



**EARTHJUSTICE**



CENTER for BIOLOGICAL DIVERSITY

**OCEANA**

April 28, 2015

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

Mr. Jack Baylis, President  
California Fish and Game Commission  
P.O. Box 944209  
Sacramento, CA 94244-2090

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

Dear Mr. Bonham and Mr. Baylis:

On behalf of the Center for Biological Diversity, Earthjustice, and Oceana, we request that the California Department of Fish and Wildlife and the California Fish and Game Commission (collectively, “the State”) take urgent action to prevent the entanglement of whales in fixed gear used in the Dungeness crab, spot prawn, and spiny lobster fisheries. First, we request that the State develop and implement initial measures to address and prevent entanglements before the beginning of the next fishing season, and then develop a comprehensive plan to address this issue in the longer term. We recommend that the State continue to work with the fishing industry, the National Marine Fisheries Service (“NMFS”), conservation organizations, and whale entanglement experts to develop both the initial measures and the longer term plan. Second, we request that the State work with the NMFS Office of Protected Resources to secure authorizations under the Marine Mammal Protection Act (“MMPA”) and Endangered Species Act (“ESA”) for the incidental take of marine mammals that occurs in these fisheries.

The actions we request are necessary to address significant harm to whales swimming in our California coastal waters, as well as to remedy legal deficiencies that would otherwise expose fishery participants to penalties for the unlawful take of federally protected marine mammals. Based on our conversations with representatives of the Department of Fish and Wildlife, Fish and Game Commission, and Dungeness Crab Task Force (“DCTF”), we understand that there is substantial agreement that the emerging issue of whale entanglements is an urgent concern. We are encouraged by the DCTF’s recent effort to convene a working group including fishermen, the Department of Fish and Wildlife, NMFS, and conservation organizations to collaboratively address this issue. We also see the Department’s recently initiated consultation with NMFS as a very positive step. We recognize that some significant work has been done in these fisheries that reduce entanglement risks, such as the development of derelict gear removal programs, gear marking, trap limits, maximum gear soak times, and other measures. We submit this request with the aim of building upon existing efforts and advancing additional action needed to reduce harm to whales along the California coast as well as reduce legal uncertainty for members of the commercial fisheries.

## Significant Numbers of Whale Are Being Entangled in Pot and Trap Gear off the California Coast

There has been a significant increase in reported entanglements of whales by crab and other pot and trap gear along the California coast in 2014 and 2015 (see Figures 1 and 2 below). Most of these entanglements have involved humpback whales, which are listed under the Endangered Species Act (“ESA”), and gray whales, which are designated as California’s state marine mammal (see Figures 3 and 4). In 2014, according to data released by the National Marine Fisheries Service’s Protected Resource Division,<sup>1</sup> 20 different whales were confirmed to have been entangled in fishing gear off the California coast, including at least a dozen humpbacks and five gray whales. The locations of the observed entanglements were nearly evenly split between Monterey Bay and southern California. The type of gear entangling the whales was most often reported as “unknown”. In five instances, the gear was confirmed to be Dungeness crab pot gear; in three instances, it was confirmed to be spot prawn pot gear. In 2015, whale disentanglement experts and their volunteers have reported over 25 large whale entanglements off California.<sup>2</sup> Most of these entanglements are thought to involve Dungeness crab gear. Most recently, a dead orca washed up north of Mendocino with crab lines attached to its pectoral fin and fluke.

These entanglements generally occur when whales encounter the buoy lines that extend from a trap or string of traps set on the ocean bottom to a buoy at the surface. Whales have been observed with line wrapped around their fluke, fins, jaw, and body. Unless the whale “self-releases” or is disentangled by human volunteers, the line can remain indefinitely, impairing the animal’s ability to swim, feed, get to the surface for breath, and ultimately survive. Wounds caused by the entangled line often become infected. Sometimes these wounds lead to fins or flukes becoming necrotic and slowly being amputated by the line. In cases where the line is still attached to the traps, the animal may have to drag hundreds of pounds of gear around as it tries to swim, breathe, eat, and migrate. One study estimates that it takes an average of six months for entangled large whales to die.<sup>3</sup> Here on the West Coast, it is estimated that over half of all humpback whales have suffered fishing gear entanglements.<sup>4</sup>

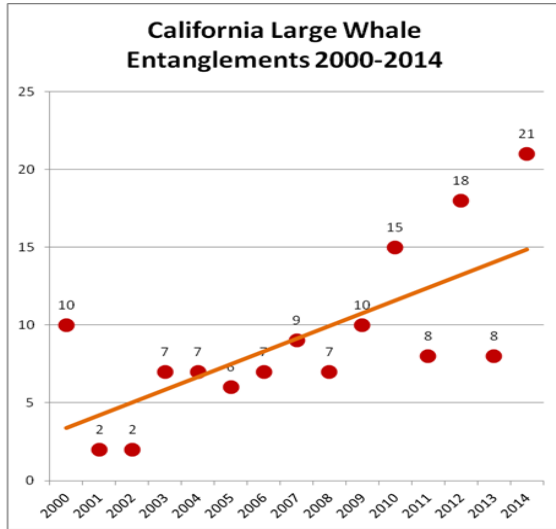
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<sup>1</sup> Response to data request, received February 27, 2015 from Penny Ruvelas, Long Beach Office Branch Chief, NOAA Fisheries West Coast Region, Protected Resource Division.

