

14th Annual Oregon Department of Fish and Wildlife Marine Resources Program Dungeness Crab Fishery Newsletter



January 2023

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Visit Our Website:

<http://www.dfw.state.or.us/MRP/shellfish/commercial/crab/.asp>

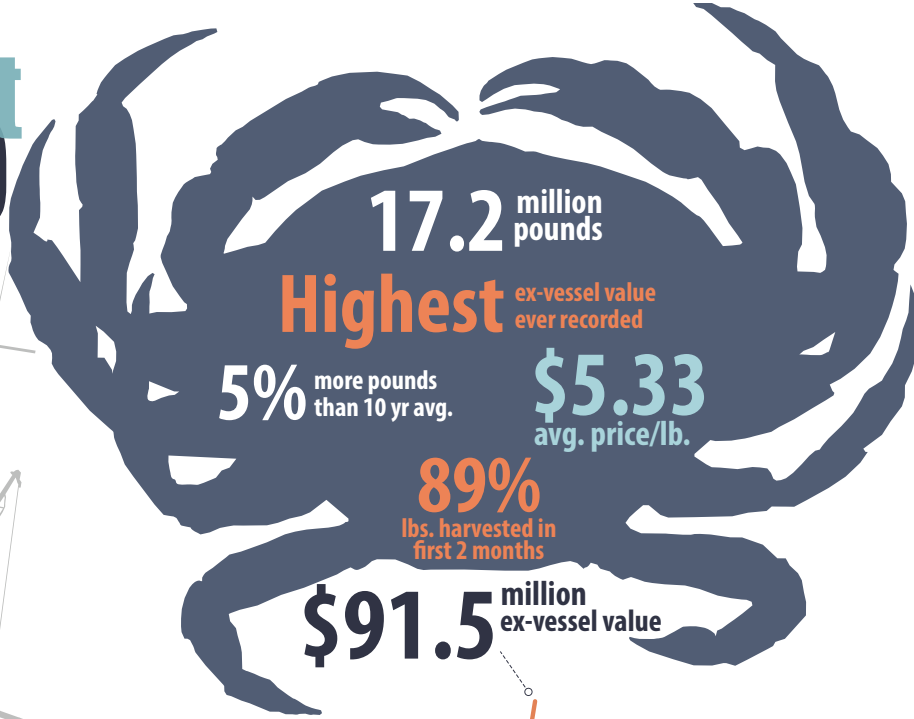
Good Volume, High Value

The 2021-22 commercial Oregon Dungeness crab fishery landed a total of 17.2 million pounds of Dungeness crab into Oregon ports coastwide, above the 10-year average of 16.4 million pounds. These landings equated to \$91.5 million ex-vessel value, the highest grossing season on record by more than 17 million dollars. The average price per pound peaked at \$7.87 in May and came in at \$5.33 across the entire season, the highest average price per pound for any season on record (Figure 1). In total, 310 different permit holders landed crab on 5,947 separate fish tickets into Oregon ports from the ocean and Columbia River.

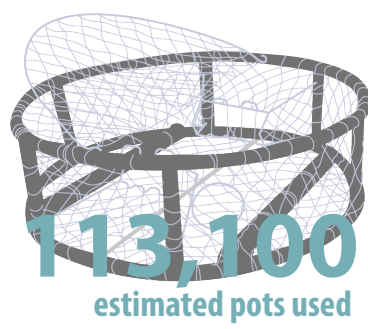
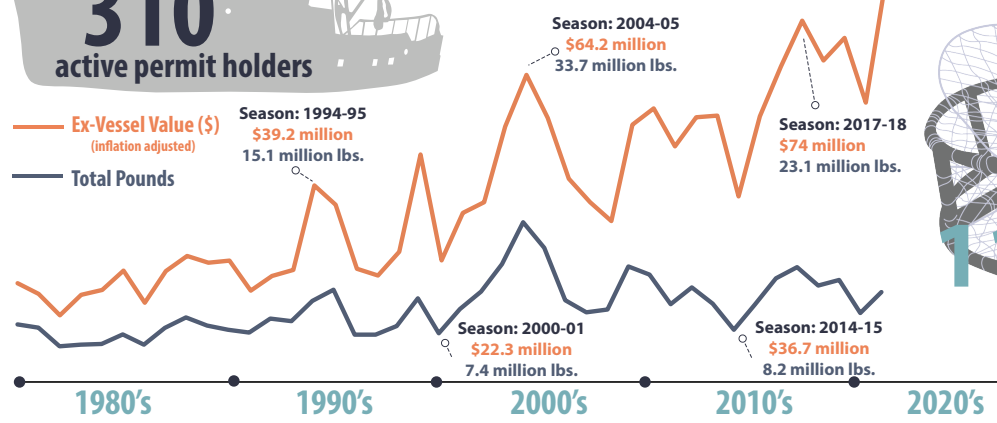
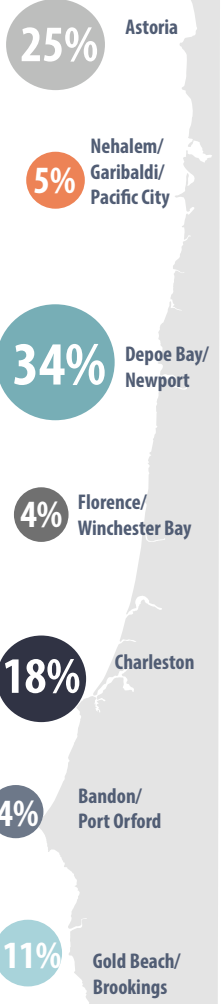
The 2021-22 season opened on Dec 1, 2021, making it the first non-delayed crab season since 2014-15. Eighty-nine percent of crab landed for the entire season were landed in the first eight weeks of the fishery. In recent seasons, excluding those with additional delays due to industry price (con't on p.2)

How'd it GO?

2021-22 Season Summary



Pounds Landed



Season Summary (cont'd)

negotiations, between 83-91% has been landed in this period. This season was the second year of a required late-season 20% pot limit reduction beginning May 1 to reduce the risk of marine life entanglement. With this reduction of gear, the fishery landed just over 1.5% of the total pounds for the season from May through Aug, which has ranged from 2-7% in recent years without these measures in place. See information on page 7 regarding our planning for the upcoming evaluation of these measures.

