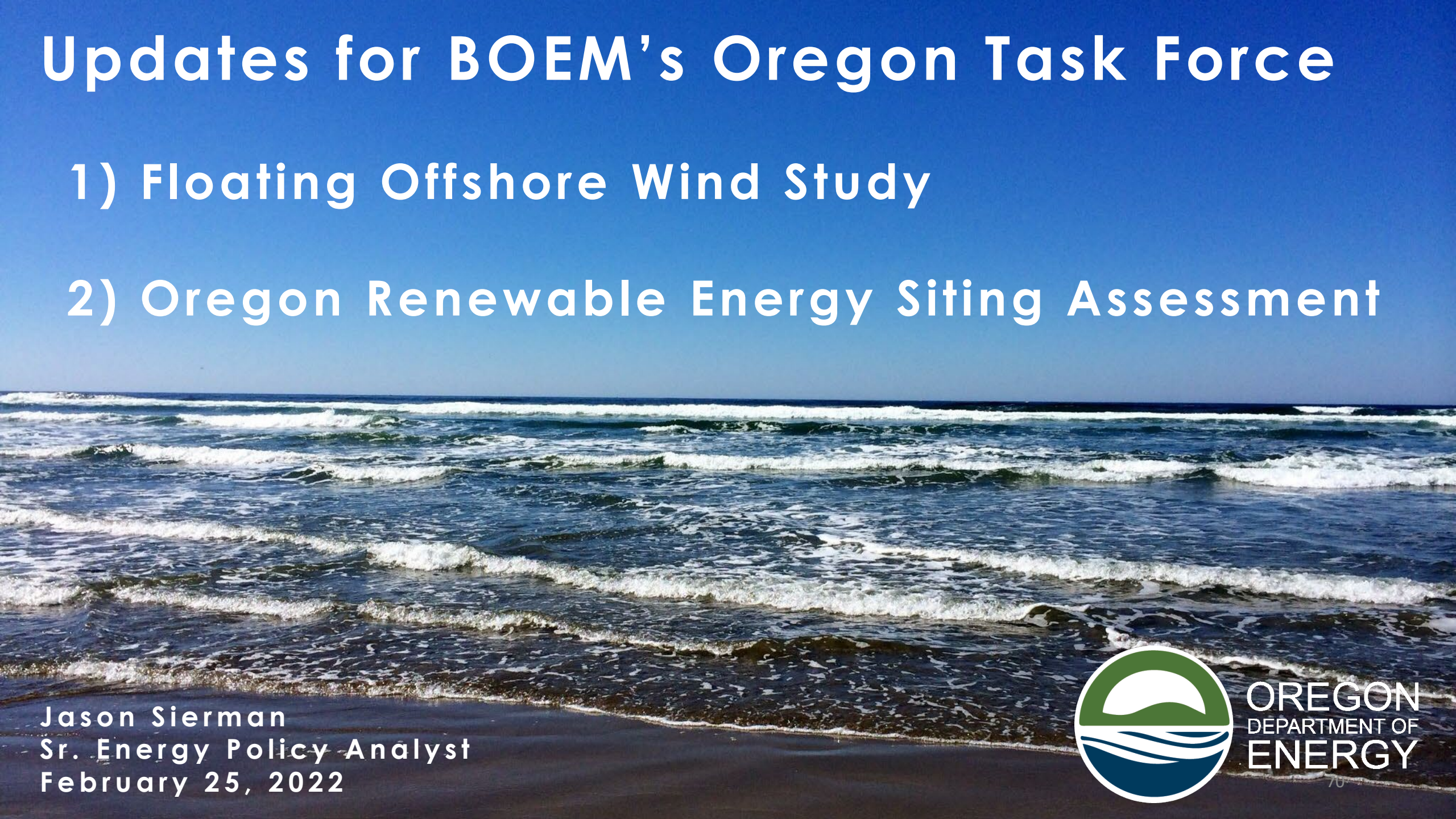
Welcome Back
Task Force Meeting Afternoon Session

State and Federal Studies

Updates for BOEM's Oregon Task Force

1) Floating Offshore Wind Study

2) Oregon Renewable Energy Siting Assessment



Jason Sierman
Sr. Energy Policy Analyst
February 25, 2022

OREGON DEPARTMENT OF ENERGY

OREGON DEPARTMENT OF ENERGY

Leading Oregon to a safe, equitable, clean, and sustainable energy future.

Our Mission

The Oregon Department of Energy helps Oregonians make informed decisions and maintain a resilient and affordable energy system. We advance solutions to shape an equitable clean energy transition, protect the environment and public health, and responsibly balance energy needs and impacts for current and future generations.

What We Do

On behalf of Oregonians across the state, the Oregon Department of Energy achieves its mission by providing:

- A Central Repository of Energy Data, Information, and Analysis
- A Venue for Problem-Solving Oregon's Energy Challenges
- Energy Education and Technical Assistance
- Regulation and Oversight
- Energy Programs and Activities

WHAT IS HB 3375?

- **“Whereas statements” - Recognize the merits of studying FOSW**
  - Vast potential, BOEM activity, decarbonization, other benefits & challenges

- **Describes Oregon goal to plan for up to 3 GW of FOSW by 2030**
  - “Goal to plan” only – doesn’t direct how to plan
  - Directs ODOE to report on benefits & challenges

- **Does not commit to deployment targets**
  - **Unlike NY**
    - State commitment to a target of 9 GW by 2035
  - **Unlike CA**
    - AB 525 directs CEC to develop a state plan
    - CEC plan will identify a capacity target

ODOE'S CORE ELEMENTS OF HB 3375

1. Literature Review

- Review studies and reports relevant to benefits & challenges of FOSW

2. Stakeholder Feedback

- Several state, regional and national entities listed in bill
- Additional stakeholders identified by ODOE, including those from BOEM Task Force
- Develop topical questions based on lit. review to prompt stakeholder feedback

3. Public Remote Meetings

- Convene at least two public remote meetings with stakeholders

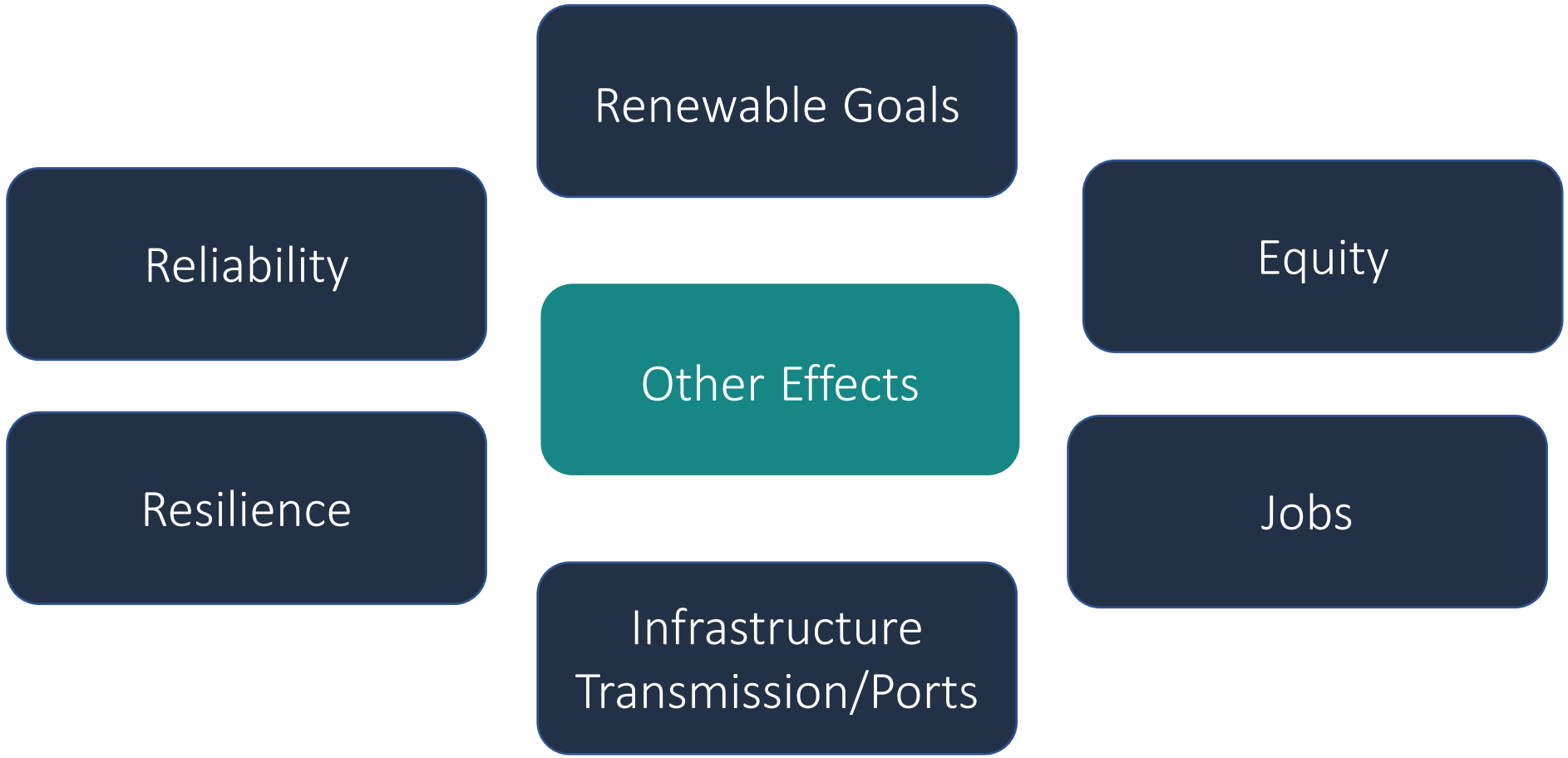
4. Report to Legislature by 9/15/2022

- Summarize key findings from literature review and stakeholder feedback, including opportunities for future study and engagement

https://www.oregon.gov/energy/energy-oregon/Pages/fosw.aspx

ODOE'S OBJECTIVES

Gather and synthesize a range of perspectives on the effects, including benefits and challenges, of integrating up to 3 GW of floating offshore wind energy into Oregon's electric grid by 2030.



TIMELINE FOR IMPLEMENTATION

Data Gathering & Engagement

- **1/19:** Lit. Review and Qs on Website
- **1/20:** Stakeholder Kick-Off Mtg.
- **2/18:** Initial Feedback Due
- **3/10:** Public Meeting #1
- **3/25:** Add'l Feedback Due
- **4/7:** Public Meeting #2
- **4/22:** Add'l Feedback Due

Report Drafting & Submission

- Begin Drafting Report
- Share Draft Findings
- **9/15:** Submit Report to Legislature

TOPICS FOR PUBLIC MEETINGS

March 10, 2022
9:30 a.m. – 2 p.m.

- Siting and Permitting
- Port Infrastructure & Sea Vessels
- Economic Development
- Equity
- Local Reliability & Resilience

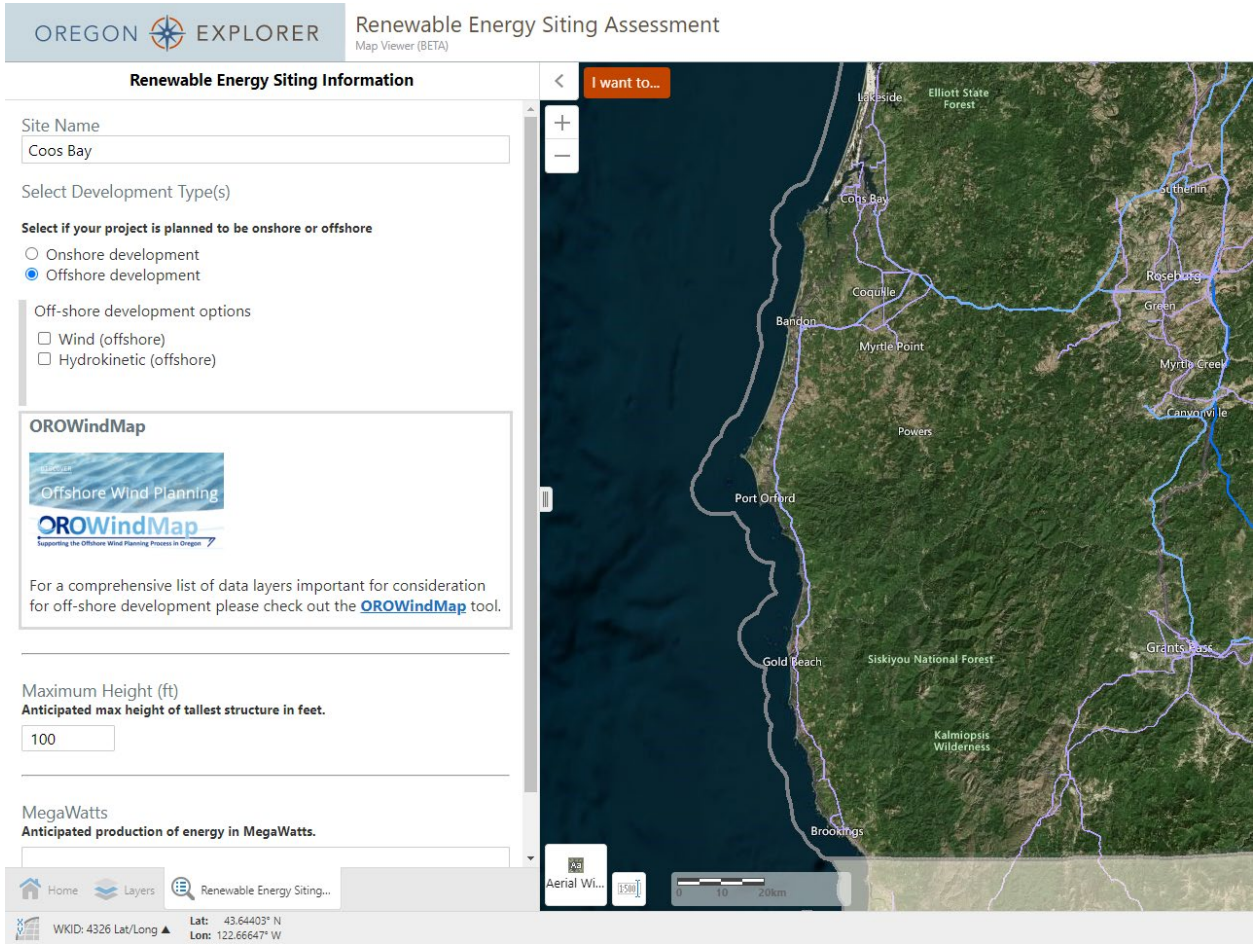
April 7, 2022
9:30 a.m. – 2 p.m.

