

June 26, 2015

Mr. Charlton H. Bonham, Director  
Department of Fish and Wildlife  
1416 9th Street, 12th Floor  
Sacramento, CA 95814

**Re: Reducing whale entanglements in California pot and trap gear fisheries**

Dear Mr. Bonham:

On behalf of the Center for Biological Diversity, Earthjustice, and their members and supporters, we are writing to thank you for the progress that has been made since our April 28, 2015, request for action to prevent whale entanglements in state-managed fixed-gear fisheries, namely the Dungeness crab, spot prawn, and spiny lobster fisheries. We hope to continue conversations with your agency, the Commission, other state bodies, and the Dungeness Crab Task Force to develop and implement long-term strategies to reduce entanglement risk.

We are following up on the request you made during our phone call on May 1, 2015, to provide suggestions specific to the Dungeness crab fishery that can help reduce the risk of entanglements before the start of the next fishing season, in late 2015. In response, we have reviewed measures that have been implemented to reduce whale entanglements in other fisheries, including the New England lobster fishery and the West Coast groundfish pot fishery, as well as scientific literature, and have begun to discuss the utility and effectiveness of various measures with representatives of government agencies, industry, and other non-governmental organizations. Based on this research, we believe a range of measures would be effective in reducing the risk of whale entanglement. These measures would address important issues such as data collection to determine where whale entanglements are occurring, as well as identifying ways to directly reduce the risk of entanglement. Some, such as improved reporting and the initiation of pilot programs, represent key steps in developing the information necessary to implement effective measures and reduce the risk of entanglement in the longer term. We recognize that a successful, complete program to reduce whale entanglements will be a long-term effort.

The Legislature has declared that the protection and conservation of fish and wildlife resources of the State are of utmost public interest and that conservation is a proper State responsibility.<sup>1</sup> Taking measures to ensure that trap and pot fisheries do not entangle large whales would further demonstrate California's leadership in wildlife management and protection; be legally consistent with federal laws prohibiting take of marine mammals and endangered species; and improve data collection and fisheries management. In that context, we ask you to consider adopting the effective and immediate measures to curb whale entanglements outlined below.

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<sup>1</sup> Fish & G. Code § 1600.

## Background

Management of all California fisheries is complex and resource-intensive, but especially so in the Dungeness crab fishery, which spans both state and federal waters.<sup>2</sup> In California, Fish and Game Code sections 8275-8284 delegate authority to the Department to manage the fishery only with respect to specific activities, such as to open and close the fishing season in certain districts and to administer the permitting system for the restricted access fishery.<sup>3</sup> As a result, implementation of some fundamental changes to reduce entanglement risk will ultimately require statutory amendments and thus will have to wait until the 2016 state legislative year. Nevertheless there are steps that the Department and Commission can initiate right away.

We are aware that the State is interested in addressing the risk of whale entanglement in all State-managed fisheries. To that end, we recommend that the Department consider measures for all State fisheries known to entangle whales. We also recognize that establishing such measures in multiple fisheries will take time and there is benefit to starting efforts in the Dungeness fishery, which has already expressed a willingness to engage in proactive efforts to reduce entanglements. In terms of tailoring measures specific to the Dungeness fishery, we provide below a few suggestions that could be accomplished before the start of the next fishing season. The Department may not be able to implement all of these measures in a short timeframe, but ideally the variety of options for the Department's consideration will begin a conversation about how to move forward.

- Continue current efforts to increase accountability for lost traps;
- Require logbooks to improve information collection;
- Implement a program for using vessel monitoring systems to track vessel movements and locations where gear is deployed;
- Implement a pilot program in the 2015-16 season to test a two-trap per buoy line gear configuration to reduce entanglement risk;
- Support the Fish and Game Commission in developing a tag program for recreational fisheries; and
- Apply for authorized take of endangered marine mammals for Dungeness crab, spot prawn, and spiny lobster fisheries.

