OREGON DEPARTMENT OF FISH AND WILDLIFE REVIEW OF
FISHERY MAPS IN OROWIND BEING USED FOR OFFSHORE WIND SITING

The Pacific Fishery Management Council (PFMC) has been briefed on the Bureau of Ocean Energy Management (BOEM) planning processes underway, to consider and site offshore wind development across the West Coast (including under Agenda Item C.2, March 2021, and during the February 24, 2021, webinar hosted by the Habitat Committee). Additionally, BOEM has established state task forces in both California and Oregon, each of which is proceeding on a state-specific timeline and process. At the April 2021 meeting, Director Chuck Tracy shared an email exchange with BOEM officials (Agenda Item A.3., Supplemental Attachment 1, April 2021), indicating BOEM's interest in and willingness to host "working webinars" during the summer of 2021, to facilitate gathering of specific input from PFMC Advisory Body (AB) members. The working webinars would offer a meaningful opportunity for PFMC AB members to provide detailed input on the maps being used by BOEM for the purposes of designing offshore wind call areas. Under this agenda item (Agenda Item C.4., June 2021), the PFMC will consider whether an existing advisory body or a new advisory body will be tasked with additional workload to engage in marine planning, and is discussed in Director Tracy's report to the Council (Agenda Item C.4, Attachment 1).

Because of the interest of PFMC in BOEM's offshore wind planning processes, the Oregon Department of Fish and Wildlife (ODFW) submits this report as informational to the PFMC in consideration of working webinars in summer 2021, and of advisory body responsibilities for engaging in offshore wind processes both this summer and in the future.

For the Oregon process, data gathering is ongoing in support of OROWindMap, an ocean resources mapping tool to represent fishery activity and ecosystem resources. ODFW has been reviewing fishery-specific map layers in OROWindMap (and continues to reviewing other resource layers, including ecosystem layers). Following, are the ODFW comments thus far on fishery-map layers. The comments have been submitted to the Oregon Department of Land Conservation and Development (DLCD; Oregon's Coastal Zone Management agency and lead on the BOEM-Oregon task force), for consideration in improving the OROWindMap. We are also providing our comments to the PFMC community with the intent that this may help focus additional comments by community members, in upcoming opportunities.

Please note that ODFW has identified datasets that might be considered in addition to or in lieu of datasets that are already in the OROWindMap catalog. However, we have not identified funding or capacity to produce new map products that could be incorporated into the BOEM process, nor identified when these new products might be integrated into the process.

ODFW-MRP Comments on OROWindMap Fishery Data Layers

June 14, 2021

Comments listed below represent ODFW Marine Resources Program staff review of OROWindMap fishery layers that were available in the OROWindMap on-line tool as of April 2020. Comments summarize our preliminary thoughts with the understanding that we will be involved in the data review working group proposed to convene summer 2021 to perform a thorough review of the complete data catalog, including ecosystem and other data layers that were not considered for this set of comments. Comments are divided into general comments that apply to multiple layers and comments on individual map layers.

<u>General Comments</u>
1) Variable quality of layers
The fishery layers vary in accuracy. For example, the NOAA bottom trawl layers appear to provide an accurate depiction of fishing locations while some of the Ecotrust layers appear to inaccurately depict fishing areas. In addition, some of the layers, such as Non-Catch Shares Hook and Line, clearly state cautions for their use in their metadata:

> *"Because all fishing operations are not observed, neither the maps nor the data can be used to characterize the fishery completely. We urge caution when utilizing these data due to the complexity of groundfish management and fleet harvest dynamics."*

While any compilation of spatial data layers from disparate sources will likely vary in their quality, we need to carefully consider how and whether to use the layers for offshore wind planning and siting. Some layers may not be appropriate for use in OROWindMap; specific recommendations are below.

