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November 13, 2017

Ms. Donna Wieting, Director
Office of Protected Resources
National Marine Fisheries Service (NMFS)
1315 East West Highway
Silver Spring, MD 20910

Re: Petition To List the California Dungeness Crab Pot Fishery as Category I; Docket NOAA-NMFS-2017-0031

Dear Ms. Wieting,

On behalf of the Center for Biological Diversity and Turtle Island Restoration Network, we formally petition the National Marine Fisheries Service (NMFS) to designate the California Dungeness crab pot fishery as a Category I fishery under the Marine Mammal Protection Act. The California Dungeness crab pot fishery qualifies as a Category I fishery because it frequently entangles, seriously injures, and kills imperiled humpback whales. NMFS should also add three marine mammal stocks to those that the California Dungeness crab pot fishery entangles: endangered blue whales, killer whales, and the western North Pacific gray whales. Elevating this fishery to Category I will help prioritize efforts to reduce the number of whales getting tangled up in the gear used in this fishery and stop further declines in these vulnerable marine mammal populations.

While California Dungeness crab gear has been entangling large whales for at least a decade, the problem has intensified in recent years. The California fishery entangled a record number of whales in 2016, contributing to the third straight record-breaking year for entanglements along the U.S. West Coast. In 2016 alone, confirmed reports of entanglements in California commercial Dungeness crab pots included 22 marine mammals: 19 humpback whales, two blue whales, and one killer whale. Since the record entanglements in 2016, no changes in

fishery management have occurred, meaning that the high risk of entanglements continues. In the first half of 2017 preliminary data indicate that at least two humpback whales, one blue whale and one gray whale were entangled in California Dungeness crab pots . When whales get tangled up in crab gear, they can drown, or die of starvation, dehydration, or infection. The animals can also drag heavy Dungeness crab traps hundreds of miles on migrations, sapping them of strength, and interfering with their breathing, feeding, and reproduction.

Entanglements due to California commercial Dungeness crab traps not only kill and injure individual whales, they threaten the recovery of these imperiled species. When NMFS identified 14 distinct humpback whale distinct populations in 2016, it estimated that the small Central America population, which feeds almost exclusively off California, is endangered, contains only 411 individuals, and is at risk from continued entanglements.[1]

I. The Marine Mammal Protection Act's Requirements For Commercial Fisheries

The Marine Mammal Protection Act (MMPA) seeks to maintain stable, functioning marine ecosystems, to secure and restore healthy marine mammal populations, and to protect individual animals from harm.[2] 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.[3]

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.[4] 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).[5] A Category II fishery is one that causes "occasional" incidental mortality and serious injury, defined as a fishery that, "collectively with

[1] 81 Fed. Reg. 62259, 62260 (Sept. 8, 2016).
[2] *Id.* §§ 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").
[3] *Id.* §§ 1361(6), 1362(9).
[4] 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).
[5] 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." 16 U.S.C. § 1362(20).

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."[6]

In enacting the MMPA, Congress expressed its intent that Section 118 would require "immediate action to protect . . . marine mammal stocks most affected by interactions with commercial fishing operations."[7] Section 118 of the MMPA requires NMFS to develop and implement a take reduction plan designed to assist in the recovery or prevent depletion of each strategic stock of marine mammals that interacts with any fishery that causes mortality or serious injury to marine mammals either "frequently" or "occasionally," i.e. Category I or Category II fisheries, respectively.[8] In this way – through a take reduction plan – the MMPA sets up a process by which to reduce incidental take in commercial fisheries of strategic marine mammals and marine mammals listed under the Endangered Species Act (ESA).

