

American Cetacean Society • Center for Biological Diversity •
Natural Resources Defense Council • Oceana • Portland Audubon •
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September 16, 2021

Dr. Caren Braby
Marine Resources Program
Oregon Department of Fish and Wildlife
2040 SE Marine Science Drive
Newport, OR 97365

Ms. Mary Wahl, Chair
Oregon Fish and Wildlife Commission
4034 Fairview Industrial Drive SE
Salem, OR 97302

submitted via email: ODFW.Commission@odfw.oregon.gov

cc: Barry Thom, Regional Administrator, NMFS West Coast Region; Chris Yates, Assistant Regional Administrator, NMFS West Coast Region; Dan Lawson, Marine Mammal Authorization Program, NMFS West Coast Region.

Dear Dr. Braby, Chair Wahl, and members of the Commission:

On behalf of American Cetacean Society, Center for Biological Diversity, Natural Resources Defense Council, Oceana, Portland Audubon, Turtle Island Restoration Network, Whale and Dolphin Conservation and our members and supporters in Oregon and along the West Coast, we submit the following comments to the Oregon Department of Fish and Wildlife (ODFW) and the Oregon Fish and Wildlife Commission (OFWC) on the Draft Conservation Plan (CP) developed by ODFW.

The CP supports the incidental take permit (ITP) application by ODFW to authorize the take of threatened and endangered humpback whales, endangered blue whales, and endangered leatherback sea turtles in the Oregon commercial Dungeness crab fishery. Our organizations represent the public interest in maintaining the health of marine wildlife and the biodiversity of the Oregon Coast, and collectively have decades of experience in developing mitigation measures to reduce and avoid the entanglement of large whales in fixed-gear fisheries. **We are concerned that the Draft CP in its current form is insufficient to warrant issuance of an ITP, and that additional, more precautionary measures are necessary before submitting the CP to the National Marine Fisheries Service (NMFS).**

Globally, entanglement in fishing gear is one of the main threats to large whales. In recent years the number of whales observed entangled in commercial fishing gear off the U.S. West Coast increased dramatically, including increased entanglement of threatened and endangered whale populations.¹ The majority of confirmed whale entanglements over the past two decades (2001-2019) off the West Coast, when the gear type is known, were in commercial Dungeness crab gear with 94 whale entanglements (54%).² For many other confirmed entanglements, the gear type is unknown (180 total unknown entanglements) and it is likely many whale entanglements go undetected.³ Studies on scarring of Pacific humpback whales indicate that only 5-10% of

¹ Saez, L., Lawson, D., and M. DeAngelis. 2020. Large whale entanglements off the U.S. West Coast, from 1982 to 2017. NOAA Tech. Memo. NMFS-OPR-63, 48 p.

² *Ibid.* with updated 2018-2019 data, personal comms May 13, 2020

³ *Ibid.*

entanglements are reported, and estimates of cryptic mortality of North Atlantic right whales, a species highly impacted by entanglements, found that observed carcass counts were a poor predictor of annual mortality.⁴

Humpback and blue whale populations have shown promising signs of recovery in recent decades, but the continued health of these whales, especially the distinct populations that inhabit waters off Oregon's coast, is not guaranteed. Western Pacific leatherback sea turtles are at high risk of extinction as evidenced by a more than 95% decline over the last thirty years.⁵ Entanglement poses a significant risk to these species, and the sharp increase in entanglements in recent years is alarming.

We remain supportive of ODFW's proactive work to reduce the risk of whale and sea turtle entanglements in the Oregon commercial Dungeness Crab fishery and to maintain thriving wildlife and thriving fisheries in Oregon. **However, we have significant concerns that the Draft CP will not meaningfully reduce risk to these marine species off the Oregon Coast.** We urge ODFW to revise the CP to address the following issues:

- Reduce the requested level of take to include consideration of coastwide cumulative impacts and unobserved entanglements and mortalities.
- Adjust the duration of the ITP and ensure tri-state coordination in implementing and modifying regulations.
- Add detail on how management decisions will be made and how input from all stakeholders will be considered.
- Ensure current regulatory measures remain in place until fully evaluated and additional measures are enacted.
- Evaluate the impact of entanglements to ESA distinct population segments in addition to MMPA stock of marine mammals.
- Strengthen conservation measures to reduce risk during early and late season periods when whales and sea turtles are present off Oregon in high relative concentrations.
- Include additional precautionary measures and emergency action alternatives to reduce risk when take limits are approached or reached.
- Incentivize the testing and approval of pop-up gear for use in times and areas otherwise closed to the fishery.
- Consider additional rules to reduce risk to gray whales and evaluate impacts to highly endangered species that may be present (Southern Resident orcas and North Pacific right whales).
- Strengthen and add detail to the monitoring plan.

I. General Concerns with the Habitat Conservation Plan

- a. *Cumulative impacts must be considered:* Entanglements in Dungeness crab gear are occurring coastwide. We appreciate that all three West Coast states are making an effort to coordinate actions and plans between states and with NMFS. However, this CP does not account for the cumulative impacts of coastwide entanglements on covered species and does not assess the level of take or risk in other states in determining the impact of Oregon's Dungeness crab fishery. Similarly, the Department should consider the changes to fisheries in other states and work with NMFS, California, and Washington to

⁴ Calambokidis, J. et al. "Insights into entanglements from whale population monitoring." Presentation to West Coast Entanglement Science Workshop, August 25, 2020. https://www.opc.ca.gov/webmaster/media_library/2020/10/M.1-S.2_Calambokidis_Marine-Life.pdf; Pace, R.M. and Williams, R. et al. 2021. Cryptic mortality of North Atlantic right whales. *Conservation Science and Practice*. 2021;3:e346. <https://doi.org/10.1111/csp2.346>

⁵ California Department of Fish and Wildlife. 2021. Status Review of the Pacific Leatherback Sea Turtle (*Dermochelys coriacea*). Available: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=193812&inline>; Tapilatu R.F. et al 2013. Long-term decline of the western Pacific leatherback, *Dermochelys coriacea*: a globally important sea turtle population. *Ecosphere* 4.

develop a coastwide monitoring plan for the presence and abundance of covered species.⁶ Coastwide coverage ensures all states are contributing in equal measures to reducing risk for covered species and that risk does not remain high in one area while more effective measures are enacted in another.

- b. *The requested ITP duration is too long:* ODFW plans to request the incidental take of two humpback whales per year, one blue whale every five years, and one leatherback sea turtle every ten years over a permit duration of 20 years. We are concerned that the state's request for a 20-year ITP is inappropriate given the rapidly changing climate and impacts on the West Coast ecosystem, especially given the established changes in humpback whale and blue whale habitat use in response to changing ocean conditions.⁷ In addition, the Marine Mammal Protection Act (MMPA) allows NMFS to authorize take in commercial fisheries for up to three years only.⁸ We recommend the Department acknowledge that its request for a long-lasting ITP is contingent on NMFS's determination at least every three years that the MMPA's requirements have been met.

