13th Annual

Oregon Department of Fish and Wildlife Marine Resources Program

Dungeness Crab Fishery Newsletter

December 2021

What's Inside

Visit Our Website:

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

High Value, Lower Volume

The 2020-21 commercial Oregon Dungeness crab fishery landed a total of 12.2 million pounds of Dungeness crab into Oregon ports coastwide, approximately 29% below the 10-year average of 17.3 million pounds. These landings equated to $60.6 million ex-vessel value, the fifth highest grossing season on record. The average price per pound peaked at $9.51 in May and came in at $4.97 across the entire season, the highest average price per pound for a single month and for an entire season on record. In total, 325 different permit holders landed crab on 4,793 separate fish tickets into Oregon ports from the ocean and Columbia River.

The 2020-21 season opening was delayed coastwide due to low meat yield in round one of preseason testing. The area south of Cape Falcon, encompassing most of the coast, opened on December 16; however, most of the fleet waited another three weeks for industry price (con't on p.2)

How'd it GO?

2020-21 Season Summary

12.2 million pounds

Highest avg. price per pound ever recorded

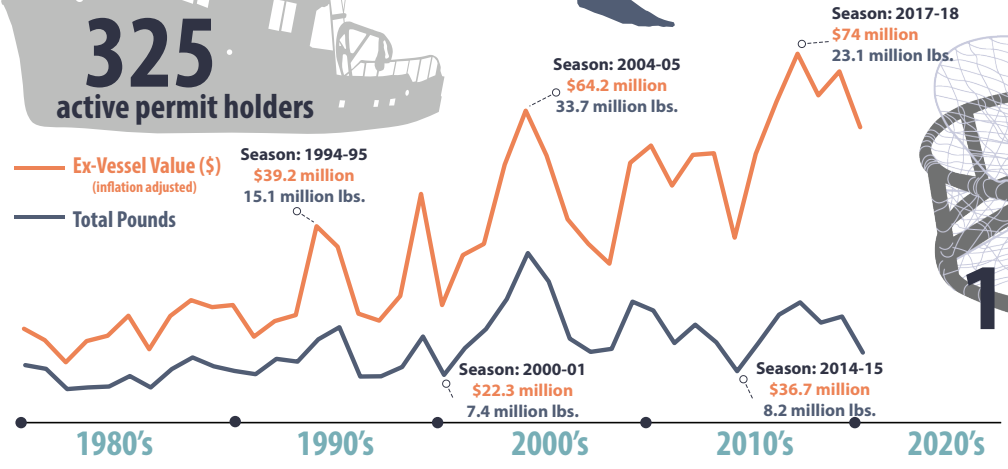
29% less pounds than 10 yr avg.

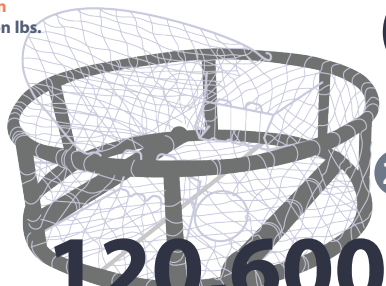
$4.97 avg. price/lb.

58% lbs. harvested in first 2 months

$60.6 million ex-vessel value

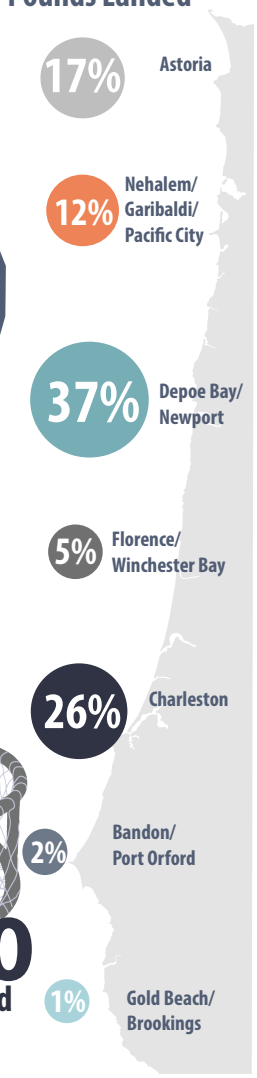
325 active permit holders





120,600 estimated pots used

Pounds Landed



Season Summary (cont'd)

negotiations to unfold and started crabbing around January 9th. The area north of Cape Falcon was delayed until February 16th to coordinate an opening with Washington's southern coastal area that was delayed due to elevated domoic acid results in crab collected off the Washington coast. The area from Point Chehalis, WA to the OR/WA border opened under an evisceration order which was in place through April 14th. No in-season actions were needed to manage biotoxins during the 2020-21 season. All harvest areas with razor clam domoic acid results at or above action levels were regularly tested throughout the season, and no elevated levels of domoic acid in crab viscera samples were detected.

Due to the vast majority of the fleet waiting to start for industry price negotiations and a delayed start on the north coast, a lower percentage of crab (58%) than normal were caught in the first eight weeks of the fishery. This season was the first year of a required late-season 20% pot limit

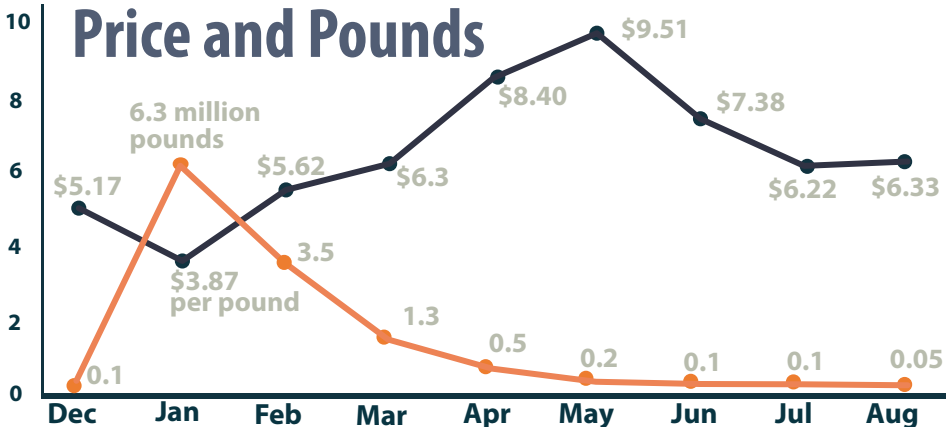


Figure 1: *Pounds of crab landed and price per pound by month.*

reduction beginning May 1 to reduce the risk of marine life entanglement. Despite this reduction of gear, the fishery still landed just over 3% of the total pounds for the season within this timeframe (May-Aug), which has ranged from 2-7% in recent years.

For the 5th season in a row, the Newport area led all ports in total landings with more than 4.6 million pounds (37% of the total season landings), followed by the Charleston and Astoria areas with 3.1 and 2.1 million pounds, respectively. There was a significantly lower percentage of crab landed into both the port of Port Orford (2%) and Brookings (1%). An estimated 120,600 total pots were used in the fishery this season, which is slightly above the estimated average number of pots utilized each season since the implementation of pot limits.