In the sections below, we outline possible measures that the Department could implement in the near term and long term in order to reduce whale entanglements in Dungeness crab gear, many of which could also be useful to address other types of pot and trap gear. As noted below, some of the near-term measures we support are already underway. Other near-term measures could be implemented under the Department's existing authority and would provide key steps for developing longer-term measures to address whale entanglements. Finally, we outline

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<sup>2</sup> The federal Magnuson-Stevens Fishery Conservation and Management Act assigns authority to the States of Washington, Oregon, and California to govern Dungeness crab fishing in waters 200 nautical miles from shore, with the authority expiring September 30, 2016. 16 U.S.C. § 1856 note.

<sup>3</sup> See, e.g., Fish & G. Code §§ 8276.2, 8276.5, 8277, 8280.2-8280.3.

suggestions for measures that we believe the Department should consider implementing in the 2016-17 season and beyond.

## **Near-Term Actions**

### **1. Continue current efforts to increase accountability for lost traps.**

In response to industry and regulator demand, the Dungeness crab fishery has in place or has discussed several ways to increase accountability for lost traps, specifically: (a) tending pots at least once every 96 hours; (b) eliminating the in-season tag replacement regulations; and (c) establishing a program to retrieve lost gear. These efforts and requirements that are already in place or underway could be critical to reducing whale entanglement risk. We urge you to consider supporting, expanding, and enhancing implementation of these regulations and programs.<sup>4</sup>

#### **a. Support requirements for pots to be tended at least once every 96 hours and not abandoned.**

We recognize the Department's ongoing, concerted efforts to monitor and enforce current requirements, and particularly appreciate the hard work being done by the Department's Law Enforcement Division. Recognizing that hard work, we offer the following ideas with the aim of maximizing the effectiveness of the Department's limited resources.

Current regulations require Dungeness crab traps to be raised, cleaned, serviced and emptied every 96 hours.<sup>5</sup> Regularly checking the pots can reduce the chance that an entanglement will go unnoticed. If an entangled whale is at the site where the pot was deployed, checking on the pot gives an opportunity for the fisherman to alert disentanglement teams.

Introducing new technology may assist in monitoring trap tending and provide assurance to trap owners that only the owner is pulling his or her traps. Recent projects in New England have tested placing radio-frequency identification devices (RFIDs) on lines and or traps, which allows a device on board the vessel to register each time the trap comes over the side.<sup>6</sup> Use of RFIDs could make it easier for enforcement officers to monitor how often traps are being tended, as well as deter vessels from pulling traps that do not belong to the vessel owner.

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<sup>4</sup> *Id.* § 850 (granting authority to the Director to employ or appoint people to carry out duties required by law); *id.* § 1000 (requiring fund expenditure as necessary for collection and diffusion of statistics and information pertaining to conservation and protection of mammals and fish).

<sup>5</sup> Fish & G. Code § 9004.

<sup>6</sup> La Valley, K. et al., 2010. *An Automated RFID and GPS Fixed Gear Identification System for Onboard Realtime Data Collection*, [http://www.greateratlantic.fisheries.noaa.gov/whaletrp/trt/meetings/Mid-Atlantic\\_Southeast\\_ALWTRT\\_Materials/IFAW\\_UNH\\_finalreport%20\(3-8-2010\).pdf](http://www.greateratlantic.fisheries.noaa.gov/whaletrp/trt/meetings/Mid-Atlantic_Southeast_ALWTRT_Materials/IFAW_UNH_finalreport%20(3-8-2010).pdf); Patton, J. and D. Cromhout, 2011. *NOAA RFID Fishing Line Tagging*, [http://www.greateratlantic.fisheries.noaa.gov/prot\\_res/GrantsResearchProjects/reports/NOAA\\_Taggingv1\\_7%20\(12-20-2011\).pdf](http://www.greateratlantic.fisheries.noaa.gov/prot_res/GrantsResearchProjects/reports/NOAA_Taggingv1_7%20(12-20-2011).pdf)

In addition to requiring checking on the pots at regular intervals, the Fish and Game Code requires that “no trap shall be abandoned in the waters of this state.”<sup>7</sup> When a fisherman realizes the pot is lost, recording the area and time it was lost can help identify areas where gear loss is higher. With a real-time system in place that shows within a week when a trap is missing, finding and recovering lost traps by other vessels on the water nearby could begin immediately. As an example, currently recreational fishermen have been helpful in identifying locations of abandoned fishing pots for retrieval by commercial fishermen at the end of the season. A real-time system could assist in identifying and recovering lost traps during the season as well.