For the 6th season in a row, the Newport area led all ports in total landings with more than 5.8 million pounds (34% of the total season landings), followed by the Astoria, Charleston, and Brookings areas with 2.2 (25%), 1.7 (18%) and 0.9 (11%) million pounds landed, respectively.

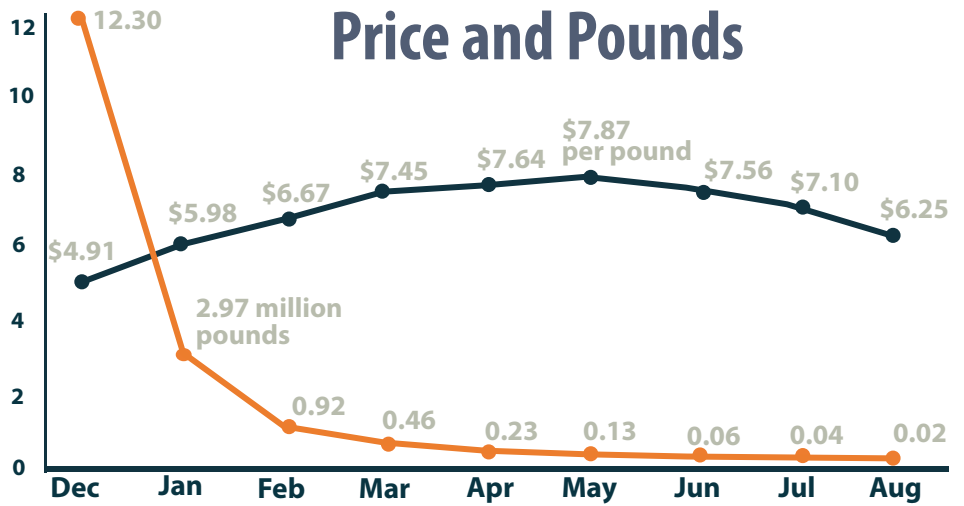


Figure 1: Pounds of crab landed and price per pound by month.

The ports of Garibaldi, Winchester Bay and Port Orford also remained active crabbing ports with combined landings of just under 13% of the total catch coastwide. An estimated 113,100 total pots were used in the fishery in the 2021-22 season, which is slightly below the estimated average of 115,927 pots utilized each season since the implementation of pot limits.

In-Season Derelict Gear Recovery

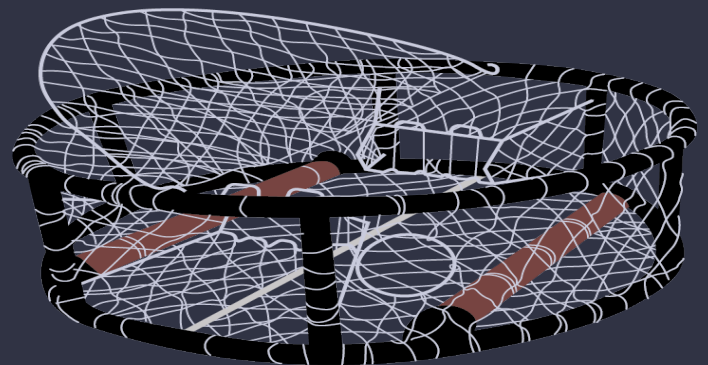
In May, the Oregon Dungeness Crab Commission (ODCC) funded a pilot in-season derelict gear removal program called the Gear Retrieval Effort After Seasonal Ebb (GREASE) project. Since 2021, all legal gear must be inside the 40-fathom depth contour and contain a late-season tag from May 1 through August 14. ODCC contracted vessels in the major Oregon ports to remove derelict crab gear that was outside of 40 fathoms after May 1. ODFW staff met the participating vessels at the dock and recorded data on the recovered pots. ODCC staff then contacted all gear owners and informed them where to pick up their pots. Between May 16 and June 26 of this year, six vessels made 10 total trips and brought in 122 derelict pots recovered seaward of the 40-fathom line. We would like to thank ODCC and all the chartered captains and crews for these efforts. We look forward to continuing to partner with ODCC and the fleet on future initiatives to get derelict gear out of the water as early and efficiently as possible.

Bring in Derelict Gear Now!

Considering the increased rate of confirmed Endangered Species Act (ESA) listed whale entanglements along the West Coast, efforts to reduce risk of entanglement by removing lines from the water both during and after the season are more important than ever for the continued sustainability of the fishery.

As we move into another crab season, we strongly encourage all fishery participants to consider removing derelict gear throughout the season as allowed by regulation and participate in next year's post-season program.

Derelict Gear Retrieval Reminders



Seasonal allowances

- Season start to 2nd Monday in June - 25 pots
- 2nd Monday in June to August 14 - 50 pots
- August 15 to October 31 - Unlimited pots
*without post-season permit, conditions listed below still apply

Conditions upon retrieval

- Gear must be unbaited
- Retain only legal crab
- Record number of pots and locations in logbook
- Transport gear to shore on same trip
- Return gear to owner

Post-Season Derelict Gear Recovery

In the ninth year of the Post-Season Derelict Gear Recovery Program (PSDGRP), an above average total of 836 pots were removed from waters off Oregon. The number of pots brought in through the program has ranged from 421 to 957 pots per year since 2014. Throughout the duration of this year's program (August 30th – October 11th), we issued 46 permits and half of those recovered gear. Derelict pots were brought into seven Oregon ports from 53 separate retrieval trips. The most gear (392 pots; 47%) was recovered by permitted vessels operating out of Newport for the second year in a row (Figure 2). Vessels out of Astoria, Garibaldi, Winchester Bay, Port Orford, and Brookings also participated in post-season gear recovery efforts; however, there was no participation in the Charleston area. For the first time since 2019, derelict pots were retrieved out of Florence by a couple of vessels. All recovered gear was registered and tagged by ODFW at the dock and all gear registration forms are posted on our website (<https://www.dfw.state.or.us/MRP/shellfish/commercial/crab/psdgrp.asp>). Any previous gear owners interested in negotiating for retrieved pots can contact the retrieving vessels directly.

For the fourth year in a row, additional outreach efforts resulted in reports of over 164 locations of derelict pots from Oregon State Police (OSP), United States Coast Guard (USCG), ODFW, Oregon State University (OSU), National Oceanic Atmospheric and Administration (NOAA) researchers, and commercial and recreational ocean users. We regularly shared these locations with PSDGRP permit holders to target for retrieval and approximately 64 of them were retrieved and registered through the program. Many are likely still in the water, so please consider retrieving them under the in-season derelict gear allowances as you start crabbing this season (see reminders on page 2). The updated list of reported gear locations is on our derelict gear recovery webpage listed above.