Derelict Gear Program Summary

A total of 555 pots were removed from waters off Oregon in this year's Post-Season Derelict Gear Recovery Program (PSDGRP). Thank you to all who participated! Of the 555 pots, ODFW confirmed 49 had a late-season tag on them. The number of pots brought in through the program has ranged from 421-957 pots per year since 2014. Throughout the duration of the program this year (August 30th – October 11th), we issued 38 permits and just under half (17 permits) recovered gear. Pots were brought into six Oregon ports from 34 separate retrieval trips. All recovered gear was registered and tagged by ODFW at the dock and all gear registration forms are posted on our

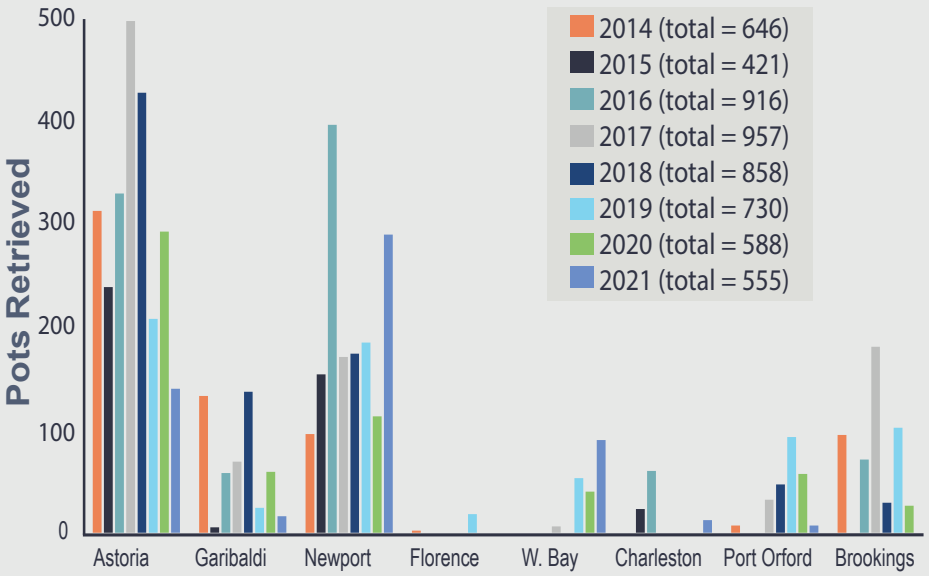


Figure 2: *Derelict gear recovered in the PSDGRP by port landed.*

In-Season 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 on the right still apply

Conditions upon retrieval

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

Derelict Gear Summary (cont'd)

website https://www.dfw.state.or.us/MRP/shellfish/commercial/crab/psdgrp.asp. This allows any previous gear owners interested in negotiating for retrieved pots to contact retrieving vessels directly.

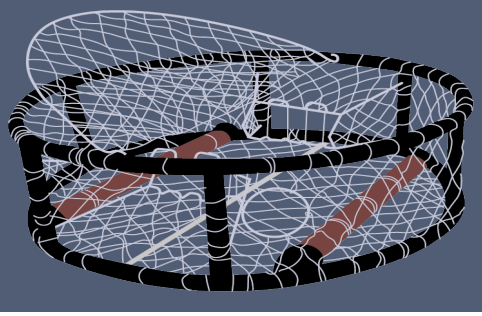
For the third year in a row, additional outreach efforts resulted in reports of over 249 locations of derelict pots from Oregon State Police (OSP), ODFW and Oregon State University (OSU) researchers, and commercial and recreational ocean users. We regularly shared these locations with PSDGRP permit holders to target for retrieval and approximately 125 of them were retrieved and registered through the program. Many of the remaining reported derelict pots are likely still out in the water so please consider retrieving derelict pots under the in-season derelict gear allowances as you start crabbing this season (see reminders on the previous page). The updated list of reported derelict gear is located on our derelict gear recovery webpage listed above.

Overall, the program continues to be successful at bringing in a significant amount of derelict crab gear and at raising awareness both within the fleet and with other ocean users about the crab industry's efforts to remove crab gear post season. Unfortunately, we had very limited participation from vessels south of Winchester Bay this year and had the lowest participation in Astoria since the beginning of the program.

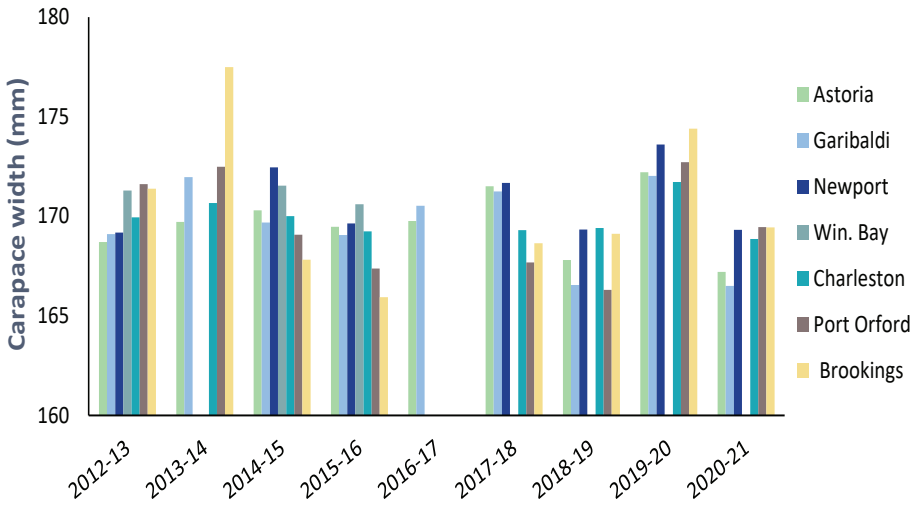
Bring in Derelict Gear Now!

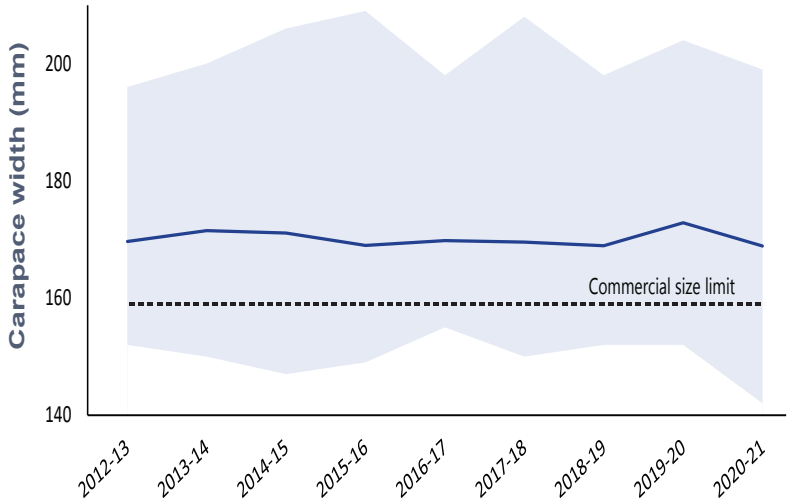
Considering the increased rate of confirmed ESA-listed whale entanglements along the West Coast, efforts to reduce risk of entanglement by removing lines from the water both during and after the season are more important than ever for the continued sustainability of the fishery.

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.



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.

2020-21 Dockside Sampling

Dockside sampling in the 2020-21 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 during the 2012-13 through 2020-21 seasons by port are shown in the graph on the top left. Over this period, the average coastwide carapace width of male crab sampled dockside was relatively constant, ranging from 168.9 mm to 172.8 mm. 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

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

Dockside Sampling (cont'd)

of sampled crab fall below the commercial size limit (0.36% in 2020-21) (figure 3). However, this season we measured the shortest crab (142 mm) dockside since the 2001-2002 season, 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.

Both preseason and in-season at-sea sampling efforts did not occur during the 2020-21 season due to the on-going COVID-19 pandemic.

Crab Logbooks and Fish Tickets

One important use of crab logbook and fish ticket data has been the development and monitoring of a Limit Reference Point (LRP) for the commercial Dungeness crab fishery. This policy, implemented in 2014, defines a state of the fishery we aim to avoid and a suite of potential management actions to be taken should that point be reached. Our recently drafted Fishery Management Plan (see p.11 for more FMP information) describes the LRP policy and our most current assessment of the landings and logbook catch-per-unit-effort (CPUE) criteria. One of the four criteria of the LRP is a logbook CPUE threshold; CPUE should stay above the average level predicted to have occurred over the 1980-81 through 1986-87 seasons (0.96 pounds per pot day), which is the period of time when the fishery came closest to triggering the landings-based LRP criteria. The mean logbook CPUE from the 2007-08 through 2019-20 seasons is shown in Figure 4, and shows that within this time period, the LRP CPUE abundance criteria has never been reached. The LRP is one our most direct ways to know if there is a problem with the crab resource so we can take action to prevent overfishing.