Whales will continue to move and populations may fluctuate in response to ecosystem changes meaning that the risk of entanglement and vulnerability of ESA-listed populations will not be constant over a 20-year time frame. For example, the currently identified Biologically Important Areas (BIAs) for humpback, blue, and gray whales are based on data collected through 2011, before the marine heatwave and resulting habitat use shift of 2014-2016, and prior to the current period of elevated entanglements.⁹ West Coast BIAs are currently undergoing review and new areas may be added and existing ones modified,¹⁰ which may require changes to Oregon's CP.

Additionally, while predictive models are being developed that may help inform when and where whales might be in Oregon waters,¹¹ these models will take time to develop, and will need to be verified and regularly updated with field data to maintain their predictive power, especially in changing ocean conditions.¹² While we understand that ODFW included the potential for amendments in its CP, a shorter ITP with interim NMFS determinations under the MMPA (made every three years), will allow better review and refinement of future measures that take into account changes in risk and population structure for the covered species.

⁶ See NMFS PacMAPPS and CMAP surveys. These surveys could be included in the monitoring plan and integrated with the ODFW monitoring plan: <https://www.fisheries.noaa.gov/west-coast/science-data/pacmapps-pacific-marine-assessment-program-protected-species> and <https://www.fisheries.noaa.gov/west-coast/science-data/california-current-marine-mammal-assessment-program>

⁷ Abrahms, B. et al. 2019. Dynamic ensemble models to predict distributions and anthropogenic risk exposure for highly mobile species. *Diversity and Distribution*, 25, 1182–1193. DOI: 10.1111/ddi.12940; Fleming, A. H. et al. 2016. Humpback whale diets respond to variance in ocean climate and ecosystem conditions in the California Current. *Glob. Chang. Biol.* 22, 1214–1224; Santora, J.A. et al. 2020. Habitat compression and ecosystem shifts as potential links between marine heatwave and record whale entanglements. *Nat Commun* 11, 536. <https://doi.org/10.1038/s41467-019-14215-w>;

⁸ 16 U.S.C. § 1371(a)(5)(E).

⁹ Calambokidis, J. et al. 2015. 4. Biologically Important Areas for selected cetaceans within U.S. waters – West coast region. In S. M. Van Parijs, C. Curtice, & M. C. Ferguson (Eds.), *Biologically Important Areas for cetaceans within U.S. waters* (pp. 39-53). *Aquatic Mammals* (Special Issue), 41(1). 128 pp

¹⁰ See <https://oceannoise.noaa.gov/biologically-important-areas>

¹¹ For example, the dynamic predictive habitat models developed by Abrahms et al. 2019 are being used, alongside sightings and acoustic data, to inform the implementation of the Whale Safe vessel strike reduction program in the Santa Barbara Channel. See <https://whalesafe.com/>. The *likelihood* of whale presence is measured by a model using near real-time oceanographic conditions; trained observers and aerial surveys report sightings that help to confirm whale presence as well as refine the model.

¹² Becker E.A. et al. 2018. 2018. Predicting Cetacean Abundance and Distribution in a Changing Climate. *Diversity and Distributions* 25(4):626-643. <https://doi.org/10.1111/ddi.12867>

- c. *Requested take of covered species does not adequately reduce risk:* Marine species entanglements in Oregon commercial fishing gear likely under-represent total take due to an overall lack of monitoring. For example, there have been six confirmed entanglements of humpback whales in Oregon Dungeness crab fishing gear from 2013-2020.¹³ Incorporating a percentage of entanglements from unidentified gear, ODFW calculates a *minimum* of 11.47 entanglements in Oregon Dungeness crab gear of ESA-listed humpback whales from 2013-2020, or an average of 1.43 humpbacks per year. As unobserved and unreported entanglements are not factored into NMFS or ODFW’s analysis, this represents the minimum estimate of humpback entanglements in Oregon crab gear.¹⁴ Requesting to take two humpback whales per year is maintaining an existing level of take that already underrepresents actual take and does not incentivize the development of meaningful measures to monitor and reduce entanglements. We urge ODFW to revise the requested take for covered species to meet a goal of reducing the current level of take in the Oregon Dungeness crab fishery and account for the cumulative effects of take coastwide.
- d. *Improve transparency and inclusion of the adaptive management framework:* The Department identifies adaptive management as a “fundamental element” of the CP that “provides a framework for achieving the goals and objectives . . . through a range of possible alternative or adjusted strategies.”¹⁵ However, despite the adaptive management framework representing the crux of the success of the CP, it falls short on two primary fronts as currently proposed: (i) lack of detail on the specific process by which decisions will be made; and (ii) lack of consideration of conservation benefit and perspective.

ODFW identifies two categories of management actions that may be considered throughout the permit duration: short-term adaptive management responses that are implemented upon indication that entanglement risk is elevated; and future potential measures that require some level of additional development time and which may be considered in addition to, or instead of, existing measures in the future.¹⁶ However, we are concerned that not enough detail is provided in the CP on how the adaptive management plan will be implemented for short-term responses.

The CP makes broad statements about consultation and seeking stakeholder input,¹⁷ yet there is no further detail provided in the CP as to the nature of these consultations or how stakeholder input will be used. ODFW should provide further information on the implementation of the adaptive management framework, including, but not limited to, the following: the evidentiary burden required to trigger consultation and/or determine a specific management response; how uncertainty in information will be evaluated; the means through which input will be sought from advisory groups; the names of those advisory groups, their membership/affiliation, and if they are existing groups or will be the four groups described in the CP; how input from different advisory groups will be considered or weighted when deciding a management response; the timeframe over which the consultation will take place and a management response initiated; and how information about the consultation process will be made available to the public.

¹³ Draft Conservation Plan at 57.

¹⁴ See footnote 4: Preliminary estimates on scarring for humpback whales can be used to estimate unobserved/unreported entanglements. For North Atlantic right whales, a relatively well-monitored species, observed carcasses accounted for only 36% of estimated total mortalities from 1990-2017.

¹⁵ Draft CP at 113.

¹⁶ *Ibid.* at 114.

¹⁷ See *Ibid.* at 115: “If confirmed entanglements indicate that an adaptive management response should be considered, ODFW will initiate a consultation process with NMFS, within two weeks of an indicator threshold being met, to determine the best management response given the information available at that time (see Section 5.6.1.3 for a menu of potential responses). ODFW will seek input from existing advisory groups with first-hand knowledge and expertise (e.g., industry advisors, marine researchers/biologists), to ensure that the selected management response is reasonably supported by the best available science and to ensure transparency in the selection process.”