Thank you to all who participated in the program this year! The program continues to be successful at bringing in a significant amount of derelict crab gear and raising awareness both within the fleet and with other ocean users about the crab industry's efforts to remove gear post season. Marine life entanglements along the West Coast remain a threat to the sustainability of the crab industry and efforts to remove lines from the water, both during and after the season, are more important than ever for reducing entanglement risk. **Only a small percentage of the derelict pots recovered in the PSDGRP had late-season tags attached (8% in 2021 and 19% in 2022).** This means that there is a significant amount of derelict gear, from the primary season, in the water from May through September that increases the fishery's risk of marine life entanglement at a time when endangered whales are more prevalent in Oregon waters. As we move into another crab season, we strongly encourage all fishery participants to consider retrieving derelict gear throughout the season as allowed by regulation and participate in next year's post-season program.

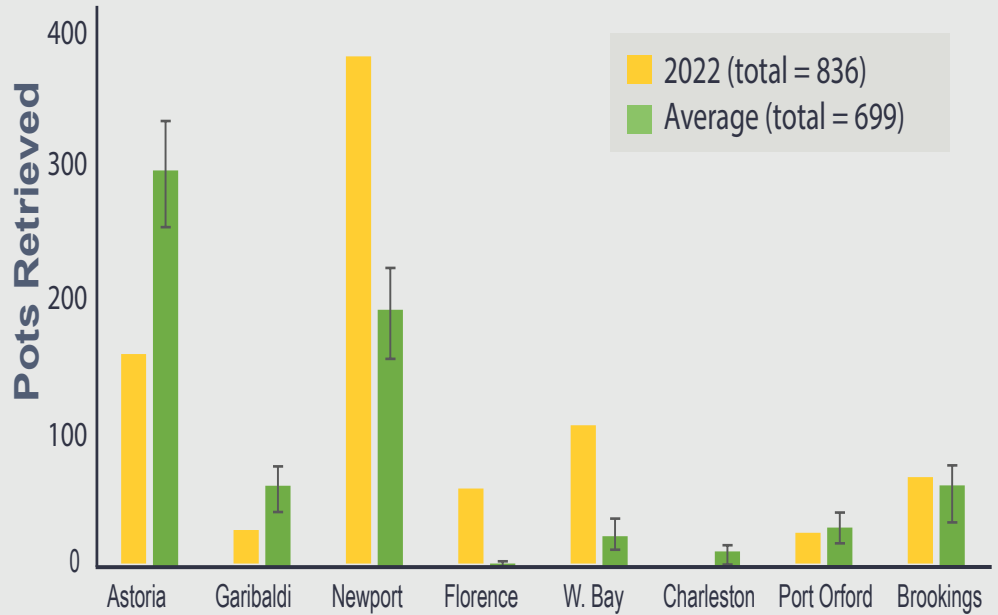


Figure 2: Derelict gear recovered in the PSDGRP by port landed.



Photo: Derelict gear pots and buoy flower recovered in the PSDGRP and landed into Newport, OR.

Fishery Monitoring

The primary tools we use to monitor the crab fishery are dockside and at-sea sampling to evaluate size of catch and bycatch rates, fish tickets to track total harvest, and crab logbooks to track effort over space and time.

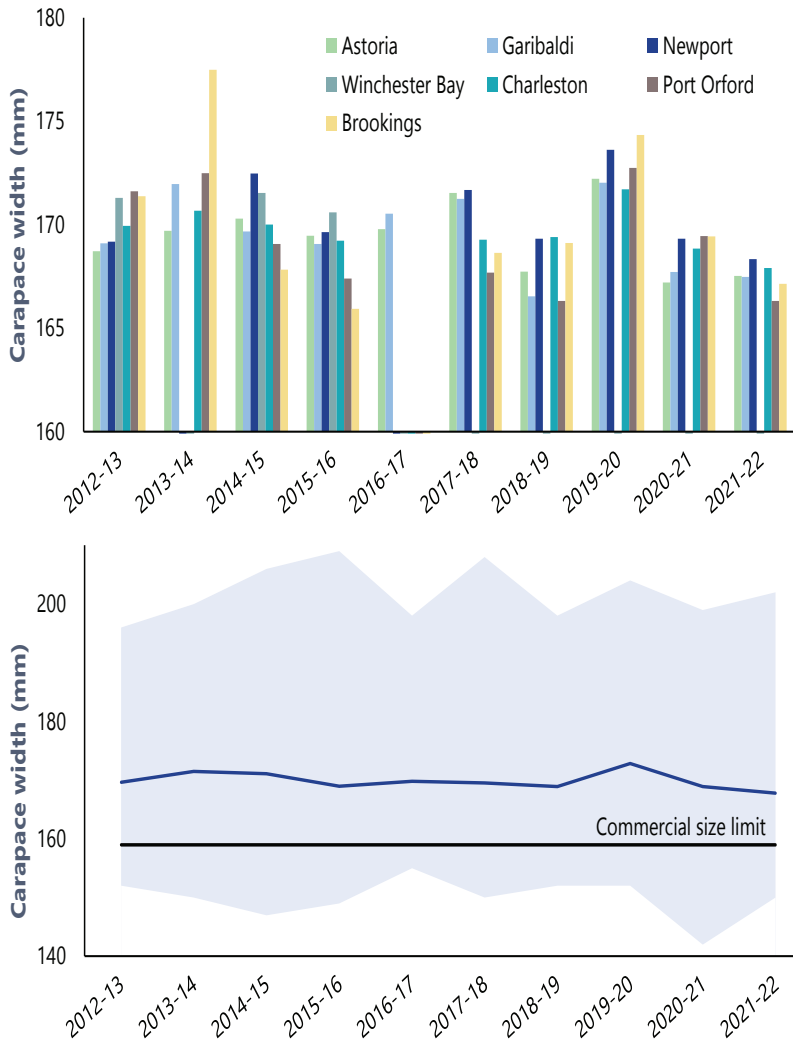


Figure 3: Average carapace width by port and crab season measured in ODFW dockside sampling (top). Average carapace width (shaded minimum and maximum) measured coastwide by season compared to the commercial legal size of 6.25 inches (bottom).