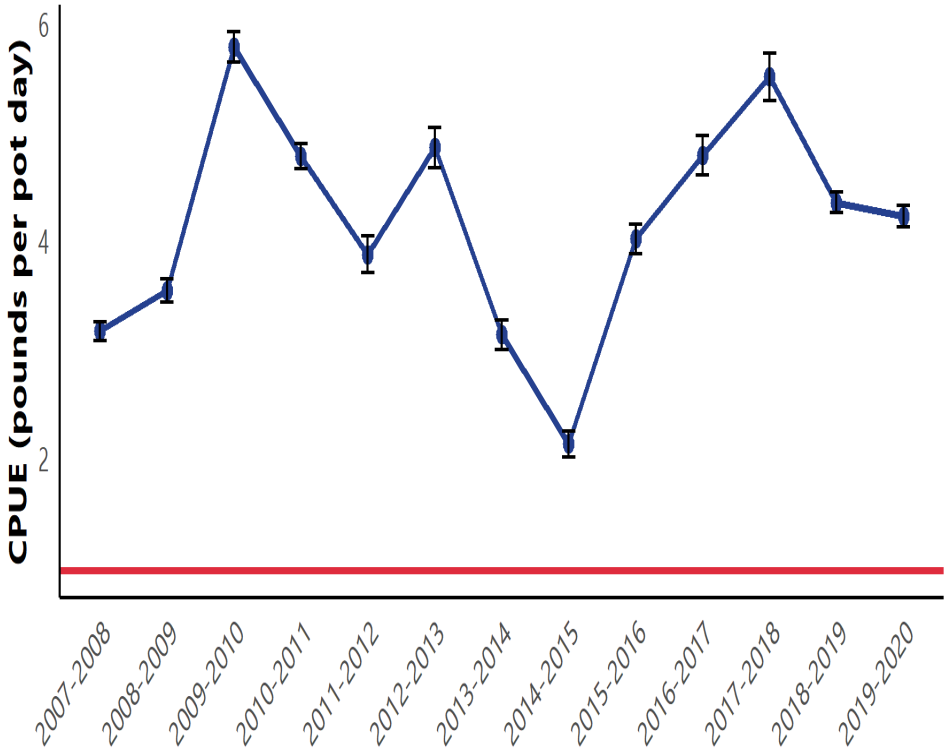
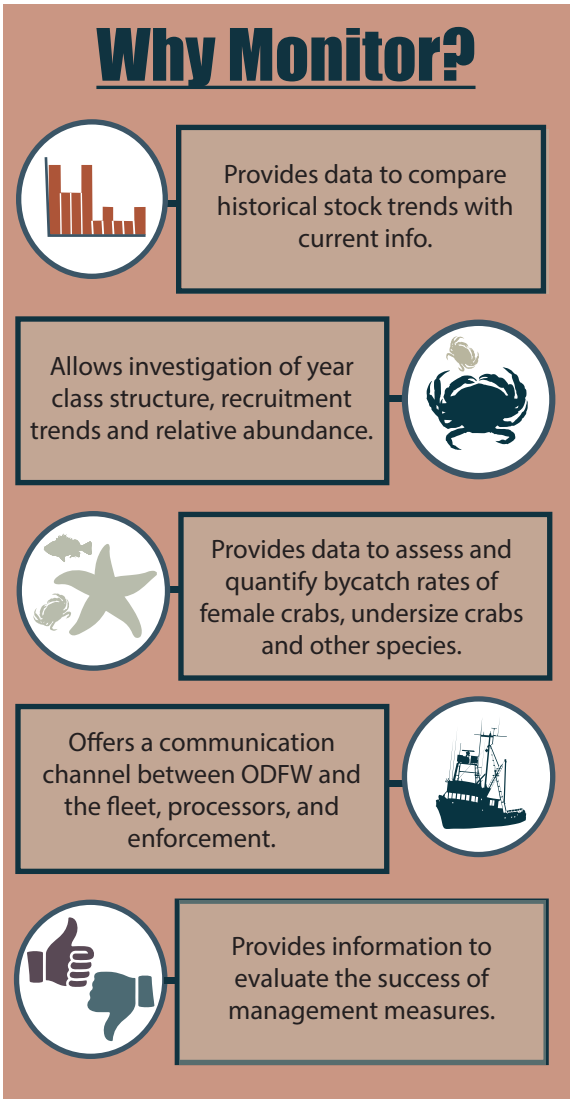


Figure 4: *Mean logbook catch-per -unit-effort (CPUE) (pounds per pot day) with 95% confidence intervals from the 2007-08 through 2019-20 ocean commercial crab seasons. Solid red line marks the LRP CPUE criteria of 0.96 pounds per pot day.*



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 informed further development of seasonal ocean condition forecasts for the crab fishery (see info below), a continuation of our own Section 6 whale distribution project and NOAA's entanglement risk assessment efforts, economic evaluation of crabbing location choice relative to safety considerations, and US Bureau of Ocean Energy Management (BOEM) siting of areas for potential future wind energy turbines and cables (OROwind MAP).

J-Scope Seasonal Forecasts for the Dungeness Crab Fishery

This year the J-SCOPE research team has continued to collaborate with state and tribal managers from Washington and Oregon to forecast ocean conditions relevant to the Dungeness crab fishery. J-SCOPE stands for JISAO Seasonal Coastal Ocean Prediction of the Ecosystem, and was built by researchers from National Oceanic and Atomospheric Administration (NOAA), University of Washington, and University of Connecticut. J-SCOPE produces seasonal forecasts, up to nine months ahead, for Oregon and Washington waters. In addition to the forecasts of summer conditions that are available on the Northwest Association of Networked Ocean Observing Systems (NANOOS) portal (http://www.nanoos.org/products/j-scope/), a major effort in 2020-2021 has been the addition of forecasts tailored for the crab fishery that predict the late fall and winter ocean conditions.

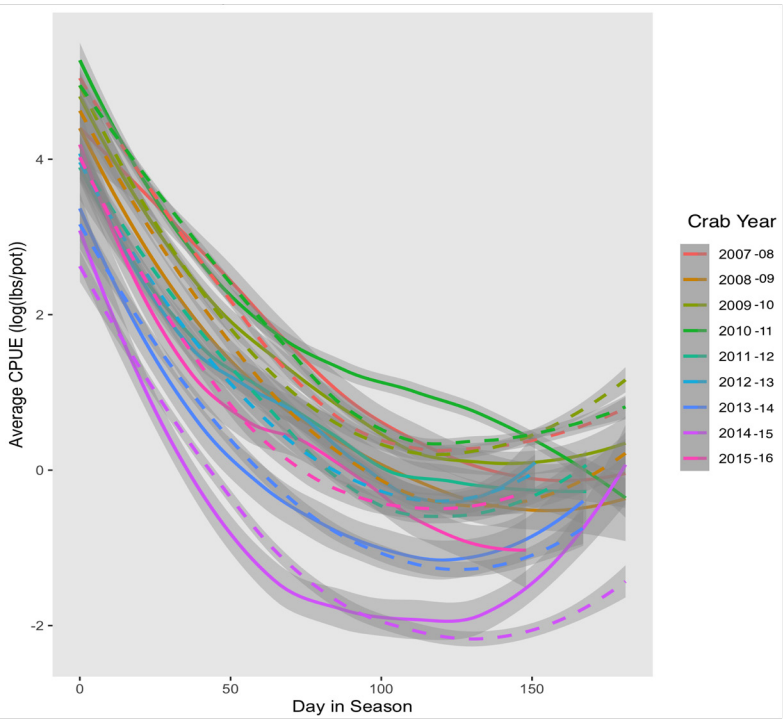


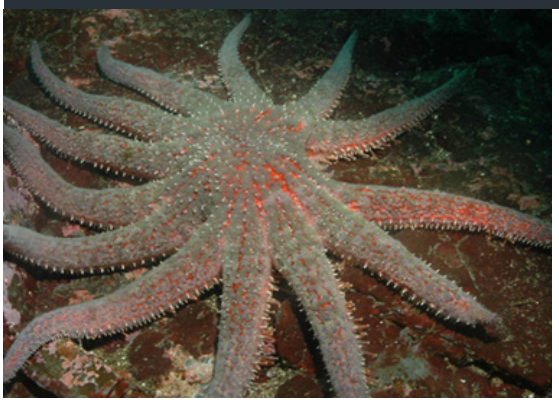
Figure 5: *Smoothed lines show each year's average daily CPUE (in units of natural log of pounds per pot) by day-in-fishing-season. Observed CPUE is represented with solid lines; CPUE predicted by the model is represented by dashed lines. Catch and effort data are from both Oregon and Washington logbooks.*

One focus of the J-SCOPE forecasts has been predicting crab catch rates based on ocean conditions, location, and day-in-fishing-season. ODFW, Washington Department of Fish and Wildlife (WDFW), and Washington tribal managers have collaborated on this project by providing crab fishery logbook data and expertise. Results suggest that ocean conditions are significant in forecasting crab catch rates, and that the model can capture much of the pattern in crab catch rates through the fishing season and the differences among years (Figure 5). However, in spite of the ability to forecast ocean conditions, true predictions of catch rates for future years are challenging because this requires foresight about fishing behaviors such as location choice and timing.

