Offshore Wind Energy Planning

Process – Data Gathering – Studies – Analysis

Pacific Fishery Management Council Webinar
July 22 - 23, 2021
Today's Participants from BOEM Pacific Regional Office

- **Frank Pendleton**, GIS Analyst
- **Donna Schroeder**, Marine Ecologist
- **Susan Zaleski**, Marine Ecologist
- **Doug Boren**, Regional Supervisor, Office of Strategic Resources
- **Rick Yarde**, Regional Supervisor, Office of Strategic Resources
- **Necy Sumait**, Chief, Renewable Energy Section
Presentation Topics

- **Leasing Process and Status**
  - Overview of leasing process
  - Status of planning in the Pacific
  - Upcoming events/Next steps

- **Data Acquisition and Mapping**
  - Summary of data acquisition and repository for OSW planning (Oregon/California)
  - Sources of data – partners in the analysis
  - Preliminary analysis of available data sets (VMS etc.)

- **Studies and Analysis**
  - BOEM Studies Program
  - BOEM environmental analysis
BOEM’s Offshore Wind Energy Authorization Process

[ Planning & Analysis ]
- Initiate Leasing Process (RFI/Call)
- Area Identification
- Wind Energy Areas
- NEPA/Environmental Reviews
- Publish Leasing Notices
- Auction

[ Leasing ]
- Lease Granted
- Pre-survey Meetings/Plan
- BOEM Reviews & Approves SAP
- Submit COP (with Project Design Envelope – optional)

[ Site Assessment ]
- Submit SAP
- Site Assessment & Surveys (maximum timeframe)
- BOEM Environmental & Technical Reviews
- BOEM Deems COP Complete & Sufficient

[ Construction & Operations ]
- BOEM Approves COP
- Submit Design & Installation Plans
- Installation
Renewable Energy Process: Calls, Wind Energy Areas and Lease Areas

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

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

- **Lease Area**
  - An area BOEM offers for lease during a Lease Sale
Anticipated Next Steps - California

**Identify Wind Energy Area** on the North Coast
- Conduct environmental analysis for potential lease issuance and site characterization

**Publish Call for Information** on additional areas adjacent to the 2018 Morro Bay Call Area

**Outreach and engagement** in coordination with California state agencies

Stay informed about BOEM California activities at [www.boem.gov/California](http://www.boem.gov/California) and sign up for updates at [www.boem.gov/CaliforniaUpdates](http://www.boem.gov/CaliforniaUpdates)
Oregon Offshore Wind Energy Planning

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

Oregon Offshore Wind Mapping Tool (OROWindMap)
Continue data gathering and engagement throughout BOEM’s authorization process

Offshore Wind Energy Planning Data Review Virtual Workshops
  o August 4, 2021, from 9:00 AM -12:00 PM PT: Physical, human, and biological datasets
  o August 11, 2021, from 9:00 AM -12:00 PM PT: Fisheries-related datasets

Fall 2021: BOEM Oregon Task Force Meeting
  o Present the results of the 12-month effort and seek input

Winter 2021-2022: BOEM Oregon Task Force Meeting
  o Review draft Call Area(s) with the Task Force

BOEM to publish Call for Information and Nominations (Call) in the Federal Register
  o Describes geographically distinct areas (Call Area(s))
  o Invites submission of information and nominations of interest for commercial wind leases

Stay informed about BOEM Oregon activities at www.boem.gov/Oregon and sign up for updates at www.boem.gov/OregonUpdates
Fishing Community Outreach and PFMC Coordination

- **PFMC**
  - Check-ins prior to PFMC meetings with PFMC staff and State representatives since ~ July, 2020
  - February 24, 2021: Webinar Presentation to Habitat Committee and PFMC Advisory Bodies
  - March 5, 2021: PFMC - Marine Planning Update
  - June 29, 2021: Brief update by BOEM
  - July 22-23, 2021: Marine planning and offshore development online meeting

- **Outreach to fishing community in coordination with State partners**
  - Inform on status of offshore wind planning
  - Ask for data and information
  - Share preliminary analysis on VMS information
NWFSC Observer Program Spatial Data