Finally, encouraging and providing incentives for fishermen to report entanglement can put extra eyes in areas where entanglements typically go unnoticed. Most reports of entangled whales come from on-water observations near large cities, where boating activity is higher. Commercial fishermen report two percent of total whale entanglements.<sup>8</sup> While this could reflect the proportion of commercial vessels on the water, the low number suggests there might be ways to encourage reports from commercial vessels to result in quantifiable improvement in whale rescue. This could involve facilitating educational workshops between fishermen and whale disentanglement volunteers, in which fishermen learn how to report entanglements and what information to collect in order to file the most helpful report, and fishermen educate disentanglement volunteers regarding how to identify fishing gear.

**b. Amend regulations to eliminate ability to replace lost tags in-season and increase the fees for each replacement tag.**

In order to increase accountability for lost traps, the Department could amend regulations to eliminate in-season replacement of buoy tags<sup>9</sup> (except in extreme circumstances) and increase the fee for replacement trap tags.

As background, in 2013 the Department issued regulations under authority delegated by the Legislature to establish a Dungeness crab trap limit program.<sup>10</sup> The Fish and Game Code specified that “permit holders may replace lost tags by application to the department and payment of a fee not to exceed the reasonable costs incurred by the department.”<sup>11</sup> For a fee of \$1.00, the regulations currently allow in-season replacement buoy tags.<sup>12</sup> At the end of the season, the in-season replacement tags must be returned to the Department in exchange for between-season replacement buoy tags.<sup>13</sup>

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<sup>7</sup> Fish & G. Code § 9004.

<sup>8</sup> NOAA Fisheries, Whale Entanglements Off California Fact Sheet, [http://farallones.noaa.gov/manage/pdf/sac/13\\_05/whale\\_entanglement\\_fact\\_sheet.pdf](http://farallones.noaa.gov/manage/pdf/sac/13_05/whale_entanglement_fact_sheet.pdf) (stranding network members and government report most entanglements, at 27% and 17% respectively, with recreational boats, private citizens, scientists, whale watching boats and fishery observers reporting a greater percent than commercial fishermen).

<sup>9</sup> 14 C.C.R. § 132.4.

<sup>10</sup> *Id.* § 8276.5.

<sup>11</sup> *Id.* § 8276.5(a)(5).

<sup>12</sup> 14 C.C.R. § 132.4.

<sup>13</sup> *Id.*

First, in order to both simplify the process of replacement buoy tags and encourage fishermen to keep track of gear, the Department should amend the current tag replacement regulations to eliminate in-season replacement. The Dungeness Crab Task Force has expressed concerns with in-season tag replacement creating potential loopholes in the trap permit system.<sup>14</sup> Eliminating in-season replacement therefore could solve several problems at once. Similarly, Washington Department of Fish and Wildlife recently reduced the number of replacement tags issued to each license owner and is considering further reductions or eliminating the program altogether.<sup>15</sup> Eliminating replacement tags would provide incentives for fishermen to maintain and tend traps and buoys, close potential loopholes in tracking tag limits, and reduce regulatory burden on the Department.

Second, the Department should set the cost of the replacement trap tag fee to an amount that covers the reasonable cost of lost gear and tags.<sup>16</sup> As noted by the Legislature in enacting sections 710 - 711 of the Fish and Game Code, the Department has been unable to adequately meet its regulatory mandates due in part to a lack of funding, which has “prevented proper planning and manpower allocation” to carry out its “public trust responsibilities” and “additional responsibilities placed on the department by the Legislature.”<sup>17</sup> As a result, the Department is burdened with “the inability . . . to effectively provide all of the programs and activities required under this code and to manage the wildlife resources held in trust by the department for the people of the state.”<sup>18</sup> Collecting fees adequate to account for the full costs of the fishery, including monitoring and enforcement, provides the foundation for a sustainable fishery.

