



BOEM Bureau of
Ocean Energy Management

BOEM Oregon Offshore Wind Energy Planning and Leasing Process

March 4, 2022

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Bureau of Ocean Energy Management (BOEM) Pacific Regional Office



BOEM Pacific Regional Office Staff

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BOEM Oregon Task Force Meetings

September 2019:

- Discussed planning approach
- Result: BOEM and DLCD drafted data gathering and engagement plan
- Meeting materials available at <https://www.boem.gov/renewable-energy/state-activities/2019-task-force-meeting-seven>



BOEM Oregon Task Force Meetings

June 2020:

- Discussed draft plan
- Result: BOEM and State of Oregon committed to offshore wind energy planning; finalized plan
- Webinar recording and materials available at <https://www.boem.gov/renewable-energy/state-activities/oregon/2020-task-force-meeting-eight>

Data Gathering and Engagement Plan for Offshore Wind Energy in Oregon

October 2020

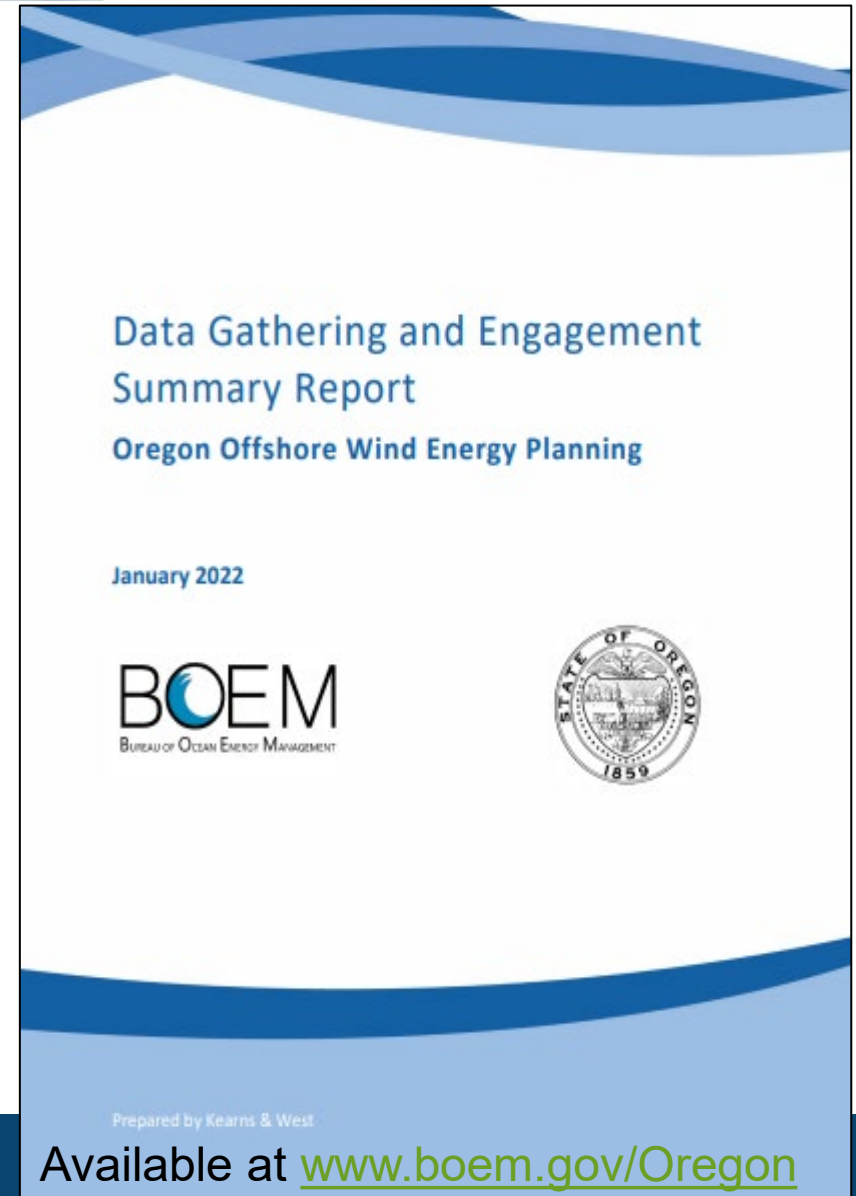


Prepared by Kearns & West

BOEM Oregon Task Force Meetings

October 2021:

- Discussed the outcome of BOEM's and DLCD's data gathering and engagement
- Result: Finalized summary report
- Webinar recording and materials available at <https://www.boem.gov/renewable-energy/state-activities/2021-task-force-meeting-nine>

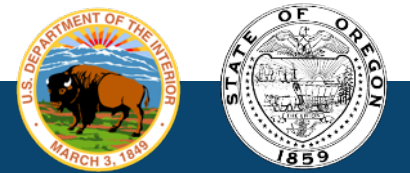
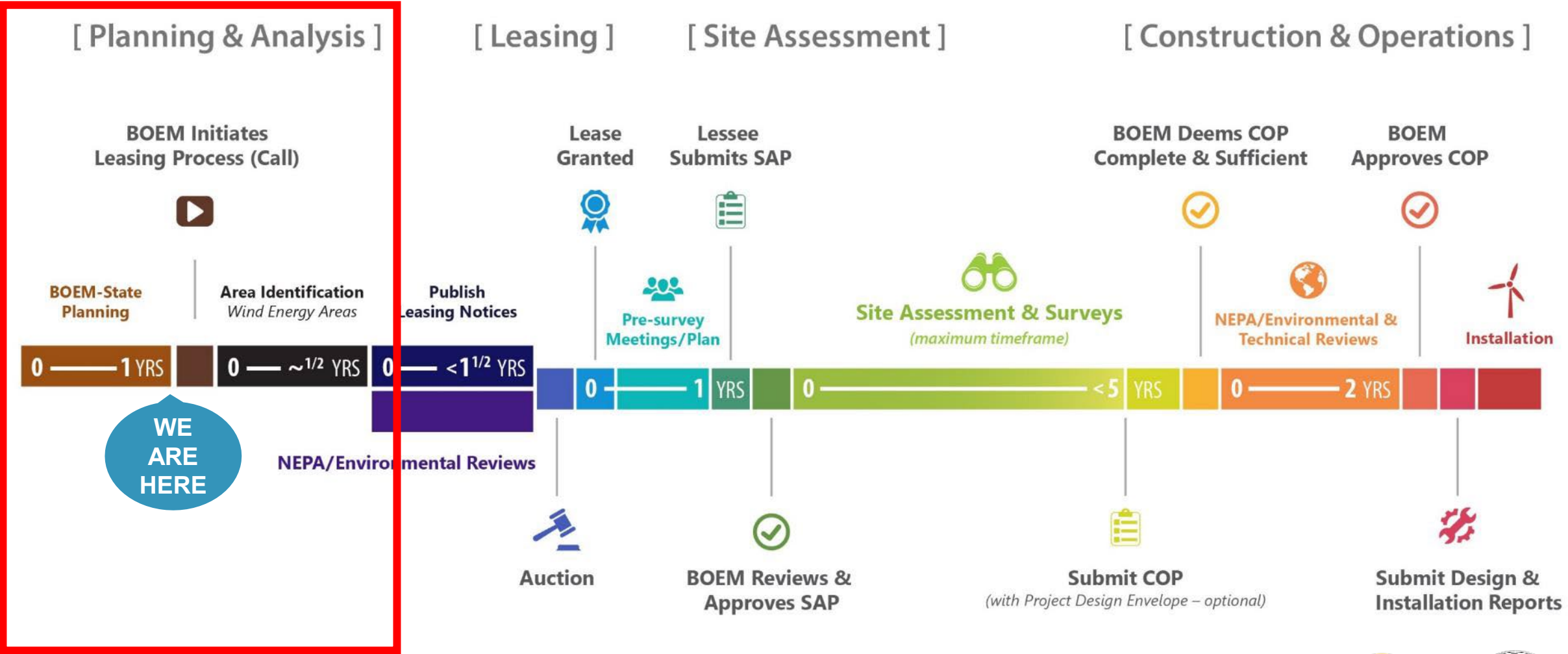


BOEM Oregon Task Force Meetings

February 2022:

- Discussed next steps in BOEM's authorization process including the identification of "Call Areas" for potential offshore leasing consideration in Oregon
- Materials available at <https://www.boem.gov/renewable-energy/state-activities/OregonTaskForceMeeting10>

BOEM Offshore Wind Energy Authorization Process



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

Call for Information and Nominations (Call)

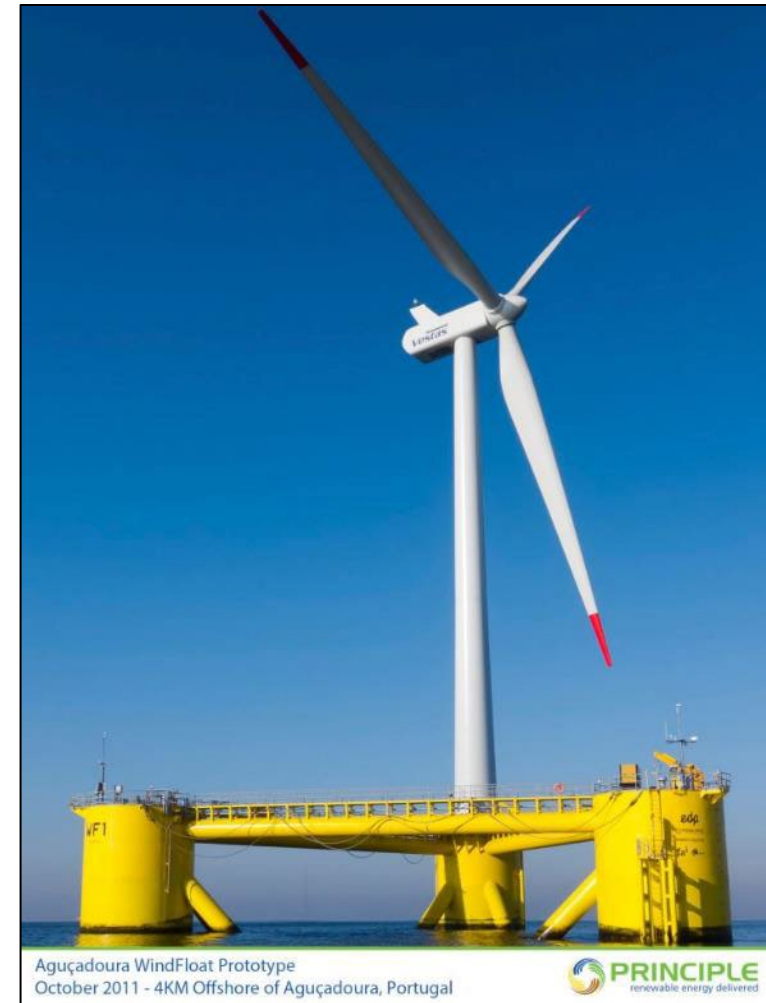
- Calls for formal public comment about the area, uses and concerns
- Requests nominations of interest for development