The research team is now asking whether Dungeness crab meat quality can be forecast by oceanographic conditions such as temperature, salinity, and plankton production. The aim is to evaluate these forecasts alongside the preseason meat quality testing that is already conducted on the West Coast to set the season opening dates. Preliminary results suggest that variation in preseason meat quality can be partly explained by ocean conditions forecast more than one month ahead.

The J-SCOPE team has also finalized modeling that links occurrence of Dungeness crab megalopae (larvae) to their dispersal path and oceanographic conditions such as oxygen, salinity, temperature and pH. That research is now published here https://doi.org/10.3389/fmars.2020.00102. If you have questions about this research, please contact Samantha Siedlecki (Samantha.Siedlecki@uconn.edu) or Isaac Kaplan (Isaac.Kaplan@noaa.gov).

Sunflower Sea Stars - Please Handle With Care!

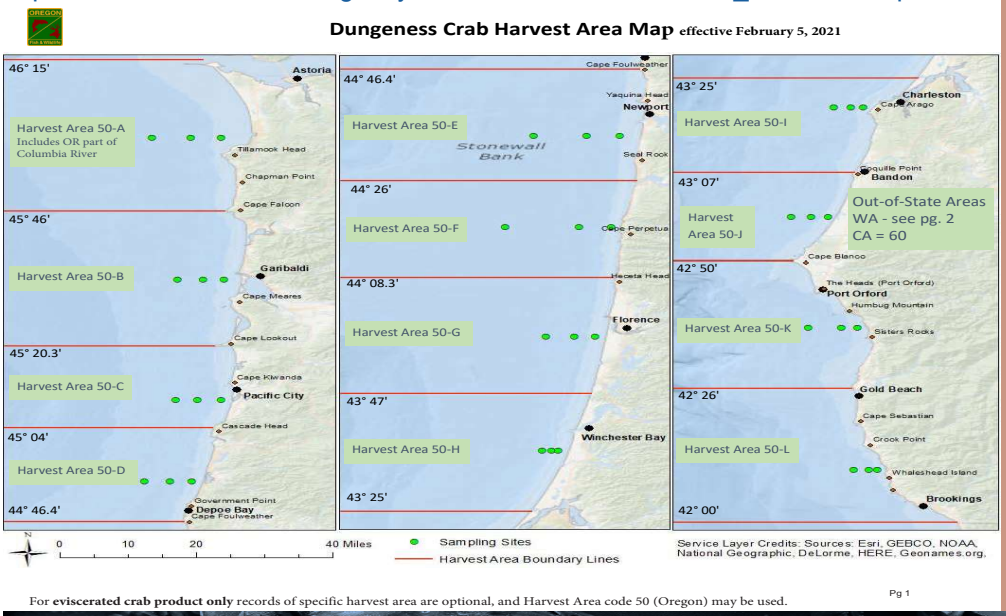


Picture: *Sunflower sea stars (Pycnopodia helianthoides). Photo courtesy of S. Groth, ODFW.*

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. Recently, NOAA received a petition to afford the species Endangered Species Act (ESA) special status along the West Coast, and the decision by NOAA to initiate a 12-month evaluation to determine if an ESA listing is warranted is currently pending. 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 quickly as possible.

Crab Biotoxin Management Reminders

Over the years, we have continued to improve traceability of crab to maintain the option of fishing on crab during biotoxin events by using evisceration to protect public health. These measures have included requiring harvest areas on our electronic fish ticket system and requiring electronic fish tickets for all crab landings. This year, the Oregon Fish and Wildlife Commission (OFWC) adopted two additional measures to continue streamlining these relatively new regulations and maintain consistency with complementary ODA regulations. These included allowing crab to be landed into Oregon for evisceration if they are from an area in another state that is under an evisceration order due to elevated biotoxins, and updating the crab harvest area map. More details of these regulations can be found here https://www.dfw.state.or.us/agency/commission/minutes/21/10_Oct/index.asp.



Buyers – Crab fish tickets are required to be electronically submitted by the end of the next business day after a crab landing is made. ***ALL*** crab 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 crab 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.

Want information about when and where crab are being tested for domoic acid? Sign up for email or text alerts from ODA here https://www.oregon.gov/oda/programs/FoodSafety/Shellfish/Pages/CrabBiotoxinInfo.aspx

Electronic Logbook and Vessel Loggers

Heads up! This spring, we are planning a pilot project to contract with a software developer to create and field test an integrated electronic logbook and vessel tracking system for the crab fishery. This type of system is needed for the crab fishery to increase the precision, accuracy, and accessibility of fishing effort, catch and location information to improve fishery accountability. This will assist managers and the crab industry to: 1) maintain biotoxin traceability regulations, 2) assess 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 plan to work 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. Stay tuned for updates and opportunities to help test and shape what an electronic monitoring system for the crab fleet will look like.

In our draft Conservation Plan (see p.7 for more info), we plan to require vessel tracking within five years (2026-27 season) and you can be part of the development by volunteering to test a vessel tracking device. Pacific States Marine Fish Commission (PSMFC) has vessel loggers from a couple of different vendors that they are interested in testing on the water in all three states during this upcoming crab season. PSFMC will provide captains with the test solar logger units and pay for one year of data transmission. Since they are testing system performance in addition to data quality, they hope that vessel operators will keep them active for any fishery they participate in throughout the year. If you are interested and willing to help test one of these systems on your boat this season, please contact us or Dave Colpo at DColpo@psmfc.org.

Reducing Marine Life Entanglements

Marine life entanglement in fishing gear from any fishery is a concern, particularly for threatened and endangered whales and sea turtles. Whale populations in the United States are protected, assessed, and managed by the federal government under the Marine Mammal Protection Act (MMPA) for all species, and additionally under the ESA for threatened or endangered populations. 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 fishing gear that has been definitively linked with the West Coast and Oregon commercial Dungeness crab fisheries. In Oregon, entanglements have been documented for large whales, most commonly humpback and gray whales. The most recent summary of entanglement information is available on NOAA's website http://www.westcoast.fisheries.noaa.gov/protected_species/marine_mammals/fisheries_interactions.html.

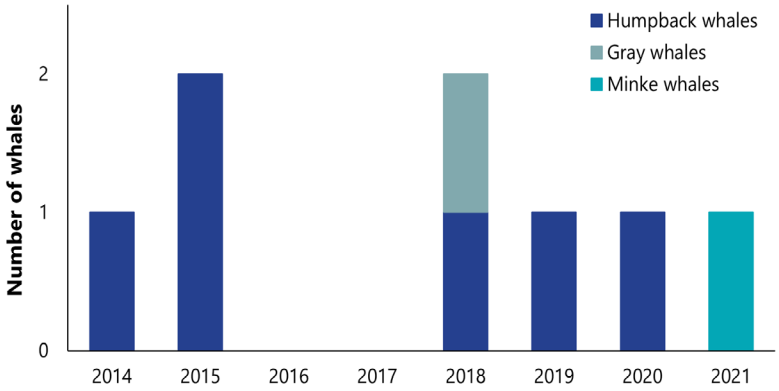


Figure 6: *Number of confirmed whales entangled in Oregon Dungeness crab gear by year and species. Entanglements are confirmed by NOAA fisheries. The 2021 record is as of November 20, 2021.*

Across the West Coast, there have been increased entanglements since 2014, driven largely by entanglements of humpback whales. While the incidence of West Coast entanglements is highest in California crab gear, elevated entanglements in both Washington and Oregon gear are also of concern. *From 2014 through 2020, there have been six confirmed entanglements of ESA-listed humpback whales in Oregon crab gear, and one confirmed entanglement of a non-listed gray whale. In 2021, the first confirmed entanglement of a non-listed minke whale in Oregon crab gear was documented (Figure 6).*

Conservation Planning For Reducing Entanglement Risk

Over the past six years, ODFW has been actively working to address entanglements in Oregon's fixed-gear fisheries with increased effort over the last three years. We have built off the Oregon Whale Entanglement Working Group's (OWEWG) preliminary draft recommendations for reducing the risk of whale entanglements to design and implement a proactive, phased management strategy for Oregon. Many parts of this strategy have been implemented in regulations by the OFWC adopting two regulatory packages (Sep 2019 and Sep 2020) to address entanglements. This year, we have focused significant efforts on packaging these measures into a draft Habitat Conservation Plan (CP) that describes our comprehensive strategy for reducing risk of marine life entanglements, including future measures and activities that will contribute to mitigating this problem. The states of California, Oregon, and Washington are in the process of developing separate but analogous CPs. Staff posted a public comment draft CP and briefed the OFWC in September 2021. All meeting materials are located at https://www.dfw.state.or.us/agency/commission/minutes/.