### **c. Encourage retrieval of lost or abandoned gear.**

Lost or abandoned gear poses risks not only to whales, but also other marine life. Traps that are lost or abandoned – i.e., left in the water without being tended at a minimum every 96 hours – pose navigational hazards for large whales on their annual migrations. It can also interfere with safe navigation by other vessels.

The California Fish and Game code provides authority to the Department and fishermen to alleviate this problem by retrieving traps.<sup>19</sup> First, the Fish and Game Code declares that any trap used without a buoy or in violation of the Code or regulations is a public nuisance and can

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<sup>14</sup> Dungeness Crab Task Force, *Initial recommendations from the California Dungeness Crab Task Force as requested in SB 369 (Fish and Game Code 8276.4)*, January 15, 2015, at 6, [http://www.fgc.ca.gov/meetings/2015/Feb/Exhibits/16\\_1\\_Report\\_Dungeness\\_Crab\\_Task\\_Force\\_Jan2015\\_Final.pdf](http://www.fgc.ca.gov/meetings/2015/Feb/Exhibits/16_1_Report_Dungeness_Crab_Task_Force_Jan2015_Final.pdf).

<sup>15</sup> Washington Department of Fish and Wildlife, *Industry Notice: Change to the Replacement Buoy Tag Program for 2014-2015 Season and Beyond*, <http://www.psmfc.org/crab/2014-2015%20files/WARreplacementBuoyTags%2012.10.14.pdf>.

<sup>16</sup> Fish & G. Code § 8276.5(a)(5). Current regulations set the replacement tag fee at \$1.00. 14 C.C.R. § 132.4(a), (b).

<sup>17</sup> Fish & G. Code § 710.

<sup>18</sup> *Id.* § 710.5.

<sup>19</sup> Fish & G. Code §§ 9007, 9008.

be removed from State waters by any person authorized to enforce the Code.<sup>20</sup> Second, any Dungeness crab permitted vessel may retrieve from the ocean crab traps of another permitted Dungeness crab vessel that were lost, damaged, abandoned, or otherwise derelict.<sup>21</sup> From July 16 through October 31, an unlimited number of Dungeness crab traps may be retrieved per fishing trip and in other times, no more than six may be retrieved per trip except with a Department waiver.<sup>22</sup> Third, the Department, in consultation with the Dungeness Crab Task Force, shall develop regulations as necessary to provide for retrieval of lost or abandoned commercial crab traps.<sup>23</sup> In order to reduce risk to whales, the Department and Commission should take steps to reduce lost and abandoned commercial and recreational pots and traps.

The Dungeness Crab Task Force has already recommended an industry designed, funded, and implemented lost gear retrieval program that works in cooperation with the Department.<sup>24</sup> According to the Task Force, the “Lost Fishing Gear Recovery Project (<http://www.seadocsociety.org/california-lost-fishing-gear-removal-project/>), which is run by the SeaDoc Society in partnership with Humboldt State University, has been working to retrieve lost Dungeness crab traps near the ports of Eureka, Trinidad, and Crescent City” and has enjoyed “widespread support” from the industry.<sup>25</sup> We understand that this program is underway and on the agenda for the tentative DCTF meeting in October. We support this effort and encourage you to work with the DCTF to ensure that any necessary changes to the Fish and Game Code or the California Code of Regulations are proposed as soon as possible, no later than spring 2016.