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

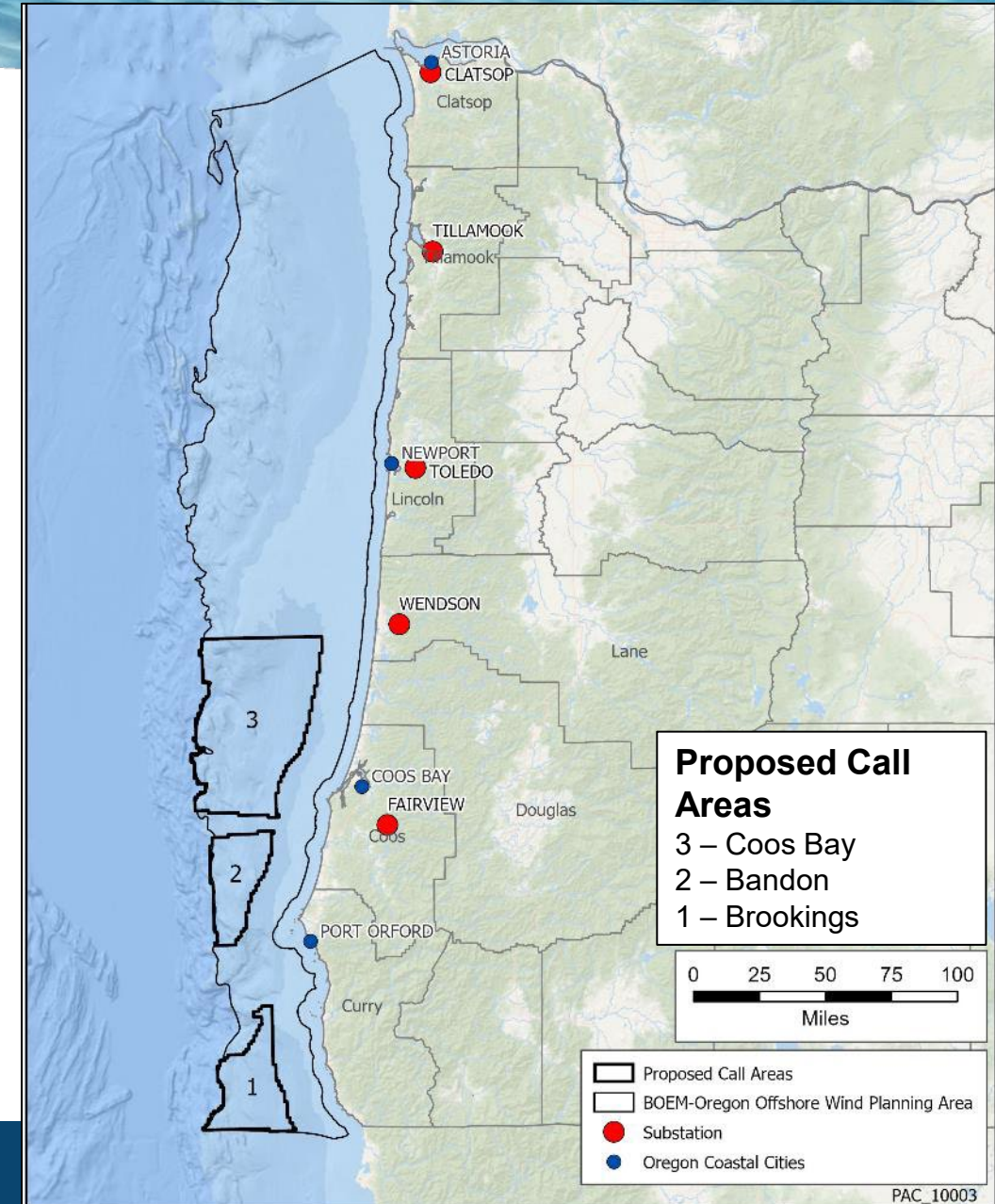
Considerations

- 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

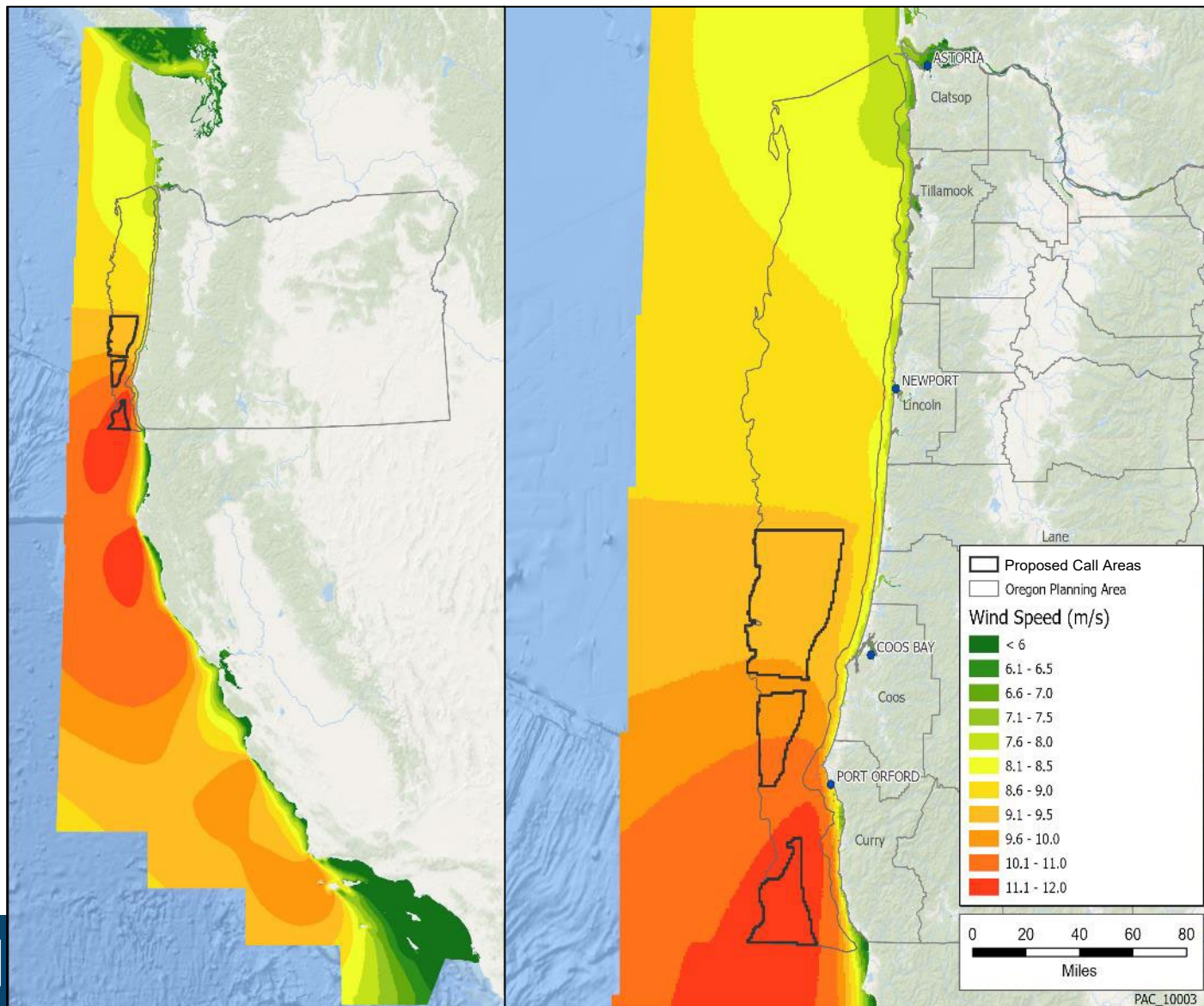
Name	Approx. Offshore Wind Energy Capacity		Area		
	Megawatts	Gigawatts	Acres	Square miles	Square kilometers
Coos Bay	10,597	10.6	871,680	1,362	3,532
Bandon	2,881	2.9	237,440	371	960
Brookings	3,478	3.5	286,720	448	1,159
Total	16,956	17	1,395,840	2,181	5,651

Power density of 3 MW/km² (7.8 MW/mi²) (NREL 2016)

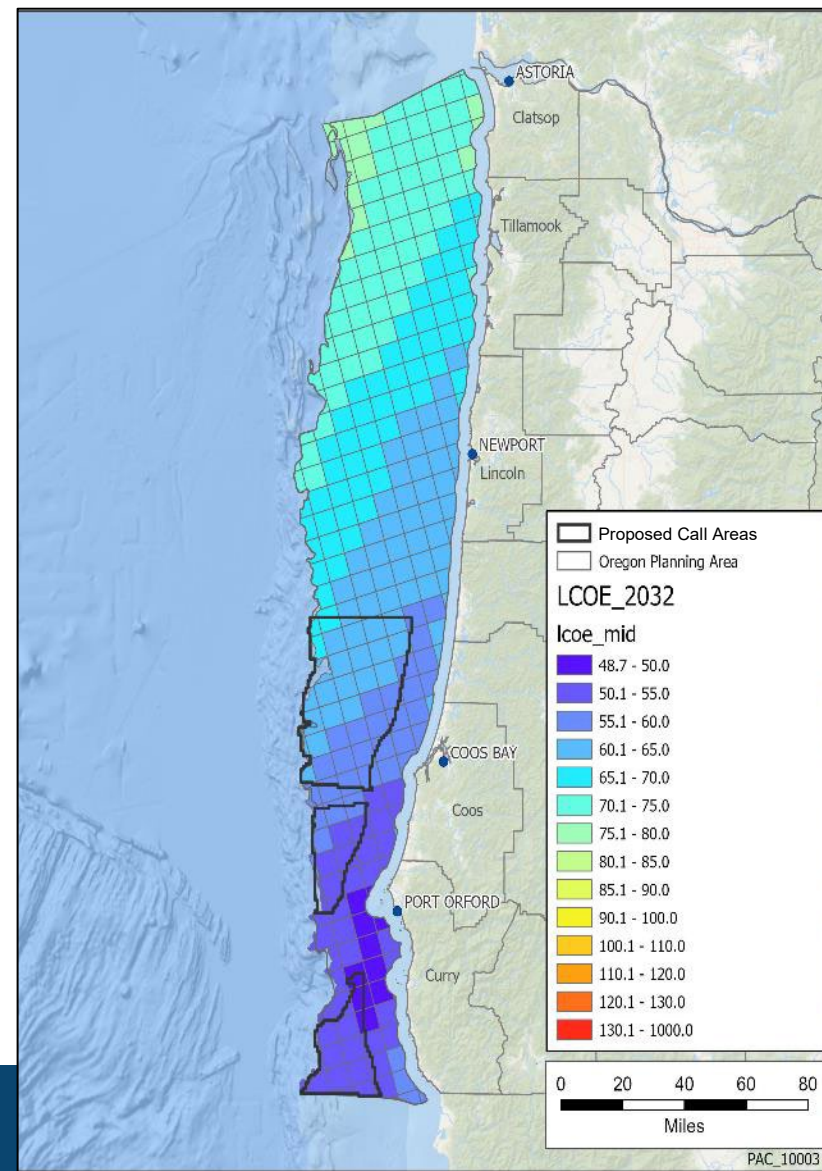


Wind Resource and Cost of Energy

Wind Resource

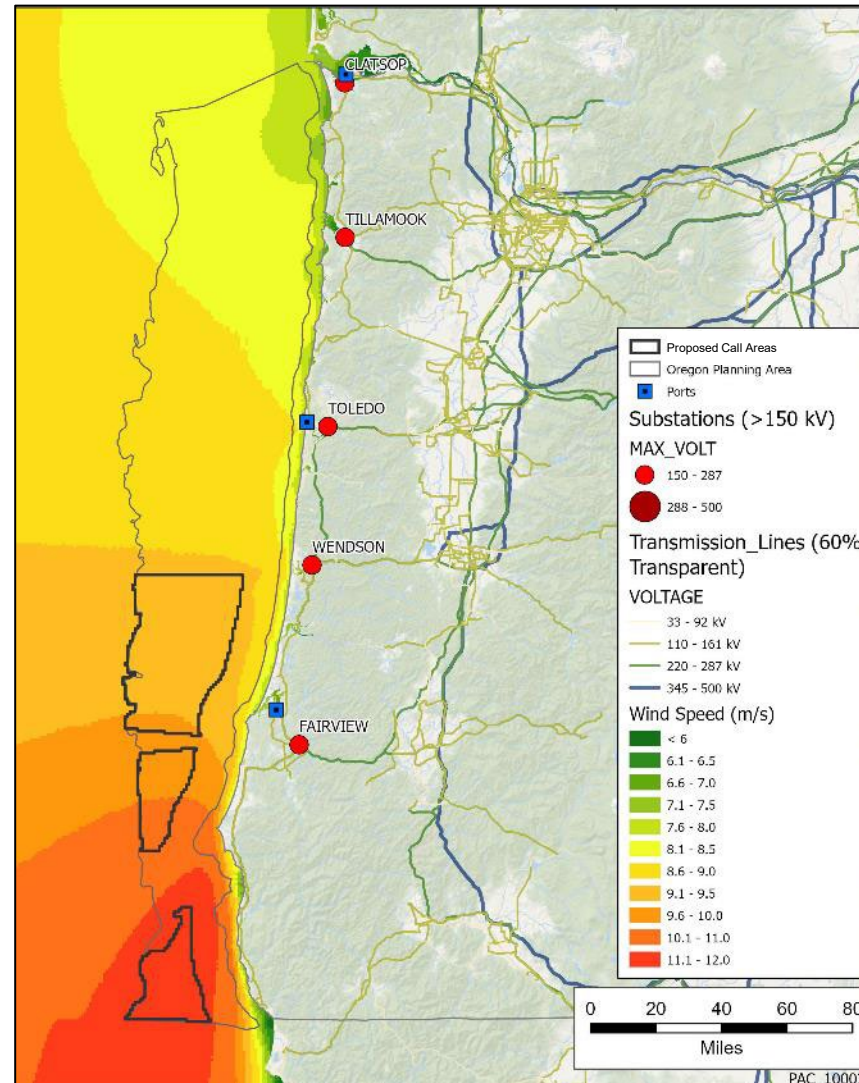


Levelized Cost of Energy



Transmission

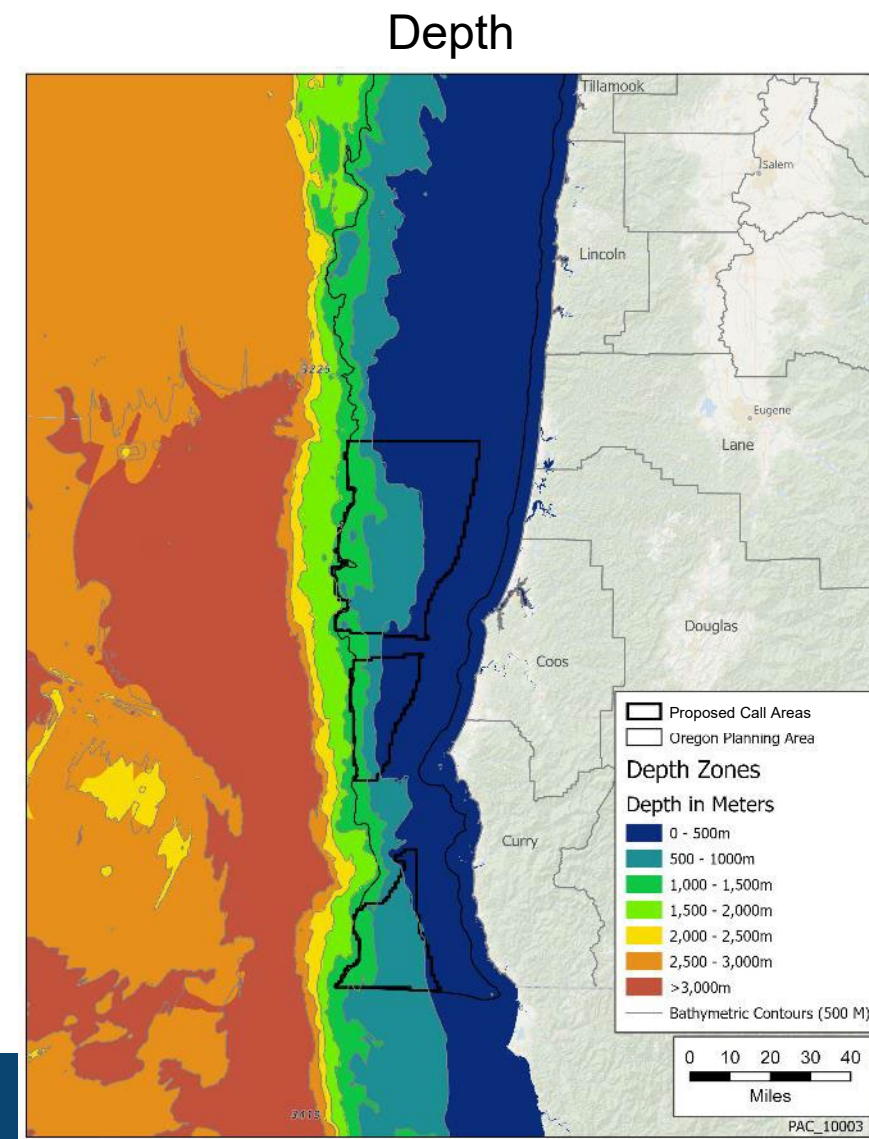
- **2,625 MW of offshore wind capacity could be integrated into Oregon's power system (NREL 2021)**
 - Without major upgrades to the trans-coastal transmission or significant curtailment of offshore wind generation
 - Distributed amongst five coastal substations
- **Proposed Call Areas close to two of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