- 100% Clean Energy Targets
- Technologies
- Transmission Infrastructure
- Energy Markets
- State & Regional Reliability

https://www.oregon.gov/energy/energy-oregon/Pages/fosw.aspx

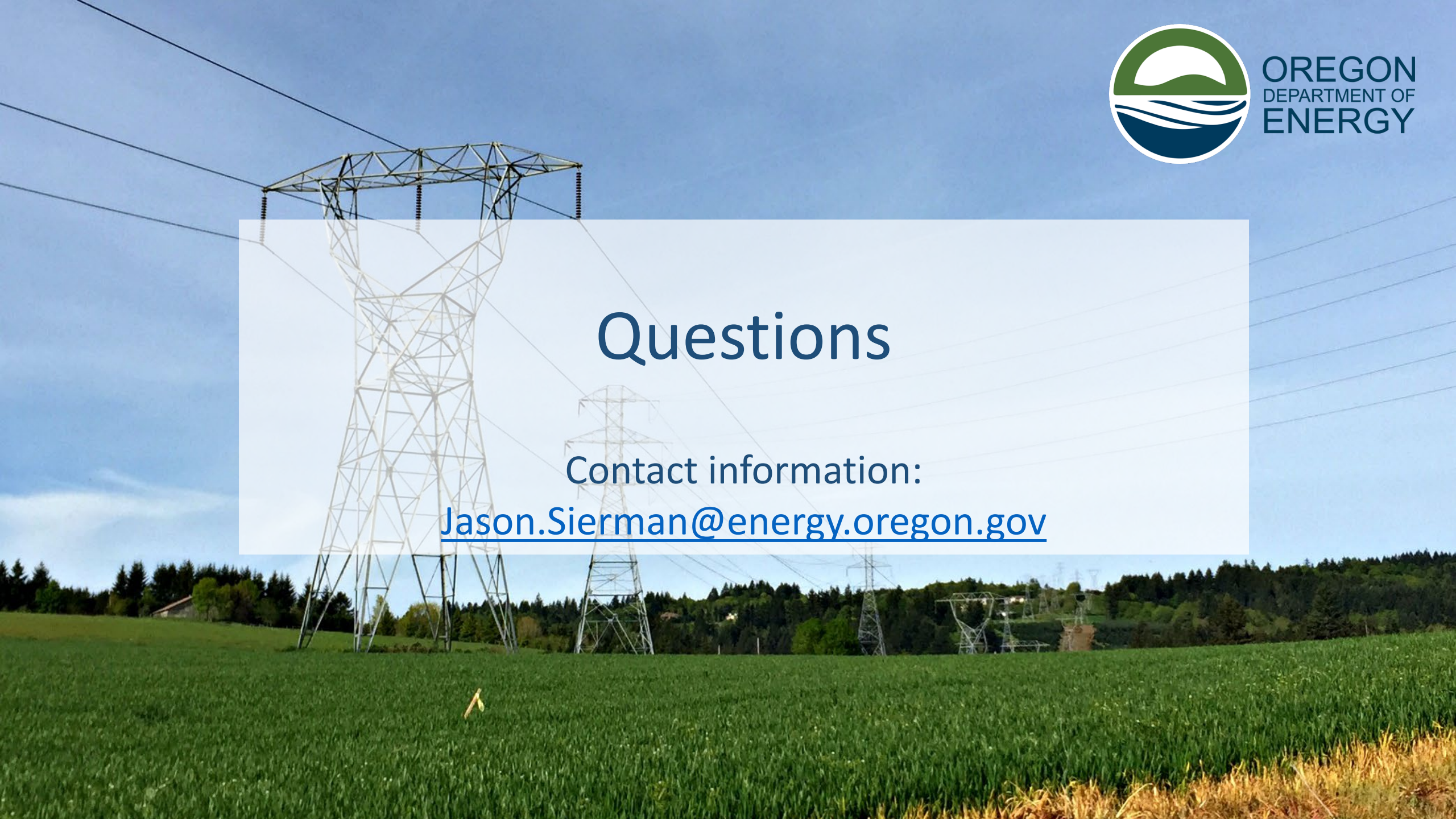
Oregon Renewable Energy Siting Assessment (ORESA)

- **Who:** $1M DOD-funded grant. ORESA team consists of: ODOE / DLCD / OSU-Institute for Natural Resources
- **Goals:**
  - Support military compatibility and early notification/coordination;
  - Create educational tools to minimize conflict and support opportunities for renewable energy;
  - Provide baseline information through central collection of transparent and accurate data and resources.
- **Deliverables / Status:**
  - (3) Topic-based Assessments - COMPLETE
    - Developed by subject-matter consultants
  - Procedures Review Report - COMPLETE
  - Mapping and Reporting Tool (***right***) – SPRING 2022
    - Developed by OSU-INR, ***Beta version launched in winter***
  - Final ORESA Report - SPRING 2022



Drafts of report & mapping tool available in coming months…
Sign-up online to preview and provide comments!

Learn more and sign-up for updates: **https://www.oregon.gov/energy/energy-oregon/Pages/ORESA.aspx**



OREGON DEPARTMENT OF ENERGY

Questions

Contact information:

Jason.Sierman@energy.oregon.gov

BOEM-funded Studies on Offshore Renewable Energy Development and Marine Mammals:

Focus on the Oregon Coast

Desray Reeb, Ph.D., Marine Mammal Biologist

BOEM Pacific Regional Office

Marine Mammal Species Diversity

- **Over 30 species off the California, Oregon, and Washington coasts**
  - 10 species listed under the ESA
- **Nearshore species examples**
  - Gray whales
  - Southern resident killer whales
  - Harbor seals
  - Sea otters
- **Pelagic (offshore) species examples**
  - Blue whales
  - Humpback whales
  - Beaked whales
  - Risso's dolphins
- **Use the entire water column**

Study Title	Dates	Methodology	Online Information
Central and Northern California Marine Mammal and Seabird Study	1979-1983	Mostly aerial and some ship-based surveys	https://marinecadastre.gov/espis/#/search/study/20375
Oregon and Washington Marine Mammal and Seabird Studies	1988-1999	Aerial and ship-based surveys	https://marinecadastre.gov/espis/#/search/study/20204
Spatial Database for the At-Sea Distribution and Abundance of Seabirds and Marine Mammals off Southern California: 1999-2002	1999-2002	Aerial surveys	https://www.sciencebase.gov/catalog/item/57c75faae4b0f2f0cebed52e
Pacific Continental Shelf Environmental Assessment (PaCSEA): Aerial Seabird and Marine Mammal Surveys off Northern California, Oregon, and Washington, 2011-2012	2011-2012	Aerial surveys	https://espis.boem.gov/final%20reports/5427.pdf
2014 California Current Cetacean & Ecosystem Assessment Survey (CalCurCEAS): Final Report to Bureau of Ocean Energy Management regarding surveys of Windfloat and Wave Energy Areas	2014	Ship-based surveys	https://www.boem.gov/PR-14-OBS/
Pacific Marine Assessment Partnership for Protected Species (PacMAPPS)	2017-2021	Vessel-based surveys	https://www.boem.gov/pc-17-04/
Seabird and Marine Mammal Surveys Near Potential Renewable Energy Sites Offshore Central and Southern California	2017-2021	Aerial surveys	https://www.boem.gov/pc-17-01/

Potential Impacts to Whales and Sea Turtles from Offshore Floating Wind

- **Displacement or Attraction**
  - Noise (vessels, operations)
  - Prey availability
  - Electromagnetic Fields (EMF)
- **Entanglement**
  - Floating wind mooring systems and
    - cables
  - Associated derelict fishing gear
- **Vessel strikes**

OCS Study
BOEM 2019-042

Synopsis of Research Programs that can Provide Baseline and Monitoring Information for Offshore Energy Activities in the Pacific Region: Seabird and Marine Mammal Surveys in the Pacific Region

US Department of the Interior
Bureau of Ocean Energy Management
Pacific OCS Region

BOEM
Bureau of Ocean Energy Management

https://www.boem.gov/2019-042

ScienceBase Catalog → USGS Western Ecological R… → Western Ecological Researc… → Database of Marine Mammal…

Database of Marine Mammal and Seabird Research Activity in the Pacific (US)

View

Dates

Publication Date : 2019-09-09
Start Date : 1960
End Date : 2018

Citation

Lafferty, K.D., Adams, J., Johnston, C.A., and Kelsey, E.C., 2019, Database of marine mammal and seabird research activity in the Pacific (US): U.S. Geological Survey data release, https://doi.org/10.5066/F7X0669S.

Summary

This database is a compilation of marine mammal and seabird information collected along the Pacific coast of the United States and U.S. territories in the Pacific from surveys that were solicited among regional research communities and persons. Information from standardized surveys was gathered from 2015 to 2018 and includes programs and researchers who collected information regarding seabirds since 1960.

These data support the following publication:
Adams, J., Lafferty, K.D., Kelsey, E.C., and Johnston, C.A. 2019. Synopsis of Research Programs that can Provide Baseline and Monitoring Information for Offshore Energy Activities in the Pacific Region: Seabird and Marine Mammal Surveys in the Pacific Region. U.S. Department of the Interior, Bureau of Ocean Energy Management, Pacific OCS Region, Camarillo, CA. OCS Study BOEM 2019-042. 14 Figures, 20 Tables, 54 p.

Contacts

Point of Contact : U.S. Geological Survey, Western Ecological Reasearch Center
Originator : Kevin D Lafferty, Josh Adams, Cora A Johnston, Emily (Emma) C. Kelsey
Metadata Contact : Western Ecological Research Center
USGS Mission Area : Ecosystems
SDC Data Owner : Western Ecological Research Center
Distributor : U.S. Geological Survey - ScienceBase

Attached Files

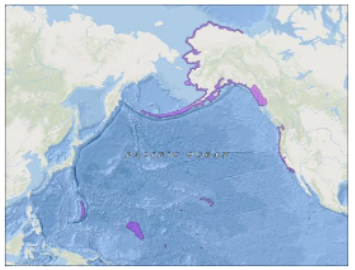
Click on title to download individual files attached to this item or download all files listed below as a compressed file.

Database of Marine Mammal and Seabird Research Activity in the Pacific.xml *Original FGDC Metadata*	View	55.3 KB
Extent.jpg		2.52 MB
BOEMmonitoringDatabase1.7.2.csv		1.21 MB

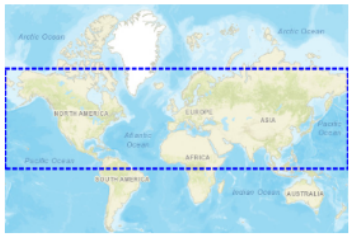
Related External Resources

Type: Related Primary Publication

To download a PDF file of this report, go to the U.S. Department of the Interior, Bureau of Ocean Energy Management's Recently Completed Environmental Studies webpage and click on the link for 2019-042.	https://www.boem.gov/Pacific-Completed-Studies/



Map



Communities

- USGS Data Release Products
- USGS Western Ecological Research Center

Tags

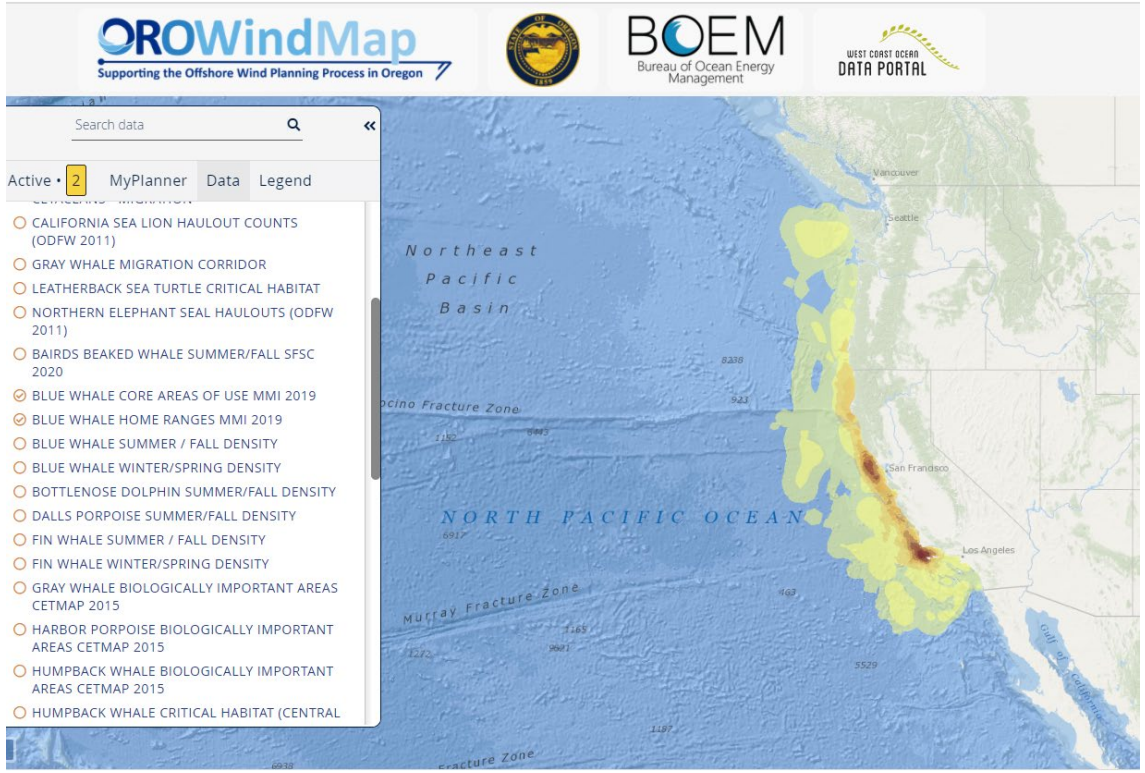
Categories : Data
Theme : Research, biodiversity, biological informatics, biota, birds, costal zones, field methods, geographical information systems (GIS), inlandWaters, laboratory methods, location, mammals, marine ecosystem, marine mammals, oceans, seabirds
Place : Alaska, California, Hawaii, Oregon, Pacific Islands, Washington
Harvest Set : USGS Science Data Catalog (SDC)
USGS Scientific Topic Keyword : Ecology, Wildlife Biology