What is a Conservation Plan?

Section 10 of the ESA provides a mechanism for the authorization of a limited and carefully controlled amount of incidental take of listed species, through an Incidental Take Permit (ITP). The foundation of an ITP application is the CP, which is a planning document that describes the activities that are being proposed, how these activities impact ESA-listed species, and the mitigation measures that will be used to minimize those impacts to the maximum extent practicable. If the CP is approved by the regulatory agency, an ITP will be issued, potentially including additional requirements as conditions of approval.

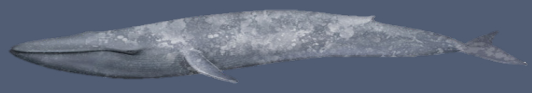
The Oregon crab fishery CP applies to the ocean commercial sector alone and will be submitted to the National Marine Fisheries Service (NMFS), the regulatory agency for whales and sea turtles at sea. We have worked closely with industry, and federal and state agency (con't next page)

Entangled Whale? 1-877-SOS-WHALe

REPORT Entangled Whales IMMEDIATELY

1-877-SOS-WHALe (1-877-767-9425) or hail the U.S. Coast Guard on Channel 16

Conservation Plan (con't) - partners over the past three years to develop and adopt implementing regulations and draft a CP that plans for the co-existence of a vibrant crab fishery and the recovery of covered species (humpback whales, blue whales, and leatherback sea turtles) in ocean waters off Oregon.



We are currently in the process of evaluating the input received from the public comment period and from the OFWC informational hearing. We plan to finalize the draft for submission to NMFS in the coming months, after which NMFS will consider all aspects of the CP and issue a determination on the proposed ITP. This process is expected to take multiple years to complete. Once a permit determination has been made by NMFS, any conditions of the ITP must be accepted by ODFW; conditions that require regulatory change to implement will be presented to the OFWC for consideration. The CP will be considered final when an ITP is approved by NMFS.

Reducing Entanglement Risk Right Now

The CP outlines primary actions we are taking (listed below) to support on-going work to understand and reduce marine life entanglements. We ask you, as part of the crab industry, to embrace the important role you play in helping implement all these actions NOW to maintain a dynamic and vibrant crab fishery. All four areas of on-going work are vital for the long-term viability of the Dungeness crab fishery in Oregon and are central to ODFW's related conservation planning efforts.

1. Accountability – improve documentation of fishing effort and marking gear to help us both learn more from any future entanglements (such as through enhanced gear marking and buoy color registration) and track co-occurrence of fishing and whales in near real-time (such as through electronic fish tickets). The OFWC adopted these regulations in 2019 and they are described in the draft CP. We need you to help develop and support future accountability tools such as line marking, vessel tracking, and electronic logbooks that are scheduled for development in upcoming months and years.

2. Risk reduction – reduce co-occurrence of whales and crab gear (separation in time and space) through a 20% pot limit reduction and 40-fathom depth restriction effective May 1, elimination of the standard replacement tag allowance, elimination of the post-season two-week gear retrieval period, requirement of a taut line best practice, changes to the season opening criteria to lessen the need for lengthy delays, and derelict gear recovery efforts. The main risk reduction measures will be evaluated over three crab seasons (20/21 through 22/23) at which point we will present our assessment of these measures to the OFWC to continue or modify them for future seasons (Summer/Fall 2023). Proposed future and adaptive measures are also planned for development and described in detail in the draft CP.

3. Research and monitoring – report whale distribution using Whale Alert App (see more on this app below) to support the Oregon Dungeness Crab Commission (ODCC), NOAA Section 6 and ODFW funded, on-going collaboration between OSU, ODFW, United States Coast Guard (USCG) and Oregon Sea Grant to understand where and when whales are in the ocean off Oregon. See status update on this project, below ("Oregon Whale Survey Update").

4. Best Management Practices – use whale-safe practices on the water and encourage others to do so as well. Originally developed by the Oregon Whale Entanglement Working Group (https://seagrant.oregonstate.edu/outreach-and-engagement/Oregon-Whale-Entanglement-Working-Group).

Want to know more?

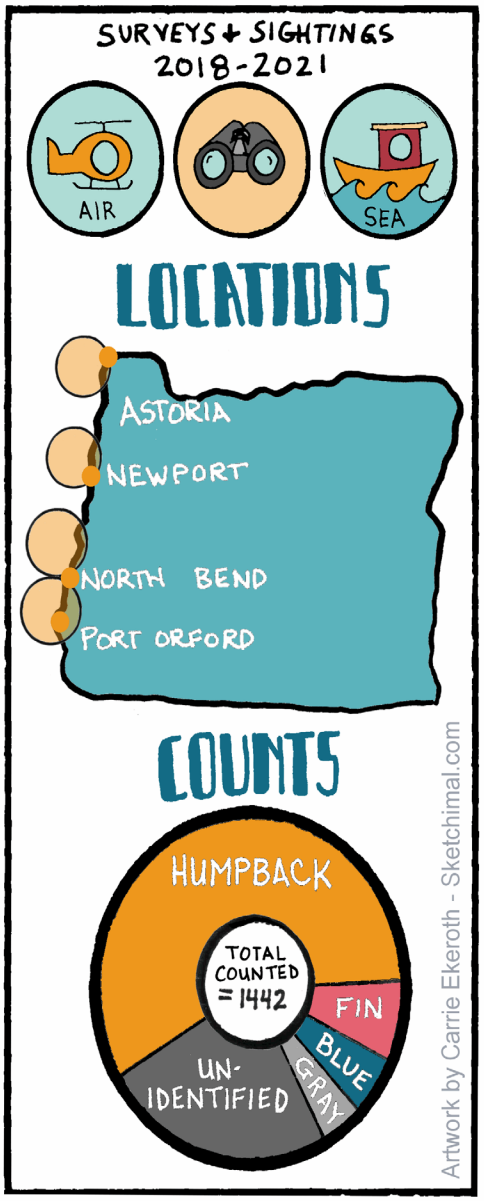
Additional information about all of ODFW's efforts to curtail marine life entanglements can be found on our website https://www.dfw.state.or.us/MRP/shellfish/commercial/crab/whale_entanglement.asp.

Oregon Whale Survey Update

To help meet the critical research need for up-to-date and detailed scientific information about where and when whales are in Oregon's waters, ODFW has continued collaborating with Oregon State University and Oregon Sea Grant to collect whale sighting data during ride-alongs on USCG helicopter training 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. Initially funded by the ODCC and then by NOAA Section 6 funds, these monthly aerial surveys continued through this year. Section 6 funds for supporting these flights ended in June 2021; however, ODFW has been covering the costs of these survey efforts in hopes of keeping them going until longer-term funding is secured.

The aerial surveys for this project have been highly successful, with over 1,442 individual sightings recorded over 28,318 km of transect. OSU is now using the whale sightings data combined with environmental data to predict seasonal whale distribution along the entire Oregon coast, and how that changes relative to environmental variables, such as sea surface temperature, depth, and water column stratification. The resulting preliminary species distribution models (Figure 7) that have been generated 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 next step in this project is to use the monthly predictions of whale density distribution patterns off the Oregon coast to conduct co-occurrence modeling relative to fishing effort to provide spatially explicit maps of entanglement risk under various environmental conditions. These will help us assess seasons and areas of greatest risk of interaction with fishing gear. We are also continuing to seek funding opportunities to continue and expand this project. This fall, we worked closely with OSU to develop a proposal to try again for a second Section 6 grant to fund aerial surveys beginning again in June 2022 and to include a whale prey component in the modeling efforts.