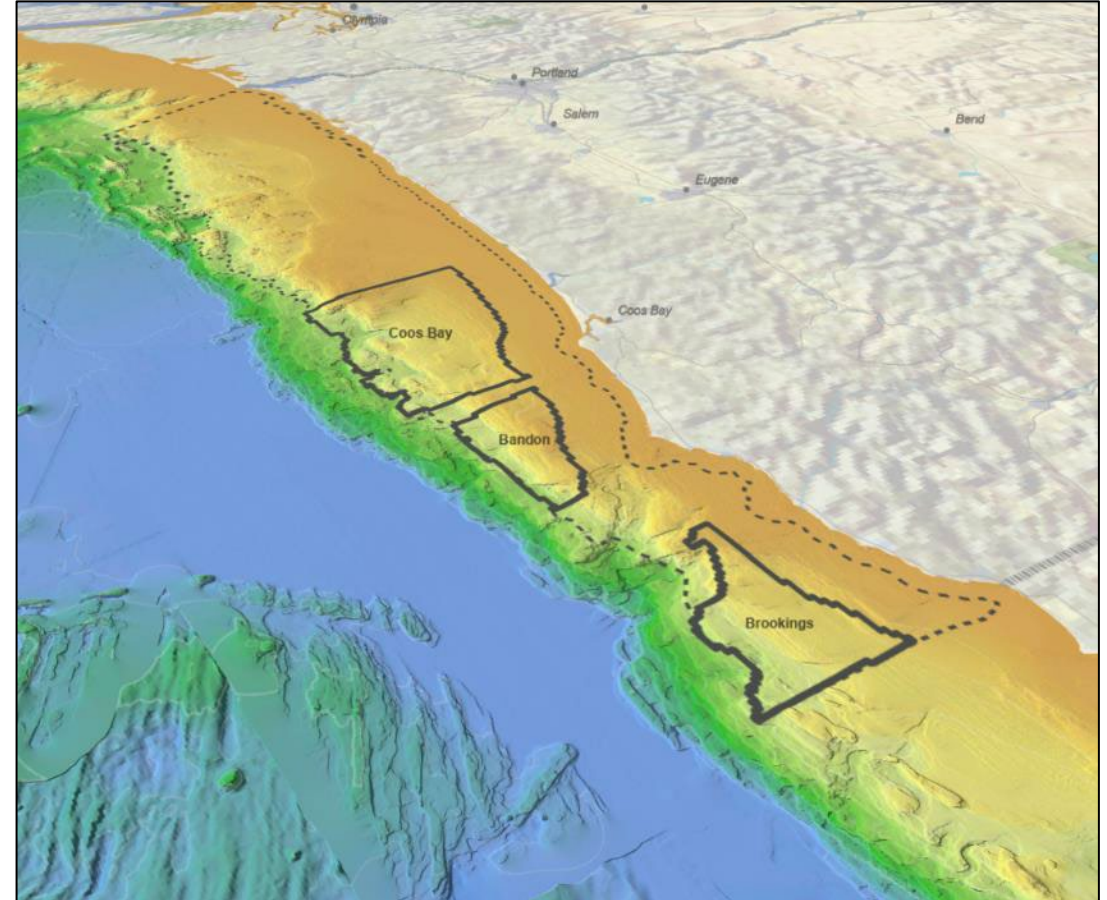
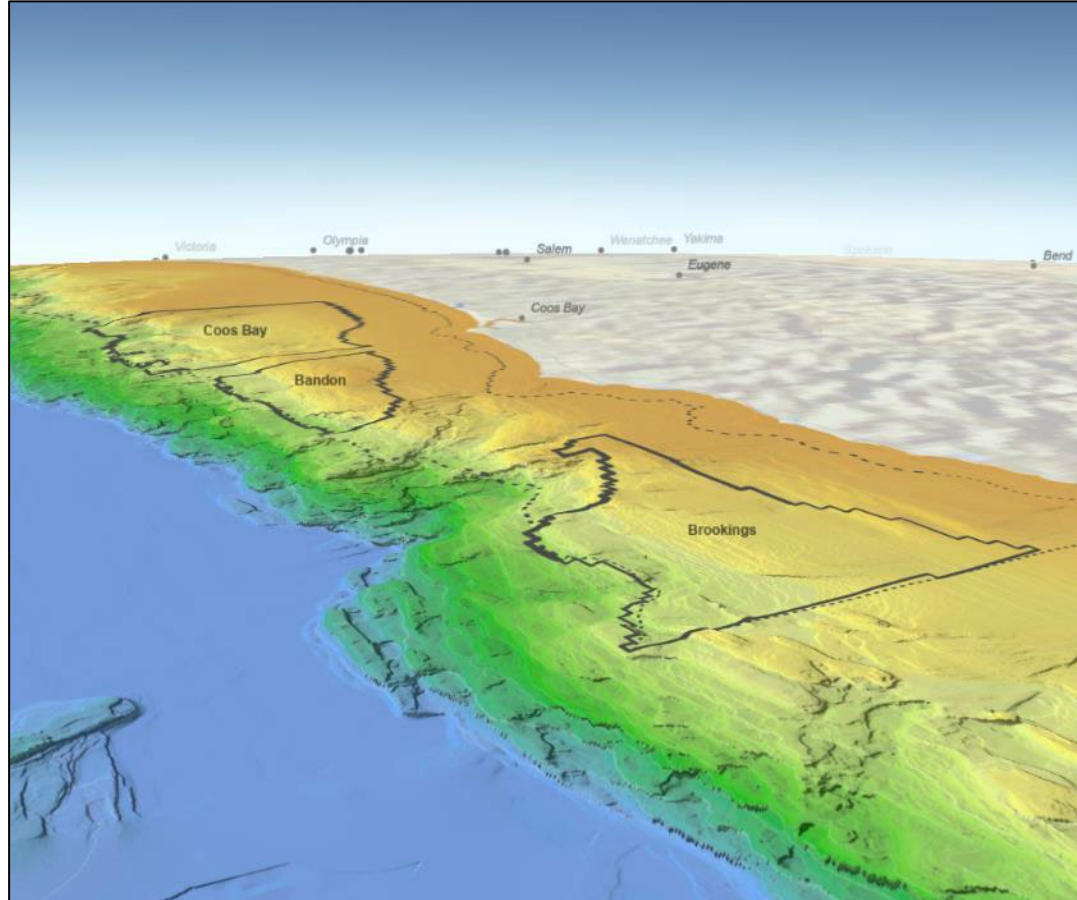
Offshore Wind Point of Interconnection (POI)	Max Capacity (MW)
Clatsop	361
Tillamook	553
Toledo	156
Wendson	613
Fairview	941
Total	2,625