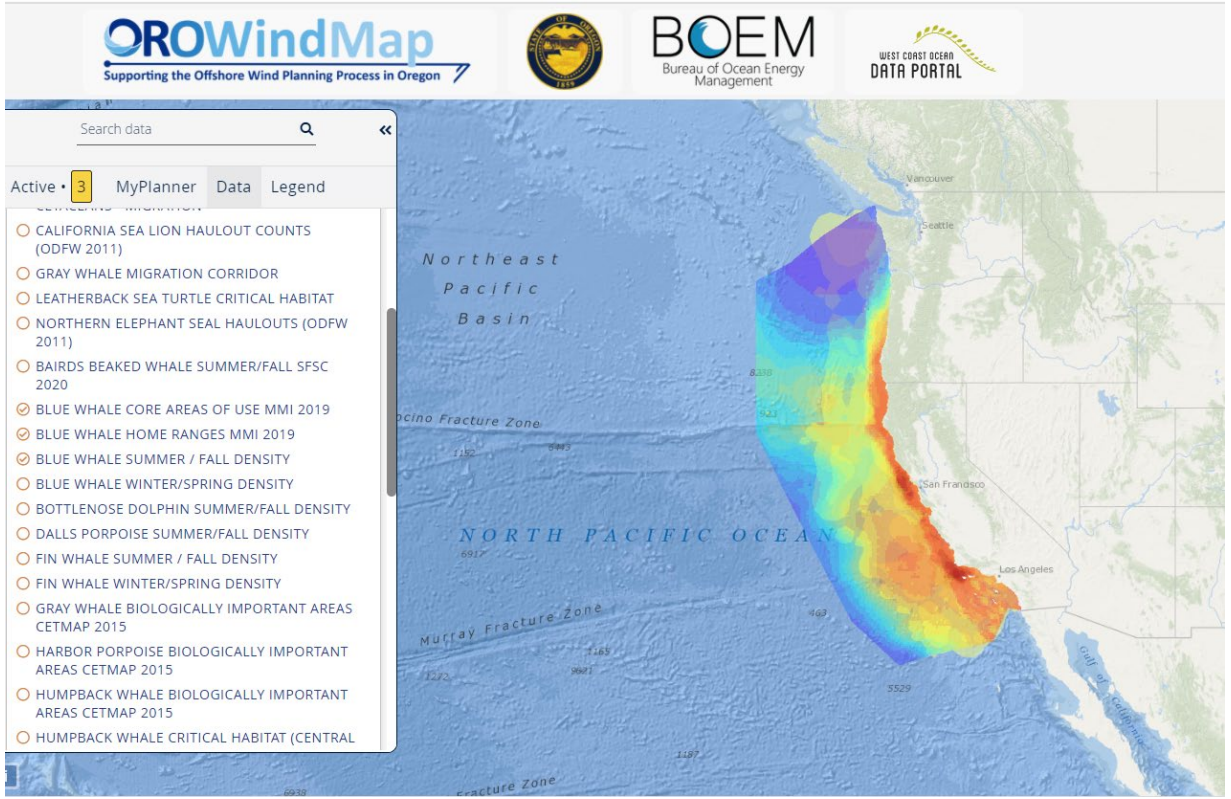
Provenance

Data source : Input directly

https://www.sciencebase.gov/catalog/item/5a7c8fb1e4b00f54eb231ae6

OROWindMap – Oregon Offshore Wind Mapping Tool

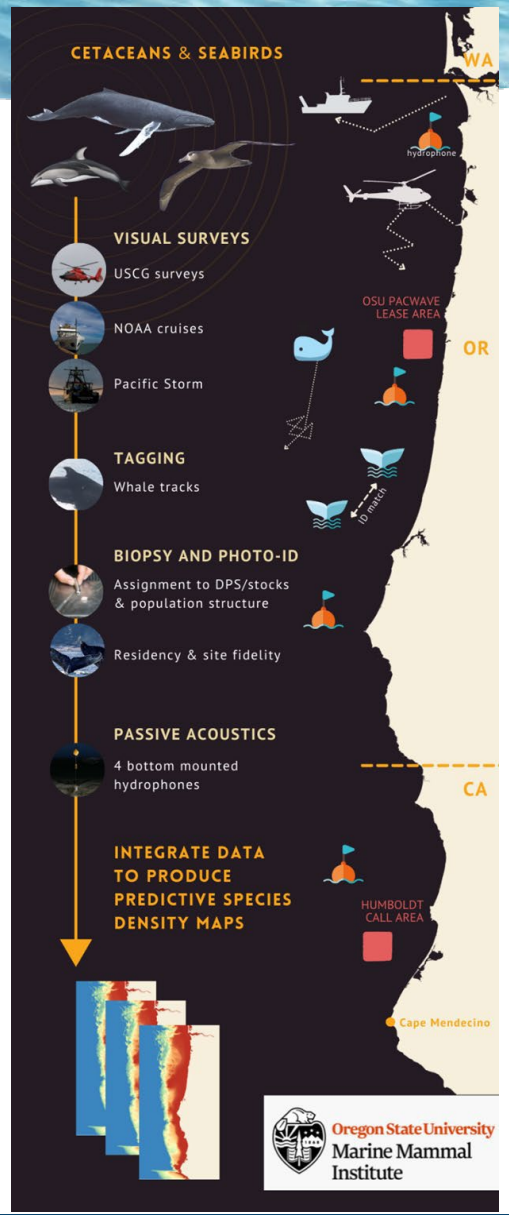




https://offshorewind.westcoastoceans.org/

U.S. Department of Energy (DOE)/BOEM Funding Partnership

- **Start Summer/Fall 2022**
- **Oregon State University**
  - *Baseline Data Collection on Cetaceans and Seabirds in the Outer Continental Shelf and Slope of Northern California and Oregon to Inform Offshore Wind Energy Development*
  - Gaps in knowledge about cetacean and seabird distribution patterns
    - especially on the shelf and slope
    - at fine spatial and temporal scales
    - during winter months
  - Dramatic fluctuations in oceanographic conditions



Vulnerability Index to Scale Effects of Offshore Renewable Energy on Marine Mammals and Sea Turtles

Expert Working Group (EWG) Objectives: 2017 BOEM/NOAA Supported Effort to:

- Evolve and further develop risk assessment methods to evaluate the severity of noise exposure on marine mammals from seismic surveys by integrating relevant biological, acoustical, ecological, and environmental contextual variables
- Evaluate impacts within the context of marine mammal populations
- Overall paradigm to quantify species-typical "exposure" relative to "vulnerability"

Develop biologically-based and common-sense risk assessment methods related to:

- *Acute events*
- *Aggregate noise exposure*

2020 EWG Objectives expanded to include:

- Assessment of risk from the acoustic impacts of construction (pile driving) of a hypothetical wind facility in the Northeast US

Exposure Index						
	5	M	H	H	H+	H+
	4	M	M	H	H	H+
	3	L	M	M	H	H
	2	L-	L	L	M	M
	1	L-	L-	L	L	M
	Rating	1	2	3	4	5
	Vulnerability					

Key	Color	Risk Assessment Rating
	Red	Highest (H+)
	Orange	Higher (H)
	Yellow	Moderate (M)
	Green	Lower (L)
	Blue	Lowest (L-)

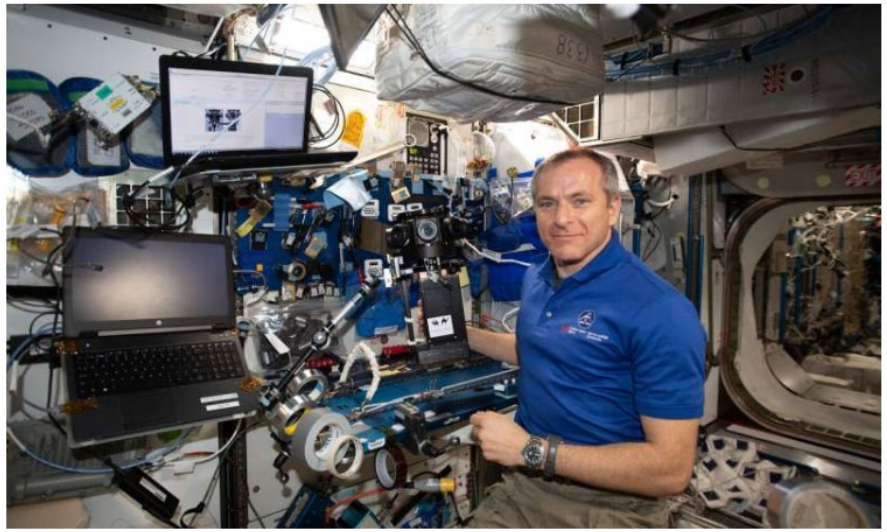
Virtual Reality in Science and Engineering

NCCOS | NATIONAL CENTERS FOR COASTAL OCEAN SCIENCE

NOVEMBER 13, 2019

A virtual reality camera captures life and science aboard the space station

by Erin Winick, NASA

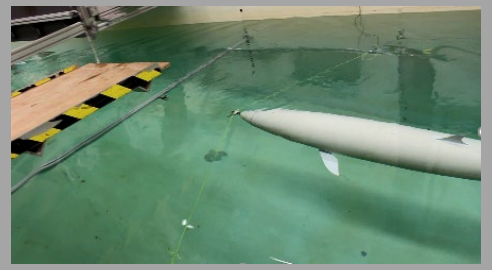


A view of Canadian Space Agency (CSA) astronaut David Saint-Jacques setting up the Z-CAM V1 Pro ...

Stanford Shows You the Horrors of Ocean Acidification in Virtual Reality

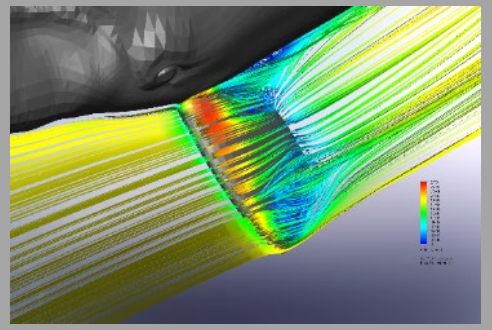
October 20, 2016 • by Dieter Holger

Physical Model

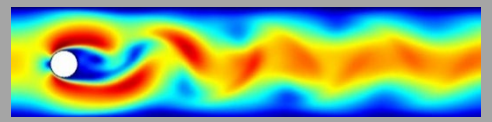


- *Validation of forces and deflections in aquaculture gear*

CFD Model



- *Computes forces, moments, and coefficients for whale positions at various relative water currents*



Wolfram Hage / CC BY-SA (https://creativecommons.org/licenses/by-sa/4.0)

- *Compute forces on aquaculture components (i.e. lines, floats, mussel droppers, etc.)*

Virtual Whale Entanglement Simulator (VWES)

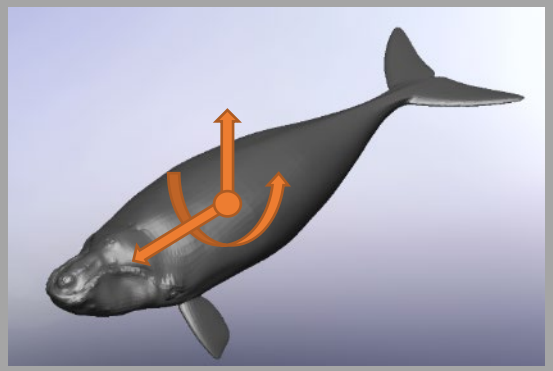
User Inputs

Prescribed Movement

OR

Game Controller

External Physics Calculations



- *Buoyancy, interaction forces (i.e. whale – water – gear)*
- *Calculates at each time step (30 fps)*

Unity

Cross-platform gaming engine

Internal Physics Engine

Collision detection, motion, and forces derived from External Physics Calculations

Simulation Environment

Animations, Meshes, Properties, Effects

Slide credit: Matt Campbell, NOAA

Virtual Whale Entanglement Simulator

Systematic and science-based approach to analyzing Whale-Gear Interactions

Configuration Analysis

Ocean Industries

Risk Assessment

Descriptive statistics

Planning tools

Sustainable Offshore Development Minimizing Entanglement Risk

Slide credit: Matt Campbell, NOAA

Development of Computer Simulations to Assess Entanglement Risk to Whales and Leatherback Sea Turtles in Offshore Floating Wind Turbine Moorings, Cables, and Associated Derelict Fishing Gear Offshore California

- We are also modeling fishing gear that may become snagged on moorings
- This is a proof of concept

https://www.boem.gov/pr-19-ent-profile/

ENTANGLEMENT SIMULATOR

A TOOL FOR COASTAL MANAGERS, CONSERVATION BIOLOGISTS, AND INDUSTRY TO MINIMIZE ENTANGLEMENT RISK IN OFFSHORE RENEWABLE ENERGY AND AQUACULTURE SCENARIOS

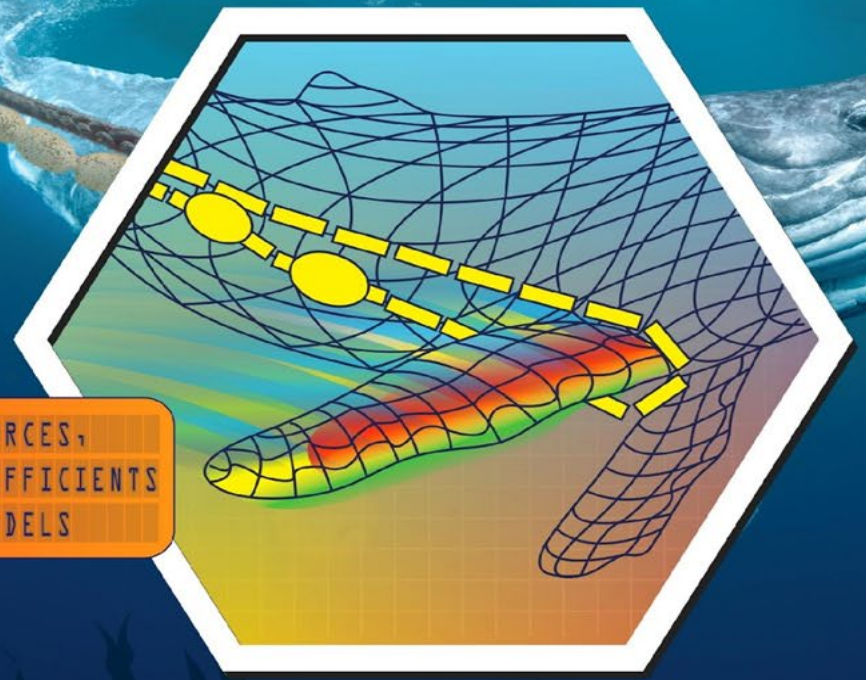
ANIMAL MOVEMENTS

GEAR PHYSICS

INTERACTIONS

VIRTUAL SIMULATOR

VERSATILE



CALCULATIONS OF FORCES, MOVEMENTS, AND COEFFICIENTS BY MATHEMATICAL MODELS

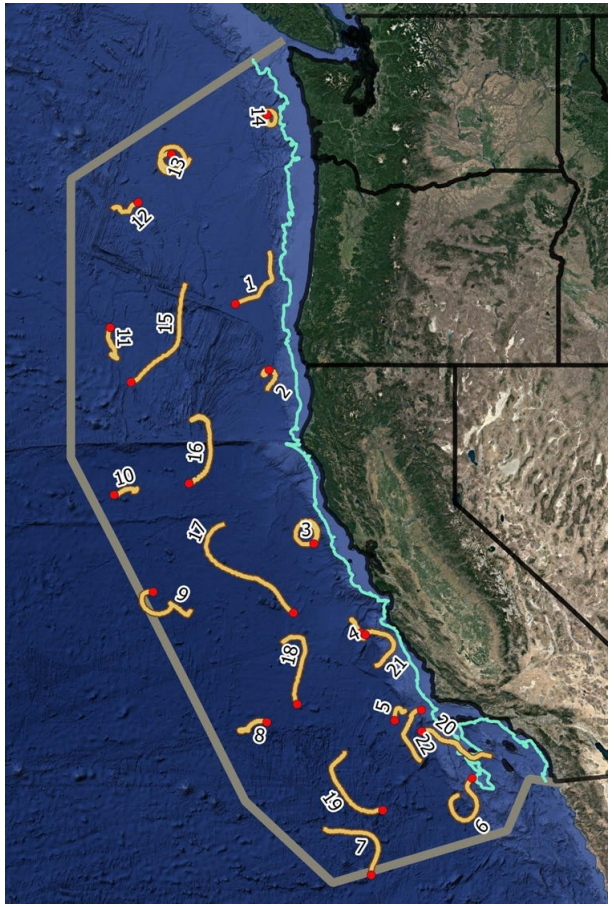
NOAA BOEM Bureau of Ocean Energy Management

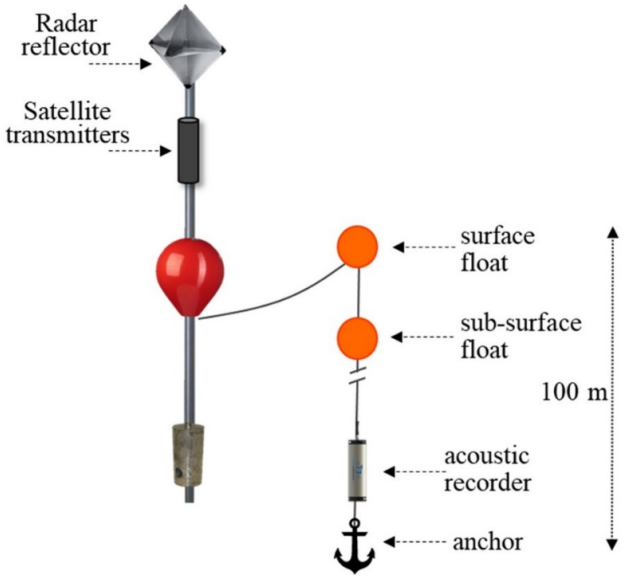
Duke BELLEQUANT Engineering, PLLC

For questions contact:
james.morris@noaa.gov
http://coastalscience.noaa.gov

desray.reeb@boem.gov
https://www.boem.gov/regions/pacific-ocs-region

ADRIFT: Spatial and Temporal Distribution of Cetaceans in the California Current Ecosystem Using Drifting Archival Passive Acoustic Monitoring





- Lower cost = more deployments
- Increased geographic & temporal resolution
- Deployment by local vessels
- Vessel time on NOAA research vessels
- Remote monitoring via satellite

ADRIFT: Spatial and Temporal Distribution of Cetaceans in the California Current Ecosystem Using Drifting Archival Passive Acoustic Monitoring

- Open-source computing for Artificial Intelligence
  - Streamlined data processing
  - Supervised machine learning acoustic ID
  - Standardized data for future development
    - Artificial Intelligence
    - Population assessment