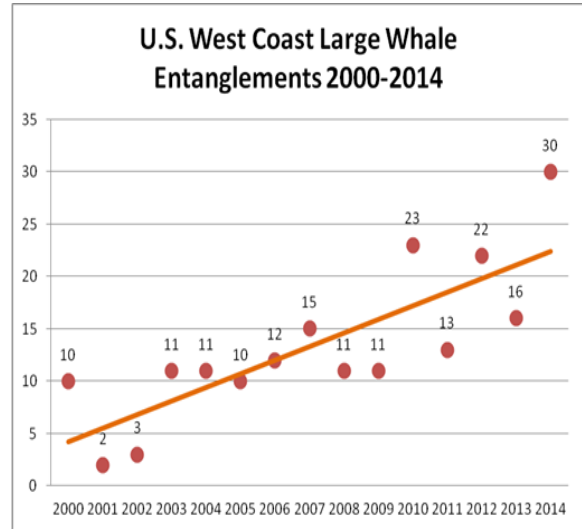
<sup>2</sup> P. Folkens, Whale Entanglement Team, pers. comm, 4/21/2015

<sup>3</sup> Moore, M. J., Bogomolni, A., Bowman, R., Hamilton, P., Harry, C., Knowlton, A., Landry, S., et al. 2006. Fatally entangled right whales can die extremely slowly. Oceans’06 MTS/IEEE–Boston, Massachusetts, Sept. 18–21, 2006 <https://darchive.mblwhoilibrary.org/bitstream/handle/1912/1505/Moore%20et%20al%20IEEE%20Entanglements%202006060330-71.pdf?sequence=1&isAllowed=y> (last accessed 23 April 2015).

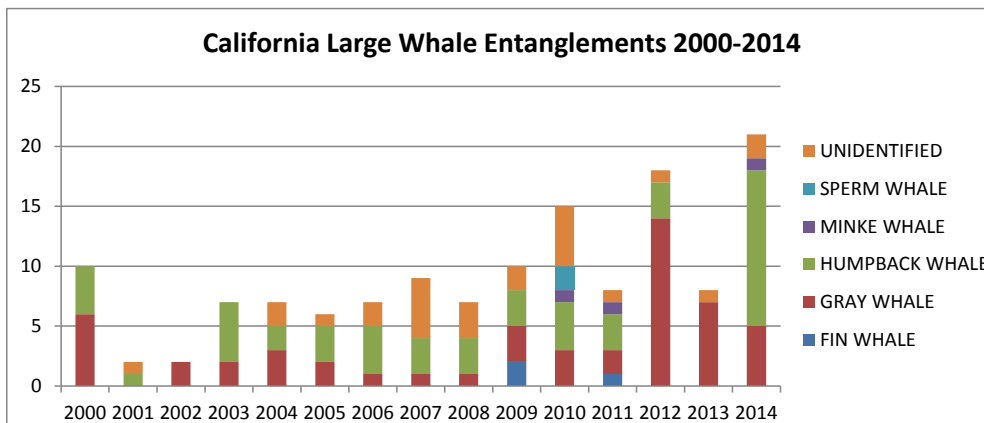
<sup>4</sup> Robbins, J., Barlow, J., Burdin, A.M., Calambokidis, J., Gabriele, C., Clapham, P., Ford, J., LeDuc, R., Mattila, D.K., Quinn, T., Rojas-Bracho, L., Straley, J., Urban, J., Wade, P., Weller, D., Witteveen, B.H., Wynne, K. and Yamaguchi, M. 2007. Comparison of humpback whale entanglement across the North Pacific Ocean based on scar evidence. Unpublished report to the Scientific Committee of the International Whaling Commission. Report number SC/59/BC.