PFMC and BOEM Meeting
July 22-23, 2021
Spatial Data Collected by Observers

<table>
<thead>
<tr>
<th>Gear Type Code</th>
<th>Haul/ Set #</th>
<th>Date</th>
<th>Time</th>
<th>Latitude</th>
<th>Longitude</th>
<th>Catch of ORV Fisheries</th>
<th>Gear Type</th>
<th>Total ORV Length</th>
<th>Target Strategy</th>
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<tbody>
<tr>
<td>1 - Trawl Small Port (44 inches)</td>
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<td>2 - Trawl Large Port (44 inches)</td>
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<td>3 - Midwater Trawl</td>
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<td>4 - Demersal Trawl</td>
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<td>5 - Unidentified Gear</td>
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<td>6 - Vertical Fish and Line</td>
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<td>8 - V俪 (Commercial)</td>
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<td>16 - Other Hook and Line</td>
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<td>17 - Other Hook and Line</td>
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<td>19 - Other Hook and Line</td>
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<td>20 - Other Hook and Line</td>
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</table>
Analysis of Spatial Data
Analysis of Spatial Data
Publicly-Available Spatial Data
VMS Analysis

Pacific Fisheries Management Council Webinar
July 22 - 23, 2021
We are asking for your expertise. Is there...

Other datasets that show where fishing occurs?

A specific concern we should address in our analysis?

Something about a fishery we should consider when analyzing the data?
  - Fishing speeds vs Transit speeds
  - Fishing times
  - Big change by year

People/Organizations/Fishing Meetings BOEM and the States should talk to about Offshore Wind Planning or datasets?

Anything else?
Extensive data discussions, including with:

• California Dept of Fish and Wildlife

• Oregon Dept of Fish and Wildlife

• NOAA Aquaculture Team

• NOAA NWFSC

• PFMC

• PSMFC

• Fishing Commissions
GPS for tracking fishing vessels

NOAA Office of Law Enforcement

Non-Disclosure Agreement
At least 3 vessels in any block
(Example is AIS data)

Data
Vessel ID
Declaration code
Date Time, Lat/Long, Course, Speed

Our Dataset = 2010 – 2017
Who is required to have VMS

Any vessel registered to a **limited entry groundfish** permit

**Non-groundfish trawl vessels**, vessels that use trawl gear but are not registered to limited entry groundfish permits, **must have VMS to fish in federal waters** (3-200 nautical miles offshore)

**Any vessel** using non-trawl gear, that is not registered to a limited entry groundfish permit, **must have VMS on trips in which groundfish are taken and retained, possessed or landed in federal waters** (3-200 nautical miles offshore)
<table>
<thead>
<tr>
<th>Declaration ID</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>210</td>
<td>Limited entry fixed gear, not including shorebased IFQ</td>
</tr>
<tr>
<td>211</td>
<td>Limited entry groundfish non-trawl, shorebased IFQ</td>
</tr>
<tr>
<td>220</td>
<td>Limited entry midwater trawl gear, non-whiting shorebased IFQ</td>
</tr>
<tr>
<td>221</td>
<td>Limited entry midwater trawl, Pacific whiting shorebased IFQ</td>
</tr>
<tr>
<td>222</td>
<td>Limited entry midwater trawl, Pacific whiting catcher/processor sector</td>
</tr>
<tr>
<td>223</td>
<td>Limited entry midwater trawl, Pacific whiting mothership sector (catcher vessel or mothership)</td>
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<tr>
<td>230</td>
<td>Limited entry bottom trawl, shorebased IFQ, not including demersal trawl</td>
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<tr>
<td>231</td>
<td>Limited entry demersal trawl, shorebased IFQ</td>
</tr>
<tr>
<td>233</td>
<td>Open access longline gear for groundfish</td>
</tr>
<tr>
<td>234</td>
<td>Open access groundfish trap or pot gear</td>
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<tr>
<td>235</td>
<td>Open access line gear for groundfish</td>
</tr>
<tr>
<td>240</td>
<td>Non-groundfish trawl gear for ridgeback prawn</td>
</tr>
<tr>
<td>241</td>
<td>Non-groundfish trawl gear for pink shrimp</td>
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<tr>
<td>242</td>
<td>Non-groundfish trawl gear for California halibut</td>
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<tr>
<td>243</td>
<td>Non-groundfish trawl gear for sea cucumber</td>
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<tr>
<td>250</td>
<td>Tribal trawl gear</td>
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<tr>
<td>260</td>
<td>Open access prawn trap or pot gear,</td>
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<tr>
<td>261</td>
<td>Open access Dungeness crab trap or pot gear</td>
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<tr>
<td>262</td>
<td>Open access Pacific Halibut longline gear</td>
</tr>
<tr>
<td>263</td>
<td>Open access salmon troll gear</td>
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<td>264</td>
<td>Open access California halibut line gear</td>
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<tr>
<td>265</td>
<td>Open access sheephead trap or pot gear</td>
</tr>
<tr>
<td>266</td>
<td>Open access Highly Migratory Species line gear</td>
</tr>
<tr>
<td>267</td>
<td>Open access Coastal Pelagic Species net gear</td>
</tr>
<tr>
<td>268</td>
<td>Open access California gillnet complex gear</td>
</tr>
</tbody>
</table>
AIS Data for Demonstration

Automatic Identification System (AIS) data downloaded from http://marinexpeditions.gov/azi
Point data was converted to tracks, and then summarized by BOEM Alerts (1200m x 1200m). Color represents the number of AIS vessels traveling through an alert in 2013.
AIS Vessel Traffic

AIS Data for Demonstration

Automatic Identification System (AIS) data downloaded from http://marineregisdata.bos.gov/ais/
Point data was converted to tracks, and then summarized by BOEM aliquot (1200m x 1200m). Color represents the number of AIS vessels traveling through an aliquot in 2013.