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

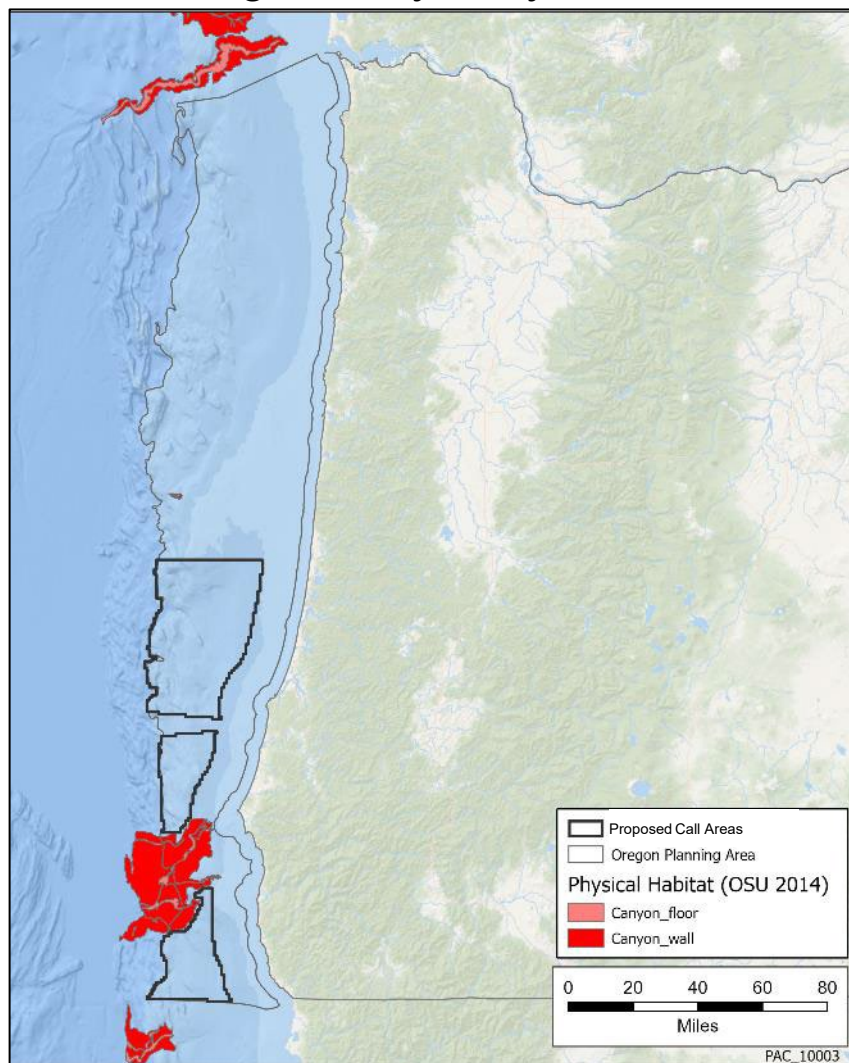


3D View of Water Depth



Slope

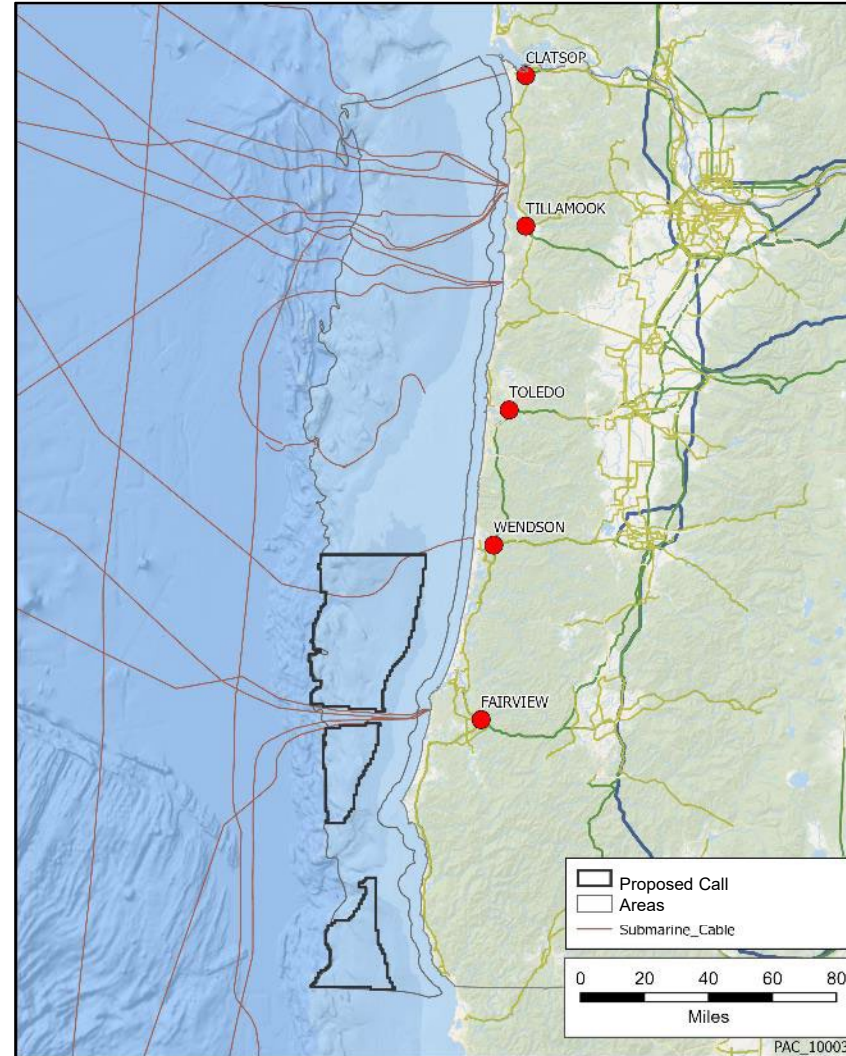
Rogue canyon system



Slope

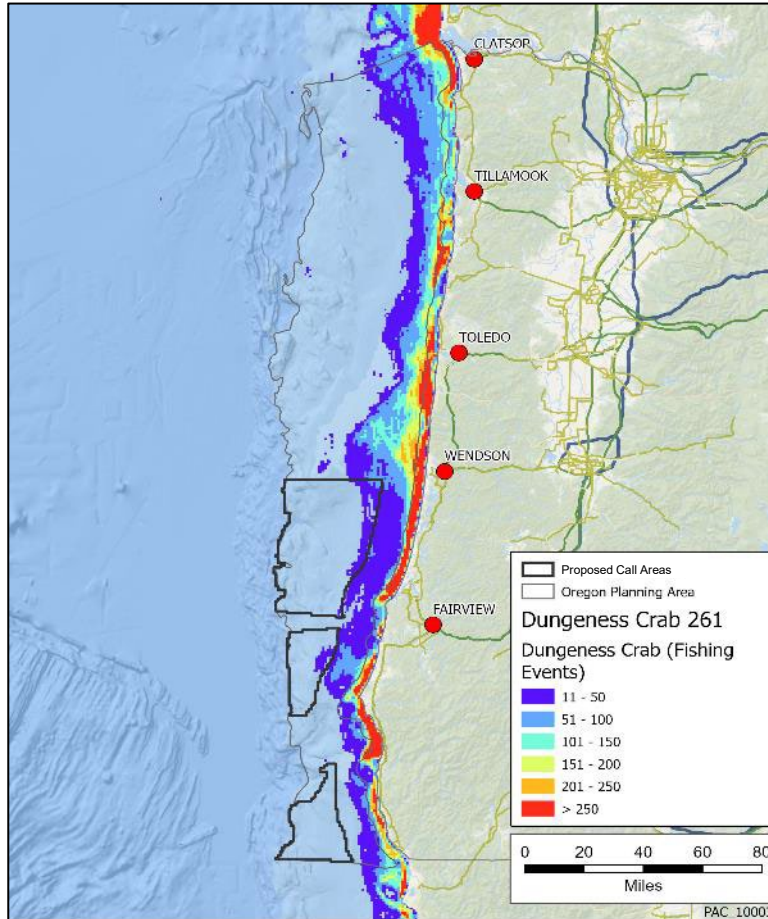


Submarine Cables

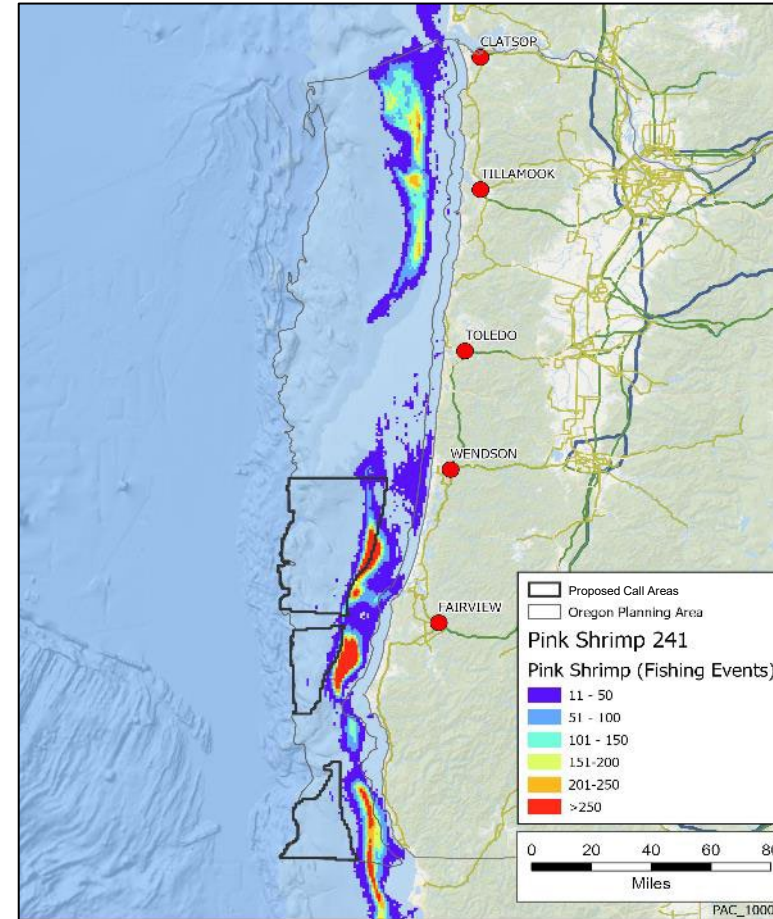


East Boundary: 13.8 mi (12 nmi) from Shore

High-density fishing areas
for Dungeness Crab

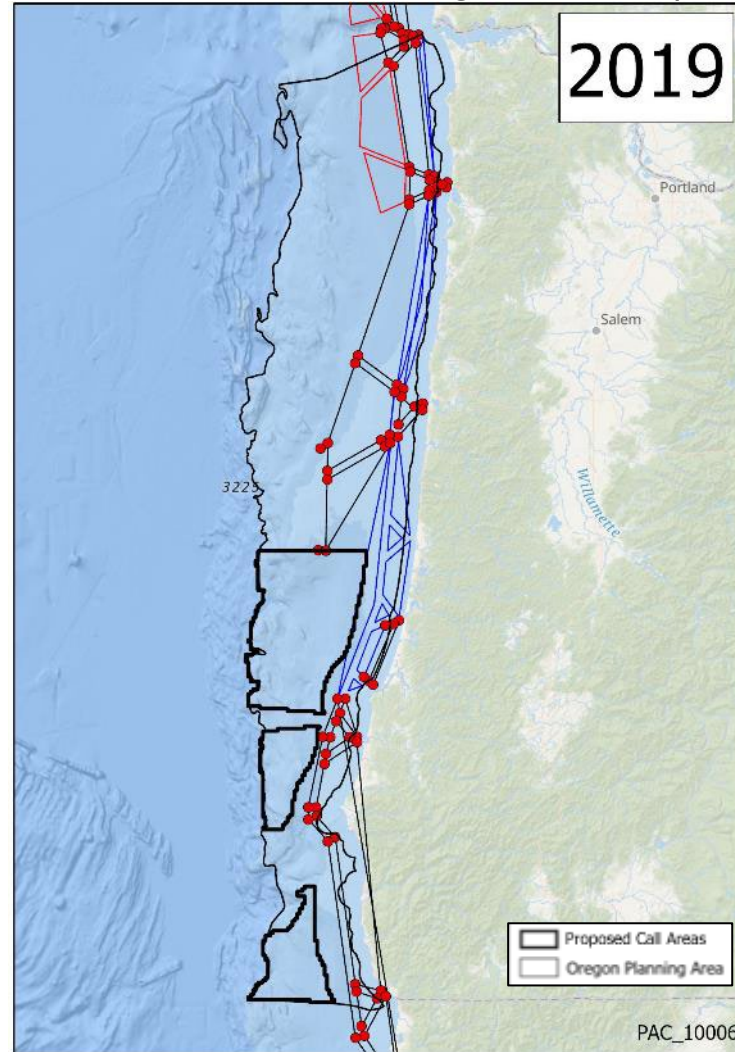


High-density fishing areas
for Pink Shrimp



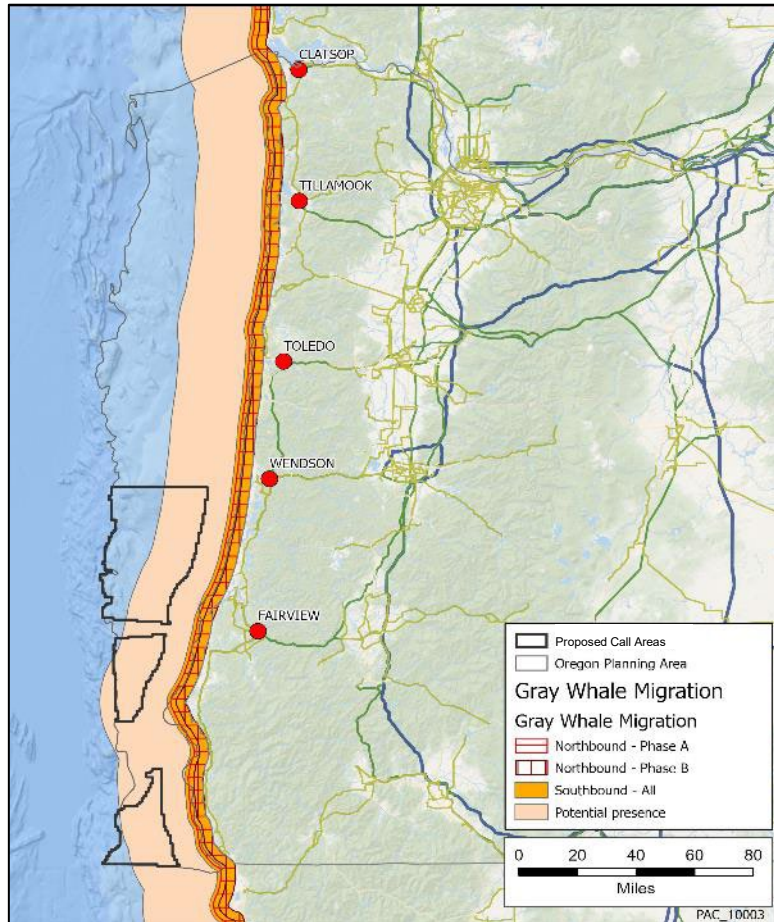
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Crabber/towboat lane agreement (2019)

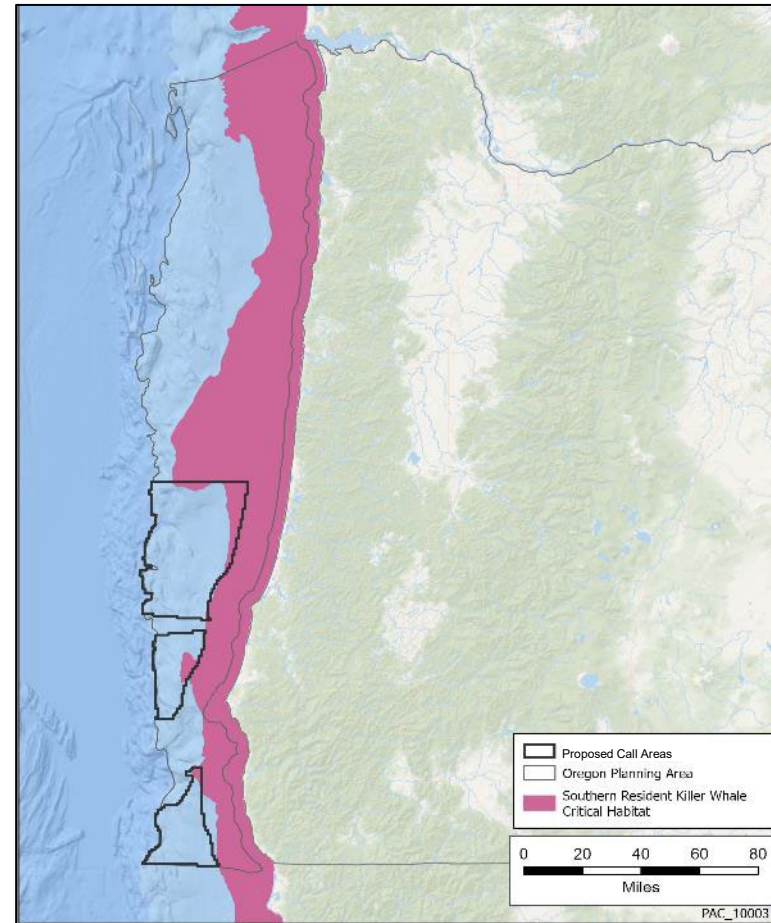


East Boundary: 13.8 mi (12 nmi) from Shore

Gray Whale migratory corridor



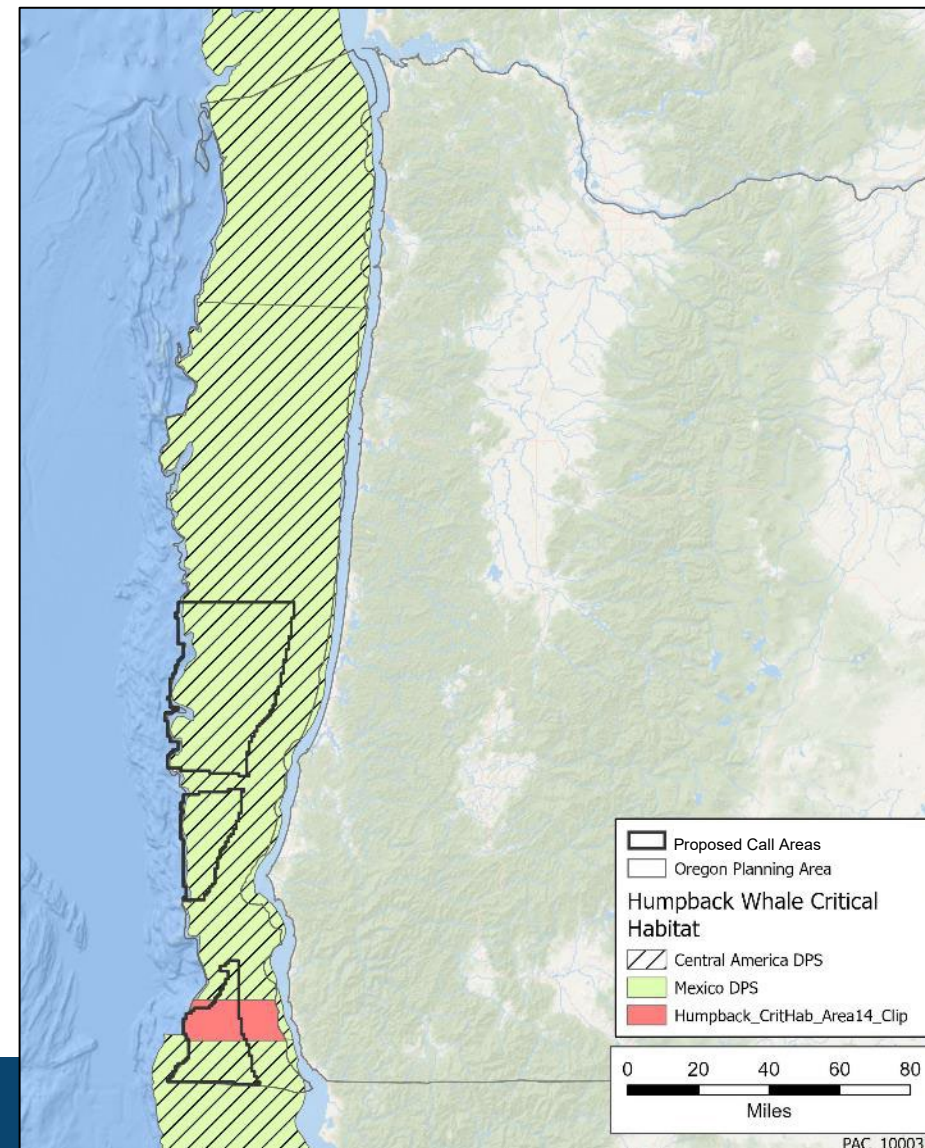
Southern Resident Killer Whale critical habitat