2021-22 Dockside Sampling

Dockside sampling in the 2021-22 season consisted of measuring the carapace widths and weighing a portion of the crab landed, based on the size of the landing. Average crab carapace width data from dockside sampling from the 2012-13 through 2021-22 seasons by port are shown in the graph on the top left. This season saw the smallest average carapace width of male crab that were sampled at the docks (167.79 mm). However, over the entire period from 2012 through 2022, the average coastwide carapace width of sampled crab was relatively constant, ranging from 167 mm to 172 mm (bottom left graph). While slight differences in the average carapace width of crab exists between ports within each season, trends are not consistent across seasons, indicating that there is not a portion of the coast where landed crab have been consistently larger or smaller than elsewhere on the coast. A small percentage of sampled crab fall below the commercial size limit (0.47% in 2021-22; bottom left). While this number is low, it is up a bit from the 2020-21 season (0.36%), so please be careful when gauging your crab at sea. ODFW communicates with fishers about all potential violations, and routinely discusses enforcement concerns with OSP when sublegal crab are sampled.

In 2022, ODFW made our first in-season at-sea sampling effort since the start of the COVID-19 pandemic. We observed and sampled crab and bycatch on one in-season trip in June 2022. We plan to continue improving our bycatch data, especially sea stars, by sampling at sea and will continue to pursue ride-along opportunities during the upcoming fishing seasons.

Sunflower Sea Stars - Please Handle With Care!

Sunflower sea stars (*Pycnopodia helianthoides*) have experienced mass mortality and coastwide declines – it is estimated that over 90% of sunflower sea stars have been lost over the past eight years – most likely due to sea star wasting disease, associated with warming seawater temperature. These predatory sea stars eat sea urchins, so the demise of the sunflower sea stars is suspected to have contributed to the recent increase in purple sea urchins in rocky reef habitats and decline in kelp beds. In August 2021, NOAA received a petition to afford the species Endangered Species Act special status along the West Coast and initiated an evaluation of the species' status to determine if an ESA listing is warranted. The results of this evaluation and the decision to list sunflower stars is still pending, with an announcement expected soon. Because sunflower sea stars are attracted to bait, they occasionally come up in crab pots. Please handle them carefully and return to the ocean as soon as possible.



Picture: Sunflower sea stars (*Pycnopodia helianthoides*). Photo courtesy of S. Groth, ODFW.

Crab Logbooks and Fish Tickets

Crab logbook and fish ticket data are also used by researchers and other agencies to describe the crab resource and the fishery you participate in, to benefit management of the crab resource and to provide rationale for protecting the crab fishery itself. The use of any logbook and fish ticket data follows a rigorous data request process and development of a Data Use and Non-Disclosure Agreement between ODFW and all data users.

This year, crab fish ticket and logbook data have also contributed to further development of seasonal ocean condition forecasts for the crab fishery, a continuation of our own Section 6 whale distribution project (see page 8) and NOAA's entanglement risk assessment efforts, OSU's economic evaluation of crabbing location choice relative to safety considerations, OSU's Harmful Algal Bloom socioeconomic fishery impact evaluation and for United States Bureau of Ocean Energy Management's siting of areas for potential ocean development (see page 9).

Crab Fishery Electronic Monitoring

Starting this summer, we contracted with a software developer, Harbor Lights Software, to kick off a pilot project creating and field testing an integrated electronic logbook and vessel tracking system for the crab fishery. This type of system is needed to increase the precision, accuracy, and accessibility of fishing effort, catch, and location information to improve accountability of the fishery. This will assist managers and the crab industry to: 1) strengthen crab traceability regulations, 2) inform the effectiveness and compliance with marine life entanglement mitigation measures, 3) track fishery reference points closer to real-time, and 4) effectively enforce season opening provisions.

We are working closely with other electronic logbook initiatives across the West Coast to maximize efficiency and coordination of these systems since there are many similarities in the operation, participants, and management needs of the fisheries. Currently we have nine vessel operators lined up to test the pilot system on the water this upcoming crab season (2022-23). We appreciate the willingness of these fleet members to work with us on this project and look forward to incorporating feedback from them to improve the system operation. This pilot project is planned to wrap-up in Spring 2023.

Why Monitor?



Provides data to compare historical stock trends with current info.



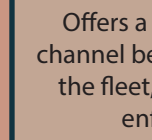
Provides data to assess and quantify bycatch rates of female crabs, undersize crabs and other species.



Provides information to evaluate the success of management measures.



Picture: The two vessel monitoring systems, Faria Beede Sentry 350 and Woodhole NEMO, that will be tested throughout the crab electronic pilot project. Photos courtesy of Harbor Lights Software.



Offers a communication channel between ODFW and the fleet, processors, and enforcement.



Allows investigation of year class structure, recruitment trends and relative abundance.

Know Your Crab Harvest Area!



Over the years we have continued to improve traceability of crab. These improvements allow the fishery an option to eviscerate crab when the fleet needs to keep fishing.

Make sure you are in full compliance with crab traceability - please review these reminders!

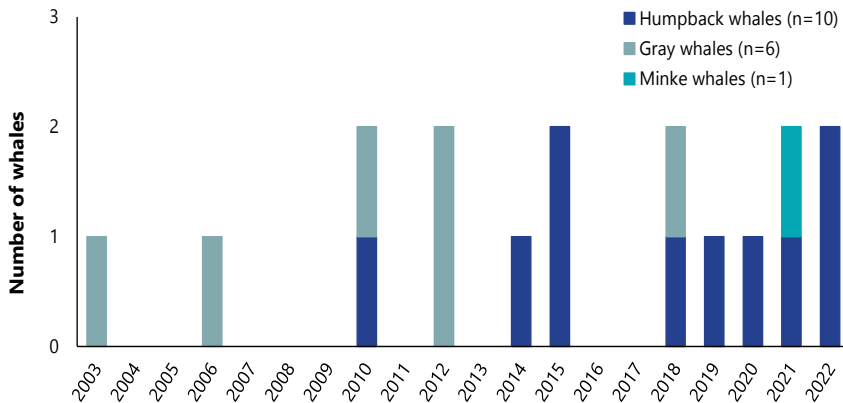
Buyers – Crab fish tickets are required to be electronically submitted by the end of the next business day after a landing is made. **ALL** harvest areas that a vessel harvested crab from on a trip are required to be listed on each fish ticket.