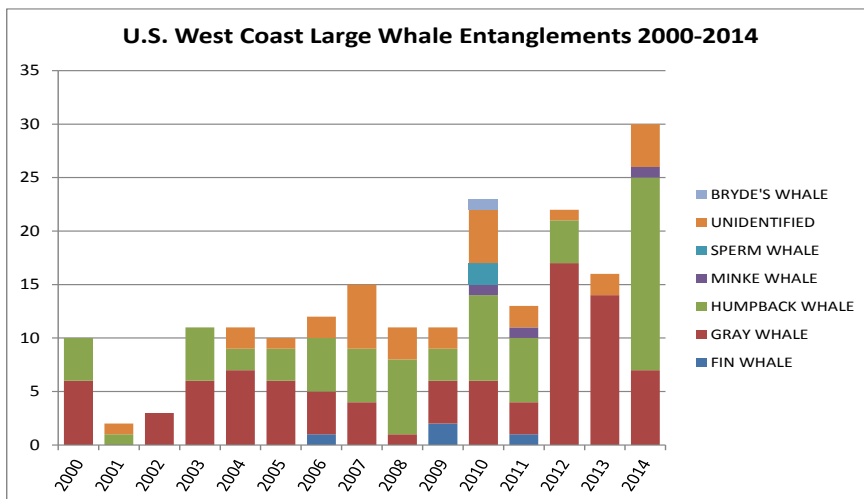
**Figure 1. Large whale entanglements observed off the California coast.**



**Figure 2. Large whale entanglements observed off the U.S. West Coast**



**Figure 3. Species of large whales observed entangled in fishing gear off California Coast.**



**Figure 4. Species of large whales observed entangled in fishing gear off U.S. West Coast.**

## California Pot and Trap Gear Fisheries Known to Entangle Whales

Fisheries that use pot and trap gear are known to cause serious injury and death of whales along the U.S. West Coast.<sup>5</sup> About 800 vessels fish over 200,000 pots and traps off California. The U.S. List of Fisheries estimates of the number of vessels participating in pot and trap fisheries off California as: CA Dungeness crab pot (570); CA spot prawn pot (28); CA/OR coonstripe shrimp pot (10), CA rock crab pot (150); CA spiny lobster (198); and CA nearshore finfish live trap/hook-and-line (93).<sup>6</sup> The three State-managed pot and trap fisheries that are known to have caused recent incidental mortality and serious injury of marine mammals are allowed to fish with the following numbers of pots and traps: CA Dungeness crab pot (174,025)<sup>7</sup>; CA spot prawn pot (12,950)<sup>8</sup>; and CA spiny lobster (45,000).<sup>9</sup>

NMFS has identified a number of such fisheries as having significant interactions with whales, including the California spot prawn pot fishery; California Dungeness crab pot fishery; Oregon Dungeness crab pot fishery; Washington coastal Dungeness crab pot/trap fishery; and Washington/Oregon/California sablefish pot fishery.<sup>10</sup> The spiny lobster fishery is also known to cause entanglements.<sup>11</sup> Additionally, a recent NOAA analysis of spatio-temporal overlap between large whales and fixed gear fisheries on the west coast concluded that the highest concern was with Dungeness crab gear and humpback whales.<sup>12</sup>

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<sup>5</sup> List of Fisheries for 2015, Final Rule. 79 Fed. Reg. 77919 (Dec. 29, 2014).

<sup>6</sup> List of Fisheries for 2015, *supra* n. 1.

<sup>7</sup> Dungeness Crab Task Force, *Updates Dungeness Crab Trap Limit Program (DCTLP) & Summary of Fishery Landings 2013-14 Season*, DCTF Meeting Oct. 29, 2014, at 5, [http://www.opc.ca.gov/webmaster/ftp/project\\_pages/dctf/ec-meeting-7/DCTF-UPDATE-Landings-Oct292014-Meeting-10-10-2014-to-DCTF.pdf](http://www.opc.ca.gov/webmaster/ftp/project_pages/dctf/ec-meeting-7/DCTF-UPDATE-Landings-Oct292014-Meeting-10-10-2014-to-DCTF.pdf).

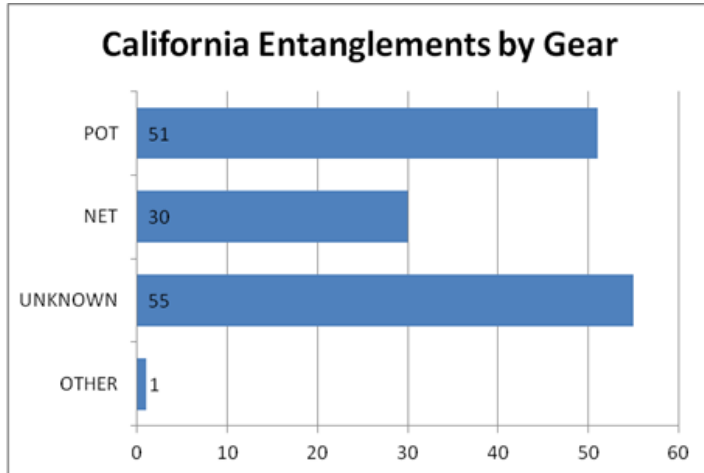
<sup>8</sup> Sweetnam, D. 2011. Review of selected California fisheries for 2010: coastal pelagic finfish, market squid, ocean salmon, groundfish, highly migratory species, Dungeness crab, spiny lobster, spot prawn, Kelleys' whelk, and white seabass. Fisheries Review, CalCOFI Report v52 2011, at 30 (noting that 17 Tier 1 permit holders and eight Tier III permit holders are allowed to fish 500 traps each; three Tier 2 permit holders are allowed to fish 150 traps each), [http://www.calcofi.org/publications/calcofireports/v52/Vol\\_52\\_13-35.Fisheries.pdf](http://www.calcofi.org/publications/calcofireports/v52/Vol_52_13-35.Fisheries.pdf).