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

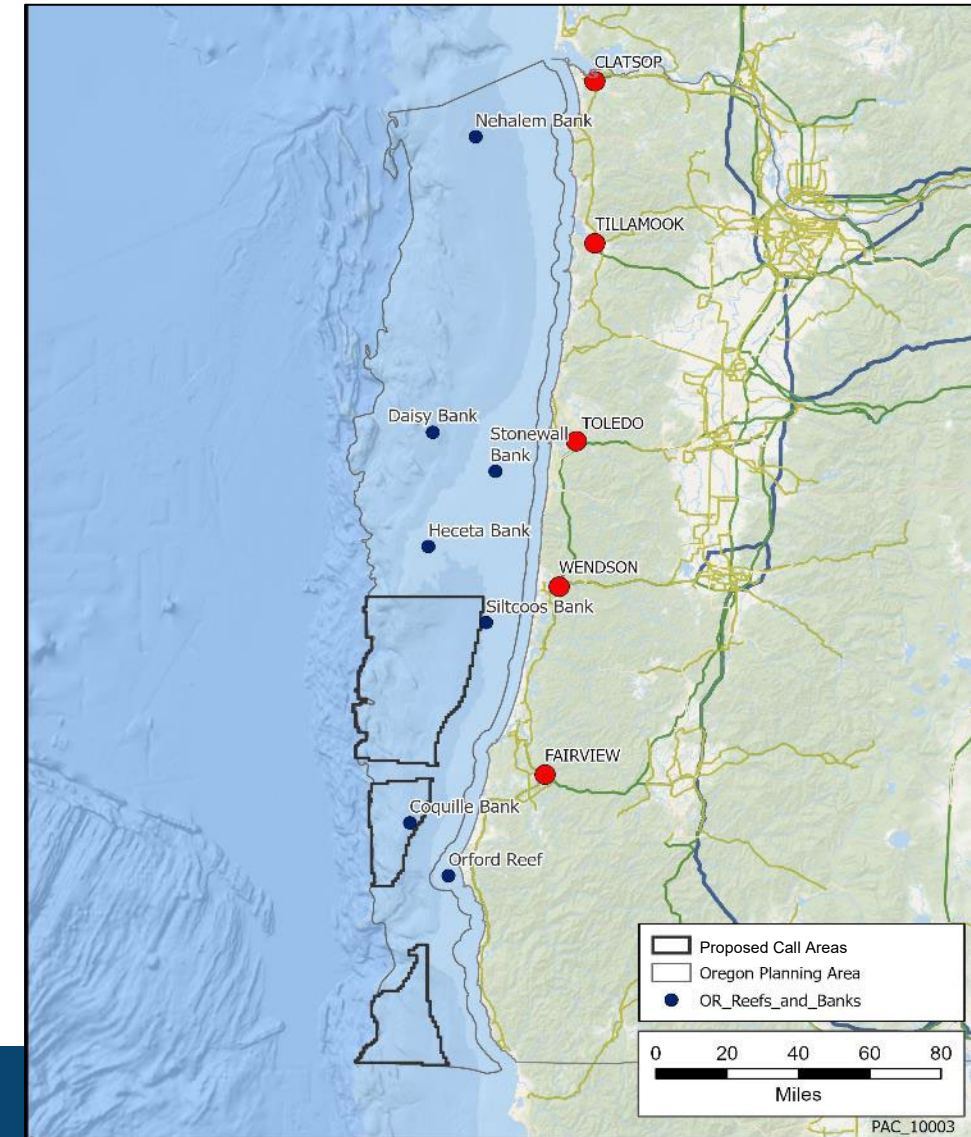


Short-tailed Albatross

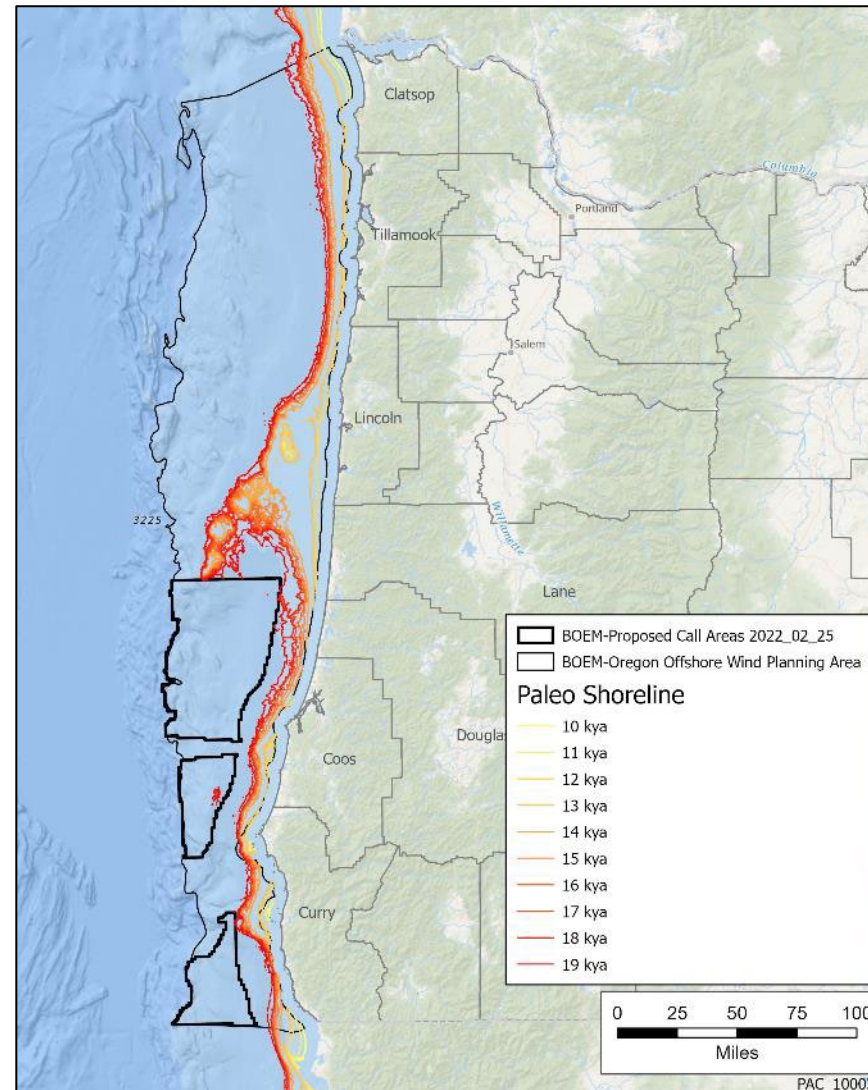
Rock Reef Habitat

- **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

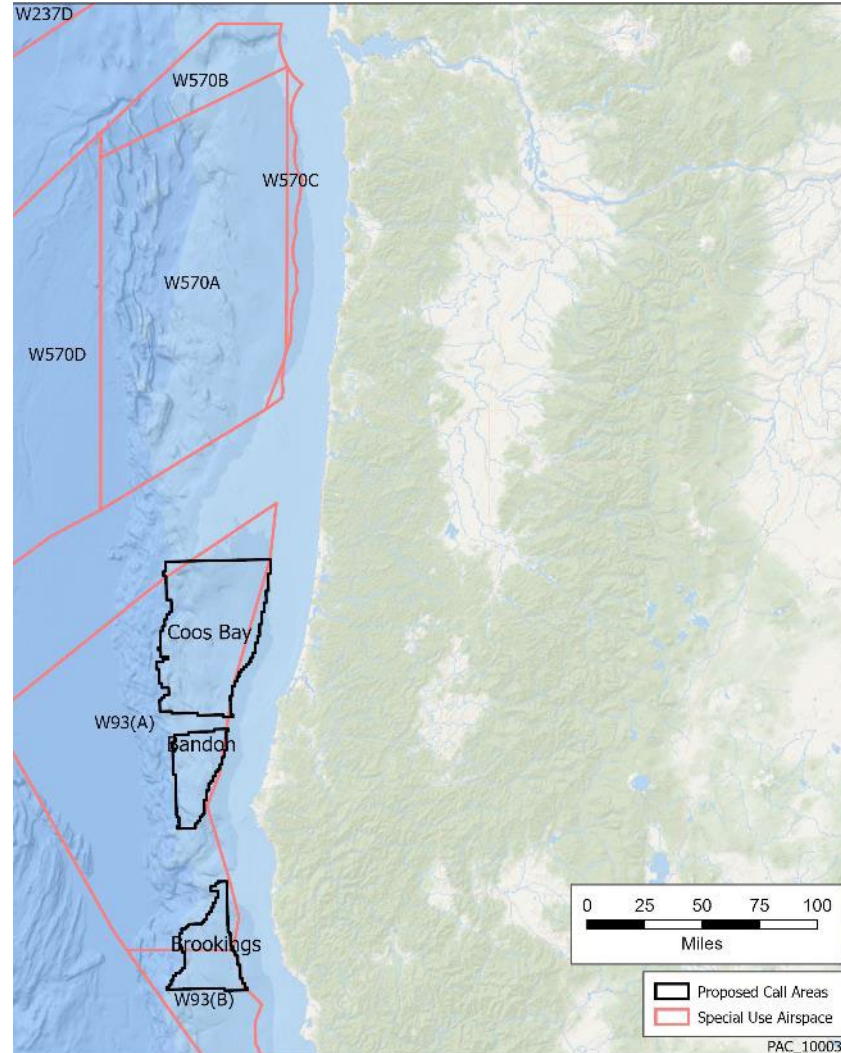
BOEM-Tribal Meetings

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



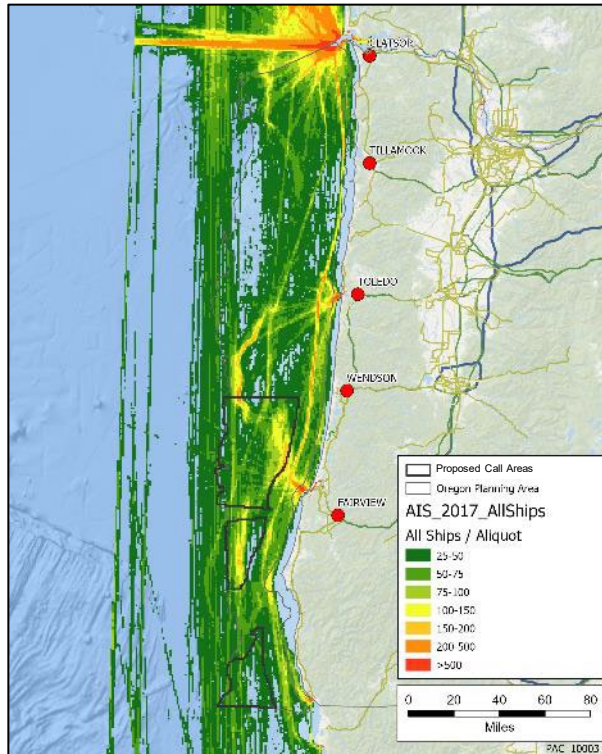
Department of Defense (DoD) Considerations

Special Use Airspace

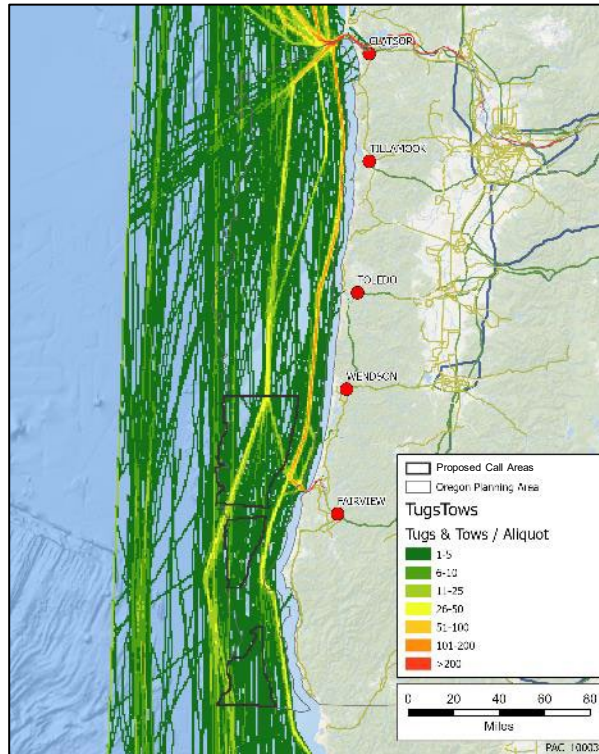


Vessel Traffic

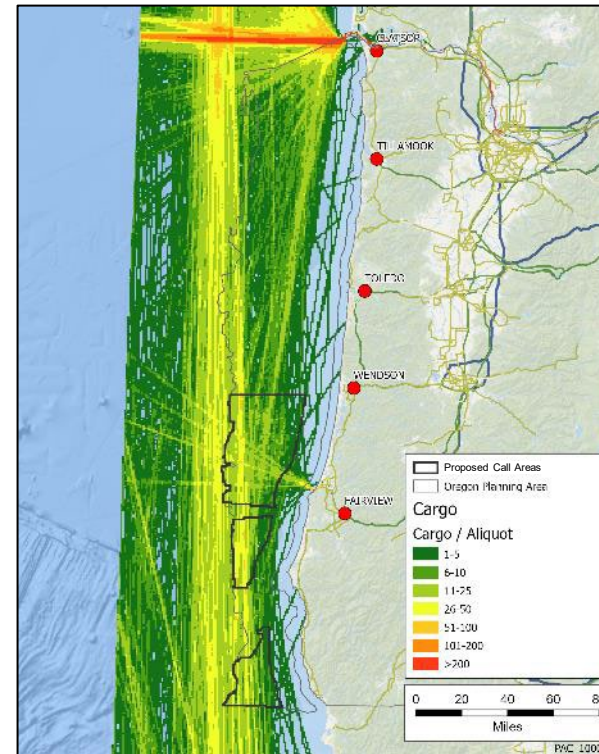
All Ships



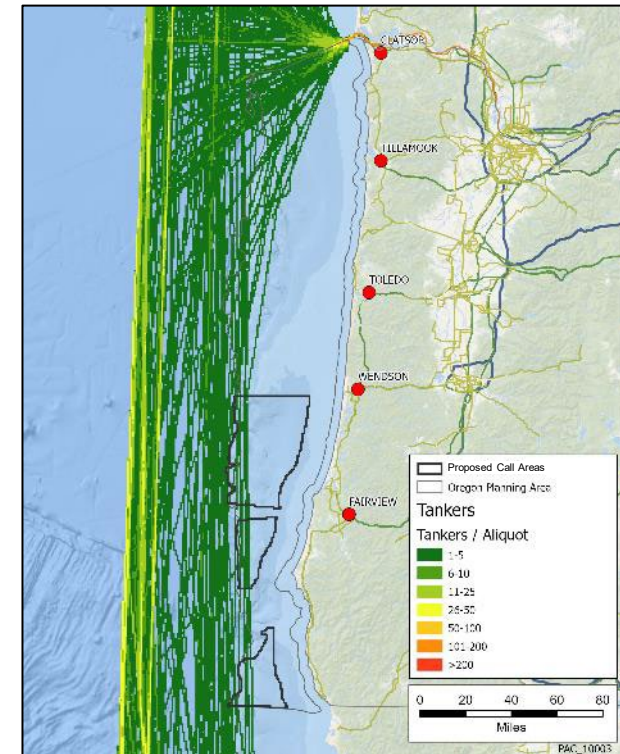
Tugs & Tows



Cargo

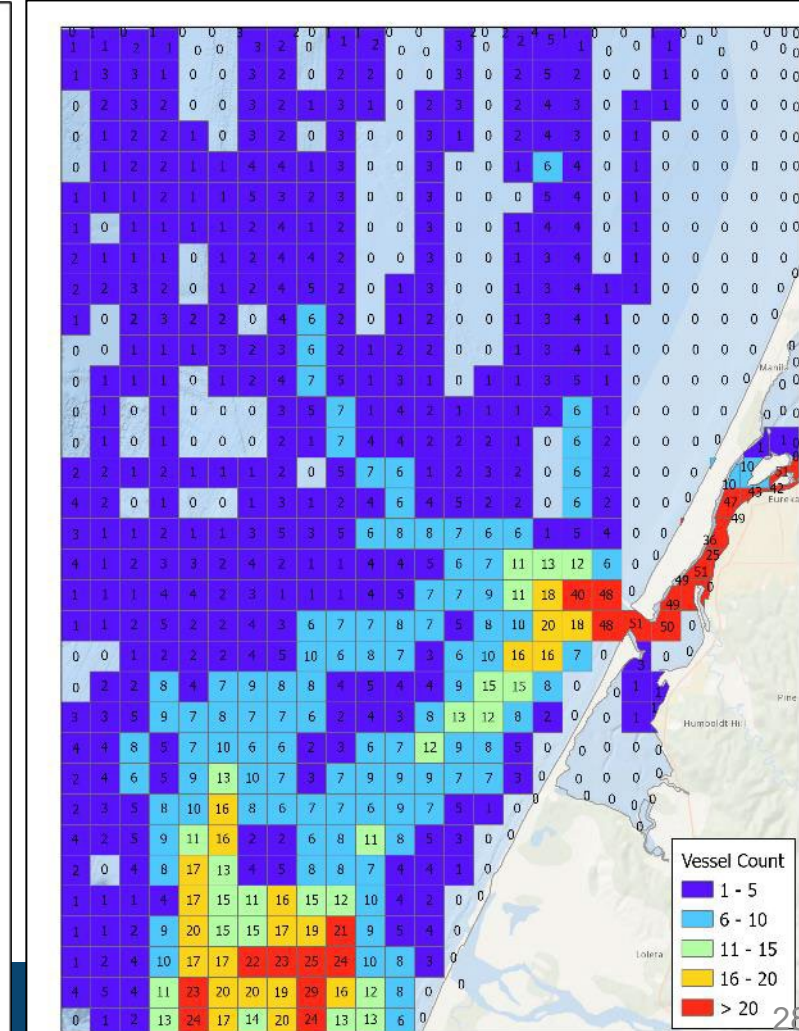
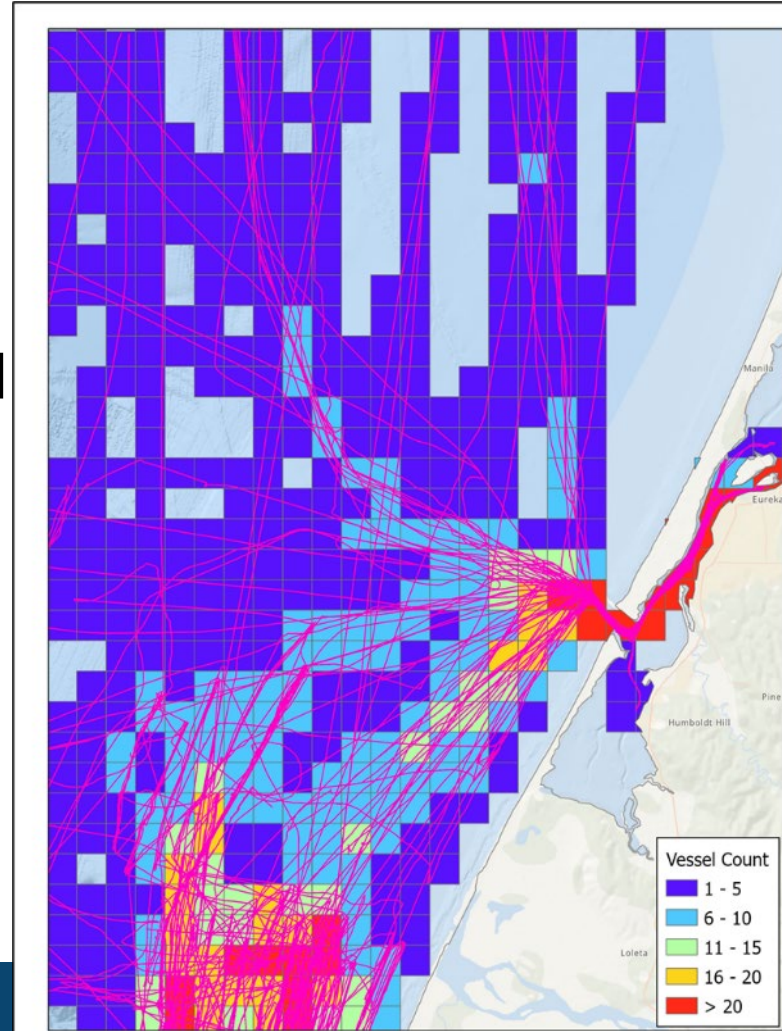