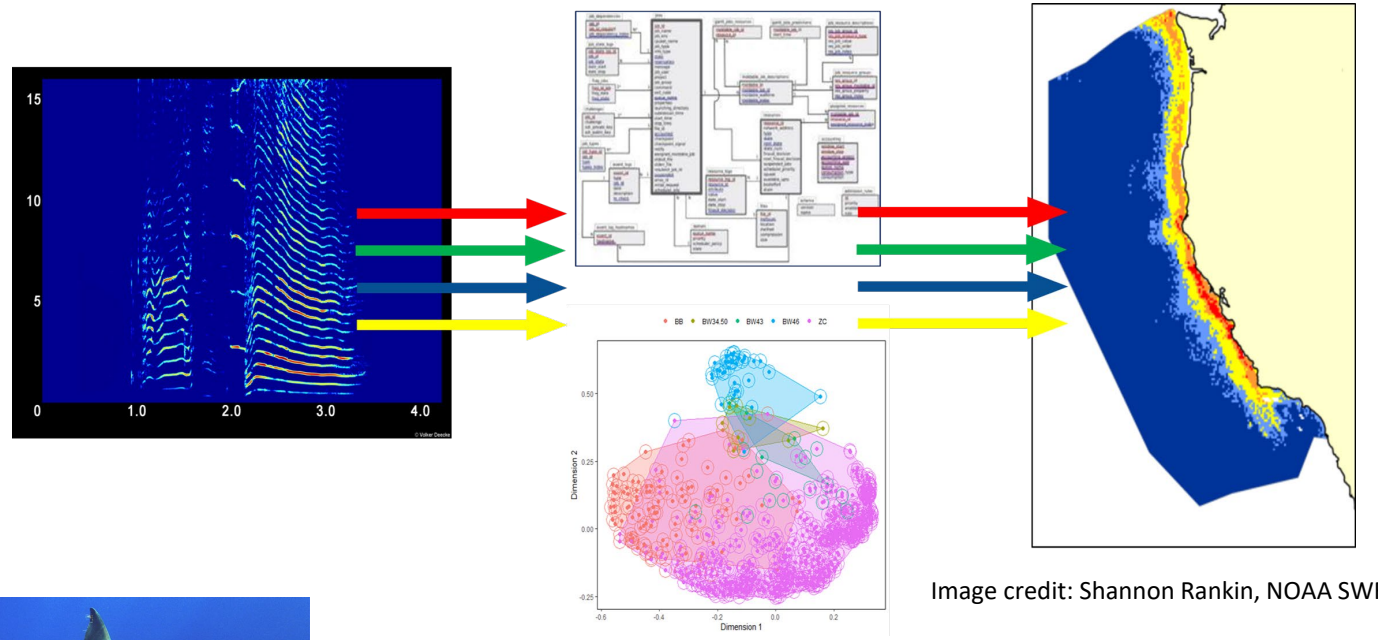


Image credit: Shannon Rankin, NOAA SWFSC

- Cost-effective partnerships
  - Additional sensors expand scope
- Academic research partnerships
- Education/Outreach
- Citizen Science
  - Vessels of opportunity
  - zooniverse.org

CENTRAL & NORTHERN CALIFORNIA OCEAN OBSERVING SYSTEM

san diego county office of EDUCATION
FUTURE WITHOUT BOUNDARIES℠

HUMBOLDT STATE UNIVERSITY
DEPARTMENT of FISHERIES BIOLOGY

MBARI

NATIONAL MARINE SANCTUARIES

BIRCH AQUARIUM
Scripps Institution of Oceanography
UC San Diego

West Coast Tribal Cultural Landscapes

Dave Ball, Regional Historic Preservation Officer
BOEM Pacific Regional Office

West Coast Tribal Cultural Landscapes

- A proactive effort to work with interested Tribes along the Oregon coast and the areas around Humboldt and Morro Bays in California
- Builds on previous Cultural Landscape efforts in the Pacific Region (Tribal Cultural Landscapes[1]; Native Hawaiian Cultural Landscapes[2])
- Three-year effort with Udall Foundation's John S. McCain III National Center for Environmental Conflict Resolution, awarded August 2021

[1]Tribal Cultural Landscapes Guidance Document: https://www.boem.gov/2015-047/
[2]Native Hawaiian Cultural Landscapes Guidance Document: https://www.boem.gov/BOEM-2017-023/

West Coast Tribal Cultural Landscapes

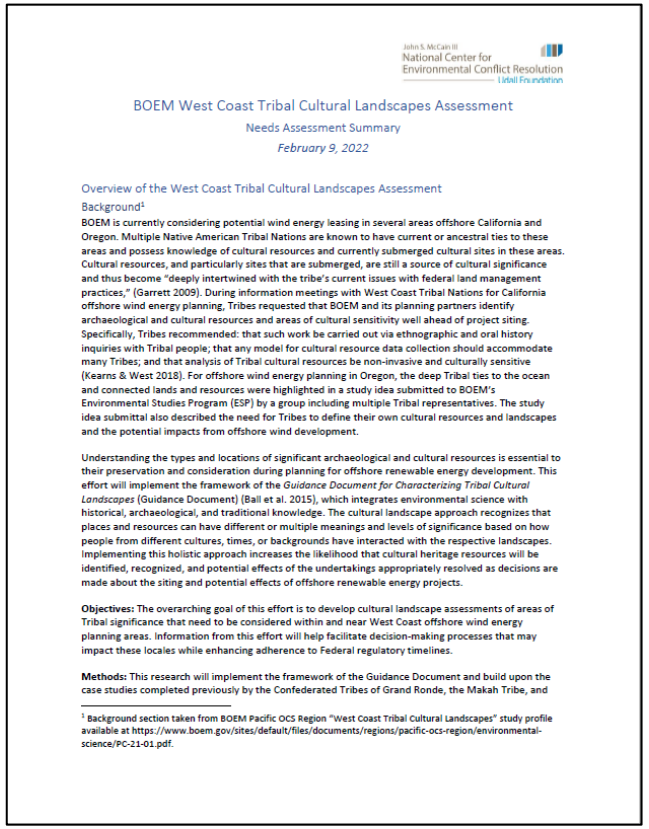
A holistic cultural landscape approach that integrates science with historical, archaeological, and traditional knowledge

Updates:

- Completed Needs Assessment and issued summary report
- Hosted three virtual webinars with interested Tribal representatives
- Developing working groups and additional outreach materials

Next Steps:

- Formalize inter-Tribal working groups
- Develop TCL assessments
- Summarize efforts



John S. McCain III
National Center for
Environmental Conflict Resolution

BOEM West Coast Tribal Cultural Landscapes Assessment

Needs Assessment Summary

February 9, 2022

Overview of the West Coast Tribal Cultural Landscapes Assessment

Background[1]

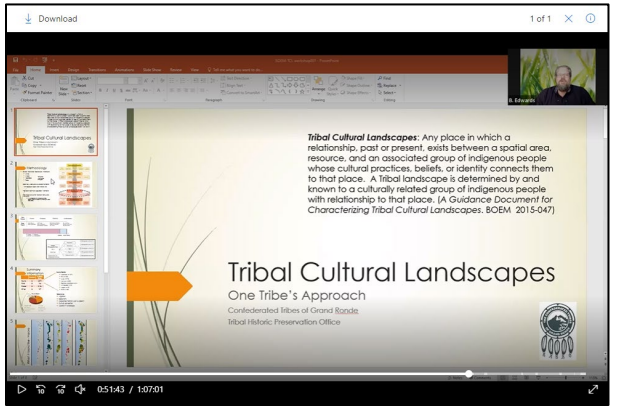
BOEM is currently considering potential wind energy leasing in several areas offshore California and Oregon. Multiple Native American Tribal Nations are known to have current or ancestral ties to these areas and possess knowledge of cultural resources and currently submerged cultural sites in these areas. Cultural resources, and particularly sites that are submerged, are still a source of cultural significance and thus become "deeply intertwined with the tribe's current issues with federal land management practices," (Garrett 2009). During information meetings with West Coast Tribal Nations for California offshore wind energy planning, Tribes requested that BOEM and its planning partners identify archaeological and cultural resources and areas of cultural sensitivity well ahead of project siting. Specifically, Tribes recommended: that such work be carried out via ethnographic and oral history inquiries with Tribal people; that any model for cultural resource data collection should accommodate many Tribes; and that analysis of Tribal cultural resources be non-invasive and culturally sensitive (Kearns & West 2018). For offshore wind energy planning in Oregon, the deep Tribal ties to the ocean and connected lands and resources were highlighted in a study idea submitted to BOEM's Environmental Studies Program (ESP) by a group including multiple Tribal representatives. The study idea submittal also described the need for Tribes to define their own cultural resources and landscapes and the potential impacts from offshore wind development.

Understanding the types and locations of significant archaeological and cultural resources is essential to their preservation and consideration during planning for offshore renewable energy development. This effort will implement the framework of the *Guidance Document for Characterizing Tribal Cultural Landscapes* (Guidance Document) (Ball et al. 2015), which integrates environmental science with historical, archaeological, and traditional knowledge. The cultural landscape approach recognizes that places and resources can have different or multiple meanings and levels of significance based on how people from different cultures, times, or backgrounds have interacted with the respective landscapes. Implementing this holistic approach increases the likelihood that cultural heritage resources will be identified, recognized, and potential effects of the undertakings appropriately resolved as decisions are made about the siting and potential effects of offshore renewable energy projects.

Objectives: The overarching goal of this effort is to develop cultural landscape assessments of areas of Tribal significance that need to be considered within and near West Coast offshore wind energy planning areas. Information from this effort will help facilitate decision-making processes that may impact these locales while enhancing adherence to Federal regulatory timelines.

Methods: This research will implement the framework of the Guidance Document and build upon the case studies completed previously by the Confederated Tribes of Grand Ronde, the Makah Tribe, and

[1] Background section taken from BOEM Pacific OCS Region "West Coast Tribal Cultural Landscapes" study profile available at https://www.boem.gov/sites/default/files/documents/regions/pacific-ocs-region/environmental-science/PC-21-01.pdf.



Oregon Ocean Data Catalog and Oregon Offshore Wind Mapping Tool Update

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

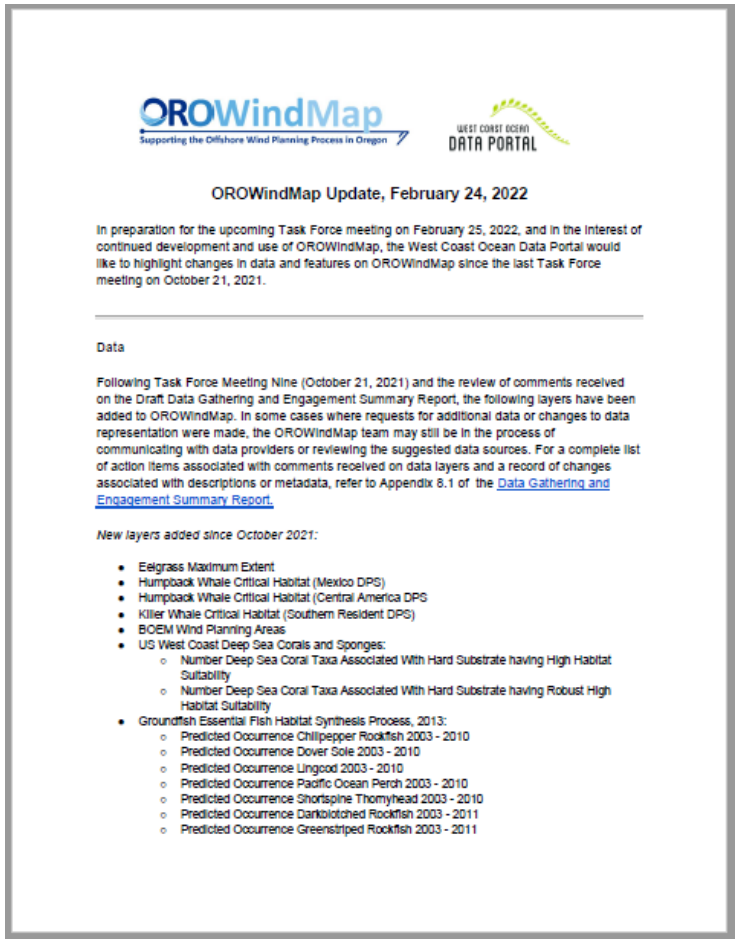
Briefing Outline:

New Features Available on OROWindMap

- Integrated Catalog & Information Pages
- User Accounts
- Bookmarks
- Drawings
- Groups

New Data Layers

- Added since October 2021



OROWindMap
Supporting the Offshore Wind Planning Process in Oregon

WEST COAST OCEAN DATA PORTAL

OROWindMap Update, February 24, 2022

In preparation for the upcoming Task Force meeting on February 25, 2022, and in the interest of continued development and use of OROWindMap, the West Coast Ocean Data Portal would like to highlight changes in data and features on OROWindMap since the last Task Force meeting on October 21, 2021.

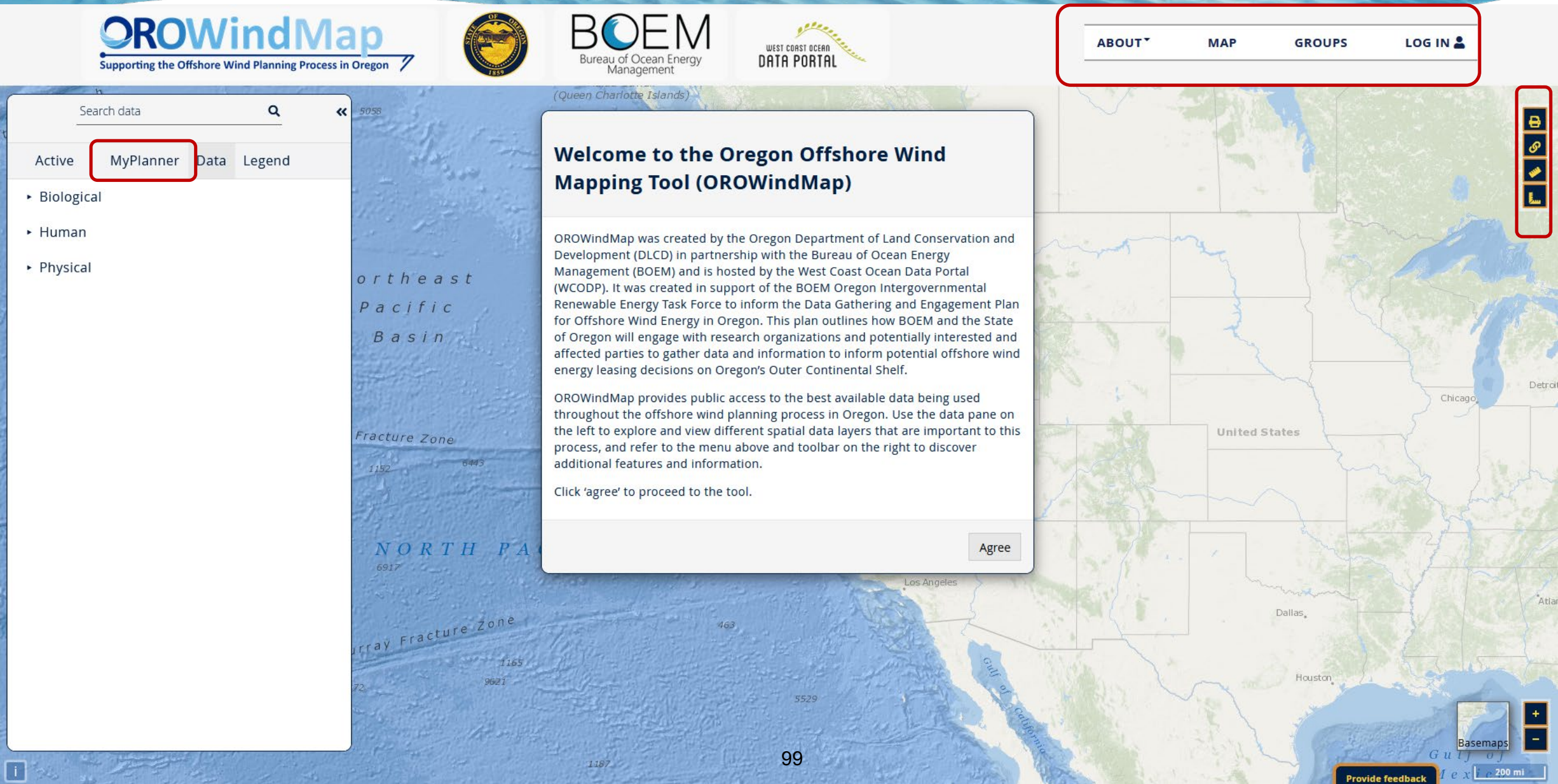
Data

Following Task Force Meeting Nine (October 21, 2021) and the review of comments received on the Draft Data Gathering and Engagement Summary Report, the following layers have been added to OROWindMap. In some cases where requests for additional data or changes to data representation were made, the OROWindMap team may still be in the process of communicating with data providers or reviewing the suggested data sources. For a complete list of action items associated with comments received on data layers and a record of changes associated with descriptions or metadata, refer to Appendix 8.1 of the Data Gathering and Engagement Summary Report.