## **2. Improve information collection through use of vessel monitoring systems (VMS) and electronic logbooks.**

First, fishery-wide use of vessel monitoring systems (VMS) would offer multiple benefits for management. VMS are widely used (and required) in federally managed fisheries. As such, the technology has been demonstrated to be practicable and useful for monitoring, enforcement, and aiding voluntary efforts to move fishing gear away from areas where whales are congregating. It would greatly boost the ability of enforcement personnel to ensure that vessels are observing seasonal closures, and staying out of closed areas or marine protected areas. It would also provide useful data on the locations of vessels and gear that could be compared to known migratory pathways of whales or congregations of whales. That information could be used to inform fishermen of any increased risk of entanglement so that fishermen could avoid or remove their gear from those areas. The information would also be very useful for identifying any consistent trends in whale entanglements and developing measures to address them.

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<sup>20</sup> *Id.*

<sup>21</sup> 14 C.C.R. § 132.2(a)(2).

<sup>22</sup> *Id.*

<sup>23</sup> Fish & G. Code § 9002.5(a).

<sup>24</sup> Dungeness Crab Task Force, *Initial recommendations from the California Dungeness Crab Task Force as requested in SB 369 (Fish and Game Code 8276.4)*, January 15, 2015, at 7, [http://www.fgc.ca.gov/meetings/2015/Feb/Exhibits/16\\_1\\_Report\\_Dungeness\\_Crab\\_Task\\_Force\\_Jan2015\\_Final.pdf](http://www.fgc.ca.gov/meetings/2015/Feb/Exhibits/16_1_Report_Dungeness_Crab_Task_Force_Jan2015_Final.pdf).

<sup>25</sup> *Id.* at 7.

Second, electronic logbooks allow efficient, standardized reporting of the locations where gear is deployed and collected as well as catch composition and other information useful for fishery management. They would be particularly useful in the context of reducing whale entanglements when used to record the locations where gear is set and collected, how much gear is set, lost gear (including gear type, location of the loss, and if lost from the vessel or at sea), and lost gear that is later retrieved. Submission of electronic logbooks that are linked to a VMS system would greatly improve data collection. Without logbooks, the only available proxy of total fishing effort is landed catch, which provides very limited information about spatial distribution of effort.

Logbooks currently in existence or under development can provide a template for development of a Dungeness crab fishery form. California regulations state that if required by the Department, each commercial fisherman permitted to use traps must complete and submit a log of fishing operations on a form provided by the Department.<sup>26</sup> Currently California requires a logbook in the spot prawn pot and spiny lobster trap fisheries, which could provide useful in development for a Dungeness crab form.<sup>27</sup> Another example can be found in the Washington Dungeness fishery, which requires a logbook entry form that collects information on depth, pots fished, pots lost, soak time, and lost gear recovered.<sup>28</sup>

Efforts to implement logbooks are underway in federal fisheries as well. First, the Pacific Fishery Management Council recommended that mandatory logbooks be required for all federal fixed gear fisheries to be implemented in 2009-2010.<sup>29</sup> At that time, management measures like trawl rationalization took precedence over logbook requirements, which have not been implemented. Second, NMFS completed an Endangered Species Act consultation in 2012 on the effects of the West Coast groundfish pot fishery and provided a set of recommendations to reduce entanglements.<sup>30</sup> The biological opinion required that fishery managers:

- Create electronic monitoring and logbook reporting measures that require or recommend fishers to document effort and lost gear;
- Develop a database to track fishing effort, locations, and lost fixed gear (the biological opinion provided an example database);
- Summarize data on lost gear to evaluate the magnitude of gear loss and factors that may influence loss (specific areas, times of year, etc.); and

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<sup>26</sup> 14 C.C.R. § 180(d).

<sup>27</sup> Fish & G. Code §8026; 14 C.C.R. §§190, 195; *see* California Department of Fish and Wildlife, California Fishing Regulations Commercial Digest 2014-2015, at 11 (“Currently, logbooks are required in the sea urchin, sea cucumber, lobster, gill net, trawl, live bait, shrimp, prawn, market squid, swordfish, and harpoon fisheries.”); *but see* 14 C.C.R. § 180(d) (referencing a Daily Sablefish Trap Log).