Harvesters – For every crab landing, it is your responsibility to tell your buyer **ALL** of the areas that crab were harvested from for that landing, and to make sure that information is recorded accurately on the dock slip or fish ticket before signing.

Need Harvest Area Map? The revised map of crab harvest areas is located here https://www.dfw.state.or.us/MRP/shellfish/commercial/crab/commercial_crab_harvest_areas.asp.

Reducing Marine Life Entanglements

Marine life entanglement in any fishing gear is a concern, particularly for threatened and endangered whales and sea turtles. Interactions with fishing gear have been documented as one of the largest contributors to human-caused serious injury and mortality of large whales on the West Coast, including gear that has been definitively linked with the West Coast and Oregon commercial Dungeness crab fisheries. In Oregon, documented large whale entanglements most commonly involve humpback and gray whales. The most recent summary of entanglement information is available on the [NOAA Fisheries website](https://www.noaa.gov/fisheries). Across the West Coast, there has been an elevated number of entanglements since 2014, driven largely by increased entanglement of humpback whales. While the incidence of West Coast entanglements peaked in 2016, entanglements in crab gear across the West Coast remain a concern.



From 2003 through 2022, there have been 10 confirmed entanglements of ESA-listed humpback whales in Oregon crab gear, 6 confirmed entanglement of a non-listed gray whale and one confirmed entanglement of a non-listed minke whale (Figure 4). The two confirmed humpback entanglements in 2022 were reported in September with gear that did not include late-season tags.

Figure 4: Number of confirmed whales entangled in Oregon Dungeness crab gear by year and species. Entanglements are confirmed by NOAA fisheries.

Conservation Planning For Reducing Entanglement Risk

ODFW continues to actively address entanglements in Oregon's fixed-gear fisheries with increased effort over the last four years. During this time, we have worked closely with industry, and federal and state agency partners to develop and adopt implementing regulations and draft a Habitat Conservation Plan (CP) that plans for the co-existence of a vibrant crab fishery and promotes the recovery of covered species (humpback whales, blue whales, and leatherback sea turtles) in ocean waters off Oregon. This year, we have focused significant efforts on refining our CP, which was publicly released in Sept 2021. The CP describes our comprehensive strategy for reducing risk of marine life entanglements. This CP refinement process has included close evaluation of all the public comments received on the draft and coordination with NMFS and managers from California and Washington who are drafting similar CPs. We plan to finalize the CP for submission to NMFS in 2023, after which NMFS will consider all aspects of the plan and issue a determination on the proposed Incidental Take Permit (ITP). This process is expected to take multiple years to complete. The CP will be considered final when an ITP is approved by NMFS.

Want to know more?

Additional information about all of ODFW's efforts to curtail marine life entanglements can be found on our website https://www.dfw.state.or.us/MRP/shellfish/commercial/crab/whale_entanglement.asp.

- **Oregon Commercial Dungeness Crab Fishing Directive to Minimize Marine Life Entanglement Risk** has been revised and included as an additional handout in this mailing. We ask you, as part of the crab industry, to embrace the important role you play in helping implement these practices to minimize risk of entanglement NOW to maintain a dynamic and vibrant crab fishery.
- **Report entangled whales or sea turtles IMMEDIATELY** to the NMFS entanglement response hotline at 1-877-SOS-WHALE (1-877-767-9425) or hail the U.S. Coast Guard on Channel 16. If possible, stand by.
- **Take Level 1 First Responder training to learn proper assessment, documentation, and reporting of entangled whales** prior to a disentanglement response effort. This course is a starting point for those interested in contributing to response efforts and understanding the various roles involved in disentanglement.

Oregon Entanglement Advisory Committee

This year, we launched a new ODFW-led entanglement advisory body, the Oregon Entanglement Advisory Committee (OEAC). This group builds on the work of the Oregon Whale Entanglement Working Group (OWEWG), which was formed in 2017 and facilitated by Oregon Sea Grant. The purpose of the OEAC is to advise ODFW on efforts to reduce the risk of marine life entanglements in Oregon Dungeness crab gear and support ODFW commitments detailed in the CP. The OEAC is intended to provide ODFW with information and broad perspectives from a range of stakeholders on strategies to support the co-existence of economically viable fixed gear fisheries and thriving marine life populations off Oregon. The Oregon Dungeness Crab Advisory Committee (ODCAC) remains an important advisory group for ODFW on season start and Tri-State management issues that require industry-specific feedback, particularly those related to fishery operations. ODFW will also engage ODCAC in CP management, with broader industry expertise than the more diverse OEAC membership. Additional information about both these groups can be found on our website https://www.dfw.state.or.us/MRP/shellfish/commercial/crab/whale_entanglement.asp.

Fall 2022 Industry Meeting

In October, we hosted a public crab industry meeting primarily focused on marine life entanglement in Dungeness crab gear and solicited input about planned upcoming regulatory changes that are commitments in our CP to continue addressing this issue. Brief descriptions of each can be found below and more detailed information is in the meeting presentation and recording posted on our marine life entanglement webpage. We also discussed and solicited input on three industry-proposed regulatory changes. These included consideration of an allowance for partial offloads, switching buoy tags at-sea and retention of crab from derelict gear after May 1 seaward of 40 fathoms and/or without late-season tags.

We appreciate everyone that joined us to discuss these topics, and we are still interested in getting more feedback on them. [Go to our website \(see right\) to submit more feedback on these topics, if you are interested.](#) Also, the survey that accompanied the industry-proposed changes is still open to submit feedback through the end of the January 2023 and is located on our marine life entanglement webpage.

Provide More Input!

We have created a form to submit new or additional feedback on the marine life entanglement topics covered at the October public meeting. If interested go here

https://www.dfw.state.or.us/MRP/shellfish/commercial/crab/crab_fishery_proposals_2022.asp.

Three-year Risk Reduction Measures Evaluation - Our primary marine life entanglement risk reduction measures include the May 1 requirements for 20% gear reduction, 40 fathom depth restriction and late-season tag attachment. When adopted by the Oregon Fish and Wildlife Commission (OFWC) in Sept 2020, these measures included a three-year sunset provision intended to ensure ODFW completes an evaluation of the effectiveness and impacts, and provides informed recommendations back to the OFWC for continuation or adjustment. We will be completing this evaluation over the winter and taking our recommendations to the OFWC in 2023, which means the evaluation will cover the first two seasons of implementation. Let us know if you have specific ideas on what should be included in this evaluation.