Also of significant concern is the exclusion of conservation voices from the adaptive management consultation process. As professionals who advocate for the protection of our ocean ecosystems including endangered species, the conservation community is an important stakeholder group with a unique perspective and expert knowledge to contribute to the consultation process. The value of conservation input is recognized in other similar management contexts, such as NMFS's Take Reduction Teams and the state of California's Dungeness Crab Fishing Gear Working Group. Inclusion of the conservation voice is necessary to build trust in ODFW's adaptive management process.

- e. *Maintain current regulatory measures until they are fully evaluated:* We recommend Oregon maintain the risk reduction management measures under the CP until the state completes an evaluation of their effectiveness and then undergoes a regulatory rulemaking process to modify any such measures. The CP relies on regulations and management actions that expire in two years (August 2023) without any assurances that those regulations will be continued for the duration of the ITP and without a specific timeline for promulgating new regulations that are at least as protective as current regulations. In fact, the Draft CP states that “[f]uture potential measures may also include a more stringent or *relaxed* version of the conservation measures that are currently in place.”¹⁸ Without reasonable assurances that the state will “minimize and mitigate the impacts”¹⁹ of takes in the Dungeness crab fishery, NMFS could deny the state's ITP leaving the state open to liability under the ESA.

We support an adaptive and dynamic management process. However, the proposed management approach must be flipped so that protective conservation measures remain in place until an evaluation shows that the measures are not necessary and/or require modification. The current approach, allowing conservation measures to expire without additional action means the covered species could be left with an increased risk of entanglement that would not meet the state's obligation to minimize the fishery's takes.

While we appreciate the state's intent to “provide recommendations to the OFWC that will provide equal and/or more conservation benefit to the covered species,” there is no guarantee that those recommendations will be adopted or that the current conservation measures on which the CP relies will be maintained.

It is also worth noting that the relatively short amount of time current measures are in place is unlikely to produce meaningful data on whether they are successful at reducing entanglements and a longer implementation time will likely be necessary to evaluate their effectiveness relative to the baseline.

II. Impact Assessment

- a. *Incorporate confirmed, unidentified entanglements:* Currently, 51% of confirmed West Coast entanglements from 2013-2020 are not attributed to a fishery.²⁰ The CP calculates the proportion of confirmed but unidentified entanglements that are likely caused by Oregon Dungeness crab gear in estimating current annual take for humpback and blue whales. NMFS entanglement data indicates that “nearly 80% of reported entanglements originate from the same region where they were reported, when those origins could be identified.”²¹ Thus, it is likely that entanglements observed in Oregon

¹⁸ Draft CP at 114 (emphasis added).

¹⁹ 16 U.S.C. § 1539(a)(2)(B).

²⁰ Draft CP at 55.

²¹ NMFS guidance to West Coast States: NMFS. 2020. Draft analysis of U.S. West Coast large whale entanglement serious injury and mortality assessments for use in conservation planning by states. West Coast Region, Protected Resources Division. 25 pp, citing Saez, L et al. 2020. Large whale entanglements off the U.S. West Coast, from 1982-2017. NOAA Tech. Memo. NMFS-OPR-63, 48 p.

waters are from Oregon gear, but there is no process in the CP to account for confirmed but unidentified entanglements in Oregon waters, and no detail on how such entanglements will be considered in tracking observed take as Oregon approaches its limit under the ITP. We recommend the Department include detail on how confirmed but unidentifiable entanglements in Oregon waters will be counted. For example, the California Risk Assessment Mitigation Program (RAMP) assigns a fraction of a take to confirmed entanglements in unknown gear, with higher fractions for mortalities. As we discuss further in these comments, any observed entanglement should trigger immediate review of current management measures and consideration of additional actions as it indicates elevated risk.

We also encourage ODFW to consider how planned improvements in gear marking will affect levels of take in Oregon gear. With improved gear marking, it is possible that more entanglements will be attributed to Oregon Dungeness crab gear. Future management measures should align with this additional information and potential increase in known risk as well as annual takes – another reason to shorten the duration of the ITP request to re-evaluate and update measures given additional information.

- b. *Consider cumulative impacts of coastwide entanglements:* The CP uses the Negligible Impact Threshold for a single fishery (NIT_s) as calculated by NMFS. Many of our organizations noted significant concerns on the updated guidance from NMFS on calculating NIT_T and NIT_s in 2020. This method undermines the precautionary and protective nature of the MMPA; isolating fisheries for which take may be at or close to the Potential Biological Removal (PBR) for separate analysis disregards the cumulative impacts of fisheries that, when considered together, exceed PBR. Assessing the impacts of single fisheries when the total M/SI for a population already exceeds PBR – as it does for the humpback and blue whales included in the CP – is inadequate as a protective standard. Previous NMFS guidance on assessing negligible impact considered the total human-related M/SI rates, and if total fisheries-related M/SI was greater than PBR, permits were not issued. The final guidance, issued by NMFS in June 2020, does note that “[t]here may be circumstances, such as when the M/SI estimate is slightly below or slightly above the negligible impact threshold(s), where the analyst may deviate from the determination that would be dictated by strictly adhering to the NIT thresholds.”²²

The CP uses the coastwide M/SI rate (0.8) to calculate anticipated annual interactions with Oregon crab gear as 1.6 humpback whales and 0.17 blue whales per year, and finds Oregon’s take to be negligible compared to NIT_s . The CP did not use the Oregon-specific M/SI rate of 1.0 for humpback whales, also calculated by NMFS, which would result in an annual M/SI rate of 2 humpback whales per year for requested take. This number of whales is closer to NIT_s and requires additional consideration by NMFS of the negligible impact determination. By using the coastwide M/SI rate but only considering take in Oregon gear, ODFW is disregarding the cumulative and total impacts of take from the Dungeness crab fishery. Using coastwide M/SI should require both ODFW and NMFS to consider the requested take on a coastwide basis, which would likely put the coastwide, tri-state Dungeness crab fishery over NIT_s .

In addition, the CP uses a different abundance estimate for the CA/OR/WA stock of humpback whales and for blue whales than is included in the most recent Stock Assessment Reports (SAR).²³ While we fully support using the best available scientific information, we will emphasize that there must be consistency

²² National Marine Fisheries Service Procedure 02-204-02: Criteria for Determining Negligible Impact under MMPA Section 101(a)(5)(E), effective June 17, 2020.

²³ Draft CP at 71 (humpbacks) and 72 (blue whales); Carretta, J. et al. 2020. U.S. Pacific Marine Mammal Stock Assessments: 2020, U.S. Department of Commerce, NOAA Technical Memorandum NMFS-SWFSC-646: Humpback whale California/Oregon/Washington stock and Blue whale: Eastern North Pacific stock.

between the states and with NMFS as to which population estimate and productivity rate will be used to calculate NIT_s and assess the impacts of anticipated take for each state and coastwide.