<sup>28</sup> WAC 220-52-041, <http://wdfw.wa.gov/fishing/commercial/crab/coastal/logbook.html>.

<sup>29</sup> Final Environmental Impact Statement, *Proposed Acceptable Biological Catch and Optimum Yield Specifications and Management Measures For the 2009-2010 Pacific Coast Groundfish Fishery*, January 2009, at 140, [http://www.pcouncil.org/wp-content/uploads/0910GF\\_SpexFEIS.pdf](http://www.pcouncil.org/wp-content/uploads/0910GF_SpexFEIS.pdf).

<sup>30</sup> NMFS, Dec. 7, 2012. Endangered Species Act (ESA) Section 7(a)(2) Biological Opinion and Section 7(a)(2) "Not Likely to Adversely Affect" Determination Continuing Operation of the Pacific Coast Groundfish Fishery, PCTS Number: NWR-2012-876.

- Summarize fish-gear fishing effort and locations to support overlap analysis with large whale migrations or aggregations.

To our knowledge, these terms and conditions that require logbooks have not yet been implemented. Currently, however, observers in the West Coast groundfish pot fishery record the type and amount of lost gear, derelict gear observed at sea, and starting in 2015, lost gear that is later retrieved, and enter all of that information into a database.<sup>31</sup>

Finally, the Council reiterated its support for logbooks at its June 2015 meeting, recommending that NMFS initiate the process to implement a logbook requirement for all commercial groundfish fisheries.<sup>32</sup> These efforts by both the Council and NMFS confirm that logbooks are necessary for responsible fishery management and that they can be an important part of reducing whale entanglements.

The Department currently has authority to establish such a program for all fisheries. The Department has a general duty to gather and prepare data on commercial fisheries, “showing particularly the extent of the fisheries.”<sup>33</sup> The Commission has authority to require a complete and accurate record of fishing activities, in a form prescribed by the Department.<sup>34</sup>

We recommend that the Department establish a pilot program to test the use of VMS and electronic logbooks within the Dungeness crab fishery during the 2015-2016 season. We understand that some vessels in the fishery may already be fitted with VMS technology and therefore may be able to participate in such a program without incurring additional cost for VMS installation. We further recommend that the information from that pilot program be used to develop a fishery-wide VMS and electronic logbook program for the 2016-2017 season and beyond.

### **3. Implement pilot program in 2015-16 season to test a two-trap per buoy line gear configuration as a means to reduce entanglements.**

We encourage the Department to implement experimental gear programs to develop fishing methods that have potential to minimize entanglements with whales. One idea that holds promise for directly reducing the risk of entanglements is to configure gear so that two traps are connected to each buoy line instead of only one, as current regulations require. This configuration would significantly reduce the number of vertical lines in the water, and thus reduce the chances of a whale becoming entangled in buoy lines. The Department could assist the development of alternative fishing gear due to the need to protect marine mammals.<sup>35</sup> Experimental fishing permits issued by the Department are limited to not more than one year and

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<sup>31</sup> D4 Supp Att Draft Bycatch Report, dated May 22, 2015, at 29-30.

<sup>32</sup> Pacific Fishery Management Council, Decision Summary Document, June 12-16, 2015, at 2, <http://www.pcouncil.org/wp-content/uploads/2015/06/0615decisions.pdf>.

<sup>33</sup> Fish & G. Code § 8010.

<sup>34</sup> *Id.* § 8026; 14 C.C.R. § 190.

<sup>35</sup> Fish & G. Code § 8606.



may authorize use of new types of commercial gear and new methods of using existing gear.<sup>36</sup> We recommend that the Department facilitate and/or administer an experimental program during the 2015-16 season to test the effectiveness and practicability of a two-trap per line gear configuration, including developing data collection methods and criteria for evaluating the success of the gear.