Picture (left): *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.*

Entangled Whale?
1-877-SOS-WHALe

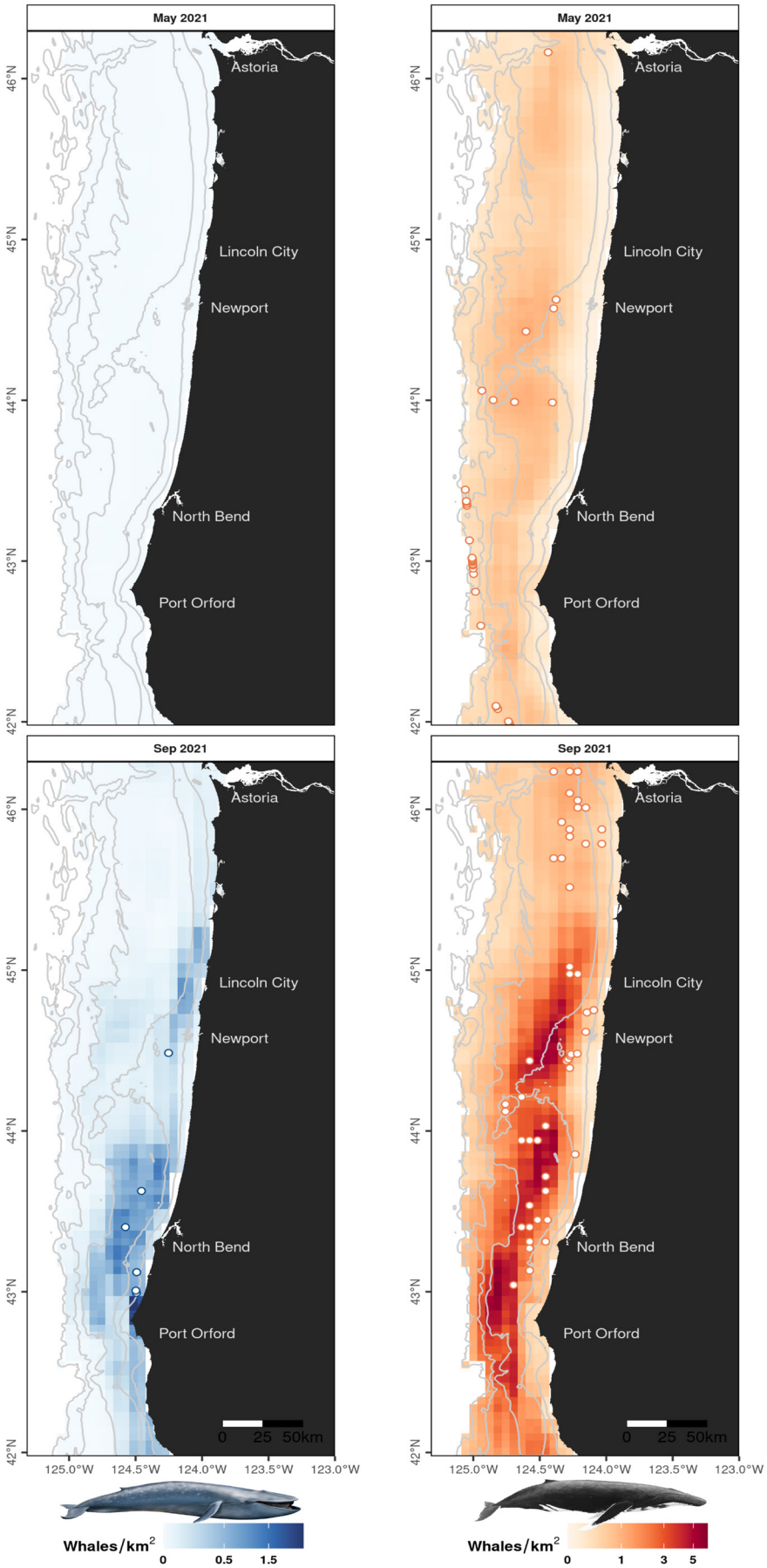
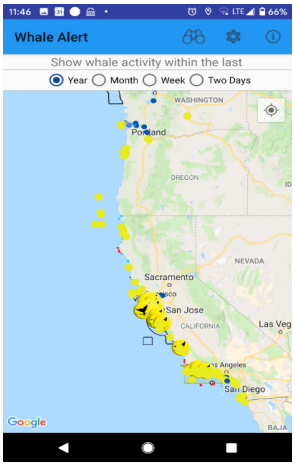


Figure 7. *Predicted densities of blue (left) and humpback whales (right) in the months of May and September 2021. Predictions are derived from species-specific density models based on shipboard (2016-2021) and helicopter survey data (2019-2021) analyzed as part of our current NOAA Section 6 grant (OPAL project, model version Sep21). Colored circles mark the position of whale groups observed during systematic research surveys and reported by sea users during each month by year.*

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 make accurate models of whale distribution. Download and use the Whale Alert App to document where healthy, happy 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 from iTunes or Google Play

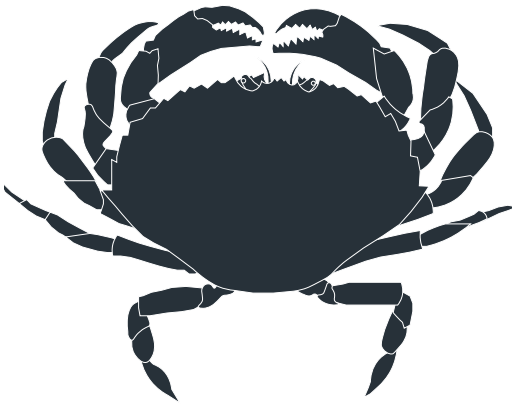


Picture (right): *Homescreen of the Whale Alert App where you can explore recent whale sighting data entered by fellow citizen scientists. The app is available for download for both android and iphone operating systems.*

Quick Facts:
Oregon crab gear and whale entanglements

- We need your help to reduce entanglement risk
- Since 2014, 6 Humpbacks (ESA listed), 1 Gray , 1 Minke
- Mostly in ACTIVE SEASON GEAR (identified by buoy tags/brand), but also derelict gear
- Oregon crab gear has been confirmed in entanglements observed in WA, OR, CA and MEX

Dungeness Crab Fishery Management Plan



ODFW's management of Dungeness crab harvest includes three separate sectors (sport, bay commercial, and ocean commercial), has developed over decades of participation, and is customized to support sustainable populations and meet the unique harvest desires and needs of each sector. In 2018, ODFW's Marine Resource Program began developing a detailed Fishery Management Plan (FMP) encompassing all three sectors. The purpose of the FMP is to provide a comprehensive reference document that describes the current knowledge of Dungeness crab and the current management strategy for harvest of the resource. Dungeness crab is a priority species for FMP development because the fishery sectors are entirely state-managed, the sectors overlap both seasonally and geographically, and the rationale for management is not well-understood among sectors. Updates on FMP development were given during public meetings with the ocean commercial sector in both 2019 and 2020, at ODCC meetings, and most recently in press releases and posting of the public comment draft this past fall. To accompany the public comment draft, we provided a briefing of the plan to the Oregon Fish and Wildlife Commission in October, along with minor implementing regulations (see below). Meeting materials can be found here https://www.dfw.state.or.us/agency/commission/minutes/21/10_Oct/index.asp.

The FMP is organized into two main sections – the Resource Analysis and Harvest Management Strategy. The Resource Analysis section describes the biology, ecology, stock status, threats, and information gaps for Dungeness crab. This section is rich with information given that there has been research and management interest in this species for many decades. The Harvest Management Strategy begins with a description of the goals and objectives of management (Figure 8), followed by a description of each fishery sector, including the management, and legal and regulatory framework. This section also identifies current management challenges and potential strategies to address them. In documenting the management approach, ODFW strives to increase awareness among the sectors of the distinct management strategies and goals. We will be evaluating public comment and feedback from the OFWC as we finalize and post the FMP in the coming months.