2) Missing fisheries
Several fisheries are not represented in the OROWindMap layers. Where possible, recommended data sources that could be used to create new layers are provided. Where data sources have not yet been identified, please continue to work with ODFW and others to fill the following data gaps:

    a. Nearshore groundfish – ODFW Nearshore logbook data could be analyzed to estimate the spatial distribution of the fishery

    b. Tuna – recommend using NMFS-required logbooks, if data are available, for commercial or recreational charter tuna fishing

    c. Sardine – The sardine fishery uses ODFW seine fishery logbooks. These logbook data could be analyzed to estimate the spatial distribution of the fishery, but require additional work before the database would be suitable for analysis.

    d. Squid – The squid fishery uses ODFW seine fishery logbooks. These logbook data could be analyzed to estimate the spatial distribution of the fishery, but require additional work before the database would be suitable for analysis.

    e. Directed Pacific Halibut fishery – recommend using IPHC logbooks, if data are available

    f. Pink Shrimp – ODFW pink shrimp fishery logbook data could be analyzed to estimate the spatial distribution of the fishery

    g. Spot prawn – ODFW spot prawn fishery logbook data could be analyzed to estimate the spatial distribution of the fishery

h. Hagfish - ODFW hagfish fishery logbook data could be analyzed to estimate the spatial distribution of the fishery
i. Recreational crab - data source not yet identified
j. Salmon Troll - data source not yet identified
k. Recreational bottomfish, halibut, and salmon - data source not yet identified

3) Ecotrust layers
In addition to comments on the individual Ecotrust layers provided later in this document, there are some overarching issues that we should carefully consider to determine the appropriate use of these data in OROWindMap:

a. The data are now over 10 years old and may not provide an accurate representation of current fishery spatial distribution
b. These data were generated for territorial sea planning and may be skewed more toward expression of nearshore areas of importance. Most of the layers seem to underrepresent fisheries that occur on the outer shelf and slope (the prime area for potential future wind energy development). Similarly, layers that depict inner shelf fisheries, such as Dungeness crab, seem to underrepresent the offshore component of those fisheries.
c. It is not possible to review the accuracy of layers that combine more than one fishery per layer without the ability to separate out the individual fisheries. It is difficult to determine how each fishery influences the combined depiction of fishing "hot spots". The ports have different combinations of fisheries combined into the layers making them difficult to compare our use as a group.
d. Separately, Ecotrust produced a statewide Dungeness crab layer that combines the data from the individual port layers. This layer may be appropriate to bring into OROWindMap.

For these reasons, we recommend follow up discussion to carefully consider which Ecotrust Layers are most appropriate for use in OROWindMap.

4) Large regulatory change in 2020
The existing OROWindMap layers are all based on data from prior to 2020. In 2020 there was a significant change in the application of the Rockfish Conservation Area (RCA) in Oregon, resulting in opening up areas that were closed to certain fisheries during the time periods currently depicted in the layers. This has and will continue to result in significant changes to fishing spatial patterns, especially in bottom trawl fisheries. These recently opened areas represent depths and locations that could be of interest to offshore wind energy developers, and would appear as unfished or lightly-fished areas if we were to rely only on the existing OROWindMap data layers. This change in fishing patterns needs to be represented in the offshore wind energy planning process. The first step would be to update layers with data from 2020 and later. Additionally, the recently-opened RCA areas have not been open long enough to be fully re-occupied by fisheries. While recent data will show some new fishing areas, it will not likely depict all of the areas that will be fished in the future. It would be useful to develop a layer that shows the recently-reopened RCA areas and label them as potential future fishing areas. It would be essential to involve fishermen familiar with these areas in the development of this map layer.

5) Bring layers up to date
The most recent data in the layers derived from logbooks or observer data is from 2017. More recent data exists for these layers and efforts should be made to incorporate the most recent data.

6) Need to include fishermen in the process
Fishermen are the foremost experts on fishing locations and the nuances of how offshore development might impact fishing and their fishing businesses. Fishermen representing all fishing sectors need to be included in map review and all steps in the offshore wind energy planning and siting process. One way to do this would be to start now soliciting interest from the fishing industry in participating in the Data Review Working Group proposed to convene summer 2021.

7) Some layer titles may not be meaningful to most of the OROWindMap audience
Layer titles that use phrases such as "catch share" and "limited entry" would only be meaningful to a fishery manager or participant. More descriptive names should be developed.

8) Use of OROWindMap layers in offshore wind planning
The process for using map layers and other data in developing offshore wind call areas has not been described. We have a number of questions, such as: which layers will be used in the process, will some data be weighted more than others, will there be some sort of scoring system developed to differentiate degrees of potential conflict, what data in addition to the layers will be brought into the process, will stakeholder advice be brought into the process. Without an understanding of this downstream process, our ability to comment on the appropriateness or completeness of the map layers is limited.

9) Future updates of OROWindMap
It would be useful to convey expected procedures for maintaining the portal and updating data layers in the future.