Surface Gear Limit - A surface gear limit will restrict the amount of surface gear (buoys and lines) allowed on each pot. Although understanding of the factors that lead to an animal becoming entangled in fishing gear is limited, it is generally accepted that slack line between buoys, knots, and splices where lines are joined are all places where an animal is more likely to become entangled. By limiting the amount of surface gear, we limit the number of entanglement points that a whale or sea turtle might encounter, thereby reducing the likelihood of entanglements. At the public meeting, we discussed the surface gear limit that was implemented in California in 2018 and heard no major concerns for implementation in Oregon waters. We are targeting implementation of a surface gear limit in the crab fishery starting in the 2023-24 crab season.

Line marking - On the West Coast, just over half of the marine life entanglements involve gear that cannot be identified to a specific fishery. Line marking is a tool that can help us improve gear attribution which will help us make better, more targeted management decisions in the future. At the October public meeting, we proposed a two-color marking scheme where a purple mark represents the Dungeness crab fishery and a yellow mark represents the state of Oregon. The two-color marking scheme is designed to be easily expandable to, distinguishable from, and coordinated with other fixed gear fisheries marking schemes across the West Coast. The full description of the proposal and rationale is in the meeting presentation slides located on our marine life risk reduction webpage. At the public meeting, we heard concerns about the cost, labor, and effectiveness of this proposal. We are currently evaluating ideas on how to phase in line marking over time to ease the burden on industry while still meeting the conservation goals in our CP. We are targeting implementation of an initial line marking regulation in the Oregon Dungeness crab fishery starting in the 2023-24 crab season.

Oregon Whale Survey Update

To help fill the critical information gap of detailed scientific information about where and when whales are in Oregon's waters, ODFW has continued collaborating with OSU to collect whale sighting data aboard USCG helicopter flights since February 2019 and through vessel-based surveys. The overall goal of this project, titled Overlap Predictions About Large Whales (OPAL), is to improve knowledge of whale space-use patterns and assess whale co-occurrence with fishing effort to evaluate entanglement risk in Oregon.

This past spring, OSU wrapped up phase-1 of comparing the whale sightings and survey data with environmental data to predict seasonal whale distribution along the entire Oregon coast, relative to environmental variables, such as sea surface temperature, depth, and ocean vertical stratification. The resulting predictive species distribution models significantly improve our ecological understanding of whale habitat use patterns across the region, particularly for humpback whales due to a larger sample size of sightings. The scientific publication of this aspect of the project can be found at <https://www.frontiersin.org/articles/10.3389/fmars.2022.868566/full>.

Next, OSU used these monthly predictions of whale density distribution patterns off the Oregon coast over a 10-year period to conduct co-occurrence modeling relative to Dungeness crab fishing effort from crab logbook data. This work provides spatially explicit maps of entanglement risk under various environmental conditions. These results quantify and describe how much overlap there is between whales and crab gear, where and when that overlap takes place, and how these overlap rates change relative to oceanographic conditions like upwelling and the Pacific Decadal Oscillation (PDO). Once this work is published, we will work with OSU to distribute more information about the results to wrap up this phase funded jointly by ODCC, ODFW and NOAA Section 6 Species Recovery funds. More information about this project is located at <https://mmi.oregonstate.edu/gemm-lab/where-are-whales-oregon-waters>.



Picture: Dr. Leigh Torres and Craig Hayslip flying with the USCG on monthly aerial surveys to collect whale sighting data along standardized tracklines. Photo courtesy of Dr. Leigh Torres, Oregon State University.

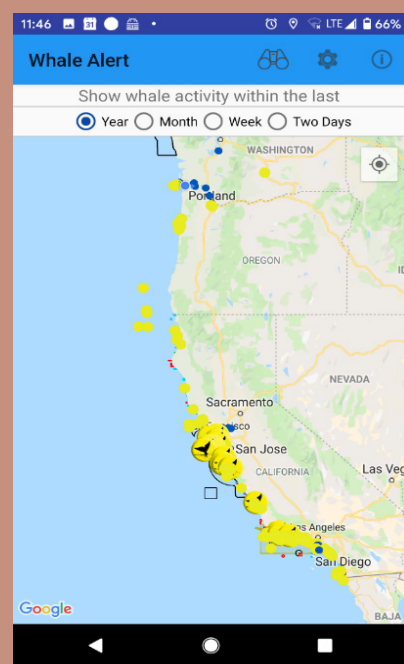
Next Steps

This year, we were notified that two additional whale entanglement related projects that we submitted proposals for were funded. First, the joint Section 6 Species Recovery project proposal with OSU to continue the monthly whale surveys and enhance the co-occurrence modeling efforts started up in July 2022. This three-year project will incorporate data on krill and prey fish distribution in the models to help us increase our model accuracy and effectiveness. Secondly, we secured congressional funding for OSU to conduct a scarring analysis of humpback whales to assess undetected entanglement rates and changes in entanglement rates overtime. Both projects aim to fill in key information gaps to help us continue to hone our management approach for reducing the risk of marine life entanglement.

Want to be involved? Use Whale Alert App!

All ocean users can help collect data for the whale surveys by being the eyes on the water to record whale locations in the areas that the research team doesn't cover. This will help the researchers ground truth their observations with "citizen science" sightings of whale presence to ensure accurate models of whale distribution. Download and use the Whale Alert App to document where healthy, free-swimming whales are seen off Oregon. Recruit others to join Whale Alert, and post information about it and your participation on social media. If the whale models are informative, we will all be better at fishing in ways that avoid the whales and keep the fishery (and whales) thriving.

**Download Whale Alert App
On iOS App Store or Google Play**



Picture: Homescreen of the Whale Alert App where you can explore recent whale sighting data entered by fellow citizen scientists. The app is available for download for both android and iphone operating systems.