**4. Apply for authorized take of endangered marine mammals for Dungeness crab, spot prawn, and spiny lobster fisheries.**

We are pleased to hear that California will request authorization for takes of endangered marine mammals in state fisheries. The MMPA and ESA incorporate important safeguards for endangered marine mammals that fisheries incidentally take. We continue to believe that securing MMPA authorization is important to protect both animals and fishermen, since these fisheries are otherwise subject to penalties for the incidental taking of marine mammals. Ideally, such a request would include information necessary for NMFS to evaluate the state fisheries' effect on endangered marine mammals, such as a description of the fisheries, including when and where they operate, any available measures of fishing effort, and whether any monitoring or mitigation measures exist. Please let us know when California will request authorization and the expected timeframe for NMFS's consideration.

**Longer-Term Measures**

**1. Analyze and recommend measures to the State Legislature for adoption in 2016.**

We are optimistic that organizations such as the Ocean Protection Council and the Dungeness Crab Task Force are taking steps to meet and develop a process by which to create recommendations for the Legislature to address long-term solutions for the issue of whale entanglements, possibly including authorization for an independent review of Dungeness management and increasing landing fees to improve resources available for management. We urge you to continue to participate in and encourage these conversations, especially by providing scientific and management information uniquely known to the Department.

Two operational- or administrative-type analyses could help improve management of the Dungeness crab fishery: (1) an independent study of management and enforcement in the Dungeness crab fishery and (2) evaluation of the costs and benefits of increasing landing fees. First, an independent study could help to answer some of the questions raised in the past about balancing management flexibility with Legislature control. The difference in management processes among California, Oregon, and Washington has highlighted some issues where more responsive management in California could be beneficial. Second, an analysis of whether to increase landing tax rates or fees could inform the Legislature of the costs and benefits of the current system. California is unique among the west coast states in requiring a tax that is not tied

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<sup>36</sup> *Id.* § 8606.

to the ex-vessel price or landing fee.<sup>37</sup> The California landing tax for Dungeness crab, which has not changed since 1994, is \$0.0019 per pound.<sup>38</sup> Increasing this amount by tying it to ex-vessel price could increase funds for management, regulation, and oversight of fishing activities by the California Department of Fish and Wildlife.

Finally, two fishery-specific changes should be considered to reduce whale entanglement: requiring two traps per buoy to reduce the amount of vertical line that whales can encounter, based on the results of the experiment(s) recommended above, and requiring that lines be marked according to fishery so that the origins of entangling ropes can be identified.

In some entanglement incidents, traps or buoys have become detached from the entangling lines and therefore identification is missing. This poses a problem because the loss of the identification means a loss of information, such as the type of gear, owner of the gear, and where the gear was set. The California Fish and Game Code requires that every commercial trap used to take fish or crustaceans is marked with a buoy that identifies the fishery.<sup>39</sup> Adding identifying marks to the lines attached to buoys and traps will provide more information and accountability when traps and buoys are accidentally detached.<sup>40</sup>

While gear marking does not reduce immediate entanglement risks to whales, we encourage a simple, color-coded, regional gear marking scheme for all pot and trap fisheries in California. Planning a comprehensive system rather than incremental marking requirements will promote equity among fisheries and efficiency for individual fishermen to adapt to one new system. An effective gear marking system can and should achieve collection of robust data to identify where whales are entangled, by which fishery and gear part. This information is critical to effective fisheries management.

Unique gear marks – color combinations, size, and frequency – should be designated for areas near expected whale entanglement hotspots in order to ascertain where whales are entangled. NMFS has developed a model identifying areas where large whales are more likely to encounter gear.<sup>41</sup> The results of the model were confirmed by locations of entanglements, providing justification for treating areas of higher predicted occurrence differently than areas of lower entanglement risk. The model could be improved with better data on fishing effort, but the best available science should be used as the basis for different line marks based on risk of

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<sup>37</sup> California Dungeness Crab Task Force, *Dungeness crab landing tax rates in California, Oregon, and Washington*,

[http://www.opc.ca.gov/webmaster/ftp/project\\_pages/dctf/DC\\_Landing\\_Tax\\_Rates\\_CA\\_OR&WA.pdf](http://www.opc.ca.gov/webmaster/ftp/project_pages/dctf/DC_Landing_Tax_Rates_CA_OR&WA.pdf).