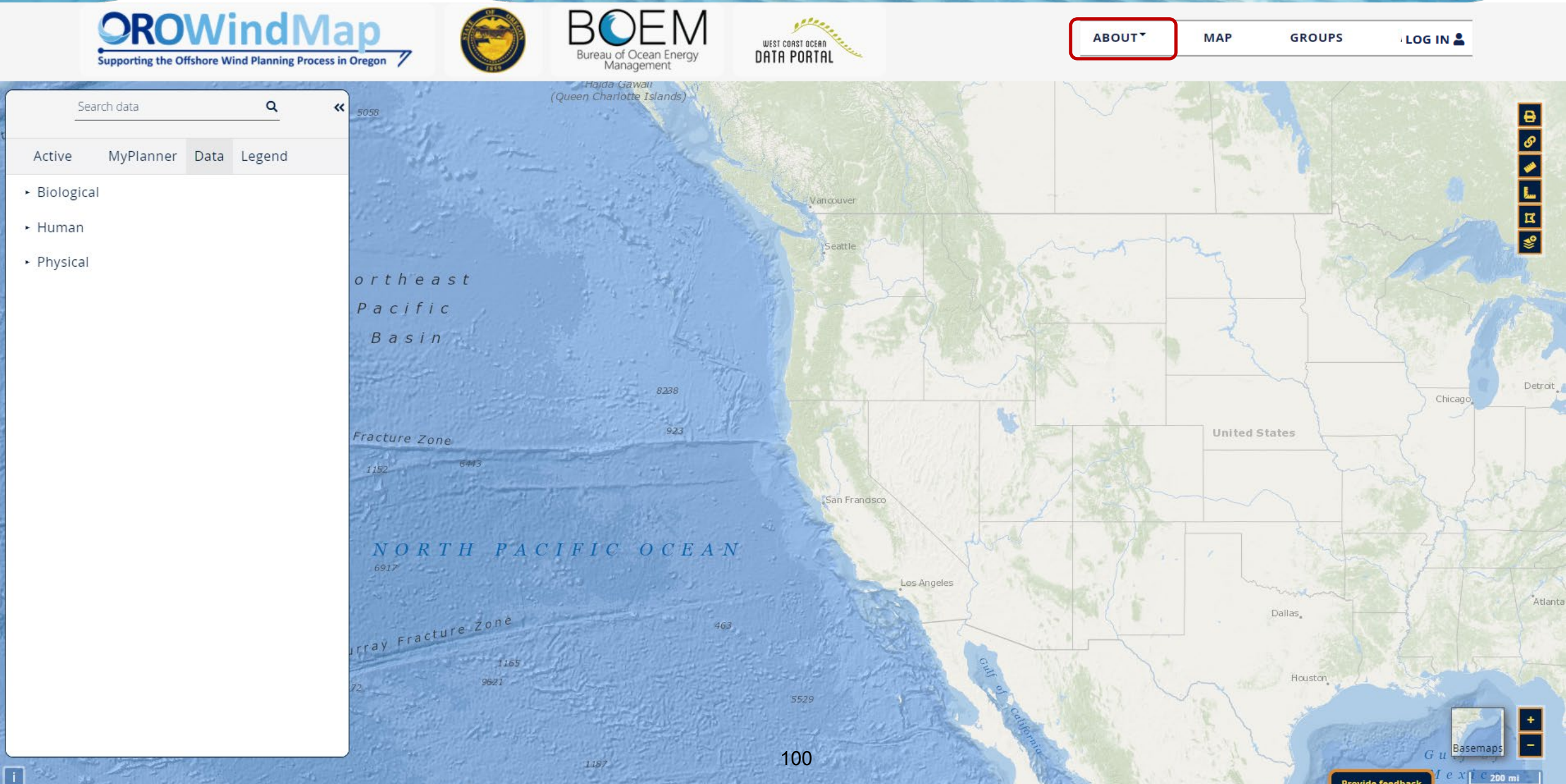
New layers added since October 2021:

- Eelgrass Maximum Extent
- Humpback Whale Critical Habitat (Mexico DPS)
- Humpback Whale Critical Habitat (Central America DPS
- Killer Whale Critical Habitat (Southern Resident DPS)
- BOEM Wind Planning Areas
- US West Coast Deep Sea Corals and Sponges:
  - Number Deep Sea Coral Taxa Associated With Hard Substrate having High Habitat Suitability
  - Number Deep Sea Coral Taxa Associated With Hard Substrate having Robust High Habitat Suitability
- Groundfish Essential Fish Habitat Synthesis Process, 2013:
  - Predicted Occurrence Chilipepper Rockfish 2003 - 2010
  - Predicted Occurrence Dover Sole 2003 - 2010
  - Predicted Occurrence Lingcod 2003 - 2010
  - Predicted Occurrence Pacific Ocean Perch 2003 - 2010
  - Predicted Occurrence Shortspine Thornyhead 2003 - 2010
  - Predicted Occurrence Darkblotched Rockfish 2003 - 2011
  - Predicted Occurrence Greenstriped Rockfish 2003 - 2011

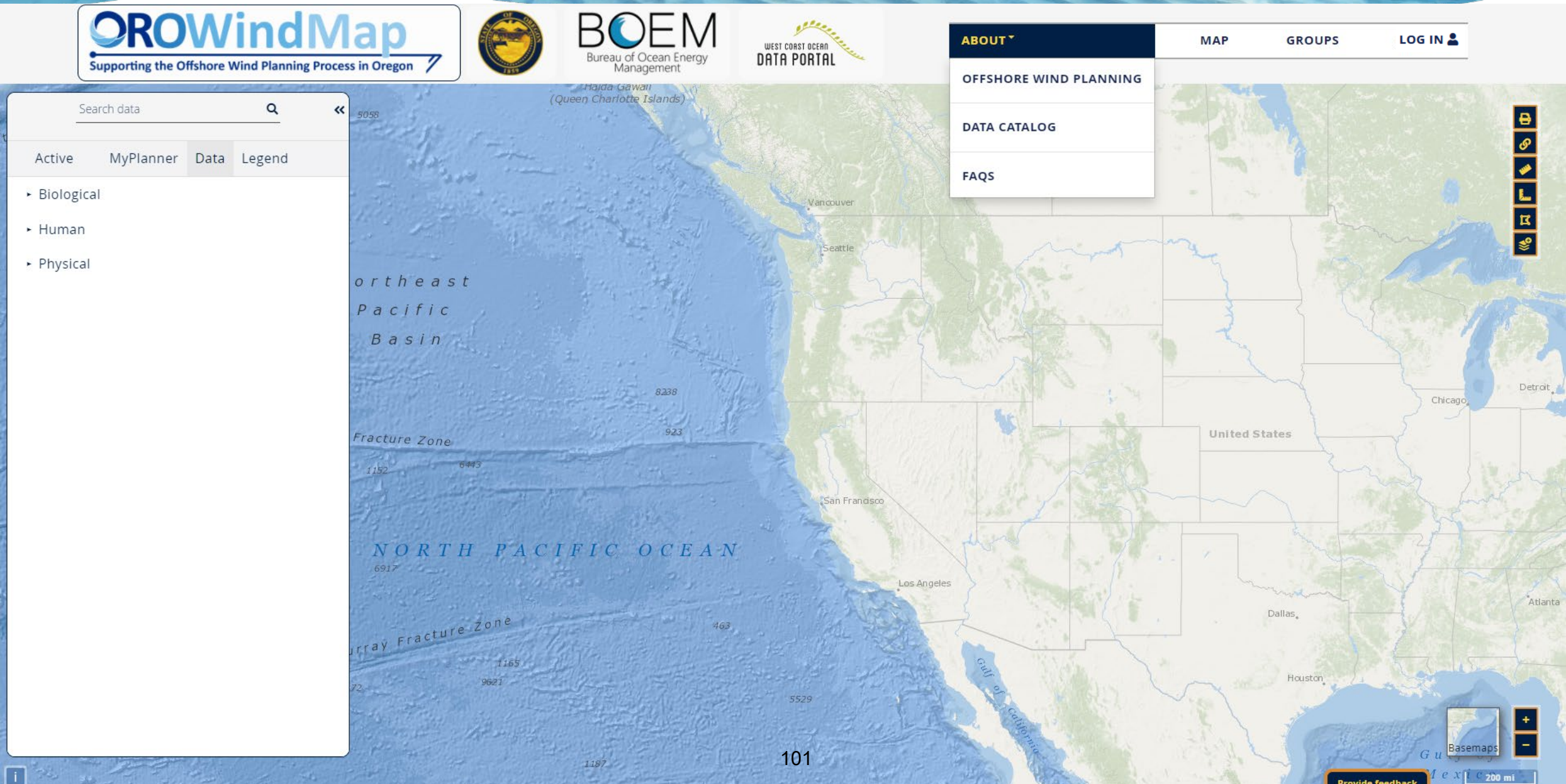
Offshore Wind Data Visualization Tool and Data Catalog



Integrated Catalog and Additional Information Pages



Integrated Catalog and Additional Information Pages



Integrated Catalog and Additional Information Pages

Provide feedback

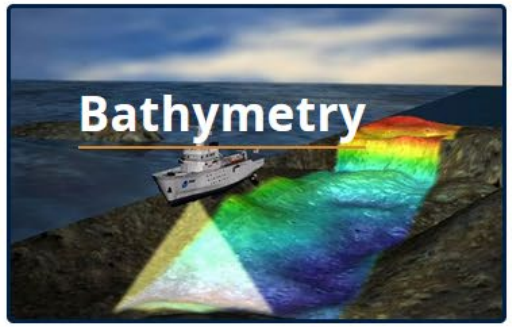
Integrated Catalog and Additional Information Pages

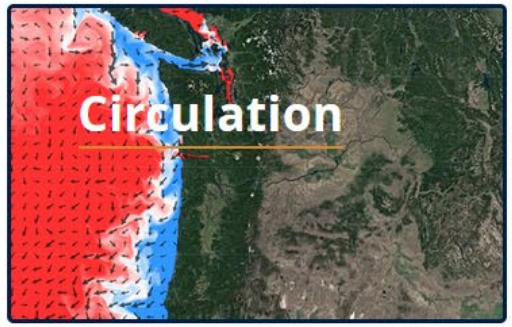
OROWindMap
Supporting the Offshore Wind Planning Process in Oregon

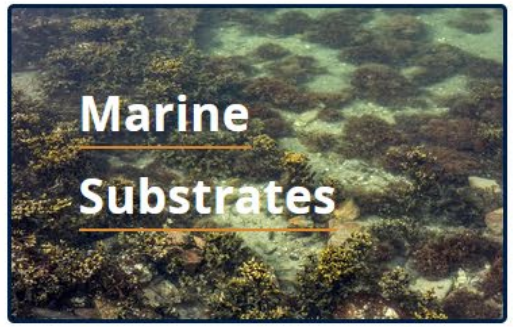
BOEM
Bureau of Ocean Energy Management

WEST COAST OCEAN DATA PORTAL

ABOUT MAP GROUPS LOG IN





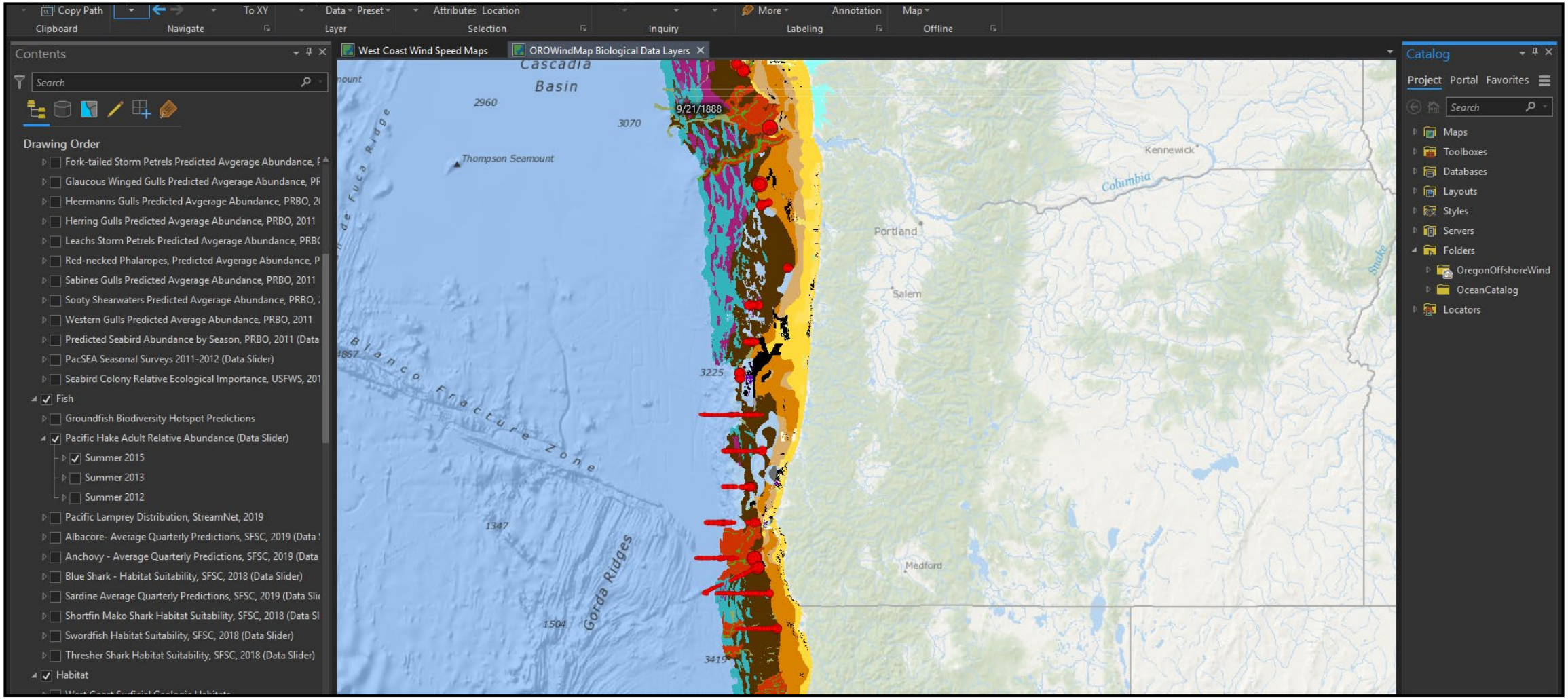


Interested in accessing the curated OROWindMap catalog in your own desktop version of ArcGIS?