Ocean Energy Development off Oregon

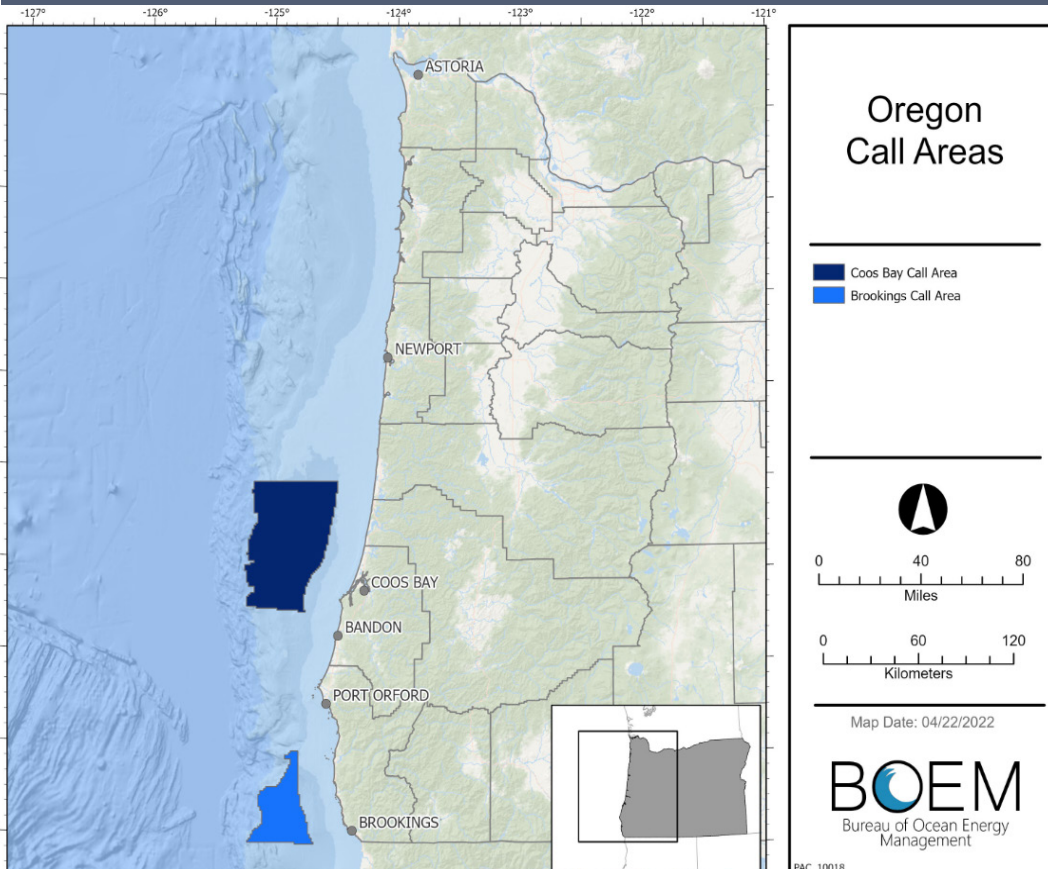
OSU PacWave South completed installation of cables beneath the shoreline in May 2022 and the construction of the onshore facility continues. Marine construction and cable laying will likely occur in 2023-24, and OSU hopes the site will be operational soon thereafter. For updates on construction of the project, see OSU's PacWave website at <https://pacwaveenergy.org/>.

We are continuing our work to inform efforts by BOEM to gather data related to potential future offshore wind (OSW) development. In fall 2021, we used aggregated crab logbook data to create a spatial map of where you fish for BOEM to consider in the siting of areas for potential future wind energy turbines. These mapping layers highlight areas where energy development could conflict with crabbing and were posted to the OROWindMap planning tool. In spring 2022, BOEM opened a public comment opportunity requesting information on two large Call Areas off of Coos Bay and Brookings to identify conflicts and inform subsequent winnowing down to smaller Wind Energy Areas (WEAs) where development would be considered. Numerous fishing industry participants voiced concerns at public meetings open to all fishing sectors that were facilitated by the Oregon Trawl Commission, Midwater Trawlers Cooperative, and BOEM. Multiple written responses expressed concern about conflicts with fisheries including those from ODFW. Links to OROWindMap and to public comments, as well as maps and information on the Call Areas are available at <https://www.boem.gov/renewable-energy/state-activities/Oregon>.

Also this past spring, per House Bill 3375 from 2021, the Oregon Department of Energy (ODOE) convened several public meetings to gather information on the benefits and challenges of integrating up to 3 gigawatts of floating OSW by 2030. Many fishing industry stakeholders conveyed concerns. ODOE submitted their final report to Legislature on September 15, 2022. Meeting materials and recordings, comments received, and the final report are available at <https://www.oregon.gov/energy/energy-oregon/Pages/fosw.aspx>.

This year we also collaborated with NMFS, PSMFC and other partners to provide data to represent select fisheries, including Dungeness crab, in multiple projects evaluating marine spatial planning for offshore wind. These on-going projects include:

- Development of a comprehensive data portal to use for future evaluation (Pacific Fishing Effort Mapping Project);
- Economic evaluation of offshore wind and select commercial fisheries;
- Modeling the suitability of portions of the Call Areas relative to conflicts with fishing.



The suitability modeling has been performed by NOAA's National Centers for Coastal Ocean Science (NCCOS) in other regions of the US to inform BOEM's decision making to identify the most suitable areas for WEA siting and is now being worked on for Oregon. No open lease applications for offshore wind development off Oregon are currently being considered by BOEM, but draft WEAs will likely be identified for public comment, followed by BOEM's finalization of WEAs and potentially the consideration of leasing for OSW development in 2023.