Tankers



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

Crab/Tow Lanes

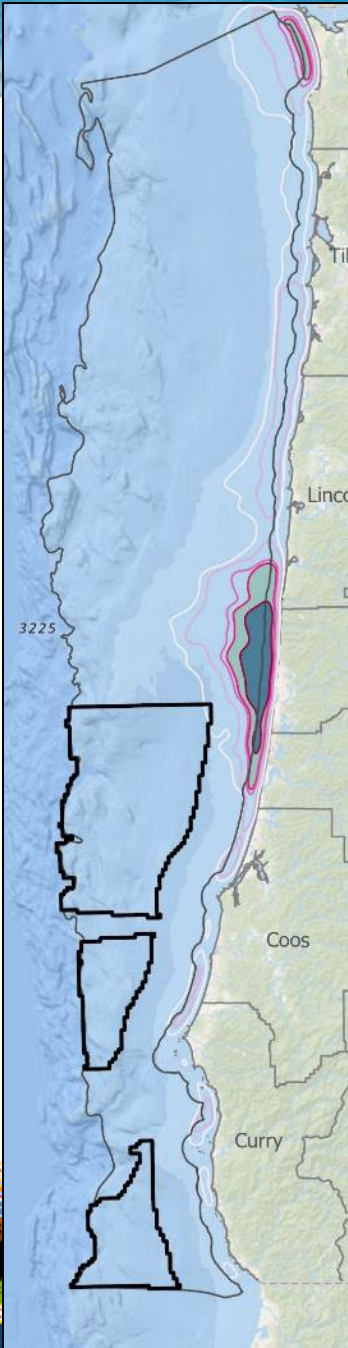
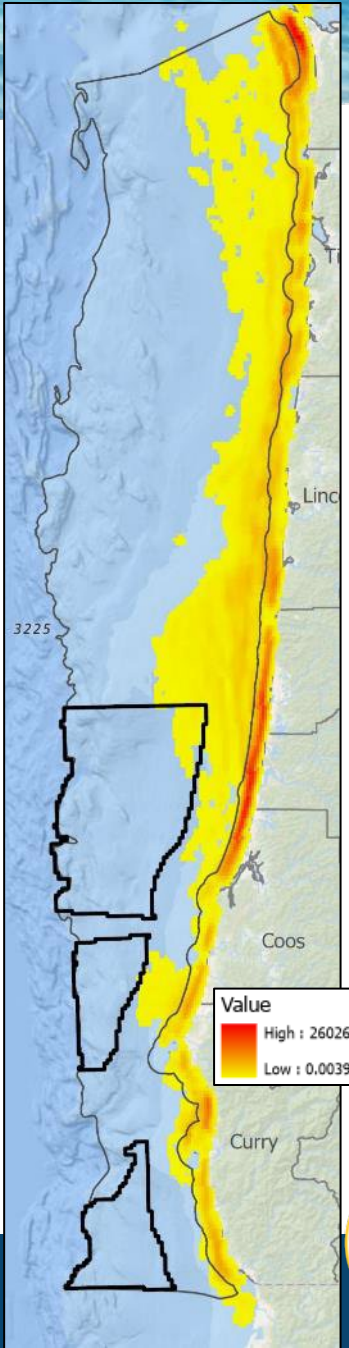
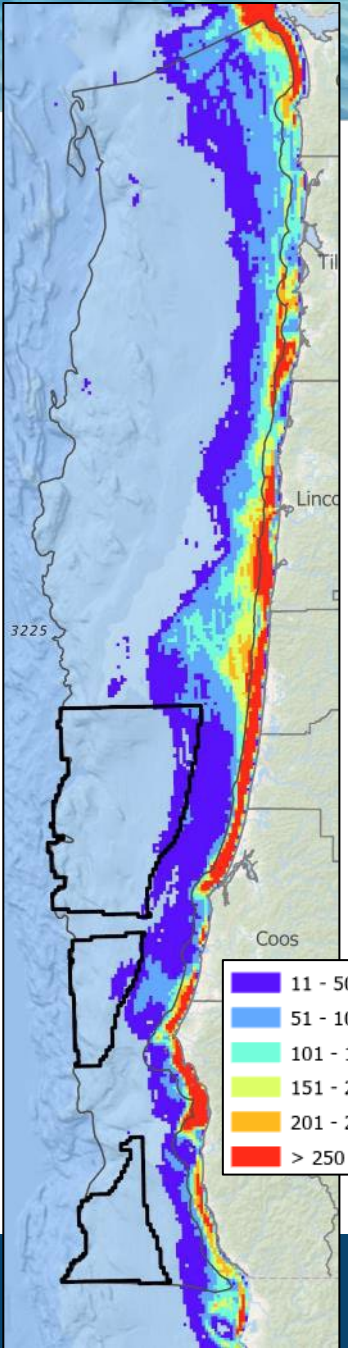
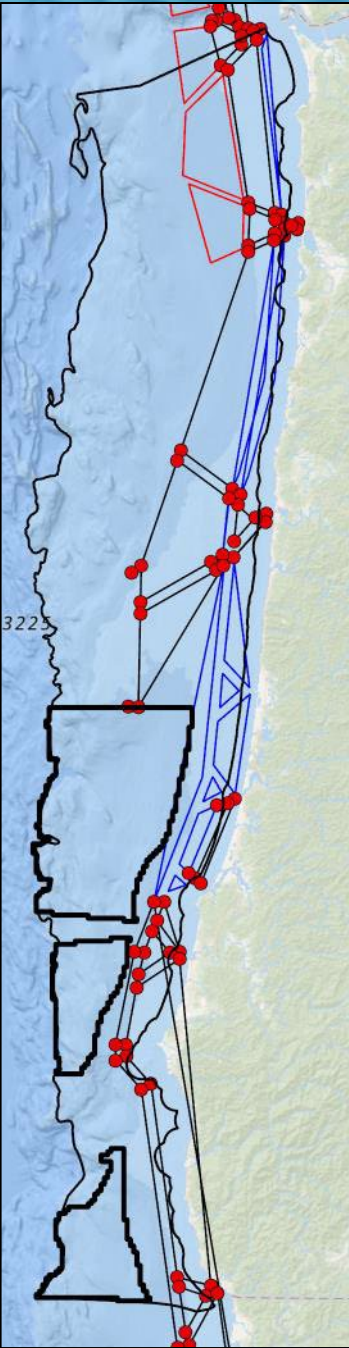
VMS 2010-2017

ODFW 2018-2020

TSP 2012

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%
Albacore tuna	\$13,910,346	9%
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%
<i>All other species</i>	\$7,613,932	5%
Total	\$152,372,563	100%

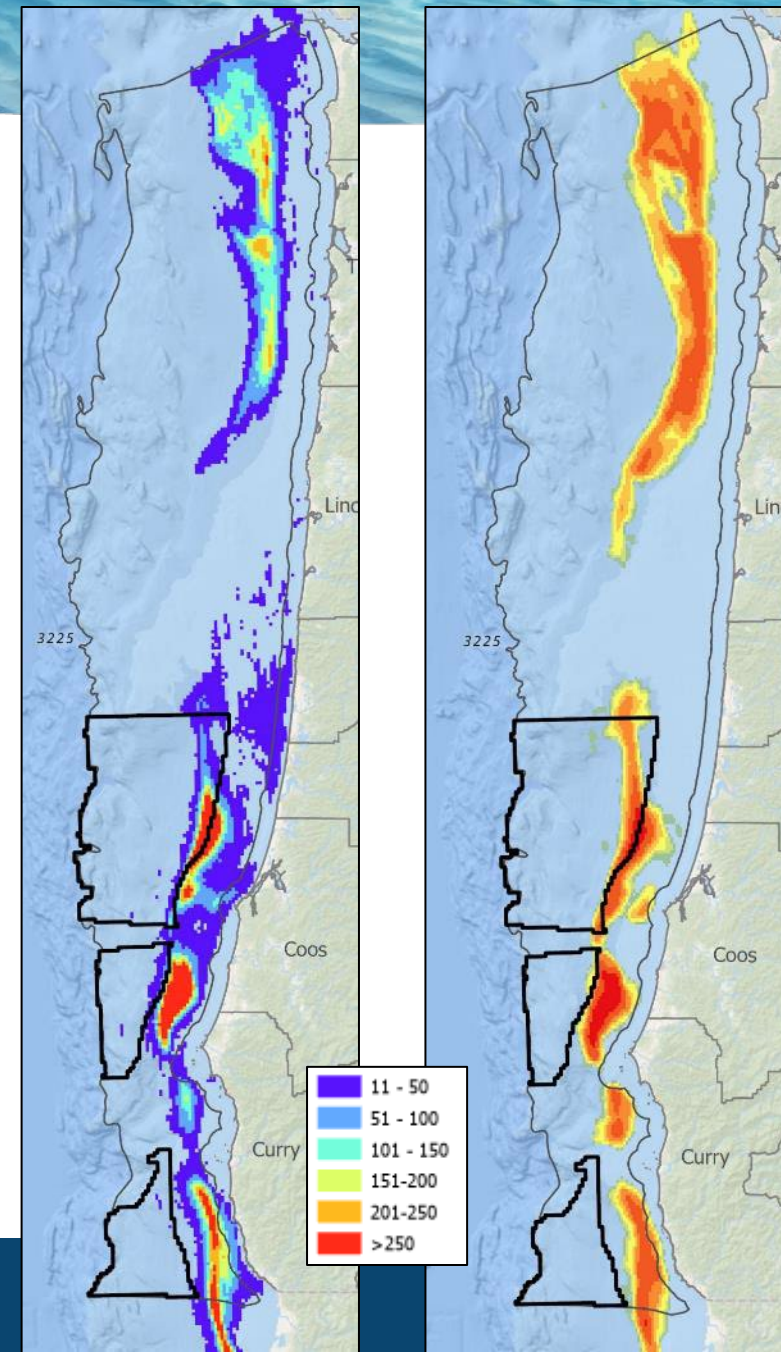


Pink Shrimp

VMS 2010-2017 ODFW 1995-2020

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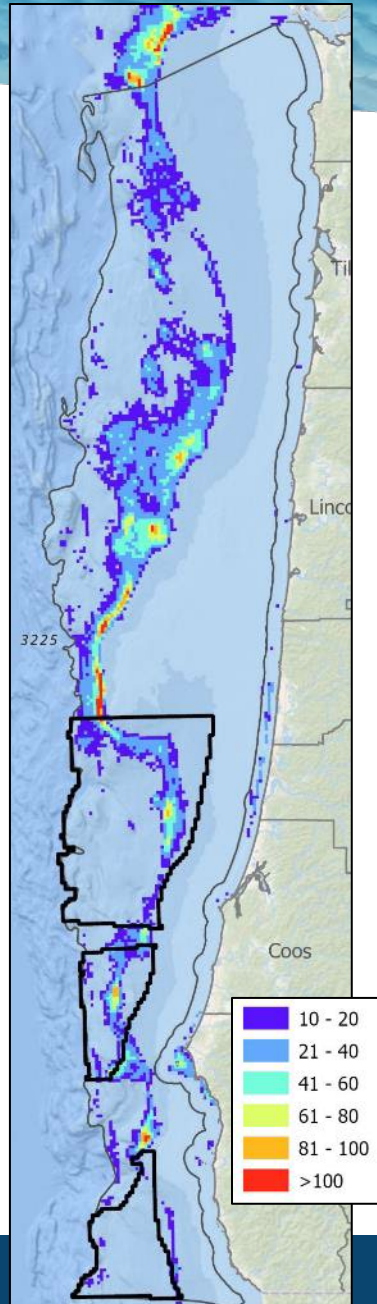
Sablefish