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.[9] 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.[10] If funds are insufficient to implement plans for all critical stocks, NMFS is to give the highest priority to the most critical stocks that interact with commercial fisheries."[11]

Because of the small population of Central America humpback whales that feed almost exclusively off of California, it is critical that NMFS prioritize fishery reductions in the California Dungeness crab pot fishery. The California Dungeness crab pot was first listed as Category II in 2009.[12] NMFS has been collecting data to assess the risk to large whales since at least as early as 2006 when the humpback whale was added to the list of marine mammals

[6] 16 U.S.C. § 1387(c)(1); 50 C.F.R. § 229.2.
[7] S. REP.NO. 103-220, at 6 (1994).
[8] 16 U.S.C. § 1387(f)(1); 50 C.F.R. § 229.2. 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. *Id.* § 1362(19).
[9] *Id.* § 1387(f)(6).
[10] *Id.* § 1387(f)(6)(B).
[11] 50 C.F.R. § 229.2.
[12] The California Dungeness crab pot reclassification was "by analogy," meaning that even though there were no interactions that could be identified as CA Dungeness crab pots, NMFS listed the fishery because of the overlap of California pot/trap fisheries with entangled whales. *List of Fisheries for 2009, Final rule,* 73 Fed. Reg. 73032 (Dec. 1, 2008).

incidentally killed or seriously injured in the WA, OR, CA crab pot fishery.[13] Yet NMFS has not developed a take reduction plan for any U.S. West Coast pot or trap fishery.[14]

II. Reported Entanglements in the California Dungeness Crab Pot Fishery Justify Category I Listing

The California Dungeness crab pot fishery should be listed as a Category I fishery. A Category I fishery is a commercial fishery that causes "frequent incidental mortality and serious injury of marine mammals."[15] NMFS defines frequent mortality and serious injury in a single fishery as "annual removal of 50 percent or more of any stock's potential biological removal."[16] Entanglements of humpback whales in the California Dungeness crab pot fishery exceed this level.

NMFS recently determined that humpback whales off California consist of two separate species – the Central America DPS and the Mexico DPS. Because the Central America humpback DPS consists of only 411 individuals, feeds almost exclusively off of California, and the Mexico DPS has a much larger range, including Alaska and Russia, the entanglements off California disproportionately affect the small Central America population. Indeed, the available information indicates that relatively few Central America population humpbacks are photographed north of Oregon (fig. 1). Therefore, for the purposes of conservation of this small, endangered population and in the absence of better information, all serious injury and mortality should be attributed to the Central American DPS.

The PBR calculation for Central America humpbacks can be determined using the current method for calculating PBR for ESA-listed species. The PBR for humpback whales is calculated as the minimum population size times one half the estimated population growth rate for this stock of humpback whales (½ of 8%) times a recovery factor of 0.1,[17] resulting in a PBR of 1.6 humpbacks:

411 humpbacks (the abundance estimate)
*0.04, which is half the population growth rate used in the Stock Assessment Report
* 0.1 recovery factor used in the Stock Assessment Report = 1.6 humpbacks

[13] List of Fisheries for 2007, Proposed rule, 71 Fed. Reg. 70339, 70344 (Dec. 4, 2006) ("NMFS will continue to monitor marine mammal interactions with pot/trap gear and revisit the fishery's classification in future LOFs.").
[14] *Taking of Threatened or Endangered Marine Mammals Incidental to Commercial Fishing Operations; Issuance of Permit, Notice*, 78 Fed. Reg. 54553, 54557 (Sept. 4, 2013).
[15] 16 U.S.C. § 1387(c).
[16] 50 C.F.R. § 229.2.
[17] *See* Taylor, B.L., M. Scott, J.E. Heyning, J. Barlow, 2003. Suggested Guidelines for Recovery Factors for Endangered Marine Mammals under the Marine Mammal Protection Act, NOAA-TM-NMFS-SWFSC-354, https://swfsc.noaa.gov/publications/TM/SWFSC/NOAA-TM-NMFS-SWFSC-354.PDF.

Dividing this by half because this is an international stock, per the Stock Assessment Report, gives an **estimated PBR of 0.8 humpback whales per year.**[18]

The best estimate of *minimum* average annual serious injuries and mortalities occurring in the California Dungeness crab pot fishery from 2011-2015, according to Carretta et al. (2017), is 1.35 whales:

- 2 serious injuries (one pot had no license but was found in Monterey Bay),
- 5 prorated serious injuries (5 * 0.75 =3.75),
- 1 dead

This results in a total of 6.75 serious injuries and mortalities averaged over 5 years, or 1.35 whales each year, which is greater than the PBR estimate above (0.8).