The West Coast Ocean Data Portal is happy to provide the curated collection of layer files as a zipped download for versions of ArcMap > 10.5. For other GIS software versions, please contact the West Coast Ocean Data Portal to discuss options for access outside of OROWindMap.

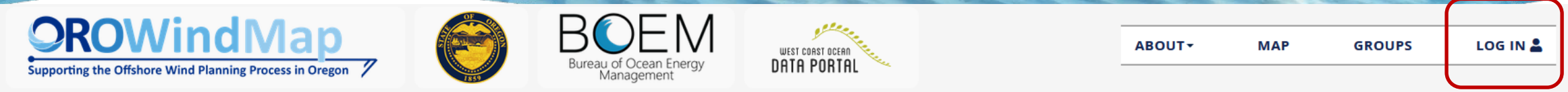
Click here to download the OROWindMap layer files for ArcMap versions >10.5

Provide feedback



View curated OROWindMap service layers within your desktop GIS software

New Features Overview: User Accounts



Sign Up

Create a new account with a password

First and Last Name:

first and last name

Preferred Name:

preferred name

Email:

email address

Password:

password

Captcha:

I'm not a robot

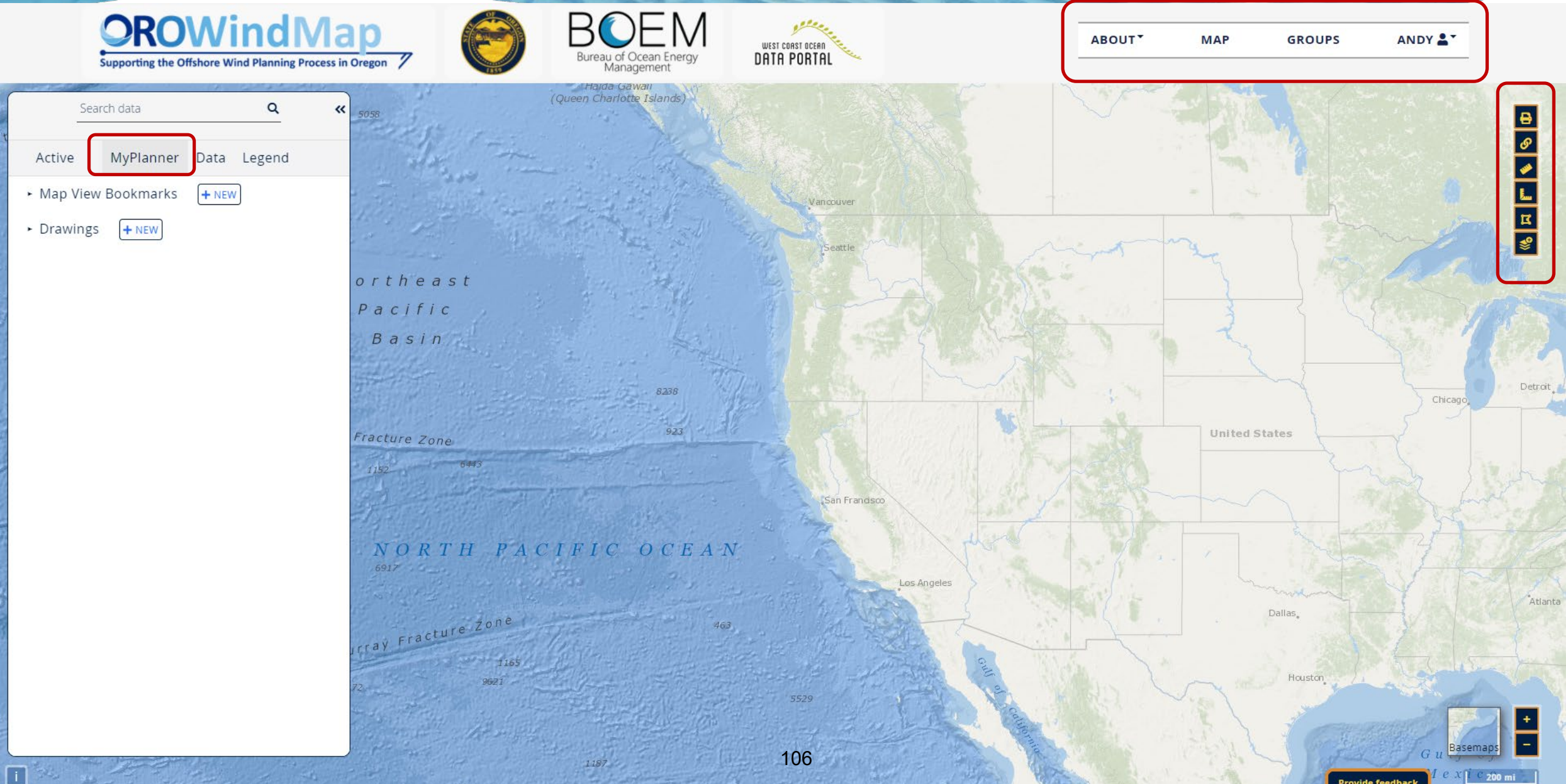
reCAPTCHA
Privacy - Terms

Sign up →

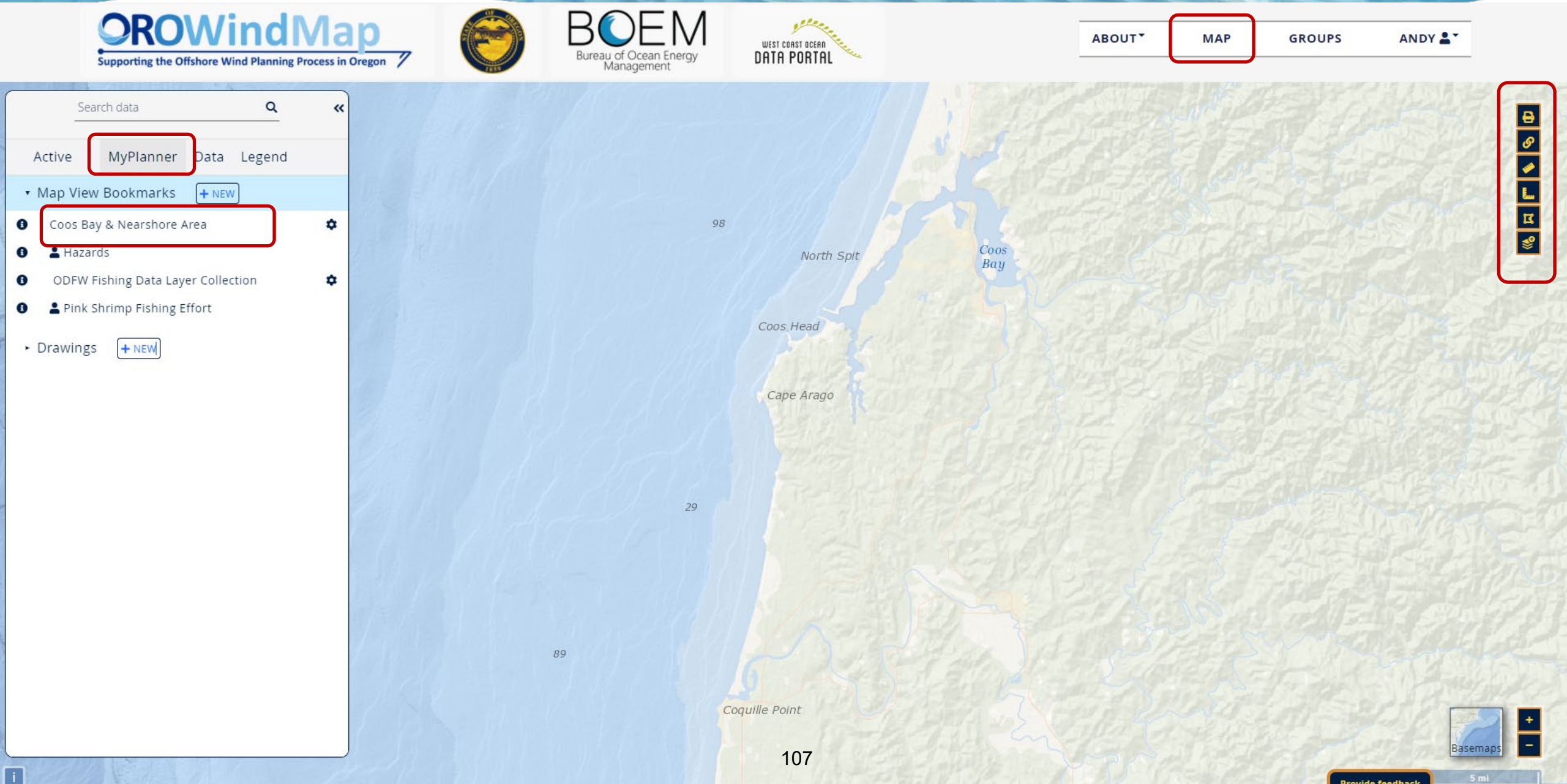
I forgot my password • Help

Provide feedback

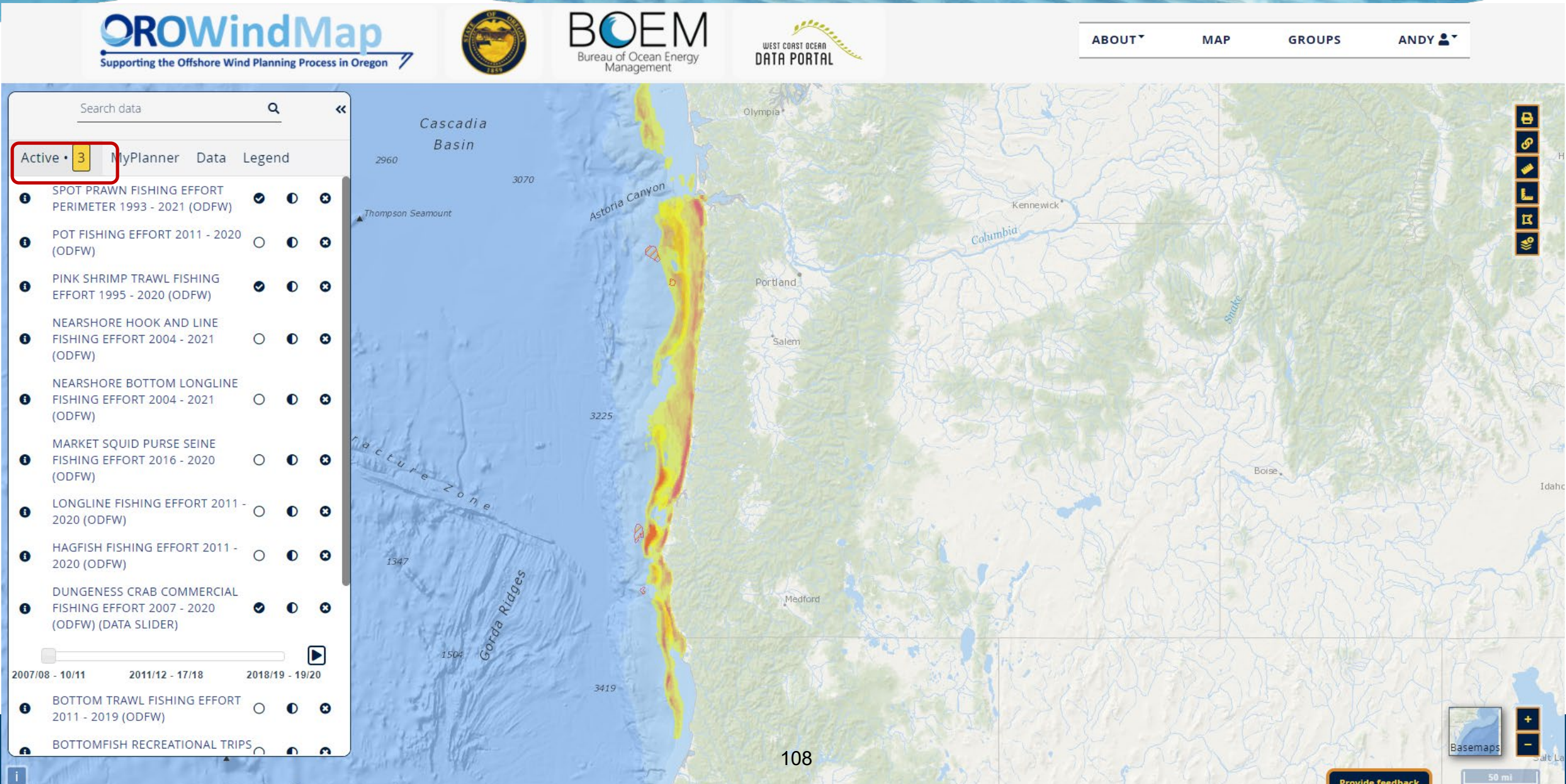
New Features Overview: Bookmarks & Drawings



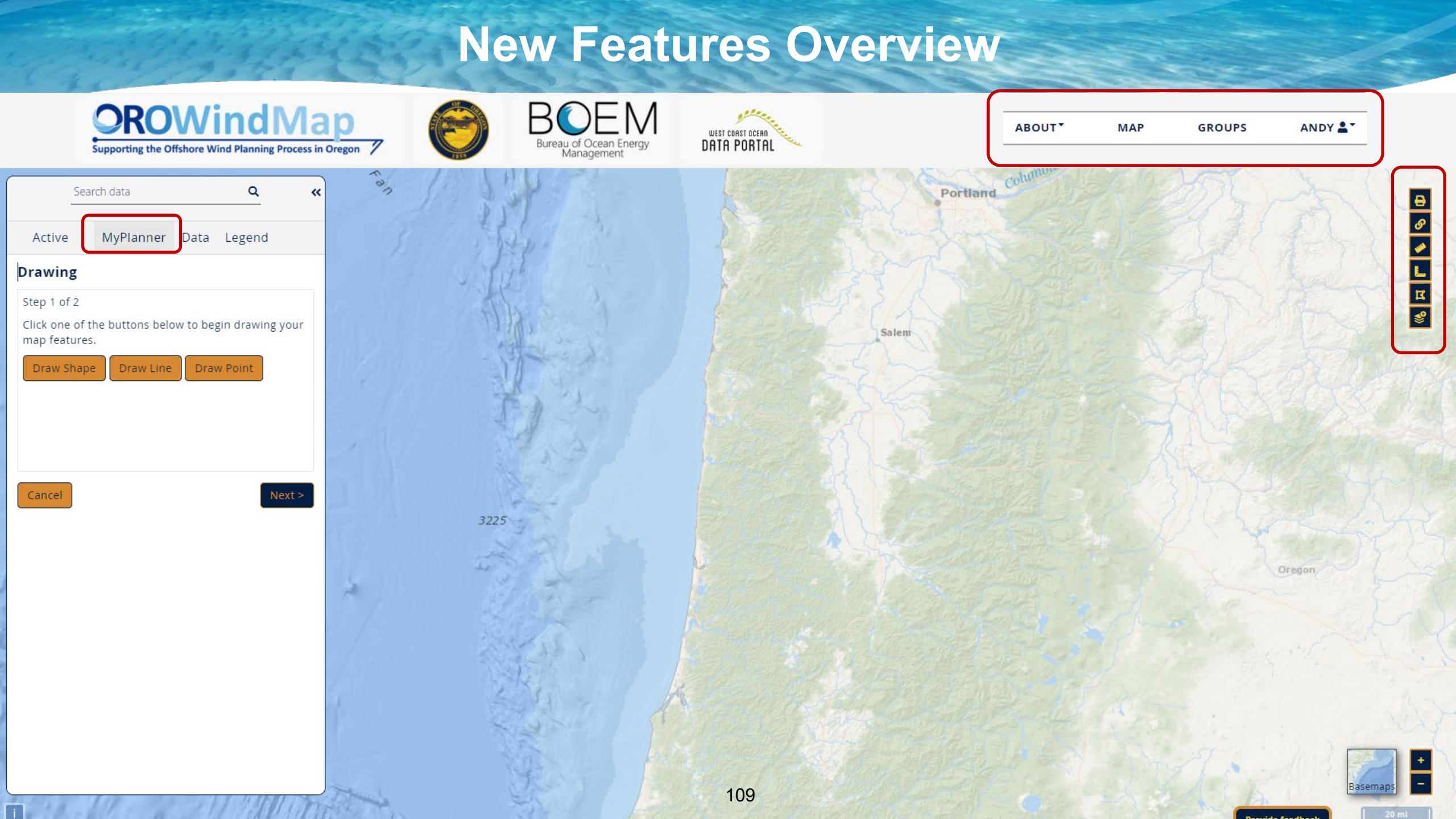
New Features Overview: Bookmarks & Drawings