<sup>9</sup> California Department of Fish and Wildlife, *supra* n. 8, at 4 (estimating 150 active fishermen operate a median of 300 traps).

<sup>10</sup> *Id.*

<sup>11</sup> NOAA Technical Memorandum NMFS: U.S. Pacific Marine Mammal Stock Assessments, 2014 (Aug. 2014) at 185.

<sup>12</sup> Saez, L., Lawson, D., DeAngelis, M., Petras, E., Wilkin, S., and Fahy, C. 2013. Understanding the co-occurrence of large whales and commercial fixed gear fisheries off the west coast of the United States. NOAA Technical Memorandum NMFS: NOAA-TM-NMFS-SWR-044.



**Figure 5. Observed entanglements of large whales by gear type.**

The California Dungeness crab fishery is managed pursuant to Fish and Game Code sections 8275-8284 and implementing regulations. The Department has authority to open and close the fishing season as well as to administer the permitting system for this restricted access fishery.<sup>13</sup> In general, the Dungeness crab season runs from November 15 through June 30 in all counties except Del Norte, Humboldt, and Mendocino Counties, where the season runs from December 1 through July 15.<sup>14</sup> The DCTF was established in January 2009 to review current management of the Dungeness crab fishery and recommend management changes to California regulators and the legislature. The DCTF is tasked with providing final recommendations by January 15, 2017, placing particular priority on “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>15</sup> The DCTF recently submitted initial recommendations to the legislature, which included support for an industry-led program to remove derelict gear.<sup>16</sup>

The commercial spot prawn trap fleet operates from just north of Monterey Bay to southern California. The fishery is closed between November and January to protect the peak egg-bearing months, and between May and August north of Point Arguello. The spot prawn trap fishery is a restricted access fishery with a multi-tiered permitting system administered by the Department.<sup>17</sup>

The commercial spiny lobster fishery is managed by the State pursuant to California Fish and Game Code sections 8250-8259. The fishery primarily operates between Point Conception and the U.S.-Mexico border, including southern California islands and banks. The commercial fishing season starts on the first Wednesday in October and ends on the first Wednesday after

<sup>13</sup> See, e.g., Fish & Game Code §§ 8276.2, 8276.5, 8277, 8280.2-8280.3.

<sup>14</sup> Fish & Game Code § 8276.

<sup>15</sup> Fish & Game Code § 8276.4(c).

<sup>16</sup> California 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.

[http://www.opc.ca.gov/webmaster/ftp/project\\_pages/dctf/DCTF\\_ReportJan2015\\_Final\\_012015.pdf](http://www.opc.ca.gov/webmaster/ftp/project_pages/dctf/DCTF_ReportJan2015_Final_012015.pdf)

<sup>17</sup> 14 C.C.R. § 180.3.

March 15.<sup>18</sup> The Department has completed a preliminary draft fishery management plan for the spiny lobster fishery. The draft fishery management plan addresses various types of finfish and crustacean bycatch but does not currently include measures to specifically address entanglement of whales in spiny lobster gear.<sup>19</sup>

### **Federal Law Protects Whales from Incidental Injury and Death by Fishing Gear**

The Marine Mammal Protection Act seeks to maintain stable, functioning marine ecosystems, to secure and restore healthy marine mammal populations, and to protect individual animals from harm.<sup>20</sup> Accordingly, the goal of the MMPA is to maintain an “optimum sustainable population” of each marine mammal stock, defined as “the number of animals which will result in the maximum productivity of the population or the species,” considering both carrying capacity of the habitat and ecosystem health.<sup>21</sup>

The MMPA prohibits the taking of marine mammals and provides a specific framework for protecting marine mammals from incidental injury and mortality associated with commercial fishing operations.<sup>22</sup> Under this framework, NMFS classifies fisheries according to the level of incidental mortality or serious injury as Category I, II, or III fisheries. A Category I fishery is a commercial fishery that causes frequent incidental mortality and serious injury of marine mammals, which is defined as a fishery that by itself causes the annual removal of 50 percent or more of any stock’s Potential Biological Removal (“PBR”).<sup>23</sup> PBR is defined as the “maximum number of animals . . . that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population.”<sup>24</sup> A Category II fishery is one that causes “occasional” incidental mortality and serious injury, defined as a fishery that, “collectively with other fisheries, is responsible for the annual removal of more than 10 percent of any marine mammal stock’s [PBR] level and that is by itself responsible for the annual removal of between 1 and 50 percent, exclusive, of any stock’s [PBR].” A Category III fishery is one that NMFS determines “to have a remote likelihood of, or no known incidental mortality and serious injury of marine mammals.”<sup>25</sup>

Owners of vessels engaged in Category I or II fisheries are required to register their vessels with NMFS, report any incidental take of a marine mammal, and comply with any applicable take reduction plan or emergency regulations under the MMPA.<sup>26</sup> In this way, the

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<sup>18</sup> Fish & Game Code § 8251

<sup>19</sup> California Dept. of Fish and Wildlife, Lobster Fishery Management Plan Preliminary Draft for Public Review (Nov. 20, 2014).