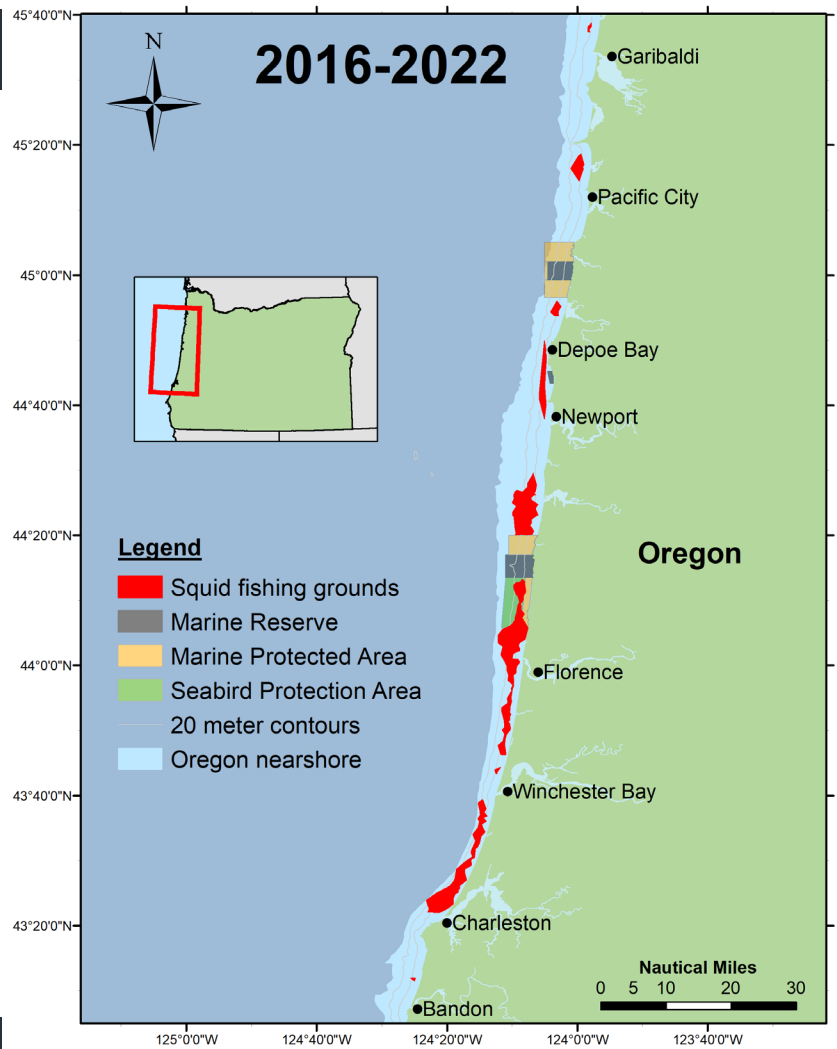
Want more info?
Contact Delia Kelly
Ocean Energy Coordinator
(541) 857-2534
delia.r.kelly@odfw.oregon.gov

Oregon Squid Fishery

Oregon has recently seen the development of a sizeable purse seine fishery for market squid starting in 2016, and squid fishing grounds overlap with the crab fishery. The highest effort in the squid fishery has occurred from March through May. ODFW has received several reports from crabbers about lost or moved pots resulting from interactions with seine nets or cut-offs from vessels searching for squid. It is unlawful to move or interfere with crab pots in Oregon and ODFW conducts regular outreach to the squid fleet regarding crab pot avoidance. ODFW has asked the squid and crab fleets to communicate about when and where they are fishing to help mitigate interactions and, as part of those efforts, ODFW is sharing this information about the location of squid fishing grounds (Figure 9) with the crab fleet. If you crab in these areas after March, there's a good chance you'll see seine vessels targeting squid and we ask that communication between the crab fleet and the squid fleet stay open to minimize potential conflicts.

**Squid fishery questions?
Contact Troy Buell (see last page)**

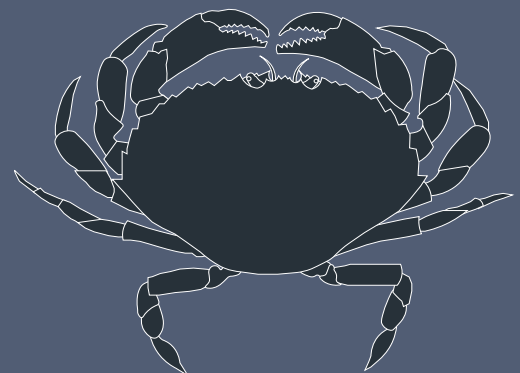
Figure 5: Market squid fishing grounds from seine logbooks, 2016-2022. Areas where fewer than three vessels made sets were excluded to protect confidentiality.



Sea Otter Reintroduction

Over the past several years, there has been renewed interest in considering sea otter reintroduction across the West Coast. A non-profit group called the Elakha Alliance led the completion of a January 2022 Feasibility Study to evaluate potential reintroduction of sea otters along the Oregon Coast (<https://www.elakhaalliance.org/feasibility-study/>). The U.S. Fish and Wildlife Service (USFWS), the federal agency that manages sea otters, was also directed by Congress to draft a Feasibility Assessment to evaluate the potential reintroduction of sea otters along the entire West Coast (June 2022; <https://www.fws.gov/project/sea-otter-feasibility-assessment>). Their website includes information to address a series of Frequently Asked Questions about the USFWS's Feasibility Assessment and the status of sea otter reintroduction off Oregon. The USFWS's Feasibility Assessment concludes that reintroduction of sea otters is feasible from biological and socioeconomic perspectives and recommends completion of a comprehensive socioeconomic impact assessment once potential reintroduction sites are identified. The USFWS's Feasibility Assessment did not make any recommendation as to whether reintroductions should take place and does not predetermine any proposal for action at this time. If a formal reintroduction proposal is developed in the future, the USFWS would be required to initiate a National Environmental Policy Act review process (including a required public review and engagement process) prior to any formal decision on reintroduction.

We would like to thank Hugh Link for over 18 years of service with the ODCC. Over the years, Hugh has been a very well respected voice for the crab industry and we greatly appreciate Hugh's willingness to collaborate with us on many industry initiatives. Thank you Hugh for all of your hard work, communication and support. We wish you the best in all that comes next and you will be missed!



Want Crab Fishery Updates?



ODFW Text & Email Updates

If you would like to receive email and/or text messages with up-to-date information about the ocean commercial Dungeness fishery, please visit the link below. You can cancel your subscription at any time by logging in on the same webpage.

Want ODFW crab updates? Sign-up here: <http://dfw.state.or.us/MRP/>



ODFW Website

Starting mid-Oct we post weekly updates on preseason testing and information about the season opening status. Updates on the webpage listed below continue until season opening decisions are made.

Want ODFW season opening updates? Visit here: http://www.dfw.state.or.us/MRP/shellfish/commercial/crab/season_weekly_updates.asp



ODA Text & Email Alerts

If you would like to receive email and/or text messages from the Oregon Department of Agriculture about when and where crab are being tested for domoic acid, please visit the link below to sign-up.

Want ODA crab updates? Sign-up here: <https://www.oregon.gov/oda/programs/FoodSafety/Shellfish/Pages/CrabBiotoxinInfo.aspx>



ODCC Text Updates

If you would like to receive text message updates about the crab fishery from the Oregon Dungeness Crab Commission, please text CRAB to the phone number below.

Want ODCC crab updates? Sign-up by texting CRAB to (833) 763-0443





Oregon Department of Fish and Wildlife
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Newport, OR 97365

Marine
Resources

Have a safe and productive crab season!

We are always interested in hearing from you about the fishery and the issues that are important to you. Please give us a call or email us any time!

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