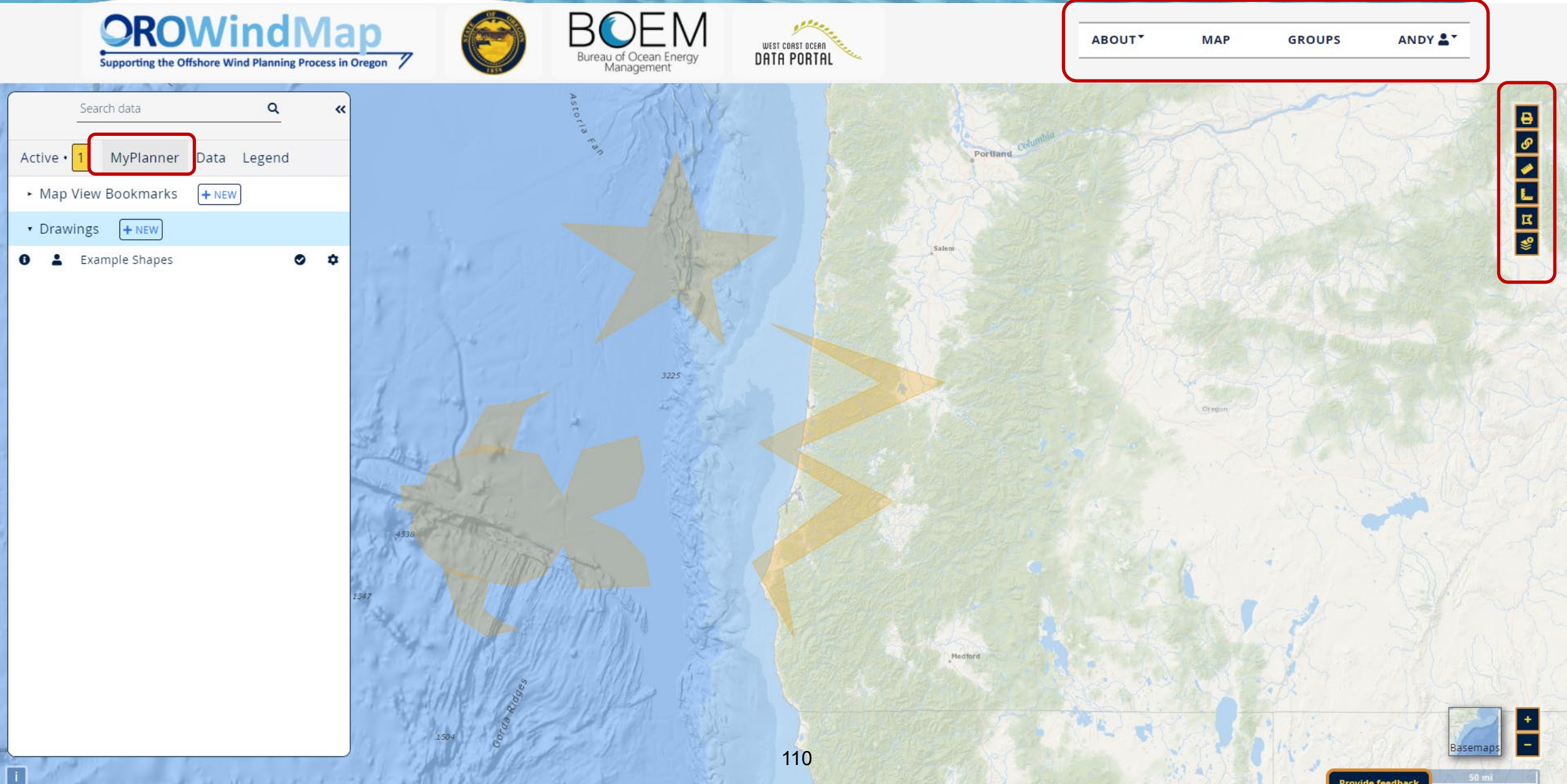
New Features Overview: Bookmarks & Drawings



New Features Overview



New Features Overview: Bookmarks & Drawings



New Features Overview: Groups

OROWindMap
Supporting the Offshore Wind Planning Process in Oregon

BOEM Bureau of Ocean Energy Management

WEST COAST OCEAN DATA PORTAL

ABOUT | MAP | GROUPS | ANDY

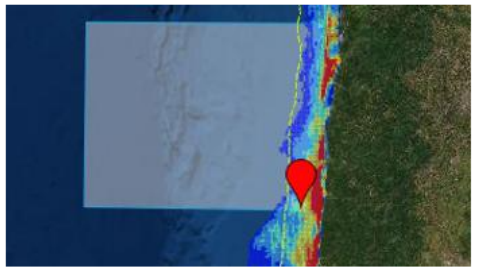
Join a map group

Groups are an opportunity to share information and resources with like-minded ocean users. Create or join a map group that interests you — and invite your colleagues! Maps and drawings can be saved and shared through your group with other registered Portal users.

To create your own map group, click here.

*Note: The OROWind administrators reserve the right to review and remove Groups and content shared within them due to inactivity, inappropriate content or other misuse.

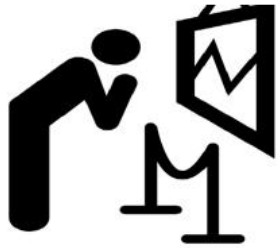
Member Groups



01.2022
4

Demo

This group is a place to share example maps and drawings that demonstrate the use of those features and the group feature of OROWindMap. Use this group to get familiar with your options, and then create your own public or private groups to collaborat...



02.2022
2

Public Map Gallery

A group for users of the OROWinMap Tool to share maps of their own making in a public gallery.

01.2022
1

OSW Assessment Maps

Assessment of Call Areas and WEAs.

Provide feedback

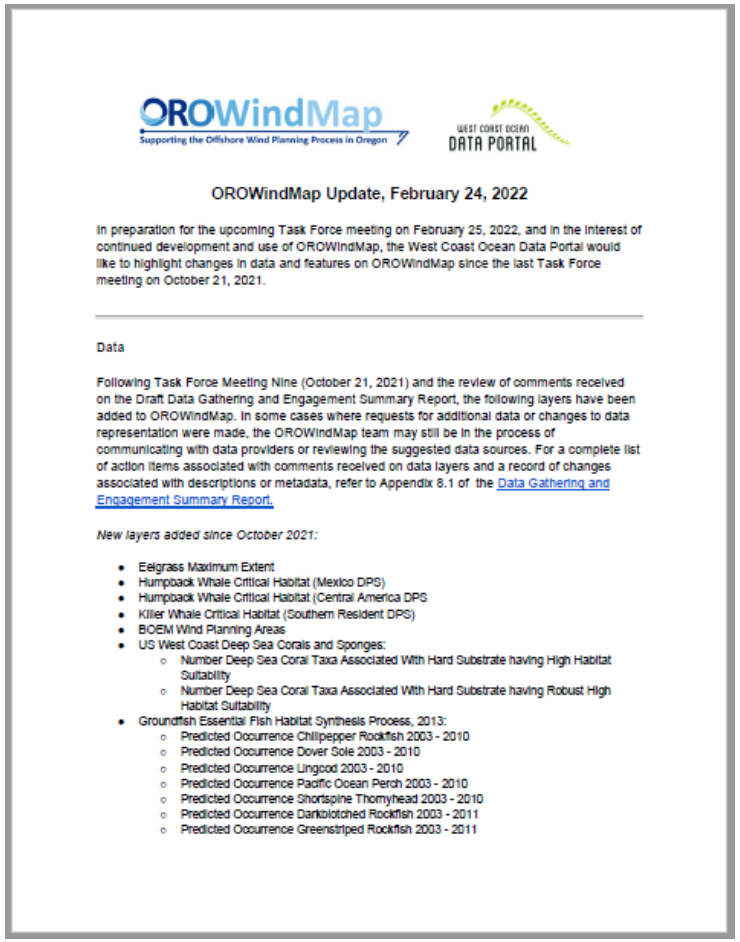
Briefing Outline:

New Features Available on OROWindMap

- Integrated Catalog & Information Pages
- User Accounts
- Bookmarks
- Drawings
- Groups

New Data Layers

- Added since October 2021



OROWindMap
Supporting the Offshore Wind Planning Process in Oregon

WEST COAST OCEAN DATA PORTAL

OROWindMap Update, February 24, 2022

In preparation for the upcoming Task Force meeting on February 25, 2022, and in the interest of continued development and use of OROWindMap, the West Coast Ocean Data Portal would like to highlight changes in data and features on OROWindMap since the last Task Force meeting on October 21, 2021.

Data

Following Task Force Meeting Nine (October 21, 2021) and the review of comments received on the Draft Data Gathering and Engagement Summary Report, the following layers have been added to OROWindMap. In some cases where requests for additional data or changes to data representation were made, the OROWindMap team may still be in the process of communicating with data providers or reviewing the suggested data sources. For a complete list of action items associated with comments received on data layers and a record of changes associated with descriptions or metadata, refer to Appendix 8.1 of the Data Gathering and Engagement Summary Report.

New layers added since October 2021:

- Eelgrass Maximum Extent
- Humpback Whale Critical Habitat (Mexico DPS)
- Humpback Whale Critical Habitat (Central America DPS
- Killer Whale Critical Habitat (Southern Resident DPS)
- BOEM Wind Planning Areas
- US West Coast Deep Sea Corals and Sponges:
  - Number Deep Sea Coral Taxa Associated With Hard Substrate having High Habitat Suitability
  - Number Deep Sea Coral Taxa Associated With Hard Substrate having Robust High Habitat Suitability
- Groundfish Essential Fish Habitat Synthesis Process, 2013:
  - Predicted Occurrence Chilipepper Rockfish 2003 - 2010
  - Predicted Occurrence Dover Sole 2003 - 2010
  - Predicted Occurrence Lingcod 2003 - 2010
  - Predicted Occurrence Pacific Ocean Perch 2003 - 2010
  - Predicted Occurrence Shortspine Thornyhead 2003 - 2010
  - Predicted Occurrence Darkblotched Rockfish 2003 - 2011
  - Predicted Occurrence Greenstriped Rockfish 2003 - 2011

New Data Layer Highlights: Marine Mammals (NOAA)

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Supporting the Offshore Wind Planning Process in Oregon

BOEM Bureau of Ocean Energy Management

WEST COAST OCEAN DATA PORTAL

ABOUT MAP GROUPS ANDY

Marine Mammals

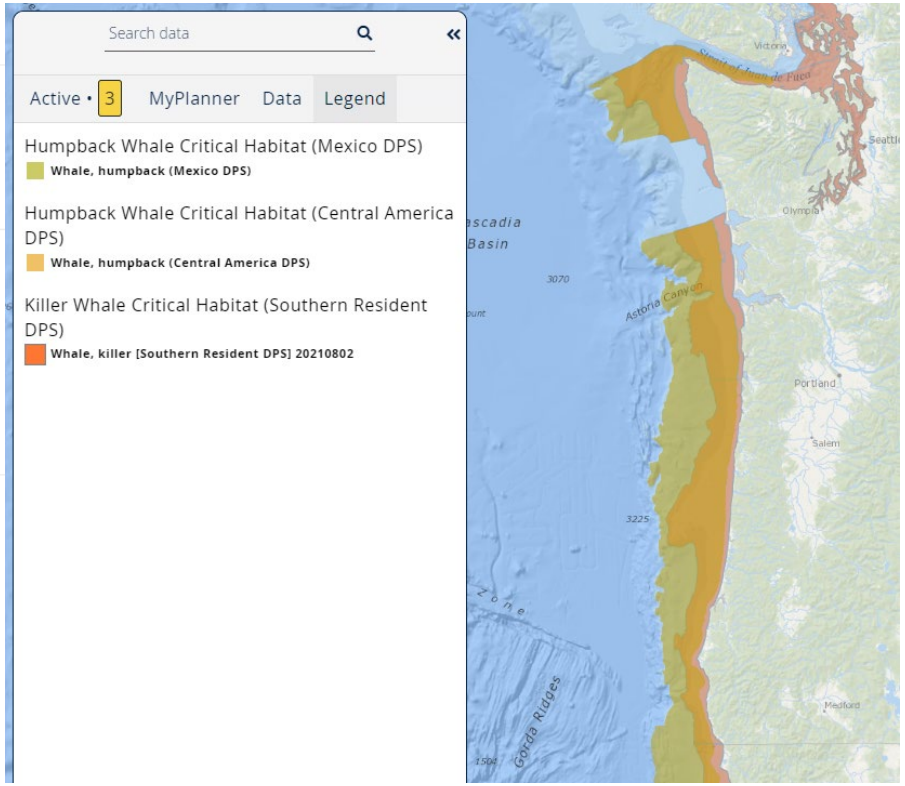
Marine Mammals includes cetacean and pinniped species for West Coast resident and migratory populations, related to density, migration, location, critical habitat, and biologically important areas.

View all Marine Mammal layers on OROWindMap

- Biologically Important Areas for Cetaceans - Feeding
  Catalog|**OROWindMap**
- Biologically Important Areas for Cetaceans - Migration
  Catalog|**OROWindMap**

- Biologically Important Areas, CETMAP, 2015
  - Gray Whale
    Catalog|**OROWindMap**
  - Harbor Porpoise
    Catalog|**OROWindMap**
  - Humpback Whale
    Catalog|**OROWindMap**

- Blue Whale Core Areas of Use, MMI, 2019
  Catalog|**OROWindMap**
- Blue Whale Home Ranges, MMI, 2019
  Catalog|**OROWindMap**
- California Sea Lion Haulout Counts, ODFW, 2011
  Catalog|**OROWindMap**
- Gray Whale Migration Corridor
  Catalog|**OROWindMap**
- Humpback Whale Critical Habitat (Central America DPS)
  Catalog|**OROWindMap**
- Humpback Whale Critical Habitat (Mexico DPS)
  Catalog|**OROWindMap**
- Killer Whale Critical Habitat (Southern Resident DPS)
  Catalog|**OROWindMap**



Provide feedback

New Data Layer Highlights: Fishing Information VMS (BOEM)

OROWindMap
Supporting the Offshore Wind Planning Process in Oregon

BOEM
Bureau of Ocean Energy Management

WEST COAST OCEAN DATA PORTAL

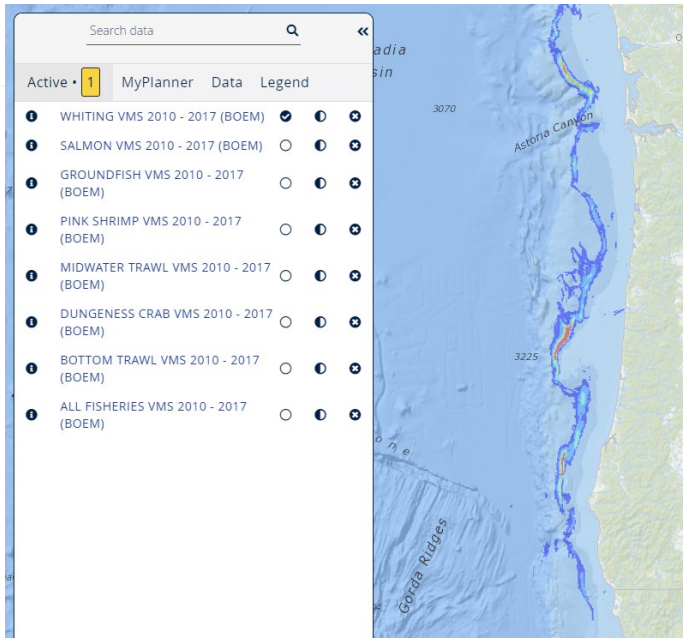
ABOUT ▾ MAP GROUPS ANDY ▾

Fishing | BOEM VMS Analysis

2010-2017 **Vessel Monitoring System (VMS)** data were used from the NOAA Office of Law Enforcement to create this fishing effort dataset for the U.S. West Coast. The dataset was generated using VMS points at fishing speeds to create fishing tracks. Tracks were joined to the BOEM aliquot grid (1.2x1.2 km) to create heat maps of fishing effort for various fisheries based on individual and combined declaration codes.