<sup>20</sup> 16 U.S.C. §§ 1361(2); 1362(18)(A); *Animal Welfare Inst. v. Kreps*, 561 F.2d 1002, 1007 (D.C. Cir. 1977) (“the MMPA is an unusual statute . . . motivated by considerations of humaneness towards animals, who are uniquely incapable of defending their own interests”).

<sup>21</sup> 16 U.S.C. §§ 1361(6), 1362(9).

<sup>22</sup> 16 U.S.C. § 1371(a) (“There shall be a moratorium on the taking and importation of marine mammals . . . during which time no permit may be issued for the taking of any marine mammal . . . except in the following cases”); *Kokechik Fishermen’s Assoc. v. Sec’y of Commerce*, 839 F.2d 795, 800 (D.C. Cir. 1988).

<sup>23</sup> 16 U.S.C. § 1387(c)(1); 50 C.F.R. § 229.2.

<sup>24</sup> 16 U.S.C. § 1362(20).

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

<sup>26</sup> 16 U.S.C. § 1387(c)(2)-(3).

MMPA offers incidental take authorization to vessel owners who comply with registration, reporting, and other requirements, thereby insulating owners and crew from penalties to which they would otherwise be subject for incidental taking of marine mammals. The MMPA tasks NMFS and the State with establishing the means by which to grant and administer these authorizations in coordination with existing fishery management and licensing programs.<sup>27</sup> Securing MMPA authorization is important to protect both animals and fishermen, since these fisheries are otherwise subject to penalties for taking for incidental taking of marine mammals.

Section 118 of the MMPA requires NMFS to develop a “take reduction plan” (“TRP”) for each “strategic stock” of marine mammals that interacts with any fishery that causes either “frequent” or “occasional” mortality or serious injury to marine mammals,<sup>28</sup> i.e., fisheries identified by NMFS as either Category I or Category II fisheries.<sup>29</sup> Strategic stocks include those stocks that are listed as a threatened or endangered species under the ESA as well as those for which the level of human-caused mortality exceeds the PBR level.<sup>30</sup> Take reduction plans are generally developed by “take reduction teams” – teams consisting of marine mammal experts, fishing group representatives, conservation representatives, and state and federal agency representatives who are tasked with developing a consensus plan with concrete measures to reduce incidental mortality and serious injury.<sup>31</sup> A take reduction team may address multiple fisheries that affect a marine mammal stock, as well as multiple marine mammal stocks taken by a single fishery.<sup>32</sup>

The MMPA sets specific deadlines both for when take reduction plans must be created and also when the plans must accomplish their goals. The “immediate goal” of a take reduction plan is to reduce, “within 6 months of its implementation,” the incidental mortality and serious injury of marine mammals to below the PBR level.<sup>33</sup> The long-term goal of a take reduction plan must be to reduce, within five years, incidental mortality and serious injury “to insignificant levels approaching a zero mortality and serious injury rate.”<sup>34</sup> The agency has defined “insignificant levels approaching . . . zero mortality” or “ZMRG” to mean 10% of a stock’s PBR.<sup>35</sup> In enacting the MMPA, Congress expressed its clear intent that Section 118 would require “immediate action to protect . . . marine mammal stocks most affected by interactions with commercial fishing operations.”<sup>36</sup>

Separately, the MMPA requires NMFS to establish programs to monitor incidental mortality and serious injury of marine mammals in commercial fisheries. Such monitoring programs must aim to obtain statistically reliable estimates of incidental mortality or serious

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<sup>27</sup> 16 U.S.C. § 1387(c)(5)(A).

<sup>28</sup> 16 U.S.C. § 1387(f)(1).

<sup>29</sup> 50 C.F.R. § 229.2.

<sup>30</sup> 16 U.S.C. § 1362(19).

<sup>31</sup> 16 U.S.C. § 1387(f)(6).

<sup>32</sup> 16 U.S.C. § 1387(f)(6)(B).

<sup>33</sup> 16 U.S.C. § 1387(f)(2).

<sup>34</sup> *Id.*

<sup>35</sup> 50 C.F.R. § 229.2.