Coordinate System: WGS 84, UTM Zone 4N
Service Layer Credits: BLM, DNR, USDA, GSIC, NOAA, and other
Document Path: H:\GIS\Map\Bos\Cal\Hawaii\Boem AIS (2014) 4-15-16.mxd
Fishing Trip begins and ends when a vessel leaves and enters a port

Fishing Event begins when vessels transition from above to below cutoff speed
VMS All Fisheries (>100 events / aliquot) 2010-2018
Dr. Ben Ruttenberg
Center for Coastal Marine Sciences
Biological Sciences Department
California Polytechnic State University
Merging VMS and Landings

• ID VMS ‘trips’ for an individual vessel in both datasets
• ‘Trip’ begins and ends when leaves/enters a port
• Fish ticket must match vessel ID, port, and date
• Only using groundfish so far

To distribute catch in space:
• ‘Regularize’ points (interpolate so each point is 1 hr)
• Distribute catch for a given trip equally to each ‘fishing’ point

- Number of landings receipts (1 record, 1 date of 1 vessel)
- Before matching: ~98,000
- After matching (with removal criteria): ~24,000

Matched only ~25% of groundfish landings receipts with VMS
Issues with self-reported block data

- **Red lines** are depth limits for each group
- Much of the block data are outside the depth limits for a given group (especially groundfish and Dungeness)
Issues with self-reported block data

- ~24,000 matched trips for groundfish

- 9,250 trips had at least one data point within the reported block(s)
  **Only 38.8%**

- Most fishing points were outside of the reported block(s)
  **Only 16.5% points were in the reported block**
Next steps:

• Make maps “Rule of 3” Compliant

• Explore matched vs unmatched landing receipts for groundfish; are they targeting the same species?

• Replicate for other fisheries (aside from groundfish)
Salmon
Salmon
2010-2017

263_Open Access Salmon Troll Gear

- Oregon Planning Area
- California Cell Areas

Open Access Salmon Troll Gear 263
Salmon (Fishing Events)

- 11 - 50
- 51 - 100
- 101 - 150
- 151 - 200
- 201 - 250
- >250

BOEM Bureau of Ocean Energy Management
FMP
Groundfish
FRAM Datasets

PFMC and BOEM Meeting
July 22-23, 2021
Future Data Possibilities
Limited Entry Groundfish 2010-2017
Limited Entry Groundfish 2010-2017
Groundfish

Midwater Trawl
2010-2017
Groundfish

Whiting

2010-2017

Call Areas
- Oregon Planning Area
- California Call Areas

Whiting (Fishing Events)
- 11 - 50
- 51 - 100
- 101 - 150
- 151 - 200
- 201 - 250
- > 250
Midwater Trawl
2010-2017
Groundfish

Midwater Trawl
2010-2017

Midwater Trawl 220-223

Midwater Trawl 220-223 (>50 events)
VMS_220_221_222_223_Events_MidWtrTrawl

- 0 - 50
- 51 - 100
- 101 - 150
- 151 - 200
- 201 - 250
- 251 - 1000

Miles

California

Nevada

Los Angeles

San Diego

Tijuana

BOEM Bureau of Ocean Energy Management
Groundfish

Bottom Trawl
2010-2017
Bottom Trawl 230-231

Groundfish

Bottom Trawl 2010-2017
Groundfish

Bottom Trawl
2010-2017
Groundfish

Open Access Groundfish Longline, Line, Trap or Pot 2010-2017
Groundfish

Open Access
Groundfish
Longline, Line,
Trap or Pot
2010-2017
Highly Migratory Species
Highly Migratory Species
2010-2017

266_Open Access Highly Migratory Species Line Gear

- Oregon Planning Area
- California Call Areas

Highly Migratory Species
- 10 - 20
- 21 - 40
- 41 - 60
- 61 - 80
- 81 - 100
- >100
Coastal Pelagic Species
Coastal Pelagic Species
2010-2017

No VMS data due to “Rule of 3”