- c. *Evaluate the impact of entanglements to humpback distinct population segments (DPSs) and demographically independent populations (DIPs).* NMFS has recognized the Central America humpback population separately from the CA/OR/WA stock both under the ESA and the MMPA. NMFS has also acknowledged that the CA/OR/WA stock designation is under revision in light of the DPS listings.²⁴ Nonetheless, ODFW relies on outdated information about the CA/OR/WA stock. First, ODFW must consider the impact of incidental take on the smallest DPS - the Central America DPS - in order to prevent jeopardizing its continued existence. Second, NMFS has identified the Central America DPS as a demographically independent population (“DIP”) under the MMPA.²⁵ Generally an MMPA stock comprises a single DIP, according to NMFS’s procedural directive on designating stocks.²⁶ In addition, PBR should be calculated for the DIP.²⁷ In that case, it is likely that PBR for the Central America DIP would be less than one whale.²⁸ This means that incidental take of two humpback whales per year in Oregon fishing gear would have drastic population-level impacts to the Central America humpbacks.

ODFW must estimate the impact of incidental take on the smaller Central America humpback DPS. In the absence of monitoring that can identify the humpback whale to DPS, ODFW should assume that the incidental take is of the Central America humpback.

III. Management Actions

- a. *Additional actions are needed to reduce risk:* The risk reduction measures described in the plan (20% late season pot limit and 40-fathom depth restriction) are largely designed to reduce the co-occurrence of humpback whales and crab gear. Under these rules implemented in 2021, starting May 1 of the fishing season, pot limits are reduced 20% and waters deeper than 40 fathoms off the Oregon coast are closed to the Dungeness crab fishery. As previously noted, these conservation measures automatically expire after the 2023 season, and should not form the basis of a 20-year conservation plan and ITP.

These conservation measures do not go far enough toward reducing entanglement risk. Of the six humpback whales confirmed entangled in Oregon Dungeness crab gear from 2013 to 2020, two were in gear set less than 40 fathoms and two were in gear set deeper than 40 fathoms.²⁹ Humpback whales and blue whales both come inshore of 40 fathoms off the Oregon coast and therefore under the current conservation measures entanglement are still likely to occur. Recently designated critical habitat for humpback whales includes Oregon coastal waters from the 50m isobath (27.3 fathoms) to the 1,200m (656 fathom) or 2,000m (1,093.6 fathom) isobaths, overlapping with the CP area (Figure 1).³⁰ 2019 aerial survey data presented by Dr. Leigh Torres shows humpback whales present off Oregon as early as

²⁴ 2020 Marine Mammal Stock Assessment Reports, Notice; response to comments, 86 Fed. Reg. 38991, 39001 (July 23, 2021) (“In light of the 2016 ESA humpback whale DPS listings, the MMPA humpback whale stock designations are currently being reevaluated”).

²⁵ Martien, K. et al. 2019. “The DIP Delineation Handbook: A Guide to Using Multiple Lines of Evidence to Delineate Demographically Independent Populations of Marine Mammals.” U.S. Department of Commerce, NOAA Technical Memorandum NMFS-SWFSC-622 at 33-34.

²⁶ Procedural Directive 02-204-03: Reviewing and Designating Stocks and Issuing Stock Assessment Reports under the Marine Mammal Protection Act (November 2019) at 2.

²⁷ *Id.* at 8.

²⁸ Letter from Rebecca J. Lent, Ph.D., Executive Director, Marine Mammal Commission, to Chris Yates, National Marine Fisheries Service, West Coast Region, dated Feb. 13, 2017, regarding 82 Fed. Reg. 2,954 (Jan. 10, 2017).

²⁹ Draft CP at 82.

³⁰ NOAA Fisheries: Designating Critical Habitat for the Central America, Mexico, and Western North Pacific Distinct Population Segments of Humpback Whales, 86 FR 21082.

March,³¹ indicating the May 1 depth-based closure and pot limit reduction may not adequately minimize risk. An earlier start date for conservation measures would provide greater risk reduction, and we strongly recommend ODFW consider additional scenarios with earlier start dates (noting that the original proposal for current regulations included a start date of April 1st) and higher levels of pot limits (e.g. 50%).

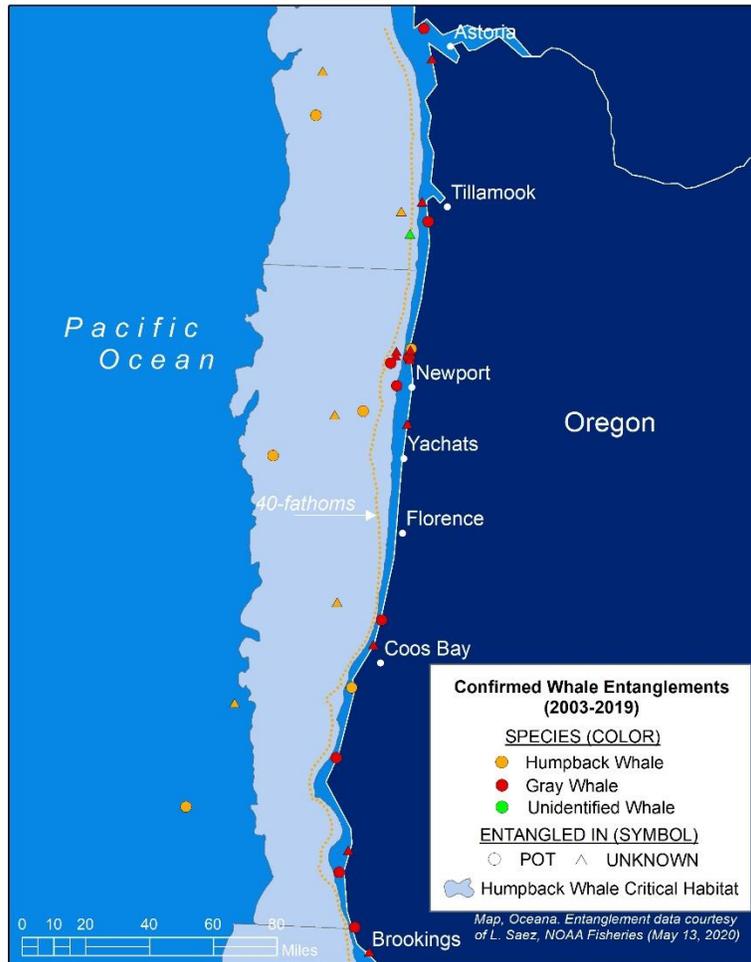


Figure 1: Humpback whale critical habitat and confirmed whale entanglements 2003-2019 in Oregon waters, showing observed entanglements in waters inshore of 40 fathoms and the overlap with critical habitat.