<sup>36</sup> S. REP.NO. 103-220, at 6 (1994) (emphasis added).

injury, determine the reliability of self-reported take data, and identify changes in fishing methods or technology that may increase or decrease incidental mortality or serious injury.<sup>37</sup>

Additional protections apply to marine mammal species, such as the humpback whale, that are listed as threatened or endangered under the Endangered Species Act, 16 U.S.C. §§ 1531 *et seq.* (“ESA”). The MMPA imposes additional requirements to protect ESA-listed marine mammals, and only authorizes the incidental mortality or serious injury of such animals if it will have no more than a negligible impact on the listed species or stock.<sup>38</sup> In addition, the ESA prohibits any “person” from “taking” threatened and endangered species.<sup>39</sup> The statute defines “take” to mean “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.”<sup>40</sup> State fishery management authorities are responsible for ensuring that fisheries under their jurisdiction comply with ESA requirements. In a case dealing with entanglement of right whales in lobster gear, a federal court ruled that “the statute not only prohibits the acts of those parties that directly exact the taking, but also bans those acts of a third party that bring about the acts exacting a taking. We believe that...a governmental third party pursuant to whose authority an actor directly exacts a taking of an endangered species may be deemed to have violated the provisions of the ESA.”<sup>41</sup>

California-managed pot and trap fisheries currently operate without the appropriate MMPA and ESA incidental take authorizations, or measures necessary to reduce incidental take in fishing gear.<sup>42</sup> The lack of these measures causes significant harm to humpback, gray, and other whales that increasingly become entangled with this gear. It also exposes fishermen to liability for the unpermitted take of federally protected marine mammals. Implementing immediate measures to avoid entanglements and securing MMPA and ESA incidental take authorizations will serve both to advance conservation of whales and ensure greater security in the commercial fisheries.

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<sup>37</sup> 16 U.S.C. § 1387(d)(1).

<sup>38</sup> 16 U.S.C. § 1371 (a)(5)(E).

<sup>39</sup> 16 U.S.C. § 1538.

<sup>40</sup> 16 U.S.C. § 1532(19).

<sup>41</sup> *Strahan v. Coxe, et al*, 127 F.3d 155, 163 (1st Cir. 1997).

<sup>42</sup> See NMFS Notice of amended permit to authorize incidental take of two stocks of marine mammals in the CA thresher shark/swordfish drift gillnet fishery and the WA/OR/CA sablefish pot fishery (Pre-publication notice, dated April 17, 2015), 80 Fed. Reg. 22709, 22710 (April 23, 2015) (“All other Category II fisheries that may interact with the marine mammal stocks observed off the coasts of California, Oregon, and Washington are state managed and are not considered for authorization under this permit.”).



**Table 1. ESA-Listed Marine Mammal Species off the coasts of CA, OR, and WA<sup>43</sup>**

<b>Species</b>	<b>Stock</b>	<b>Status</b>
Blue whale ( <i>Balaenoptera musculus</i> )	Eastern North Pacific stock, (formerly the California/Oregon/Washington-Mexico stock)	Endangered
Fin whale ( <i>Balaenoptera physalus</i> )	California/Oregon/Washington stock	Endangered
Humpback whale ( <i>Megaptera novaeangliae</i> )	California/Oregon/Washington stock, (formerly the Eastern North Pacific stock and California/Oregon/Washington-Mexico stock)	Endangered
Gray whale ( <i>Eschrichtius robustus</i> )	Western North Pacific stock	Endangered
North Pacific right whale ( <i>Eubalaena japonica</i> )	Eastern North Pacific stock	Endangered
Sei whale ( <i>Balaenoptera borealis</i> )	Eastern North Pacific stock	Endangered
Sperm whale ( <i>Physeter macrocephalus</i> )	California/Oregon/Washington stock	Endangered
Killer whale ( <i>Orcinus orca</i> )	Eastern North Pacific Southern Resident stock	Endangered
Guadalupe fur seal ( <i>Arctocephalus townsendii</i> )	Mexico	Threatened

### Available Measures to Mitigate Large Whale Entanglements in Pot and Trap Gear

Industry participants, state and federal government representatives, and academics have suggested several measures that could potentially reduce risk of gear entangling large whales based on measures that have been taken in other regions.<sup>44</sup> For example, the Atlantic Large Whale Take Reduction Team has conducted research on gear modifications.<sup>45</sup> Notably, research indicates that near-term implementation of multiple mitigation measures may be necessary to effectively reduce entanglements, and the effectiveness of individual mitigation measures can be challenging to evaluate. In the Atlantic, incremental implementation of gear modification measures to reduce large whale entanglements over 10 years, 1999-2009, produced no evidence

<sup>43</sup> NMFS, Draft Marine Mammal Protection Act Section 101(a)(5)(E) Amended Negligible Impact Determination CA/OR/WA Humpback Whale CA/OR/WA Sperm Whale, August 2014.

<sup>44</sup> NMFS, West Coast Regional Office, U.S. West Coast Large Whale Entanglement Information Sharing Workshop Report, Nov. 13-14, 2013, Portland, OR.