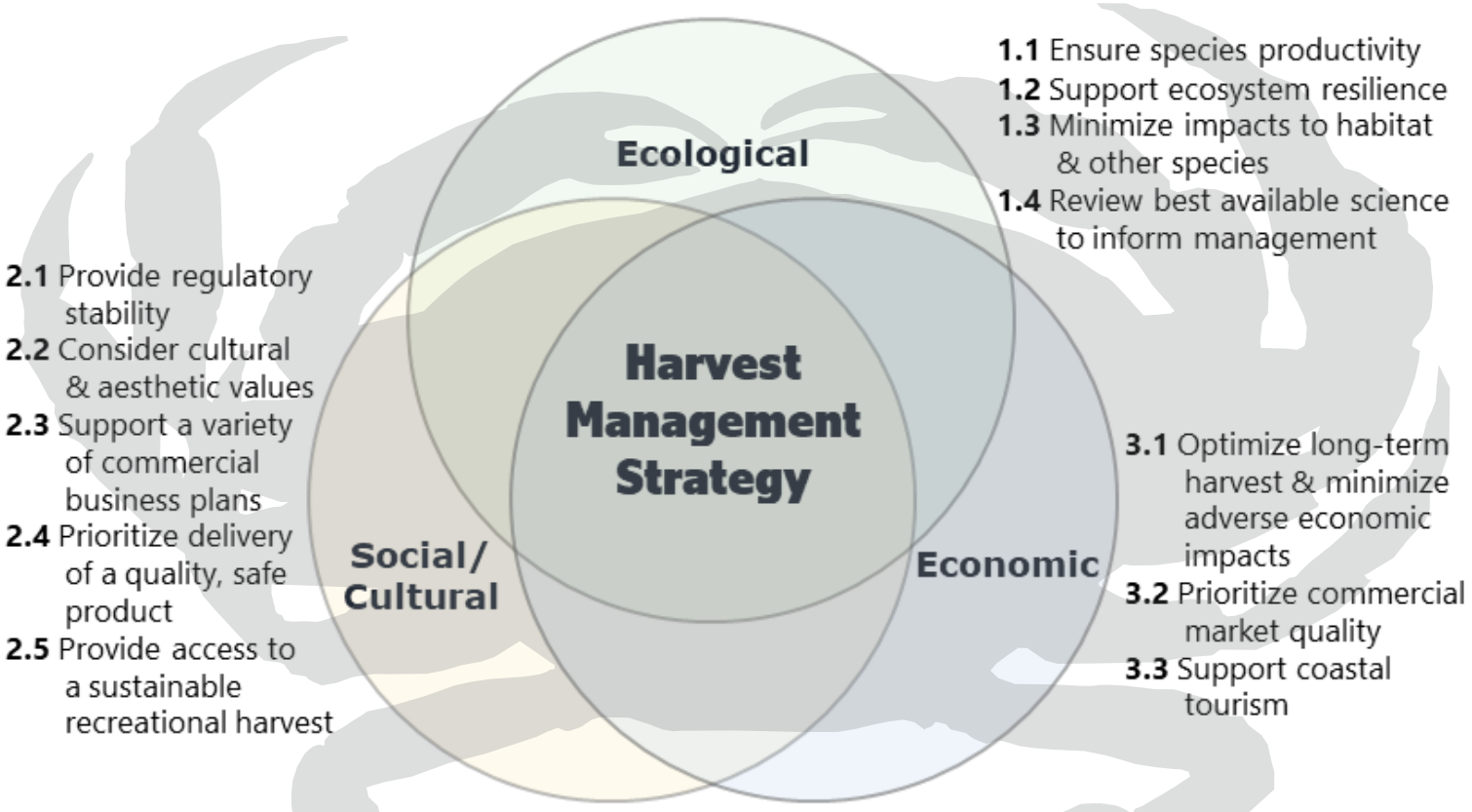


Figure 8: *The management approach for the Oregon Dungeness crab fishery, driven by overlapping ecological, social/cultural, and economic objectives. Ecological objectives apply to all Dungeness crab fishery sectors, while social/cultural and economic objectives may apply to the commercial fishery, recreational fishery, or both.*

Fishery Management Plan New Regulations

The FMP was written to describe the status of the species and the current management (which includes all existing regulations) but is not intended to promote broadscale change in management approaches. As such, we only proposed relatively minor regulatory changes for the bay and ocean commercial sectors to the OFWC. The OFWC adopted all staff proposed regulatory changes including:

1. **Marine life entanglement risk reduction measures**
   a. Prohibited landing of crab after May 1 unless late-season tags are purchased
   b. Extended time allowed to attach late-season tags to buoys from two weeks to three weeks

2. **Biotoxin management measures**
   a. Allowed landing of crab into Oregon for evisceration if they are from an area in another state that is under an evisceration order
   b. Updated harvest areas map to refine Washington crab harvest areas

3. **Clarified the marine reserve definition of "fishing gear"**
   to include surface buoys of bottom contact gear which prohibits surface gear within marine reserves boundaries (applies to all commercial fixed gear)

4. **Required logbook for bay commercial crab fishery**

Picture (below): *Oregon State Police Marine Patrol vessel, Guardian. Photo courtesty of OSP .*

Enforcement Reminders

The OSP works in conjunction with United States Coast Guard and enforcement officers from California and Washington Departments of Fish and Wildlife to ensure compliance with the commercial Dungeness crab fishery regulations. In recent years, more frequent commercial crab enforcement issues have been related to:

Logbooks – Crab logbooks are required to be completed prior to landing. Logbooks need to be available for inspection and submitted to ODFW within 10 days after the end of the month.

Buoy tags – All gear is required to have the proper buoy tags affixed to the surface buoy. Ensure that each time gear is ran the buoys are inspected for tags. It is unlawful to fish with any gear that doesn't display the proper buoy tag.

Late-season – Reminder that ALL gear needs to be either removed or properly tagged no later than May 1 for the late season. Additionally, no gear shall be outside of the 40-fathom line, including surface buoys.

Licenses – With the fishery starting around the first of the year, there are almost always individuals who forget their new licenses. Make sure you have all the necessary licenses before heading out.

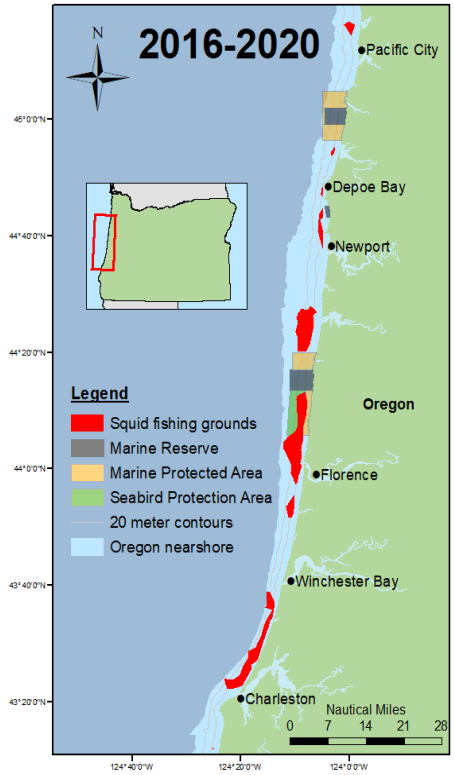
Undersized crab – There is NO allowance for undersize crab, and it is the responsibility of all on board the vessel to ensure undersize crab are not retained.

Partial and split offloads – There is NO allowance for partially offloading crab and heading back out to sea with crab still onboard to resume crabbing. Vessel operators are allowed to make split deliveries to multiple buyers; however, operators must completely unload all crab from their vessel prior to returning to sea to harvest more crab.

Marine reserves – A reminder that the marine reserve sites at Cape Falcon, Cascade Head, Otter Rock, Cape Perpetua, and Redfish Rocks are closed to crabbing and fishing. There have been increasing instances where gear enters the reserves due to current or weather. Crabbers should be aware that it is their responsibility to ensure they set gear according to current and weather patterns as to minimize the amount of gear that enters the reserve. Any gear found inside of the reserves is considered illegal, no matter how it enters these closed areas. Crabbers should also note the recent rule clarification (above) to include a specific prohibition of surface gear inside the marine reserve boundaries along with bottom contact gear.