Comments on Individual OROWindMap Layers
1) AIS vessel transit counts: fishing; Marine traffic fishing by aliquot AIS 2017; Marine traffic fishing (high traffic) by aliquot AIS 2017
The AIS system gives an excellent record of vessel locations for the component of the fleet that is required to have the AIS system. Fishing vessels under 65 feet in length are generally not required to have AIS. Some smaller vessels have AIS, but the proportion using the system is unknown. Over 80% of the Oregon fishing fleet consists of boats under 65 feet in length, and it is unlikely that the AIS data represent vessels in this size class. Data to compliment AIS vessel transit count layers should be identified to fill this data gap. We also recommend that the AIS layer metadata emphasize what the data does and does not cover.

2) Astoria all fishing sectors fisheries uses and values grid, Ecotrust, 2010
See general comment 3.c. about Ecotrust maps that combine fishing sectors.

3) Commercial Dungeness crab fishery uses and values grid, Ecotrust, 2012
The comments listed below apply to all of the Ecotrust commercial Dungeness crab fishery layers in OROWindMap. (Astoria, Brookings, Gold Beach, Depot Bay, Florence, Newport, Port Orford, Tillamook, Garibaldi, SOORC)
   a. The layers appear to reflect commercial crabbing hotspots reasonably well when compared to crab fishery logbook data, although the overall footprint and use of deeper waters in recent seasons of the fishery appears to be underrepresented. When compared to maps based on

Dungeness crab logbook data from the 2012-13 through 2017-18 crab seasons the outside extent of the crab fishery footprint appears underrepresented. This appears to be the case with all layers except Garibaldi. In recent years (since 15-16 season) the fishery has had a noticeable shift to deeper waters.

b. It is unclear how all of these layers by port can be used in combination or if doing so overestimates use in some areas. There are two specific issues of concern: 1) The Garibaldi layer has a significantly larger footprint than all of the rest of the port layers, which seems strange as Garibaldi is one of the smaller crab ports and 2) Florence and Depoe Bay have standalone layers, although very little crab is landed into Depoe Bay and essentially none into Florence. The SOORC layer encompasses the vast majority of the Florence layer.

c. ODFW has commercial crab logbook data from the 2007-08 through 2018-19 commercial crab seasons, which is considerably more recent than these Ecotrust fishery maps, and could be used to better estimate the spatial distribution of the fishery.

d. The maps appear to reflect commercial crabbing hotspots reasonably well other than the comments listed above.

4) At-sea midwater trawl catcher-processor intensity
This layer appears accurate based on our understanding of where this activity occurs, but our biologists do not receive logbook data from this fishery so we have no separate data to compare with the layer.

5) At-sea midwater trawl mothership intensity
This layer appears accurate based on our understanding of where this activity occurs, but our biologists do not receive logbook data from this fishery so we have no separate data to compare with the layer.

6) Brookings, Gold Beach all fishing sectors fisheries uses and values grid, Ecotrust, 2010
Offshore tuna seems to be underrepresented.

7) Catch shares bottom trawl intensity
Overall, this layer appears accurate for the timeframes and conveys some of the historic nearshore trawling extent. There were many more small vessels trawling in the mid-2000's that fished nearshore areas. Note that the layer does not show fishing in the RCA areas, which opened to trawling in 2020 (see general comment 4).

8) Catch shares hook-and-line intensity (2011-2017)
This fishery consists of a small fleet. Although the layer appears accurate, fishing areas are likely to be variable from year to year because there are so few vessels that fall into this category. Data should be updated now and in the future to reflect changes in areas used by this fleet.

9) Catch shares pot intensity; non catch shares pot intensity
There appears to be a large decrease in size of the fishing areas between the 2011-2015 and the 2016-2017 layers, especially on the south coast. Based on our understanding of where this activity occurs, this apparent decrease may not be accurate. In addition, there is a significant hot spot just north of Cape Blanco/ Bandon High Spot area, that doesn't show up on the OROWIND layer, but does show up somewhat on maps based on VMS data that BOEM is currently developing.

10) Depoe Bay all fishing sectors fisheries uses and values grid, Ecotrust, 2010
This appears fairly accurate, with the bulk of fishing on Siletz Reef and Lincoln City. The southern points appear to be recreational salmon/ halibut, but it is not possible to discern due to the combined nature of the maps.