ODFW Kernel Density Effort VMS 2010-2017

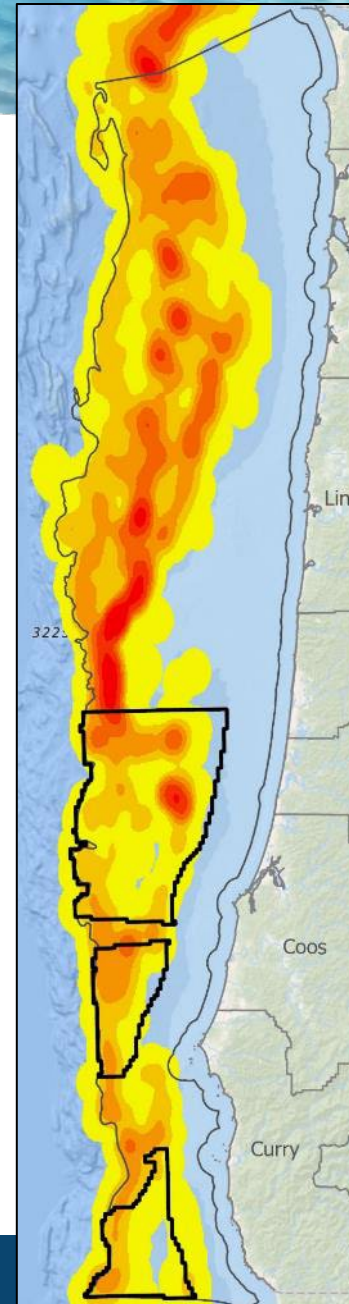
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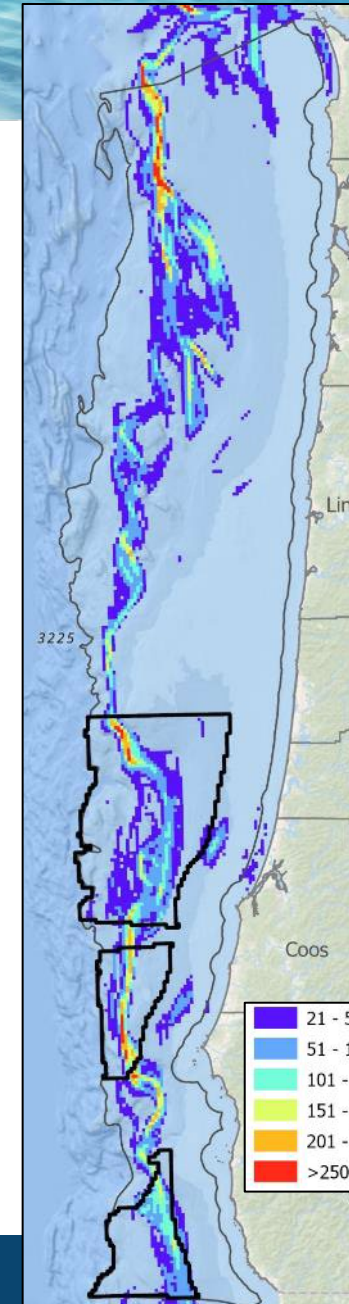
VMS
LE Groundfish



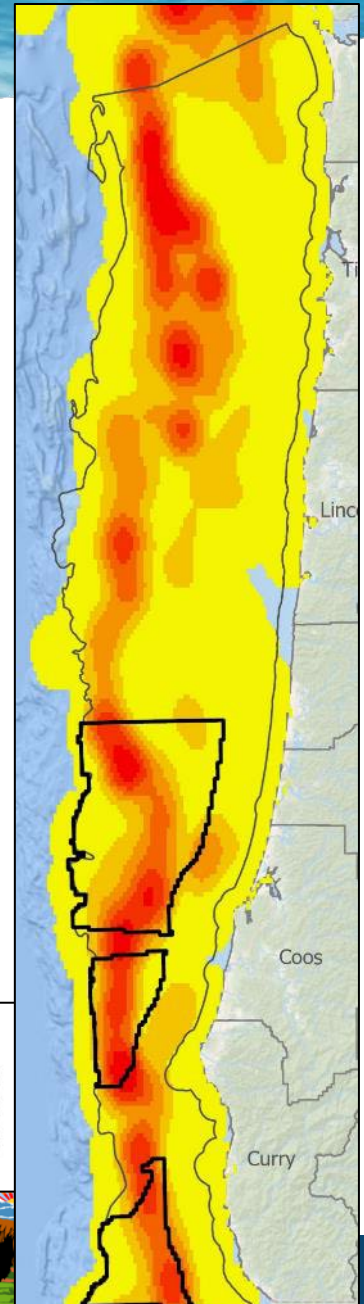
ODFW Pot Gear
2011-2020



VMS
Bottom Trawl



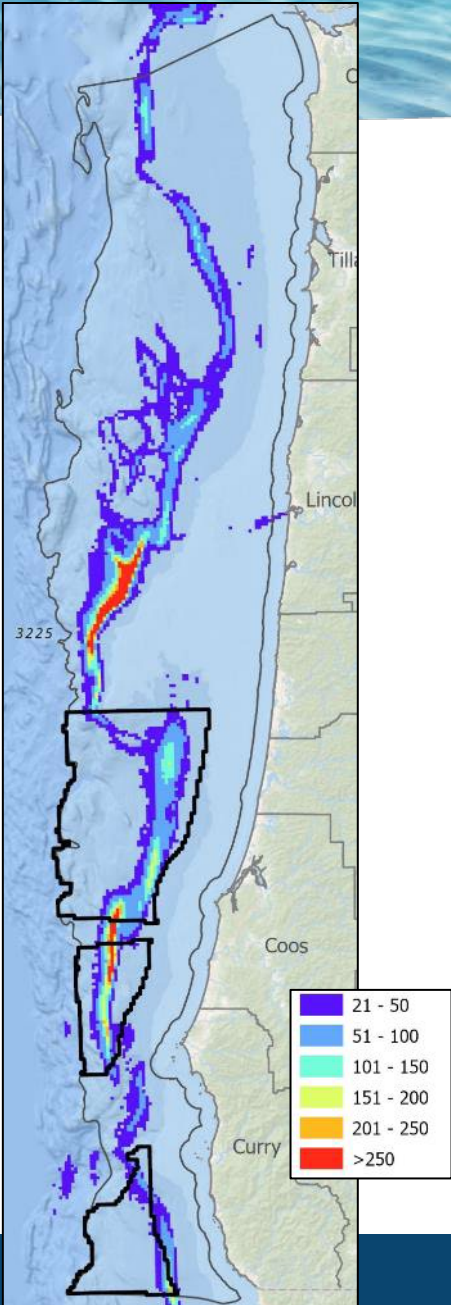
ODFW Bottom Trawl
2011-2019



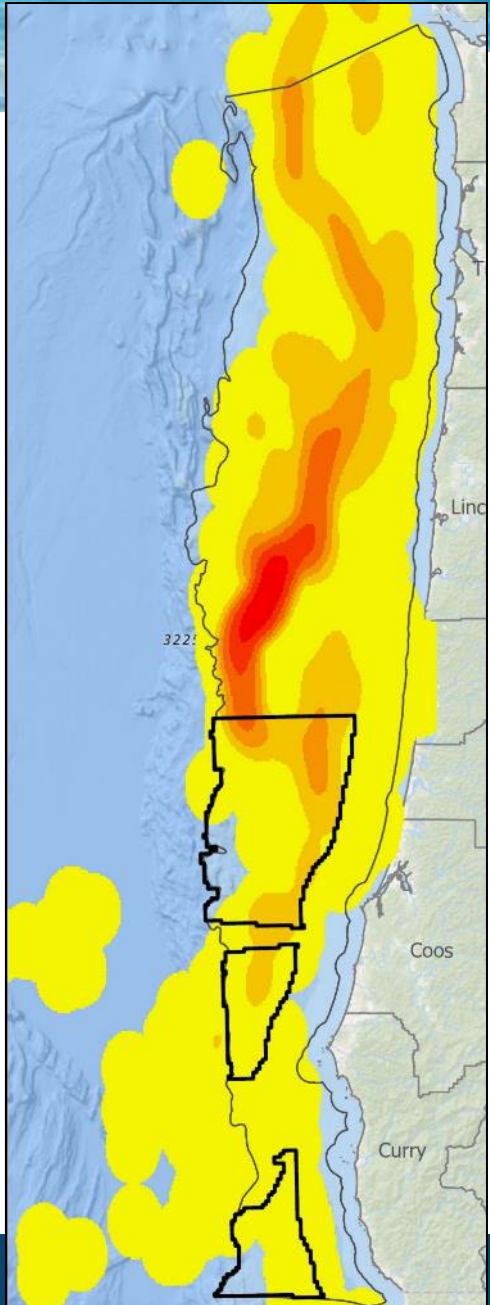
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VMS 2010-2017



ODFW 2011-2019
Tow Hours



Whiting Mothership

FRAM 2011-2015

VMS 2011-2015

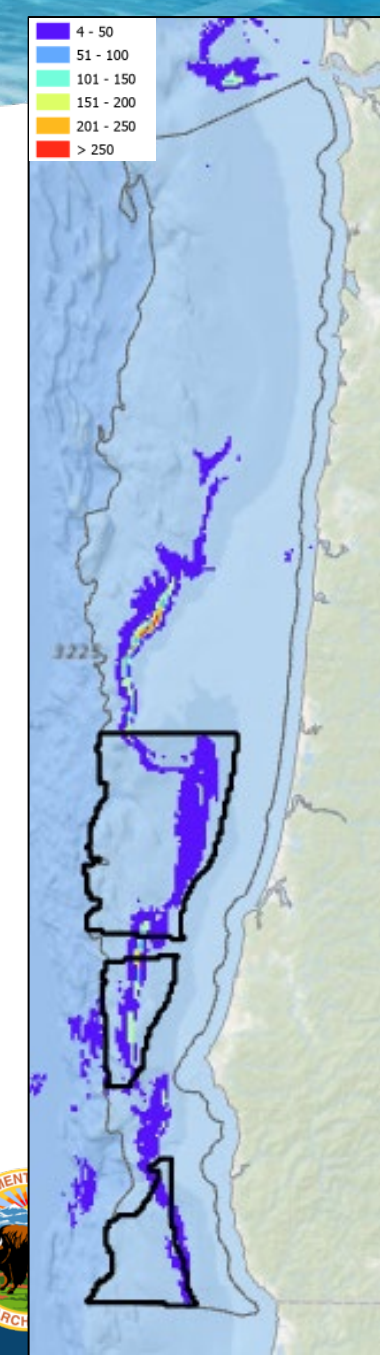
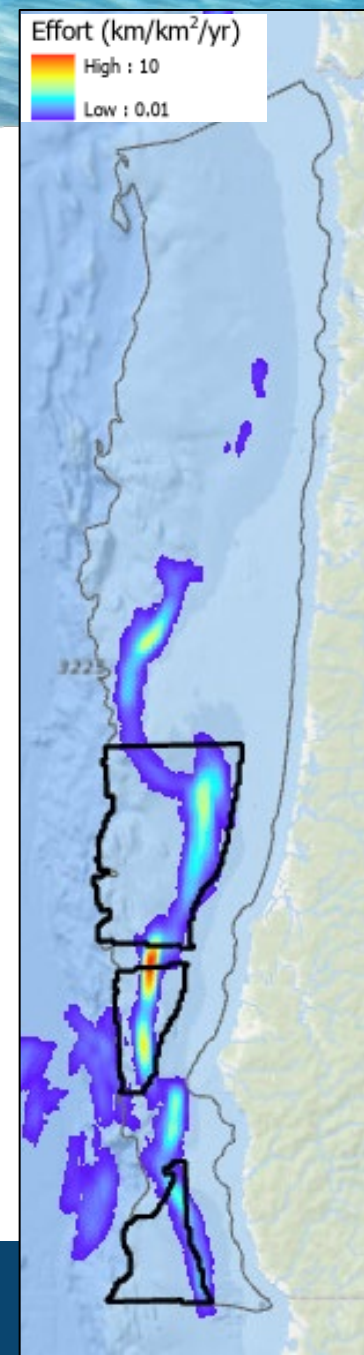
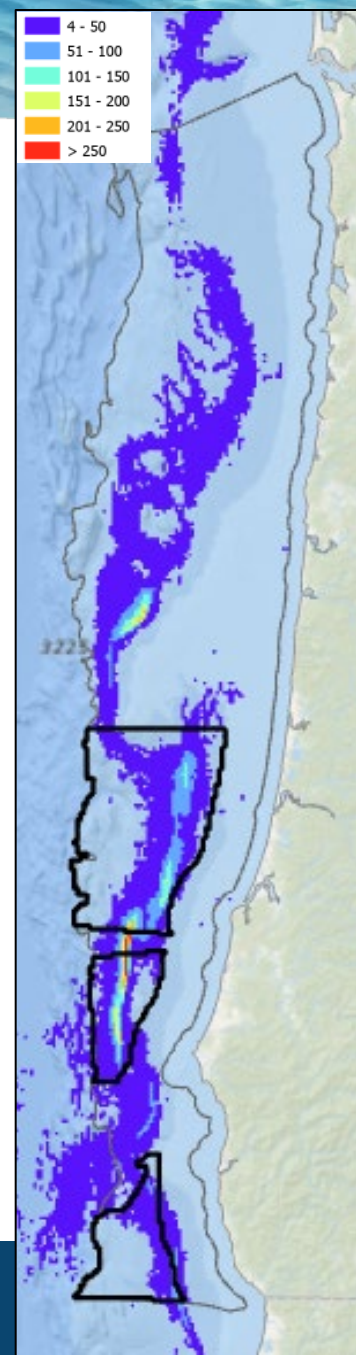
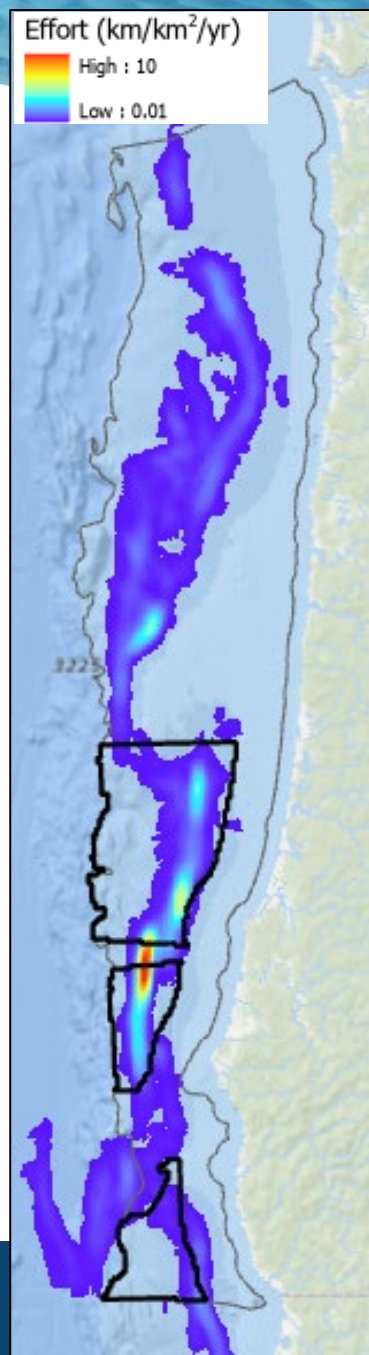
FRAM 2016-2017