The CP specifically states “ODFW has implemented a management approach which is focused on reducing the number of vertical lines which are present when entanglement risk is expected to be elevated”.³² However, the measures in the CP do not adequately reduce the total number of line-days, with only an estimated 8.3% reduction.³³ According to the 2012-2019 crab fishery effort data, the 40-fathom depth closure will not make a significant change, as there was already a substantial decrease in

³¹ Braby, Torres, & Gladics. May 28, 2020. Reducing Risk of Whale Entanglements in the Oregon Dungeness Crab Fishery. Presentation Recording available: <https://www.youtube.com/watch?v=OFE0aJW4HG0>

³² Draft CP at 147

³³ Draft CP Table 5-2 at 108.

effort outside of 40 fathoms beginning in May. The draft CP reports that in recent years, only 3.7% to 9.6% of fishing effort in the month of May has occurred in waters deeper than 40 fathoms.³⁴ Because the management approach is to reduce the number of vertical lines, the CP must demonstrate a *significant* reduction of line-days, either by an increased pot limit reduction and/or an earlier season closure. The Draft CP falls short in this regard.

- b. *Consider emergency actions when the take limit is reached:* Aside from consultation with NMFS, there is no plan to reduce risk once Oregon’s annual take is reached for any of the covered species. The CP does not have a mechanism or trigger for the number of entanglements that will cause an area closure or an entire fishery closure for conventional gear. We urge the Department to develop a set of triggers that will close areas or the entire fishery to conventional vertical line fishing once the allowable take limit is reached.
- c. *Include a dynamic management approach to time and area closures based on covered species presence:* We strongly recommend ODFW develop and implement a dynamic management approach to reducing entanglement risk that is informed by near real-time monitoring and data. Such an approach should be developed now, and not only after incidental take limits are reached (recognizing the resource constraints of the Department, we have suggested some options for additional funding and supplemental monitoring activities in Section IV.b. and IV.f.). The default assumption should be that until near real-time data indicates an absence of or low concentration of whales and/or sea turtles management measures (including fishery closures for conventional gear) should be implemented. In other words, if no data are available, area-based closures to conventional gear should automatically be implemented. Conversely, if data are available showing the covered species are not present, areas would remain open. We note that the California RAMP framework includes incentives for data collection and as such the industry is actively participating and collecting real time data regarding the presence of humpback and blue whales, and Pacific leatherback sea turtles in Dungeness crab fishing grounds.
- d. *Clarify progress made with pop-up gear and incentivize use:* The CP recognizes that pop-up gear has the potential to eliminate the vertical lines that cause whale entanglements by keeping the lines and buoy attached to the crab pot on the ocean floor until the pot is ready to be retrieved. We appreciate that the draft CP includes information on how this gear could be tested in the Oregon Dungeness crab fishery under an Experimental Gear Permit. The plan, however, largely dismisses this fishing technology as not being “reliable, affordable, and effective” at this time. The plan also fails to include incentives for testing this gear, such as allowing its use during the late fishing season (May 1 through the season closure on August 14) in waters deeper than 40 fathoms that are otherwise closed to conventional crab gear.

There have been a number of successful pilot projects and at-sea trials of pop-up fishing systems conducted off the U.S. West and East Coasts, in Canada, and around the world, and some fisheries are already using pop-up gear for commercial fishing.³⁵ The California Dungeness Crab Fishing Gear Working Group conducted initial testing and demonstration of various pop-up systems and recommended testing of specific systems;³⁶ that testing is currently underway by the National Marine Sanctuary Foundation funded by the California Ocean Protection Council.³⁷

³⁴ Draft CP at 82.

³⁵ We recommend the Department attend the 2021 Ropeless Consortium meeting occurring on 19 October 2021 for the most up-to-date information on the status of ropeless technology development and testing. <https://ropeless.org/2020-annual-meeting-copy/>

³⁶ Shester, G. 2018. Initial Trials Exploring Ropeless Fishing Technologies for the California Dungeness Crab Fishery. Available at: http://www.opc.ca.gov/webmaster/media_library/2018/08/ropeless-trials-update7-30-18.pdf

³⁷ <https://marinesanctuary.org/news/commercial-crab-fishermen-sought-to-test-innovative-fishing-gear/>

Initial trials in the Northeast American lobster and Jonah crab offshore fishery in 2020 demonstrated success rates approaching 88% and any challenges encountered were primarily due to failure to rig the gear correctly rather than a failure of the acoustic release mechanism.³⁸ Testing has also commenced nearshore in the Gulf of Maine and is being undertaken by the Massachusetts Lobstermen’s Association and the South Shore Lobster Fishermen’s Association. A pilot project was successfully completed in the black sea bass fishery in the Southeast Atlantic in 2020.³⁹ In Canada, l’Association des Pêcheurs Professionnels Crabiers Acadiens based in the Gulf of St. Lawrence has been testing pop-up gear since 2019, including a number of pilot tests, off-season at-sea trials, and in-class and at-sea fishermen training. This collaborative process led to the redesign of one of the systems, improving handling and efficiency, and ultimately achieving a 97% success rate (and a 100% success rate of the acoustic release system) during 2020 trials. These successes led to both the project authorities and harvesters recommending expanding the pop-up fishery in 2021.⁴⁰ Pop-up fishing is also being undertaken by the Coldwater Lobster Association and the Grand Manan Fishermen’s Association in Canada. Fishermen in Scotland are testing and trialing pop-up fishing gear, with the primary goal of reducing gear loss.⁴¹ Pop-up gear is successfully being used for commercial catch in South Africa,⁴² and several fishermen in an Australian rock lobster fishery have been fishing commercially with pop-up gear since 2013.⁴³

A common lesson that has emerged from pilot tests and at-sea trials to date is that reliability of the gear approaches 100% when users are provided with adequate training and time to master the skills of using the gear.⁴⁴ Retailers are also gaining confidence in the benefits and feasibility of pop-up gear. The US-based major retailer, Publix, has recently invested in a fisheries improvement project (FIP) to advance pop-up testing in the Gulf of St. Lawrence snow crab fishery.⁴⁵

The examples above demonstrate that pop-up fishing gear has the potential to provide a viable solution for allowing continued fishing during periods when entanglement risk in conventional gear is elevated. We recommend ODFW include incentives to fishermen for using pop-up fishing technology that lowers the risk of entanglement to marine mammals by allowing pop-up gear in fishing areas that are otherwise closed to conventional Dungeness crab gear. This type of incentive is currently utilized in the California Dungeness crab fishery where regulations for reducing entanglement risk allow for the use of pop-up gear.⁴⁶

- e. *Consider additional rules designed to reduce entanglement risk for gray whales:* We appreciate ODFW affording special consideration to Pacific Coast Feeding Group (PCFG) gray whales, which number an estimated 232 individuals and may represent a small and demographically independent group from the

³⁸ Fuller E. and Matzen E., “The opus of ropeless in the offshore lobster fishery.” Presentation at the Ropeless Consortium meeting, 26 October 2020.