View all BOEM VMS Layers in OROWindMap

- All Fisheries VMS 2010 - 2017 (BOEM)
  - View Metadata in Catalog | **View Layer in OROWindMap**
- Bottom Trawl VMS 2010 - 2017 (BOEM)
  - View Metadata in Catalog | **View Layer in OROWindMap**
- Dungeness Crab VMS 2010 - 2017 (BOEM)
  - View Metadata in Catalog | **View Layer in OROWindMap**
- Groundfish VMS 2010 - 2917 (BOEM)
  - View Metadata in Catalog | **View Layer in OROWindMap**
- Midwater Trawl VMS 2010 - 2017 (BOEM)
  - View Metadata in Catalog | **View Layer in OROWindMap**
- Pink Shrimp VMS 2010 - 2017 (BOEM)
  - View Metadata in Catalog | **View Layer in OROWindMap**
- Salmon VMS 2010 - 2017 (BOEM)
  - View Metadata in Catalog | **View Layer in OROWindMap**
- Whiting VMS 2010 - 2017 (BOEM)
  - View Metadata in Catalog | **View Layer in OROWindMap**



Provide feedback

New Data Layer Highlights: Fishing Information (ODFW)

OROWindMap
Supporting the Offshore Wind Planning Process in Oregon

BOEM Bureau of Ocean Energy Management

WEST COAST OCEAN DATA PORTAL

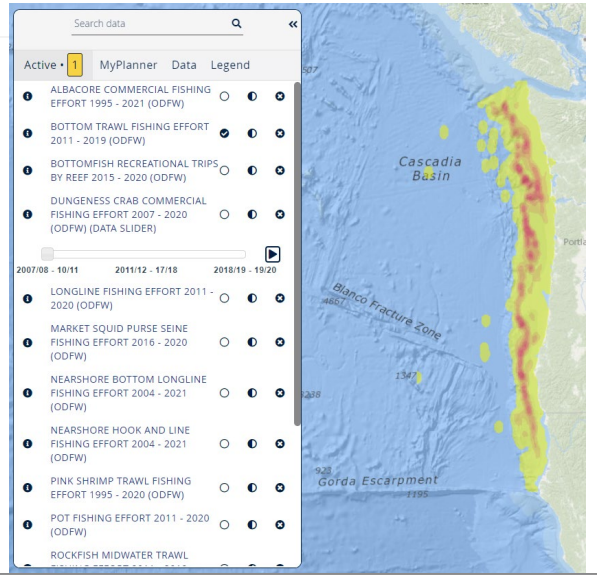
ABOUT MAP GROUPS ANDY

Fishing | Oregon Department of Fish and Wildlife (ODFW)

The Oregon Department of Fish and Wildlife (ODFW) has a mission is to protect and enhance Oregon's fish and wildlife and their habitats for use and enjoyment by present and future generations. ODFW staff created the following layers from fishery logbook data. Because the data are recorded by many independent sources, ODFW cannot guarantee the accuracy of all logbook data. These data were developed for large-scale offshore wind energy development planning off of Oregon, and should be used for that purpose only. For specific methods associated with the creation of the layers, refer to their individual metadata.

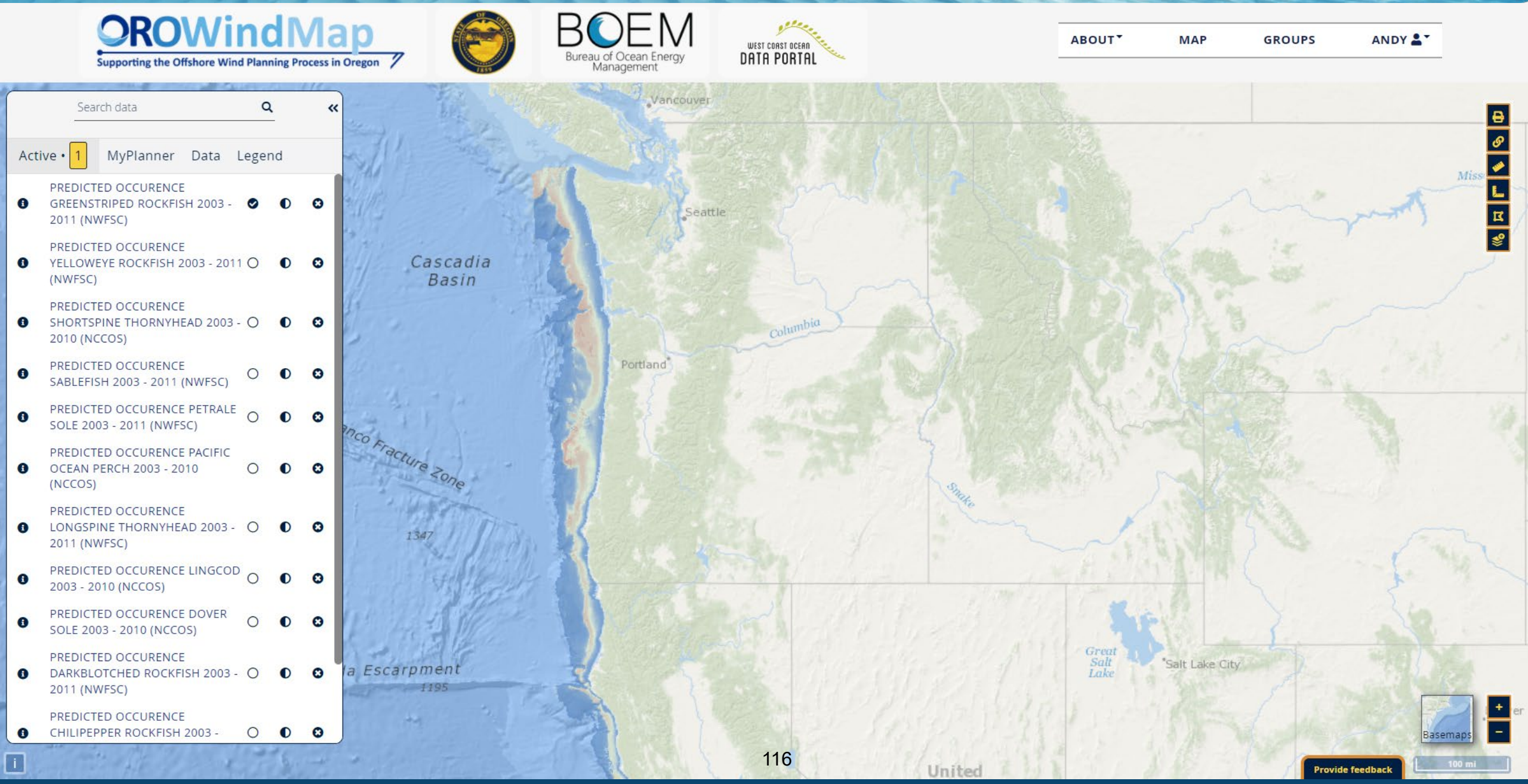
View all Fishing | Oregon Department of Fish and Wildlife (ODFW) layers on OROWindMap

- Albacore Charter Fishing Effort 2002 - 2020
- Albacore Commercial Fishing Effort 1995 - 2021
- Bottomfish Recreational Trips By Reef 2015 - 2020
- Bottom Trawl Fishing Effort 2011 - 2019
- Dungeness Crab Commercial Fishing Effort 2007 - 2020 (Data Slider)
- Hagfish Fishing Effort 2011 - 2020
- Longline Fishing Effort 2011 - 2020
- Market Squid Purse Seine Fishing Effort 2016 - 2020
- Nearshore Bottom Longline Fishing Effort 2004 - 2021
- Nearshore Hook And Line Fishing Effort 2004 - 2021
- Pink Shrimp Trawl Fishing Effort 1995 - 2020
- Pot Fishing Effort 2011 - 2020
- Rockfish Midwater Trawl Fishing Effort 2011 - 2019
- Spot Prawn Fishing Effort Perimeter 1993 - 2021
- Whiting Midwater Trawl Fishing Effort 2011 - 2019

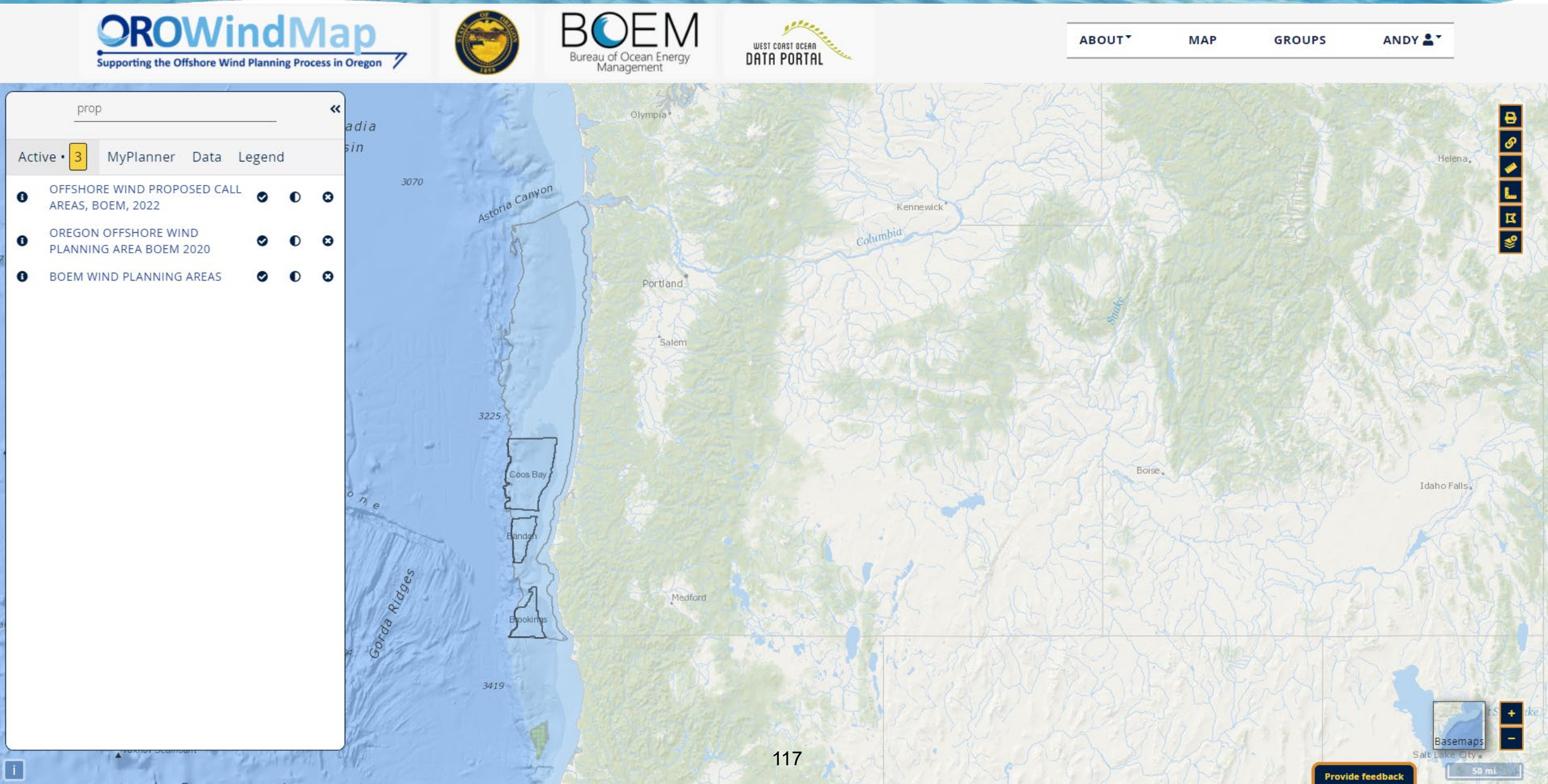


Provide feedback

New Data Layer Highlights: Groundfish Essential Fish Habitat Synthesis Process, 2013



New Data Layer Highlights: BOEM Planning & Proposed Call Areas



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

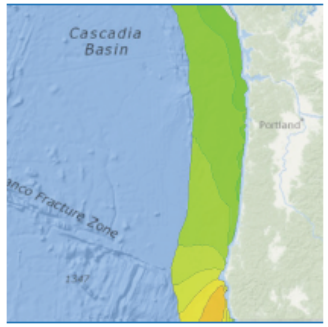
BOEM Bureau of Ocean Energy Management | WEST COAST OCEAN DATA PORTAL

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 http://wcodp.readthedocs.io/.



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 portal.westcoastoceans@sccwrp.org.

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:

- Title
- Abstract / Description
- Use Limitations / Constraints
- Bounding Box Coordinates in Latitude/Longitude (decimal degrees)
- Keywords
- Date Published
- Contacts
  - Originator
  - Publisher
  - Distributor
- URLs for data download, web services, kml, web application, documentation

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

Questions?

Andy Lanier
Andy.Lanier@dlcd.Oregon.gov
Marine Affairs Coordinator
Oregon Department of Land Conservation and Development

Break

Meeting will resume at 2:15 pm

Task Force Roundtable Q&A and Discussion

Action Items and Next Steps

Whitney Hauer
BOEM Pacific Regional Office

Anticipated Next Steps (near term)

March 4, 2022: Pacific Fishery Management Council Ad Hoc Marine Planning Committee – BOEM Joint Meeting

https://www.pcouncil.org/events/ad-hoc-marine-planning-committee-to-hold-online-work-session-friday-march-4-2022/

March/April 2022: Issue the Call in the Federal Register

- Public comment period

After Call Issuance: Begin "Area Identification" to identify Wind Energy Areas

- Continued coordination with the State
- Continued engagement with potentially interested and affected parties

Closing Remarks

Amira Streeter, Oregon Governor's Office

Doug Boren, BOEM Pacific Office Regional Director

Contact Information

BOEM Pacific Region

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Desray Reeb, Ph.D.| Marine Mammal Biologist Reeb,
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Parker McWilliams | Tribal Liaison
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Abigail Ryder | NEPA Coordinator
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John Romero | Public Affairs Officer
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Oregon DLCD

Andy Lanier | Marine Affairs Coordinator
andy.lanier@dlcd.Oregon.gov | 503-206-2291

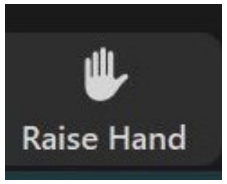
Task Force Meeting Adjourned

Public Input Opportunity

Interested members of the public are encouraged to provide input

Process Guidelines for Public Input Opportunity

- **Public input opportunity: 3:05 pm**
- **Raise your hand to join the public input queue.**



- **The facilitator will call on you when it is your turn to speak. You will then be unmuted.**
  - If you are a phone call-in user, dial *9 on your phone to raise hand.
- **Provide your name and affiliation before you speak.**
- **When providing input, please:**
  - Respect time limits as assigned.
  - Use respectful language.