VMS 2016-2017

NOAA Fisheries Resource Analysis and Monitoring

Annual Average Landings for Oregon 2009-2018

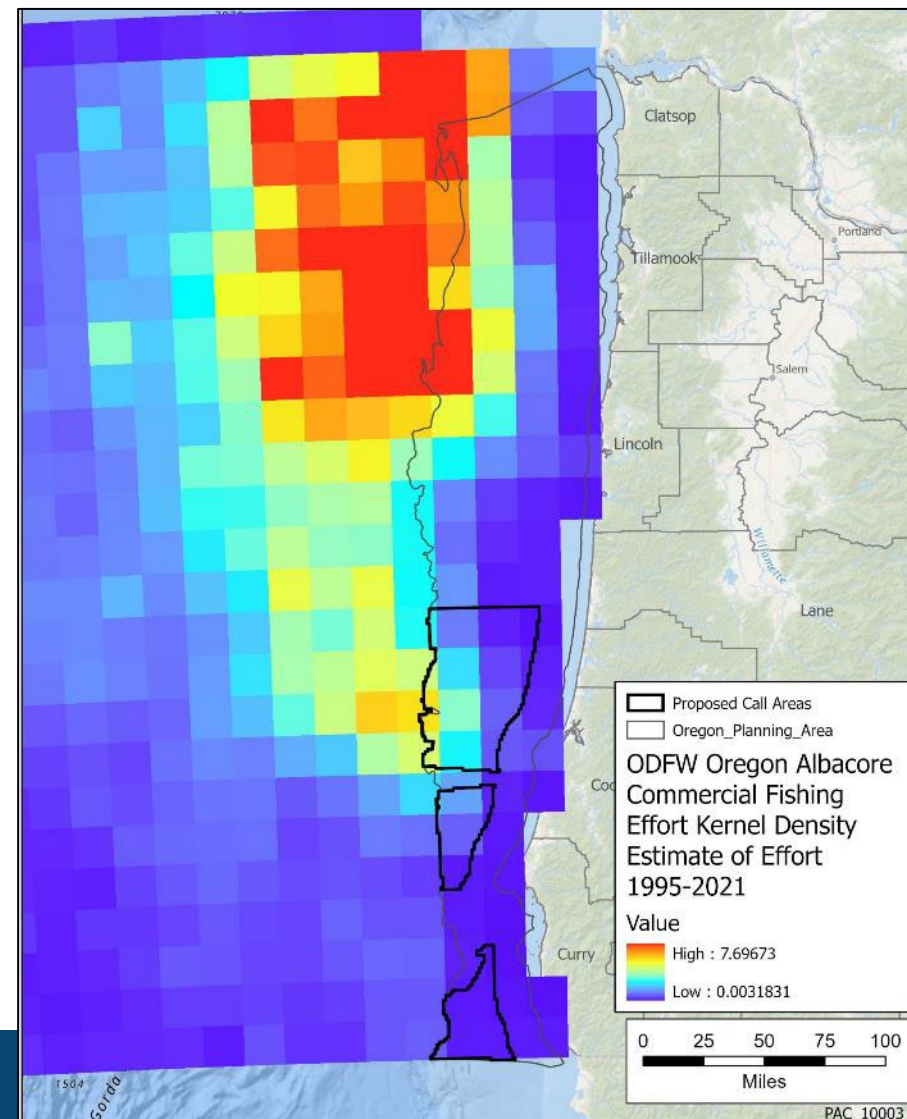
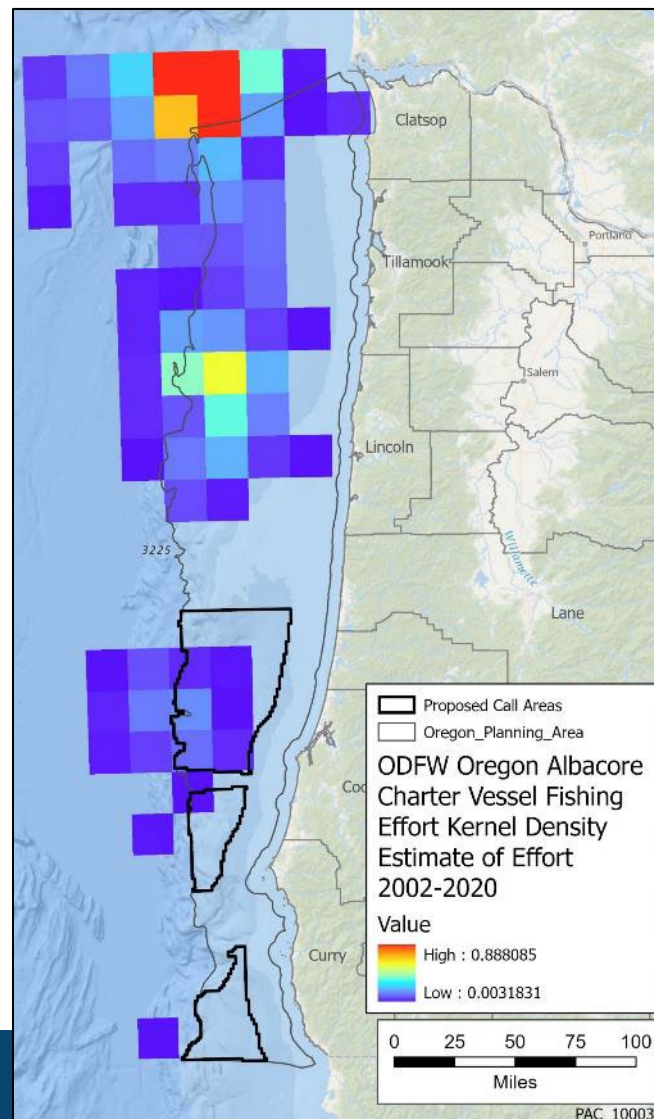
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Albacore Tuna

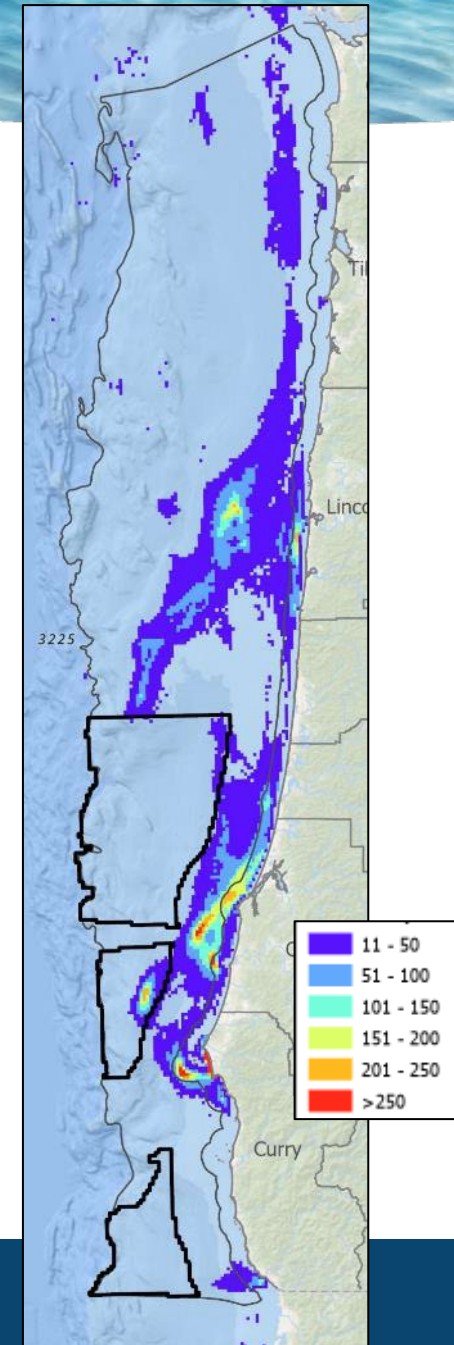
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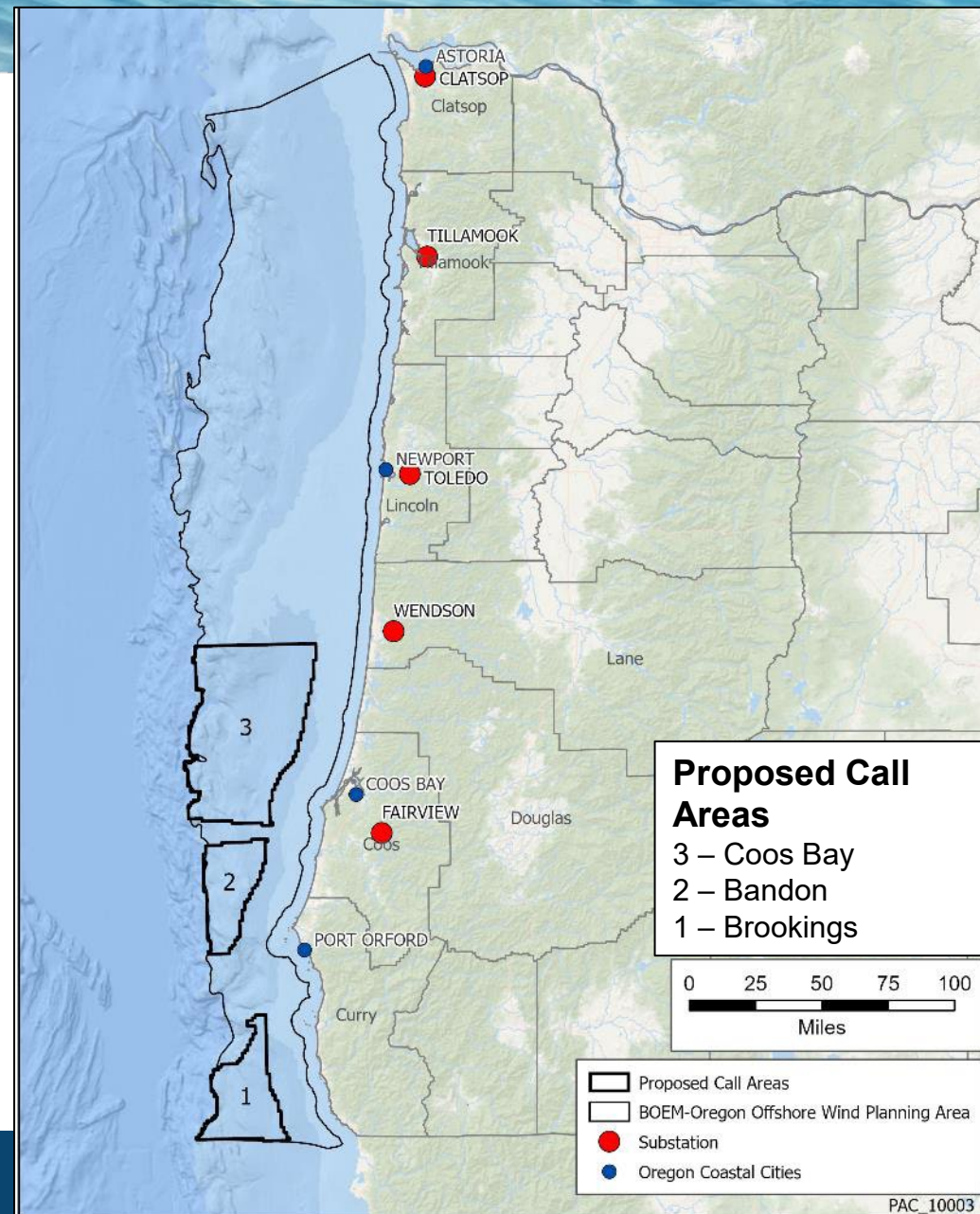
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Total	\$152,372,563	100%



Summary: Guiding Principles and Proposed Call Areas

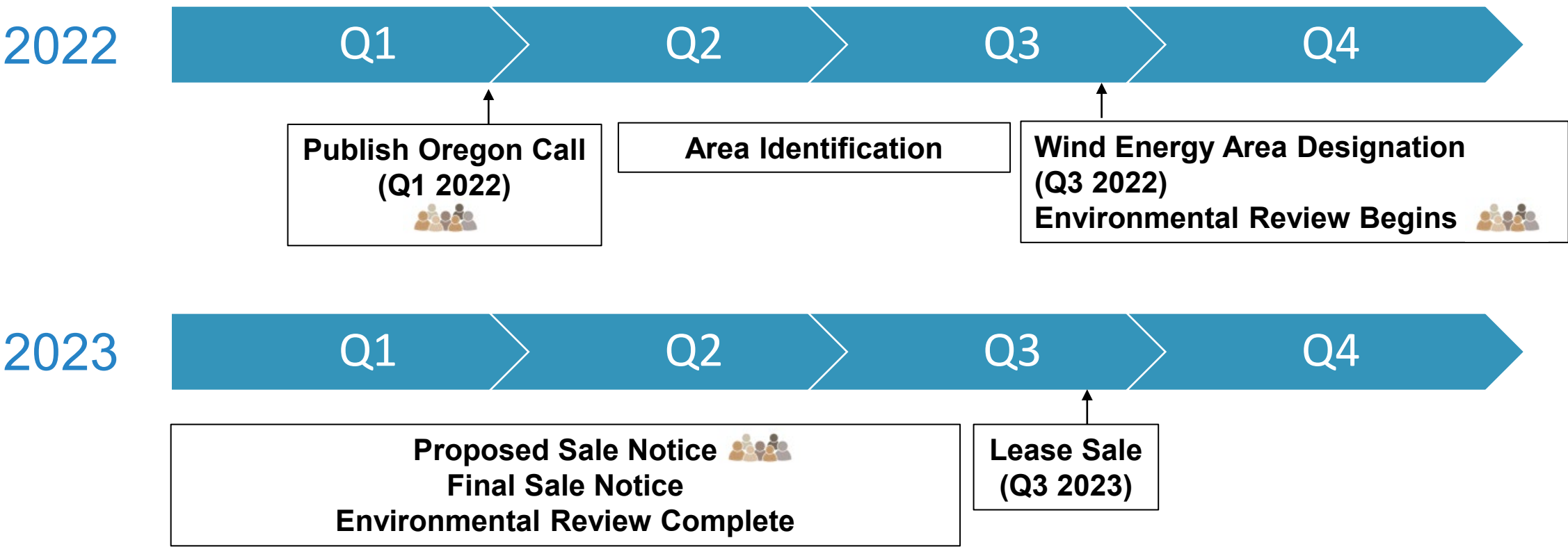
Guiding Principles

- 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

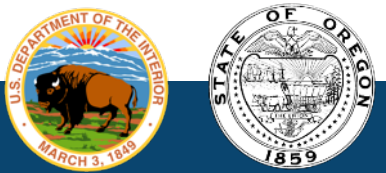


Proposed Schedule

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



 = Public comment



Anticipated Next Steps (near-term)

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

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

Continuation of Engagement with Fishing Community

After BOEM issues the *Call for Information and Nominations in the Federal Register*

- Continue to gather data and information on the Call Areas to inform future decisions
- Focus engagement with specific fishing sectors
- Listening sessions on the Call Areas offshore Oregon; receive public comment
- In-person and virtual meetings

Potential Fishing Sector Meetings

- Target timeframe: April-May 2022
 - Pacific Whiting
 - Pink Shrimp and Groundfish trawl
 - Dungeness Crab
 - Salmon and Tuna
 - Other

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