³⁹ See resources and presentations provided by the Ropeless Consortium. <https://ropeless.org/>

⁴⁰ Cormier P., “Using ropeless in closed fishing areas: Sea trials of snow crab fishing gear in the Gulf of St. Lawrence.” Presentation at the Ropeless Consortium meeting, 26 October 2020.

⁴¹ Sawicki K., “Ropeless fishing in Scotland.” Presentation at the Ropeless Consortium meeting, 26 October 2020.

⁴² See, e.g., <https://www.fishingindustrynewssa.com/2020/12/09/the-octopus-fishery-has-a-gripping-story-to-tell/>

⁴³ Myers H.J. et al. 2019. Ropeless fishing to prevent large whale entanglements: ropeless Consortium report. *Marine Policy*, 107:103587.

⁴⁴ See resources and presentations provided by the Ropeless Consortium. <https://ropeless.org/>

⁴⁵ See https://sustainability.publix.com/meat_seafood/fishery-improvement-projects/

⁴⁶ California Risk Assessment Mitigation Program: Commercial Dungeness Crab Fishery, Section 132.8, Title 14: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=184177&inline>

rest of the Eastern North Pacific (ENP) population.⁴⁷ The PCFG is highly vulnerable to impacts relative to the larger population and thus must be treated as a separate management unit.⁴⁸ Gray whales are directly impacted by human activities, including entanglements, and with an estimated 24% decline in the ENP population since 2016 and an ongoing Unusual Mortality Event, gray whales are currently in a vulnerable position.⁴⁹ Since 2001, there have been 23 confirmed gray whale entanglements in commercial Dungeness crab gear off the West Coast; next to humpbacks, gray whales are the second most frequently entangled whale in crab gear.⁵⁰

The Plan identifies how the proposed management measures designed for covered species will co-benefit PCFG gray whales; namely, that the combined 20% pot limit reduction and depth reduction will mitigate potential fishery crowding or impacts to other marine life nearshore, including gray whales, that might otherwise increase due to effort shift.⁵¹ Acknowledgement is also made of information gaps on the entanglement risk of different groundline types associated with longlining/duplexing, particularly on bottom-feeding species such as gray whales.

However, in the absence of specific management triggers for gray whales or targeted monitoring efforts, the effectiveness of those measures in reducing risk of entanglement is unclear. We therefore recommend the Department consider additional rules specifically designed to reduce entanglement risk for gray whales. For example, in 2015, NMFS identified BIAs for gray whale feeding including areas near Depoe Bay and Cape Blanco based on years of visual surveys and tagging studies.⁵² As previously noted, NMFS is currently working with scientists to update its list of BIAs with an expected completion date of December 2021.⁵³ Upon the completion of NMFS's update, we recommend ODFW and the Commission identify actions to reduce risks to gray whales within any distinct feeding areas identified, including considering seasonally closing these areas to conventional fishing gear.⁵⁴

- f. *Consider the impact of actions and emergency measures for highly endangered species:* Extremely vulnerable populations with exceptionally small abundance including the Southern Resident orca DPS and North Pacific right whales also inhabit the waters covered by the CP, and Oregon coastal waters were included in the recent revision of critical habitat for the Southern Resident population.⁵⁵

⁴⁷ Calambokidis, J., J. Laake, and A. Perez. 2019. Updated Analysis of abundance and population structure of season gray whales in the Pacific Northwest, 1996-2017. Final Report to NOAA, Seattle, Washington. pp. 1-72; ang, A. R. et al. 2014. Assessment of genetic structure among eastern North Pacific gray whales on their feeding grounds. *Marine Mammal Science* 30:1473–1493; Frasier, T. R. et al. 2011. Assessment of population substructure in relation to summer feeding ground use in the eastern North Pacific gray whale. *Endangered Species Research* 14:39–48

⁴⁸ Calambokidis, J., J. Laake, and A. Perez. 2019. Updated Analysis of abundance and population structure of season gray whales in the Pacific Northwest, 1996-2017. Final Report to NOAA, Seattle, Washington. pp. 1-72.

⁴⁹ Stewart, J.D. and D. W. Weller. 2021. Abundance of eastern North Pacific gray whales 2019/2020. U.S. Department of Commerce, NOAA Technical Memorandum NMFS-SWFSC-639. <https://doi.org/10.25923/bmam-pe91>

⁵⁰ Saez, L., Lawson, D., and M. DeAngelis. 2020. Large whale entanglements off the U.S. West Coast, from 1982 to 2017. NOAA Tech. Memo. NMFS-OPR-63, 48 p., with updated 2018-19 data, Personal Communication, May 13, 2020.

⁵¹ Draft CP at 82, 118-119.

⁵² Calambokidis, J. et al. 2015. 4. Biologically Important Areas for selected cetaceans within U.S. waters – West coast region. In S. M. Van Parijs, C. Curtice, & M. C. Ferguson (Eds.), *Biologically Important Areas for cetaceans within U.S. waters* (pp. 39-53). *Aquatic Mammals* (Special Issue), 41(1). 128 pp.

⁵³ See <https://oceannoise.noaa.gov/biologically-important-areas>

⁵⁴ We define “conventional” fishing as the gear currently used in the fishery: a single pot connected to one or more buoys at the surface by a vertical line suspended in the water column.

⁵⁵ Carretta, J.V. et al. 2021. U.S. Pacific Marine Mammal Stock Assessments: 2020, U.S. Department of Commerce, NOAA Technical Memorandum NMFS-SWFSC-646: Killer Whale: Eastern North Pacific Southern Resident stock; Muto, M.M. et al. 2021. Alaska marine mammal stock assessments, 2020. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-AFSC-421, 398 p.: North Pacific right whale; NOAA Fisheries Revision of Critical Habitat for the Southern Resident Killer Whale Distinct Population Segment, 86 FR 41668

Entanglement in fishing gear and vessel disturbance are both considered threats to these populations.⁵⁶ While there are no recorded interactions with Dungeness crab gear for Southern Resident orcas or North Pacific right whales, we recommend the Department consider the impacts from management measures (e.g. the potential shift of vessel concentration after May 1st) on the Southern Resident orcas given their highly vulnerable status and likely presence in the area in the spring. Very little is known about the distribution and habitat use of North Pacific right whales. The Eastern North Pacific population is estimated to have just 30 individuals remaining, and recent sightings have occurred in Alaska, British Columbia, Washington, and California.⁵⁷ Oregon waters are at least a migratory corridor, and we recommend the Department similarly consider how management measures may impact this critically endangered population. For both Southern Resident orcas and North Pacific right whales, the Department should include emergency management measures including a complete fishery closure to conventional fishing gear if one is observed entangled in Oregon waters.

