



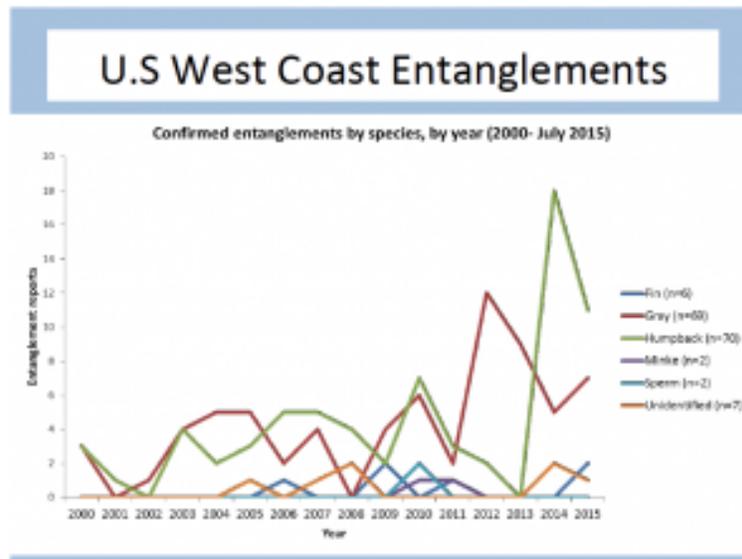
Working with Crab Fishermen to Reduce Whale Entanglement

PSMFC has been awarded a Bycatch Reduction Engineering Program grant to reduce whale entanglement in crab pot gear which has escalated in recent years. PSMFC will be project manager for the grant and work closely with Dan Lawson of NOAA's protected species division and Pete Nelson of HT Harvey and Associates on this effort. The project also involves close work with the crabbing industry including the California Dungeness Crab Working Group.

Project summary: After gear testing of working loads, line profiles of working gear (NOAA/HT Harvey), PSMFC will hold a two-day workshop with fishermen, fisheries managers, gear manufacturers, marine mammal experts and others to present this gear testing information and generate and prioritize ideas for new gear and practices to minimize whale entanglement. Workshop findings will be distributed to industry groups to encourage awareness of efforts and to help identify additional fishermen willing to test gear. Fishermen in each state will then test gear modifications prioritized at the workshop during regular crabbing operations. A report of findings and recommendations will be shared widely through industry focused presentations and publications.

Background:

The bycatch of marine mammals, especially entanglement of large whales in commercial and recreational fishing gear, is an international concern because of the potential impacts to individual animals, populations, and to the fishing industry. On the U.S. West Coast (California, Oregon, and Washington), the number of whales observed and reported entangled in fishing gear and other sources has increased dramatically in recent years, prompting significant engagement by fishermen, managers, and other stakeholders to better understand the causes and develop solutions. In 2014 and 2015 combined, National Marine Fisheries Service (NMFS) received reports of 93 entangled whales and 1 entangled leatherback sea turtle along the West Coast, primarily in fixed fishing gear.



from a 2015 presentation by NMFS biologist Dan Lawson

The majority of these whales entangled in recent years have been endangered humpback whales. When it has been possible to identify the origin of these recent entanglements, NMFS has most commonly identified Dungeness crab fishing gear as being associated with entanglement. Although outcomes for entangled whales are largely unknown, there is concern that if whale entanglement rates remain high, significant additional management activity could be triggered or mandated under various State and Federal authorities, including the Federal Marine Mammal Protection Act (MMPA) and Endangered Species Act (ESA). As this issue has emerged in the fishing community and public arena in the last two years, there has been consistent agreement by all stakeholders to work together to address this issue now ahead of any regulatory mandates.

The commercial Dungeness crab fishery is the largest fixed gear fishery on the West Coast, deploying up to 450,000 pots annually, with each pot attached with a line to the surface. Recreational fishing for Dungeness crab is also very significant, although effort and fishing behavior is less understood. In addition, lost pots from this fishery are a concern for many reasons, including increasing the potential for mammal entanglements.

Largely, the mechanisms of exactly how whales become entangled in fishing gear have not been well documented because entanglement events are rarely observed occurring. However, one of the key factors likely important to the potential for entanglements relates to the amount of slack line used and the profile of the lines in the water column. Generally, we expect lines that remain relatively tight and vertical are less likely to lead to an entanglement as opposed to lines that create larger profiles in the water if they are relatively loose and/or winding around in loops. Currently, there has been no evaluation of the profile of Dungeness crab gear fishing lines on the West Coast or how various configurations of Dungeness crab gear influence the profile(s) of the fishing lines.

As the issue of how to address whale entanglements has been considered in numerous situations around the world, including the West Coast, common approaches to gear modification that have been discussed or implemented involve the use of measures that would allow the whales to break free easier or otherwise lessen the integrity of the gear to make entanglement less likely or less

severe. Before any of these modifications can be well evaluated for potential trial or use on the West Coast, it is necessary to analyze the amount of physical strain and tension force exerted upon fixed fishing gear lines (referred to as “working loads”) under numerous conditions and various gear configurations. Without such information, it is not possible to design gear modifications and evaluate the feasibility. Such testing was a recommendation of the California Dungeness crab fishing gear working group in 2015¹.

Though groups such as the California Dungeness crab Fishing Gear Working Group and the NW Straits Commission in WA are working to address this issue both from an entanglement angle and a derelict gear recovery angle, no group has tested gear modifications or practices based on the way gear is rigged or fished. There is interest from NMFS West Coast Region (WCR), the fishing industry, state agencies, the West Coast Marine Debris Alliance, marine mammal protection groups and others to address gear innovations to reduce bycatch of marine mammals in crab pot gear.

This project will work collaboratively with industry and managers throughout the region to find, test, and promote practical and effective gear modifications and practices to reduce whale entanglements in crab pot gear.



Rescuers try to free a humpback whale from gear; Moss Landing (Courtesy of Marine Life Studies, Whale Entanglement Team, Peggy Stap, photographer)

1 http://www.opc.ca.gov/webmaster/_media_library/2015/08/Best-Practices-Guide_FINAL-10-28-15.pdf

Reporting: *In Washington, Oregon and California, report whales in distress (injured, entangled, stranded or ship-struck) by calling (877) SOS-WHALE or (877) 767-9425. Try to capture an image or video and note location, time, date and nature of distress*