11) Florence all fishing sectors fisheries uses and values grid, Ecotrust, 2010
In multiple ways, this layer appears to be inaccurate or incomplete in its representation. The total fishing area appears quite large for the small fleet from Florence, but it does seem to highlight crab and salmon troll fisheries. The fishing location off the Columbia seems too distant for the fleet. Tuna doesn't appear to be represented.

12) Limited entry bottom trawl intensity
This appears accurate for the two timeframes shown. This layer shows historic nearshore trawling which still exists but is less prevalent in the current fishery.

13) Newport all fishing sectors fisheries uses and values grid, Ecotrust, 2010
The trawl, deepwater sablefish fishery (pot and longline), and tuna fisheries appear underrepresented on this layer.

14) Non catch shares hook-and-line intensity; non catch shares pot intensity
   a. The fishing areas represented appear incomplete, especially for hook-and-line. The data source states: "*Because all fishing operations are not observed, neither the maps nor the data can be used to characterize the fishery completely. We urge caution when utilizing these data due to the complexity of groundfish management and fleet harvest dynamics.*" The layers are based on data from the West Coast Observer Program, which does not have 100% coverage for these fisheries.
   b. There is a large area from Government Point to Tillamook head that is actively fished and does not show up on the layer. This area is in logbook data and on maps based on VMS data that BOEM is currently developing.
   c. The Oregon Fixed Gear logbook data may provide a more complete data source. It is required for any fisher landing into Oregon. It still may not be 100% complete because Washington vessels could fish in Oregon waters and land into Washington, where there is no fixed gear logbook requirement. The same may be true for California.
   d. IPHC logbooks could provide another data source for hook-and-line; they are required by law in all states for the Pacific Halibut fishery.
   e. The nearshore hook and line fishery is missing from the layer. The Oregon Nearshore Logbook, which is required by state law, could provide additional data for this fishery.

15) Non catch shares pot intensity
The hagfish fishery appears to be missing from this layer, including notable omissions from Depoe Bay to Cascade Head, the north coast, and Newport.

16) Port Orford all fishing sectors fisheries uses and values grid, Ecotrust, 2010
This layer does not load in the OROWindMap tool.

17) Shoreside Midwater trawl for hake intensity
- This layer appears accurate based on our understanding of where this activity occurs. During the 2015 marine heatwave ''blob'' year, fishing was very slow and spread out in July and August as the layer shows for the 2011 – 2015 layer.
- The source data description appears to have an error (see bold text). Either this statement below has a typo or they used at-sea processed trawl data to depict the shoreside fishery (which wouldn't be correct):
  - "This data layer depicts the relative intensity of fishing effort for shoreside processed commercial midwater rockfish off the U.S. West Coast from 1 Jan 2011 to </SPAN><SPAN><SPAN>31 Dec 2015. **Records of at-sea processed** midwater trawl tows were compiled from observer records from the West Coast Groundfish Observer Program (WCGOP) and the electronic monitoring program coordinated by the Pacific States Marine Fisheries Commission (PSMFC). "

18) Shoreside Midwater trawl for rockfish intensity
This layer appears accurate based on our understanding of where this activity occurs.
The above comment about the apparent error in map description is applicable to this layer as well.

19) SOORC commercial fisheries uses and values grid, Ecotrust, 2010
See general comment 3.c. about Ecotrust maps that combine fishing sectors.

20) West coast fishing ethnography
This layer appears to show the maximum spatial extent of various fishing sectors. The layer is not useful in its current format with all the fishing sectors combined onto one layer. The data would be useful to the offshore wind energy process if each fishing sector was displayed on a separate layer.

21) Layers not reviewed include:
  a. Astoria commercial passenger fishing vessel fishery uses and values grid, Ecotrust, 2010
  b. Garibaldi all fishing sectors fisheries uses and values grid, Ecotrust, 2010
  c. Newport charter and recreational fisheries uses and values grid, Ecotrust, 2010
  d. PFMC landmarks and areas, PFMC 2020
  e. Salmon River recreational fisheries uses and values grid, Ecotrust, 2010
  f. Salmon River recreational Pacific Halibut uses and values grid, Ecotrust, 2010
  g. Salmon River recreational rockfish uses and values grid, Ecotrust, 2010
  h. Salmon River recreational salmon uses and values grid, Ecotrust, 2010
  i. Salmon River recreational crab uses and values grid, Ecotrust, 2010