IV. Monitoring

- a. *Electronic monitoring of fishing effort:* We support the development of an electronic logbook system and electronic monitoring of fishing vessels to increase available spatial and temporal harvest information. Timely information of when and where fishing occurs will help assess risk and identify areas with high co-occurrence of whales and fishing gear. We urge ODFW to ensure this measure is implemented swiftly and to consider a tri-state electronic monitoring plan with California and Washington.
- b. *Increased funding is necessary to support monitoring for whales and entanglements.* The success of the CP, in large part, is reliant on a monitoring plan that is robustly designed, well implemented, and responsive to the dynamic nature of whale and fishery distributions. While the monitoring plan described in the CP endeavors to meet these goals, there are several caveats that require consideration. We detail these considerations below and provide, as appropriate, our recommendations on areas of the monitoring plan that could be strengthened.

Notwithstanding these recommendations, we underscore that a well-funded and well-resourced monitoring effort will underpin the overall success of the CP. We appreciate that the Department currently has limited resources to implement what may be considered an “ideal” plan; however, in a tri-state management context, we risk a situation where fishermen in California may be subjected to more stringent management measures than Oregon based on greater levels of monitoring effort, ultimately facilitated by greater financial investment by the state. To return on the already significant investment to bring about the CP and help achieve equity in implementation of fishery management measures across states, we encourage the Department and the Commission to work with NMFS and other West Coast states to address this funding gap, for example, by requesting funding available under Section 6 of the Endangered Species Act for states to monitor endangered species, as well with the Oregon State Legislature to dedicate funding toward the CP.

- c. *The monitoring plan suffers from several limitations that undermine its effectiveness.* Tier 1⁵⁸ activities for monitoring covered species entanglements and species distributions center on several survey

⁵⁶ See NOAA Fisheries species directory: <https://www.fisheries.noaa.gov/species-directory>

⁵⁷ See sightings map in Muto, M.M. et al. 2021. Alaska marine mammal stock assessments, 2020. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-AFSC-421, 398 p.: North Pacific right whale.

⁵⁸ Draft CP at 95 and 97. The CP divides monitoring into three main categories: 1) baseline monitoring; 2) effectiveness - to support ongoing decisions and determine progress towards meeting goals and objectives; 3) compliance. All three are grouped under Tier 1 or Tier

activities that will subsequently support the deduction of the entanglement rate relative to ITP take levels (i.e., take assessment), as well as inform the development of a predictive habitat model that will provide an indicator of expected co-occurrence between species distributions and the fishery, and thus serve as a proxy for entanglement risk. There are several limitations in the proposed plan, including the lack of targeted monitoring effort for sea turtles; frequency of the scientific surveys and updates to the predictive habitat model; the limited geographic coverage and uncertain extent of the augmented survey activities; the dependency on voluntary surveys and self-reporting by fishing vessels; and the lack of inclusion of passive acoustic monitoring.

- i. *The CP lacks targeted scientific monitoring for sea turtle entanglements and distribution.* The Department relies on a collaborative research project between ODFW, Oregon State University, Cascadia Research Collective, and the U.S. Coast Guard, for obtaining scientific data to inform the monitoring plan. Through this collaboration, whale presence and absence data are collected from monthly aerial surveys along standardized track lines to inform the development of predictive distribution models. Additionally, vessel-based photo-id and tissue sampling is being conducted to provide information on whale population structure.⁵⁹ It appears, however, that there is no intention to undertake a similar scientific monitoring effort for leatherback sea turtles. Monitoring methods for large whales are not as effective for sea turtles (for example, manned observers are required to maximize detections of large whales; in contrast, aerial digital imagery may increase detection probability of sea turtles). The lack of a scientific monitoring plan for leatherback sea turtles therefore represents a significant gap that should be addressed in the final Conservation Plan.⁶⁰
- ii. *Post-2022 surveys and updates to the predictive habitat model are too infrequent to inform management action.* Conducting surveys every 5-10 years is far too infrequent to capture the rapid distributional shifts that large whales and sea turtles are experiencing due to climate change.⁶¹ Moreover, such an approach implies almost complete reliance on a predictive habitat model in the interim, for which the underlying data will quickly become outdated. These models must be verified more frequently than every 5-10 years, especially in the early phases of development and application, and an effort must be made to confirm the presence of covered species in areas identified by predictive models.⁶² ODFW must develop a monitoring plan that reflects the dynamism of the species being monitored, otherwise the uncertainty in the monitoring data and resulting predictive habitat models will be of such a magnitude that they will be uninformative for management action.
- iii. *The geographic and temporal coverage of the augmented surveys may be too limited.* While we agree that maximizing the probability that an entangled animal is detected is fundamental to the success of the CP, we are concerned that the geographic scope of the existing research

2 activities: Tier 1 activities are those ODFW has committed to implementing, Tier 2 are those ODFW will support but are considered “aspirational” that the Dept. cannot commit to implementing at this time due to various barriers to implementation.

⁵⁹ Draft CP at 92.

⁶⁰ For example, see NMFS’s EcoCast model, which predicts leatherback presence based on habitat conditions: Smith, J.A. et al. 2021. Comparing Dynamic and Static Time-Area Closures for Bycatch Mitigation: A Management Strategy Evaluation of a Swordfish Fishery. *Front. Mar. Sci.*, doi.org/10.3389/fmars.2021.630607

⁶¹ Becker, E.A. et al. 2019. Predicting cetacean abundance and distribution in a changing climate. *Diversity and Distributions* (25):4, 626-643. DOI:10.1111/ddi.12867; Santora, J.A. et al. 2020. Habitat compression and ecosystem shifts as potential links between marine heatwave and record whale entanglements. *Nat Commun* 11, 536. <https://doi.org/10.1038/s41467-019-14215-w>.

⁶² See footnote 10.

surveys may be too limited if they are mainly based out of Newport, Oregon, as the CP describes.⁶³ The Department proposes to rely on several existing research surveys to increase the number of “eyes on the water” to primarily improve the probability of detection of entangled animals, and secondarily provide additional species distribution information that will be used to ground truth predictive distribution models. It would be helpful for ODFW to provide more information on the existing research surveys that will be engaged in these activities, including their geographic and temporal scope and expected overlap with the current whale survey effort, so that the effectiveness of this strategy can be more carefully evaluated.