This underestimates the average numbers of annual serious injury and mortality because it is based on reported entanglements, and many entanglements go unobserved. It also is an underestimate because it does not include the 2016 entanglement of 19 humpback whales in the California Dungeness crab pot fishery. According to the historical rate of serious injury determinations,[19] 84% of these entanglements resulted in a serious injury or mortality, or 16 whales. This is well above the PBR estimate above. The available information clearly demonstrates that NMFS should reclassify the fishery as Category I.

There is preliminary evidence that the proportion of humpback whales on the U.S. West Coast that are from Central America and Mexico varies by latitude, with the highest proportion of Central America whales occurring off southern California and decreasing northward (fig. 1, Steiger et al. 2017). This shows that the California Dungeness crab pot fishery – and not the Oregon or Washington Dungeness crab pot fishery – primarily impacts the Central America DPS. Without additional information, all interactions of the California Dungeness crab pot fishery should be assigned to the Central America DPS.

[18] For PBR calculations, a minimum estimate should be used, so the calculations based on 411 humpbacks will result in a slightly higher PBR than appropriate.
[19] List of Fisheries for 2017, 82 Fed. Reg. 3655, 3659 (Jan. 12, 2017).

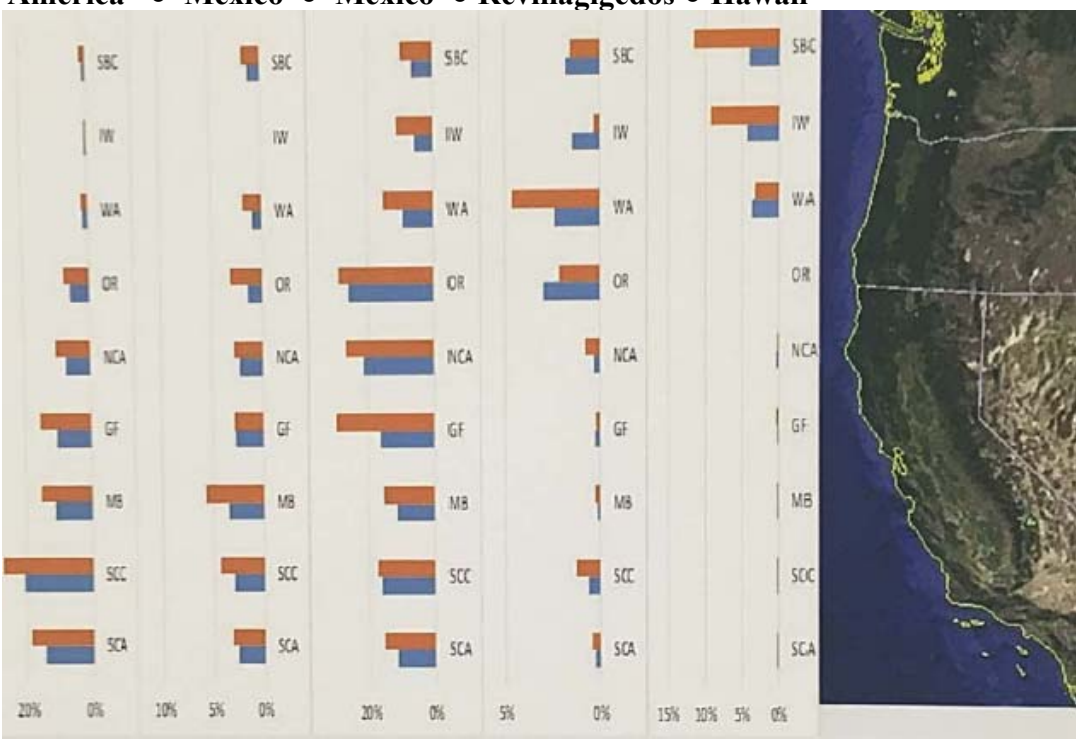

Figure 1. The proportions of humpback whale photographs from different feeding areas, which generally correspond to areas off the U.S. West Coast shown to the right, that match different wintering areas labelled at the top. Blue bars show the percentage of unique individuals and orange bars show the percentage of encounters in each area known to match each wintering area. (Source: Steiger et al. 2017)

III. Marine Mammal Species and/or Stocks Incidentally Killed Or Injured in California Dungeness Crab Pot Fisheries

Currently the listing of the California Dungeness crab pot fishery as Category II includes two species of marine mammals incidentally killed or injured in the fishery: the Eastern North Pacific gray whale and the CA-OR-WA stock of humpback whales. In addition to reclassifying the fishery as Category I, NMFS should add blue whales, killer whales, and the western North Pacific gray whale to this list of species incidentally killed or injured.

