

2018 MMC AM Whale Entanglement Session Summary

The number of fishing-gear entanglements of humpback and some other whales along the West Coast has increased dramatically. Prior to 2014, two humpback whales entanglements per year were confirmed on the West Coast. In 2014, that number jumped ten-fold to 20, then to 35 in 2015, and peaked at 54 in 2016. The number in 2017 dropped substantially to 16, but was still eight-fold higher than the 'historical' average. Although approximately 30% of these entanglements did not result in deaths or serious injuries, the number of deaths and serious injuries likely now exceeds the allowable limit for the two ESA-listed populations found on the West Coast. In addition, although no entanglements of blue whales occurred through 2014, eight have been confirmed since then. Most entanglements (roughly 80%) have been in gear used by the Dungeness crab fishery; the rest occurred in gear from lobster, spot prawn or sablefish trap gear, or in nets.

Dan Lawson (NMFS' West Coast Region Office) outlined these basic facts and provided further insight into the problem. Most of the entanglements have occurred in Central and Southern California, which may reflect more where people are rather than where entanglements occurred. The best explanation for the spike in entanglements is that complex set of factors coincided to greatly increase the entanglement threat. Those factors included whale distribution, abundance and behavior, environmental variability, prey distribution, and public awareness. Dan diagrammed an ecosystem-based approach to monitoring these factors that NMFS is taking, which would provide managers with risk assessments based on data describing the co-distributions of prey, whales and fishing effort.

Next, Dr. Karen Martien (NMFS' Southwest Fisheries Science Center) addressed population-level impacts of the entanglements. Although NMFS manages all humpback whales on the West Coast as a single stock, recent research has determined that those whales come from three demographically and genetically distinct breeding populations. All of the whales that feed during the summer off California and Oregon, and most of those off Washington, come from breeding populations in Mexico or Central America. The Mexican population is ESA listed as Threatened (~2,800 whales) and the Central American (400-800 whales) as Endangered. Problems exist because current management is using an incorrect stock delineation, population abundance estimates are out of date and highly uncertain, and deaths currently cannot be assigned to a population. Dr. Martien was able to report that research is underway to address these issues. Although not yet assessed using the latest data, whether considering the coast-wide stock, or the Mexican and Central American stocks individually, it appears that the recent numbers of deaths and serious injuries exceed PBR (Potential Biological Removal), and therefore is unsustainable.

The states of California, Oregon and Washington have each established a working group to address the entanglement problem and to seek mitigation measures. The Facilitator (Kelly Sayce) and two members (Dr. Geoff Shester - Oceana, and Dick Ogg – Dungeness crab fisherman) of the California Dungeness Crab Fishing Gear Working Group presented information on the group's progress. The group was formed in 2015 and has members from federal and state agencies, fishermen and environmentalists; the Commission has an advisory role with the group. Significant accomplishments to date include the dissemination of a best-practices guide to fishermen throughout the state, draft recommendations for gear modifications sent to the California Department of Fish and Wildlife, and development of a near

real-time risk assessment tool that can be used to recommend short-term closures of areas with high entanglement risk. Dick provided insight into the operation of the Dungeness crab fishery, the concerns of the fishermen, and actions they have taken, such as gear recovery and the testing of new technology. Geoff described collaborative efforts involving Oceana, Dungeness crab fishermen and gear developers to trial two “ropeless” gear systems, which offer the prospect of removing the vertical lines that are mostly responsible for entanglements from the environment. Representatives from the Oregon and Washington working groups participated in the discussion session and contributed experience and insights gained by their groups.

Finally, Dr. Tim Werner of the New England Aquarium described the experiences scientists and gear developers have had addressing the issue of the entanglement of large whales in lobster and crab gear in New England. Entanglements in U.S. and Canadian gear are a major source of deaths for Endangered North Atlantic right whales, are believed to be one of the main factors causing the population to decline. Approaches that reduced the number of and lengths of lines, altered the characteristics of lines (e.g., strength, color, stiffness, or buoyancy), used acoustic deterrents, or closed areas had limited success, and in the end did not reduce the rate and severity of entanglements. Researchers in New England are now focused on pursuing the use of rope with weak links for some segments of the fishery and ropeless systems for other segments. In conclusion, Dr. Werner cautioned the West Coast groups to be wary of assumptions, measure success in terms of population viability, prioritize based on conservation urgency, design for the local circumstances and network with other groups.