<sup>38</sup> Fish & G. Code § 8051.

<sup>39</sup> Fish & G. Code § 9006.

<sup>40</sup> The Department has general authority to regulate gear marking and is responsible for enforcement and administration of the regulations for commercial fisheries in state and federal waters. *Id.* §§ 878, 7857, 8280.4, 9006.

<sup>41</sup> Saez, L., D. Lawson, M. DeAngelis, E. Petras, S. Wilkin, and C. Fahy. 2013. Understanding the co-occurrence of large whales and commercial fixed gear fisheries off the west coast of the United States. U.S. Department of Commerce Technical Memorandum, NOAA-TM-NMFS-SWR-044, 102 p.

entanglement. Although entanglements may still occur in areas whenever at least one whale and some fishing gear are in the same location, unique line marks could help inform the Department on areas to prioritize for further work.

## **2. Implement a tag program for recreational fisheries.**

We recognize the Department's ongoing, concerted efforts to monitor recreational fishing effort, and encourage that work to continue. This spring, the Department made a presentation with a proposal to require crab trap buoys that identify the owner with their GO ID number, i.e. their sportfishing license number, to be implemented in the 2016-2017 season.<sup>42</sup> We support this effort and encourage you to implement the program on that proposed timeline.

Monitoring of the recreational Dungeness crab fishery is important to create reliable estimates of catch and effort,<sup>43</sup> and thereby allow a measure of risk of interactions between recreational pots and large whales. Because the Commission regulates the recreational Dungeness fishery,<sup>44</sup> we appreciate the Department's taking the first steps to proposed and encourage collection of the information necessary to evaluate the risk of recreational traps entangling whales.

As you know, the Legislature has also expressed interest in exploring management measures for the recreational fishery.<sup>45</sup> The Legislature mandated that the Dungeness Crab Task Force "prioritize the review of pot limit restriction options, current and future sport and commercial fishery effort, season modifications, essential fishery information needs, and short- and long-term objectives for improved management."<sup>46</sup> The Department's proposed requirement for placing GO ID numbers on crab trap buoys is a terrific first step.

## **3. Analyze possible time-area closures or dynamic management areas to reduce entanglement risk in areas where large numbers of whales congregate.**

Avoiding overlap between fishing gear and concentrations of whales is a reliable way to reduce the risk of entanglements. We encourage you to work with scientists at NMFS, the OPC, DCTF, and others to gather data on gear locations and whale entanglements, oceanographic conditions that influence whale movements, and other relevant information to analyze likely "hotspots" or conditions (such as concentrations of food) that could lead to whales congregating in a particular area. Identifying these locations and conditions would provide an opportunity for fishermen to voluntarily avoid areas where the risk of entangling a whale is relatively high. If

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<sup>42</sup> Christy Juhasz, Environmental Scientist, Department of Fish & Wildlife, Apr. 8, 2015. *Notice of Proposed Regulation Changes to Recreational Dungeness Crab Fishery and Crab Trap Requirements for seasons: 2015-2016 & 2016-17.*

<sup>43</sup> California Ocean Science Trust, *Rapid Assessment for Selected California Fisheries*, August 2013, at 55-56.

<sup>44</sup> Fish & G. Code § 200 (delegating to the Commission the power to regulate the taking or possession of fish, excluding the taking for commercial purposes).

<sup>45</sup> *See id.* § 8276.4(c).

<sup>46</sup> *Id.* § 8276.4(c)(3).

necessary, it would also provide information necessary to establish any regulatory time-area closures.

## **Conclusion**

We greatly appreciate your willingness to find ways to address the increase in whale entanglements in fishing gear as quickly as possible. We look forward to working with you to develop and implement near-term measures, with a particular focus on identifying key steps toward developing effective long-term measures that both reduce the risk of whale entanglements and improve overall fishery management. We appreciate your consideration of these ideas.

Sincerely,



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