Blue Whales

In June 2016, a blue whale entangled in Dungeness crab pot gear made national news as rescuers attempted the first ever disentanglement of an 80-foot blue whale, the largest animal on

earth.[20] A NMFS rescuer was quoted as saying that the rope was certainly causing the animal severe pain as it towed both the line and the attached crab pot, applying constant pressure.[21] Ultimately that year a total of four blue whale entanglements were reported, two of which were attributed to the California Dungeness crab pot fishery. In 2017 three confirmed blue whale entanglements were reported as of October, one of which was attributed to the California Dungeness crab pot fishery (Saez 2017).

Because of these reported entanglement numbers, which are certainly underestimates of the actual blue whales entangled, serious injury and mortality due to fishing entanglements risks exceeding the blue whale PBR of 2.3 whales per year (Carretta et al. 2017b). Though no blue whale entanglements had been reported on the U.S. West Coast prior to 2015, in which one was reported, a 2013 co-occurrence NMFS technical memorandum determined that the highest risk of blue whale entanglement was the Dungeness crab fishery in the fourth quarter of the year (October to December), around San Francisco and Bodega Bay (fig. 2, Saez et al. 2013). This coincides with the earliest openings of the California Dungeness crab pot fishery, November 15 in central California and December 1 in districts north, when the vast majority of the fishing occurs. Without changes to the fishery at the opening of the season, blue whale entanglements are likely to continue to occur because of the co-occurrence of blue whales and the California Dungeness crab fishery.

[20] Fritz, A. *Rescuers describe their desperate attempts to free this entangled blue whale*, Washington Post, June 30, 2016, https://www.washingtonpost.com/news/capital-weather-gang/wp/2016/06/30/rescuers-describe-their-desperate-attempts-to-free-this-entangled-blue-whale/?utm_term=.73ad1a29f932.
[21] *Id.*

Figure 2. Co-occurrence of the multi-year average blue whale density and the Dungeness crab pot fishery shown for quarter three (July to September) and four (October to December) (Source: Saez et al. 2014, fig. 36).

Killer Whales, Eastern North Pacific Offshore Stock

In both April 2015 and April 2016 a killer whale from the Eastern North Pacific Offshore stock was reported entangled in Dungeness crab pot gear (NMFS 2017). In 2015, the whale was found dead at McKerrick State Park. The PBR for this stock is 1.6 whales per year. As reported entanglements are likely an underestimate of the actual number of entanglements and dead killer whales are unlikely to wash ashore like the one in 2015 did,[22] entanglements of the Eastern North Pacific Offshore killer whales in Dungeness crab gear could easily be in excess of 50% of PBR.

Gray Whales, Western North Pacific

Based on the migratory patterns and sightings of western North Pacific gray whales, both the western and eastern North Pacific gray whale DPSs are incidentally killed or injured in

[22] https://lostcoastoutpost.com/2015/apr/18/dead-killer-whale-mackerricher/

California Dungeness crab pots. Three of seven tagged adult western gray whales transmitted information long enough to document migration away from Sakhalin Island, Russia, to the eastern North Pacific (Mate et al. 2015). Tags attached to two of those whales functioned long enough to document whales entering the south-bound migration corridor toward the U.S. West Coast; one tag last transmitted 5 February 2011 off Lincoln City, Oregon (the whale, called Flex, was resighted in good body condition in Russia the next year), and the other transmitted from Baja California, Mexico, and back to Russia on a whale called Varvara (fig. 3, *id.*). Notably, these southbound migrations coincide in time with the California Dungeness crab season.