<sup>45</sup> Atlantic Large Whale Take Reduction Plan, ALWTRP Research, <http://www.greateratlantic.fisheries.noaa.gov/Protected/whaletrp/research/index.html>.

that the frequency of entanglements or entanglement-related mortality substantially abated.<sup>46</sup> The study noted that additional or different measures were likely needed, and effects of incremental measures can be challenging to evaluate. We therefore urge the State to implement all available mitigation measures feasible, potentially including limits on the amount or location of gear, as soon as possible. Any mitigation measures should be designed to address gear-types causing entanglements off the West Coast and include means to assess their effectiveness.

Based on the measures identified in the literature, we recommend that the State work with NMFS, fishermen, conservation organizations and whale entanglements experts to evaluate the following options – and any others that it identifies as potentially effective – and implement the combination of measures that is most likely to effectively reduce and avoid entanglements in each fishery.

### **Gear Modifications and Marking**

- Neutral/sinking lines – Particularly for horizontal lines in multi-trap fisheries like the spot prawn trap fishery, neutral or sinking lines could reduce entanglement hazards floating in the water column.
- Clean lines – Variations on the types of lines used or how fishermen maintain the lines may reduce entanglement. Stiff or glowing ropes could be easier to for whales to avoid. Lines free of knots could increase the chance that whales could slip free. Finally, minimizing slack between the pot and the buoy would decrease the amount of line that can entangle whales.
- Weak links – A strategy used by East Coast fishermen, weak links could allow lines to break when large whales snag them. Effectiveness on the West Coast would require testing.
- Tending gear more often – While tending gear is often dictated by weather conditions, increasing the frequency with which fishermen check gear could provide early warning of lost gear and increase the probability of seeing whales entangled in the gear.
- Gear marking – Color coding of lines could be a low-cost way to identify a fishery and/or an area where the gear was set. Current buoy tags for the Dungeness crab reportedly are easily visible for enforcement and entanglement response.<sup>47</sup>
- Increasing the number of traps per string – Currently, California, Oregon, and Washington require a single trap per line for the Dungeness fishery, but multi-trap lines could reduce the number of vertical lines that entangle whales without reducing the number of traps.<sup>48</sup> Concerns with multi-trap lines include enforcement of trap limits,

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<sup>46</sup> Pace, R., T. Cole and A. Henry. 2014. Incremental Fishing Gear Modifications Fail to Significantly Reduce Large Whale Serious Injury Rates. *Endangered Species Research*. 26:115-126.

<sup>47</sup> NMFS, West Coast Regional Office, U.S. West Coast Large Whale Entanglement Information Sharing Workshop Report, Nov. 13-14, 2013, Portland, OR, at 45.

<sup>48</sup> *Id.* at 44.

spatial conflict among fishermen, and gear loss. Spot prawn trap fishermen on the West Coast fish multiple traps per line.<sup>49</sup>

### **Retrieval of Lost Gear**

Promoting retrieval of lost gear may be a relatively easy way to reduce large whale entanglements. Since 2006, the California Lost Fishing Gear Recovery Project has removed more than 60 tons of lost commercial and recreational fishing gear and debris.<sup>50</sup> From central California north to the Canadian border, about 400,000 Dungeness crab pots are fished; about 10 percent are lost each year as a consequence of fishing during harsh winter conditions.<sup>51</sup> Building upon existing industry-led programs to retrieve lost gear, such as the Lost Fishing Gear Recovery Project carried out in recent years in Humboldt and Del Norte counties,<sup>52</sup> could significantly reduce risk of injury and death for large whales.



Retrieved derelict Dungeness crab gear. Photo credit: NOAA.

### **Time and area management**

NMFS has developed a model identifying areas and times when large whales are more likely to encounter fixed fishing gear, such as pots, traps, set longlines and set gillnets and that could inform managers' analysis of time-area closures or other management measures.<sup>53</sup> Additional information from fishermen could improve this model by providing additional data about fishing effort, for example through logbooks. No logbooks are currently required for the Dungeness crab pot fishery. For fisheries that do require logbooks, like the spot prawn pot

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<sup>49</sup> *Id.*

<sup>50</sup> Gilardi, K.V.K., and Renzullo, J.R. 2013. Sixty tons in six years: Reducing threats to California marine wildlife through lost fishing gear recovery. IAAAM 44th Annual Conference Proceedings, April 2013, Sausalito, California.