If you would like to report a violation, please call the TIP Line at (800) 452-7888 or *OSP (*677) on a mobile phone or email TIP@state.or.us.

For Your Information



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 about mid-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 seine 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 in order to minimize potential conflicts.

Figure 9: *Market squid fishing grounds from seine logbooks, 2016-2020. Areas where fewer than three vessels made sets were excluded to protect confidentiality.*

Squid fishery questions?
Contact Troy Buell (next page)

Ocean Energy Development off Oregon

OSU received a license from the Federal Energy Regulatory Commission to construct and operate the PacWave South wave energy test site off Newport. Construction commenced at the onshore facility and Driftwood Beach in June 2021. Marine construction and cable laying will likely occur in 2022. For updates on construction of the project, see OSU's PacWave website at https://pacwaveenergy.org/.

OSU is also working to obtain a 15-year research lease from the Oregon Department of State Lands along with other federal and state authorizations to install research equipment at the PacWave North site off Yaquina Head, near Newport. If permitted, installed research equipment would be similar to types deployed at the site previously but with additional moorings designed to remain at sea year-round. No wave energy devices are authorized by this decision; developers interested in testing at PacWave North must secure their own permits.

ODFW is continuing work to inform efforts by the BOEM to gather data related to potential future offshore wind development. We used 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 and cables. These mapping layers will be included in BOEMs OROWindMap planning tool which can be found here https://offshorewind.westcoastoceans.org/visualize/#x=-124.50&y=40.50&z=5&logo=true&controls=true&basemap=ocean&tab=data&legends=false&layers=true. Data will be aggregated to protect confidentiality while highlighting areas where energy development could conflict with crabbing. No open lease applications for offshore wind development off Oregon are currently being considered by BOEM, but wind energy areas may be identified in 2022 and future leasing for offshore wind development may be considered in 2023.

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

Sea Otter Reintroduction Feasibility Studies

In the past few years, there has been new interest in considering sea otter reintroduction along the Oregon coast, as well as regionally across the West Coast. A non-profit group called the Elakha Alliance has led the drafting of a Feasibility Study to evaluate potential reintroduction of sea otters along the Oregon Coast, which can be found here https://www.elakhaalliance.org/feasibility-study/. Additionally, the U.S. Fish and Wildlife Service (USFWS), the federal agency that manages sea otters, was directed by Congress to draft a Feasibility Study to evaluate the potential reintroduction of sea otters along the entire West Coast. The USFWS study is anticipated to be submitted to Congress by the end of this year.

2021-22 Season Information

Planning to Crab Past May?

Make sure to order your late-season tags that will be required, in addition to your primary tag, for any gear in the water after May 1 of this season. Late-season tags will be available to order from ODFW at cost ($1.15 per tag) beginning in mid-March, but cannot be attached to gear in the water before April 10.

REMINDERS

- Landing crab after May 1 is prohibited unless late-season tags have been purchased.
- You can apply for a one-time retrieval waiver to have another vessel help get your gear out of the water under qualifying circumstances. Call Licensing at 503-947-6101 for more information.
- Starting May 1, there is NO retention of crab allowed from derelict gear without late-season tags attached.

For more information see industry notice https://www.dfw.state.or.us/MRP/shellfish/commercial/crab/docs/2020/Industry%20Notice%202020-0925_Final.pdf.

Buoy Color Pattern Registration

If you have not registered your buoy color pattern or have changed your buoy color pattern for this upcoming crab season, please submit an electronic or printed photo of the buoy color pattern with your vessel's name and crab permit number. **Re-registration is only required if you change your vessel's buoy color pattern.**

Want to register your buoy colors?
Email or text Eric Anderson - Crab and Shrimp Assistant Project Leader
(541) 961-6227 or eric.s.anderson@odfw.oregon.gov

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 Departement of Agriculture about when and where crab are being tested for domoic acid please visit the link below to sign-up.

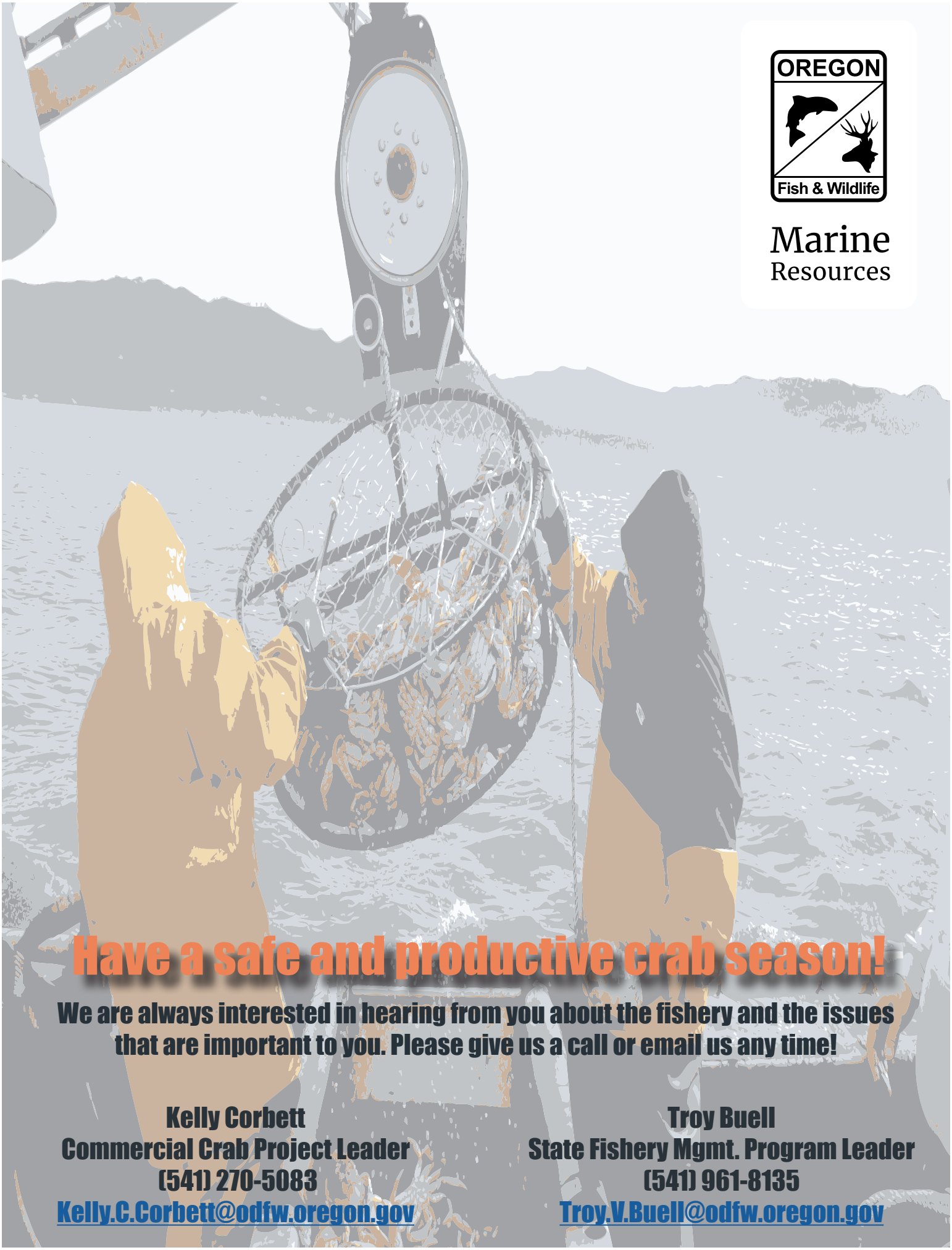
Want ODA crab updates? Sign-up here: https://www.oregon.gov/oda/programs/FoodSafety/Shellfish/Pages/CrabBiotoxinInfo.aspx

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

Photo courtesy of G. Krutzikowsky, ODFW



OREGON
Fish & Wildlife

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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Commercial Crab Project Leader
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Kelly.C.Corbett@odfw.oregon.gov

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State Fishery Mgmt. Program Leader
(541) 961-8135
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