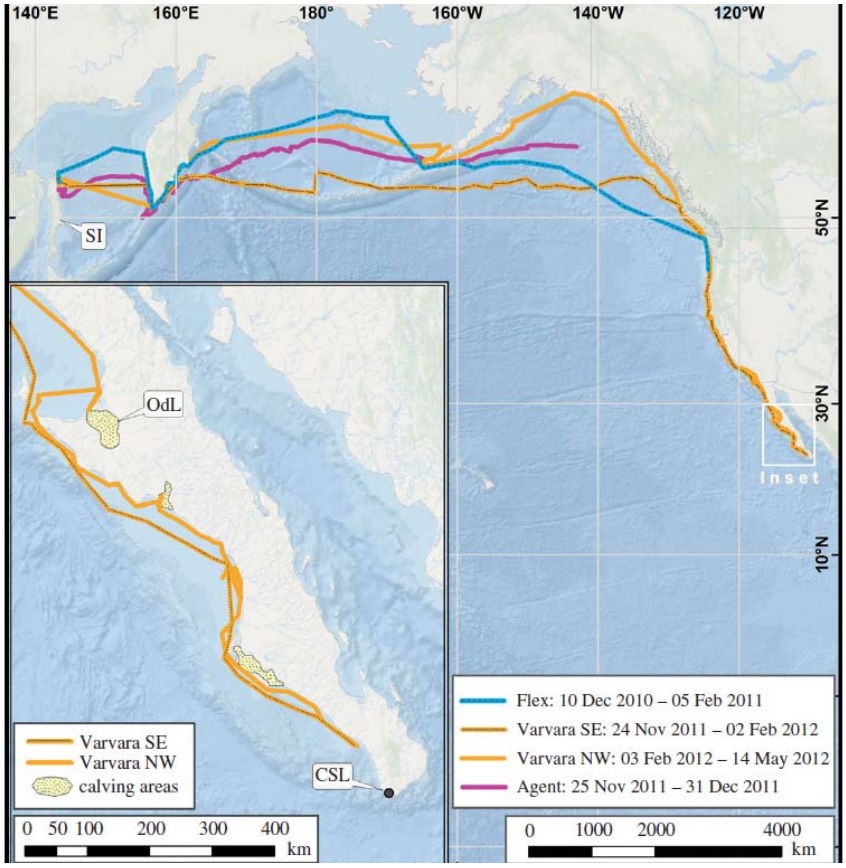

Figure 3. Routes of three western gray whales migrating from Sakhalin Island, Russia, to the eastern North Pacific. The legend depicts departure and arrival/end dates. Varvara visited all three major eastern gray whale reproductive areas off Baja California, Mexico (inset). (Source: Mate et al. 2015; in color in digital format.)

Because entangled gray whales have not been photographically identified to either the western North Pacific (WNP) or eastern North Pacific populations, both stocks should be listed on the 2018 List of Fisheries for the California Dungeness crab pot fishery known to entangle gray whales. Analysis of anthropogenic scarring of gray whales off Sakhalin Island found that at

least 18.7% (28 whales) of 150 individuals identified between 1994 and 2005 had evidence of previous fishing gear entanglements (Carretta et al. 2017b citing Bradford et al. 2009). The marine mammal stock assessment report states that given "that some WNP gray whales occur in U.S. waters, there is some probability of WNP gray whales being killed or injured by ship strikes or entangled in fishing gear within U.S. waters" (Carretta et al. 2017b at 175).

The minimum population estimate for the western North Pacific stock of gray whales is 135; PBR is 0.06, or approximately 1 whale every 17 years (Carretta et al. 2017b). Between 2000 and October 2017, 116 gray whales have been reported entangled off California, Oregon, and Washington (Saez 2017). Based on reports only, this number underestimates the actual gray whale entanglements that have occurred. Assuming that means that hundreds – rather than a hundred – gray whales have been entangled in the past 17 years, it seems improbable that none are WNP gray whales, even if the population is much smaller than that of eastern North Pacific gray whales.

IV. Conclusion

NMFS must list the California Dungeness crab pot fishery as Category I because it causes frequent serious injury and mortality of humpback whales, and is likely having an extraordinary and unique impact on the small, endangered Central America humpback DPS, which feeds almost exclusively off California. In addition to this change, NMFS should also add endangered blue whales, the offshore stock of killer whales, and the endangered WNP stock of gray whales to the marine mammals killed or seriously injured in this fishery. Listing this fishery as Category I will allow NMFS to devote the funds necessary to help adequately address entanglements and conserve endangered and threatened species.

Please feel free to contact us with any questions or comments.

Sincerely,

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References

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