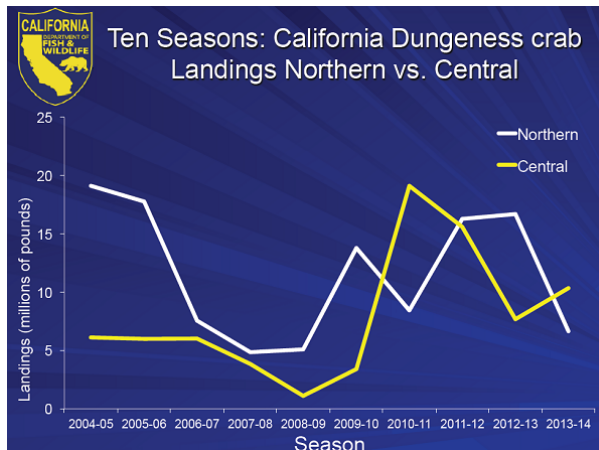
<sup>51</sup> Pacific Fishery Management Council. 2013. Pacific Coast Fishery Ecosystem Plan for the U.S. Portion of the California Current Large Marine Ecosystem, at 155-56, <http://www.pccouncil.org/ecosystem-based-management/fep/>.

<sup>52</sup> *Good catch: Fishermen clean ocean of lost crabbing gear*, U.C. Davis News and Information, September 24, 2014, [http://news.ucdavis.edu/search/news\\_detail.lasso?id=11028](http://news.ucdavis.edu/search/news_detail.lasso?id=11028).

<sup>53</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.

fishery, the data collected could be improved by requiring information at the finest-scale resolution possible, which will help to define areas of high co-occurrence risk. Even an annual estimate of how many lines and traps are set on the U.S. West Coast could help managers understand the risk to whales.

Increased Dungeness crab landings from central California have coincided with increased large whale entanglements since 2010 (see Figure 6 below). This trend requires additional examination to determine whether there is a relationship between increased effort and amount of gear deployed and higher entanglements. In addition, shifts in the distribution of fishing effort should be examined.



**Figure 6. Dungeness crab landings in northern versus central California ports.**<sup>54</sup>

<sup>54</sup> Source: California Department of Fish & Wildlife, *Updates Dungeness Crab Trap Limit Program (CDTLP) & Summary of Fishery Landings 2013-2014 Season*, DCTF Meeting, Oct. 29, 2014, [http://www.opc.ca.gov/webmaster/ftp/project\\_pages/dctf/ec-meeting-7/DCTF-UPDATE-Landings-Oct292014-Meeting-10-10-2014-to-DCTF.pdf](http://www.opc.ca.gov/webmaster/ftp/project_pages/dctf/ec-meeting-7/DCTF-UPDATE-Landings-Oct292014-Meeting-10-10-2014-to-DCTF.pdf)

## **Request for Action**

As a matter of law and public policy, the State must take immediate steps to prevent entanglements of whales in the pot and trap fisheries it manages. Federal law requires that measures be taken to avoid and minimize fishing-related injury and mortality of marine mammals. When those animals belong to a threatened or endangered species, the fishery must minimize incidental take and may not have more than a negligible impact on the species. The entanglement of dozens of whales in less than two years is a serious conservation concern. It is also a commercial concern. In addition to causing suffering, injury, and in many cases death to individual whales, these entanglements cause the loss of fishing gear and diminish consumer confidence in seafood sustainability. Moreover, humpback, gray, and other whale species are important and much beloved parts of California's natural heritage. Ocean lovers, marine sanctuary visitors, and seafood consumers, among others, deserve to know that local seafood is not delivered at the cost of injury or death to a whale.

We therefore request that, by the beginning of the next fishing season, the State develop and implement initial measures to address and prevent entanglements. We also request that the State develop and implement a comprehensive plan to address this issue in the longer term. We recommend that the State continue to work with the fishing industry, NMFS, conservation organizations, and whale entanglement experts to develop both the initial measures and the longer term plan. We recommend that with respect to the Dungeness crab fishery, the State utilize the existing organization and expertise of the DCTF to develop these measures. In addition, to the extent that the State is not able to development entanglement prevention measures for all three fisheries in the immediate future, we request that the State prioritize development of these measures for the Dungeness crab fishery. Given that Dungeness crab pot gear has been involved with many of the recent entanglements and the DCTF has initiated efforts to reduce entanglements, we believe that prioritizing immediate action with respect to this fishery would be appropriate, and could potential serve as a model for other fisheries.

We further request that the State secure the incidental take authorizations required under the MMPA and ESA for the incidental injury and death of marine mammals in these fisheries. The processes involved in obtaining these authorizations will contribute to the development of long-term conservation measures. The authorizations themselves will ensure that those who operate in these fisheries are not exposed to liability for unpermitted take of marine mammals.

We recognize that significant steps have been taken to reduce entanglement risks, including gear marking, derelict trap retrieval, trap limits and other measures. However, the recent, substantial increase in whale entanglements indicates that more needs to be done. We are encouraged that the State and DCTF representatives have indicated a strong interest in further addressing this problem. We urge immediate action and stand ready to offer our assistance and participation in securing that immediate action.

We appreciate your time and attention to this important issue. We look forward to working with you to prevent future entanglements of whale in California pot and trap fisheries.

Sincerely,



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