- iv. *Voluntary survey data may not be reliable enough to base management decisions on.* The third component of ODFW’s covered species monitoring will involve coordination of standardized reporting of on-the-water observations by Oregon coastal and ocean users.⁶⁴ Voluntary data collection programs may provide a useful indication of species presence (e.g., timing of migration), distribution, and for reporting sightings of entangled animals as well as collecting environmental information. However, these surveys should be viewed as supplemental to regular and more detailed surveys conducted or directed by the Department to assess the effectiveness of management measures and inform the development of additional regulations. We urge ODFW to conduct these detailed surveys at a *minimum* of every five years (noting, as stated earlier, that this is still too infrequent to verify predictive models and evaluate the effectiveness of mitigation measures, but in recognition of the currently constrained resources of the Department). Volunteer surveys must follow a clear protocol for data collection and be standardized for effort.⁶⁵ Volunteers should go through an extensive training program and initial surveys verified by ODFW. Ensuring the strength and validity of this volunteer survey program maximizes the return on investment with limited resources for the Department.

We are encouraged that the Department has been actively conducting outreach and education to a variety of ocean users and has elected to promote the Whale Alert app as the preferred means of recording opportunistic sightings, which has several functionalities that make it well suited to this purpose (e.g., image upload). However, the uncertainty related to opportunistic sightings means that these data alone are likely not robust enough to underpin management measures, and opportunistic data must still be verified. The most useful opportunistic sighting will be one where the whale is identified to species level and, if the animal is entangled, direct evidence of that entanglement, which requires a good-quality photograph of the sighting. Whale Alert has the functionality to upload photographs, however, it is unclear from the CP how those images will be validated by ODFW or how they will be used to inform management actions. This should be clarified in the final plan. We also note concerns that while the Department has promoted use of the Whale Alert app, regular use by fishing vessels and other ocean users has been sporadic. In addition, methods do not currently exist to incorporate opportunistic data into predictive species distribution models, and it is unclear how these data could be used to ground truth such models if not standardized for effort. ODFW should provide more information on how it will undertake this work in the final plan, with a full evaluation of the caveats.

⁶³ Draft CP at 99.

⁶⁴ Draft CP at 100.

⁶⁵ For example, see: Braulik, GT et al. 2017. Cetacean rapid assessment: An approach to fill knowledge gaps and target conservation across large data deficient areas. *Aquatic Conser. Mar. Freshw. Ecosyst.* 1-15. DOI: 10.1002/aqc.2833

- v. *Using fishing vessels to collect research poses challenges.* The request to the Dungeness crab fishery, other fisheries and other ocean users to voluntarily self-monitor and collect and report data using the simple Whale Alert app has not made much progress. The at-sea sampling program “is dependent upon voluntary industry participation and in-season sample sizes remain low to date”.⁶⁶ Asking fishermen to voluntarily complete an observation protocol, while engaged in fishing activity, places a difficult burden on fishermen. Self-reporting of bycatch and entanglements also has a strong incentive to under-report if such observations lead to additional management measures. If this method is included there must be independent validation such as by an on-board observer. NMFS, Cascadia Research Collective and the state of California have developed a standardized vessel survey approach that can be done from any vessel, including crab vessels. It would still require independent validation but may save time developing a protocol. Funding for the HCP monitoring program will need to include funding the independent validation necessary from using volunteers and self-monitoring methods.
- vi. *Acoustic detections are an important data source to understand the level of risk.* Passive acoustic monitoring (PAM) is included as a Tier 2 monitoring activity.⁶⁷ However, acoustic detections are an important complementary data collection method to visual observations and can, depending on their design, inform managers of whale presence, abundance, and habitat use, and contribute to the development of predictive models.⁶⁸ Archival PAM also holds the benefit of providing a continuous data collection method, in contrast to period snapshots provided by aerial or vessel-based surveys.

While a network of archival recorders along the entire Oregon coast or deployment of near real-time PAM to trigger dynamic management measures may be beyond what is currently possible in terms of funding, the CP notes that ODFW has considered that a “gateway approach” to track migrations into and out of certain areas might be feasible. We agree that this could be a worthy investment and propose such a gateway include one or two near real-time units and three archival units. Near real-time units could provide an “early warning” of the migration of covered species into Oregon waters—an increasing need given observed dynamic spatial and temporal shifts in whale distribution—that could help inform relative risk assessment and alert observers undertaking visual monitoring that species are likely to be in the area. In contrast, archival units would provide a longer-term view of whale presence in Oregon waters; these data could be collected over a three-year period and analyzed as part of ODFW’s three-year evaluation report to NMFS. These data could be used to inform whether any updates to the management actions may be required at that time to improve their effectiveness, such as whether the implementation date of late-season measures (May 1) is still appropriate based on the migratory timing of covered species.

⁶⁶ Draft CP at 27

⁶⁷ See footnote 49

⁶⁸ For example, passive acoustic monitoring for North Atlantic right whales on calving grounds off Florida and Georgia increased days with right whales detections 2-10x over visual methods: Soldevilla M.S. et al. 2014. Passive acoustic monitoring on the North Atlantic right whale calving grounds. *Endang Species Res* 25:115-140. <https://doi.org/10.3354/esr00603>; and optimal PAM deployment off the West Coast indicated that Southern Resident orcas could be detected 95% of the time, even if only vocalizing 50% of the time: Hanson, M.B. et al. 2018. Modeling the occurrence of endangered killer whales near a U.S. Navy Training Range in Washington State using satellite-tag locations to improve acoustic detection data. Prepared for: U.S. Navy, U.S. Pacific Fleet, Pearl Harbor, HI. Prepared by: National Oceanic and Atmospheric Administration, Northwest Fisheries Science Center under MIPR N00070-17-MP-4C419. 33 p.

V. Conclusion

We reiterate our support for ODFW’s proactive effort to reduce the risk and harm that Oregon crab gear poses to marine wildlife, and we support the goal of having both healthy fisheries and a thriving ecosystem. We urge the Department to revise this Draft CP to ensure that robust and effective management, monitoring, and assessment measures will meet that goal and safeguard Oregon’s wildlife under changing ocean conditions. Thank you for your consideration of our input and please reach out with any questions.

Regards,

Colleen Weiler
Jessica Rekos Fellow
Whale and Dolphin Conservation

Francine Kershaw, Ph.D.
Staff Scientist, Marine Mammal Protection & Oceans
Natural Resources Defense Council

Joy Primrose
Director, American Cetacean Society
President, American Cetacean Society-Oregon Chapter

Ben Enticknap
Pacific Campaign Manager and Senior Scientist
Oceana

Catherine W. Kilduff
Senior Attorney
Center for Biological Diversity

Scott Webb
Advocacy & Policy Manager
Turtle Island Restoration Network

Paul Engelmeyer
Ten Mile Creek Sanctuary Manager
Portland Audubon

Joe Liebezeit
Staff Scientist
Portland Audubon