



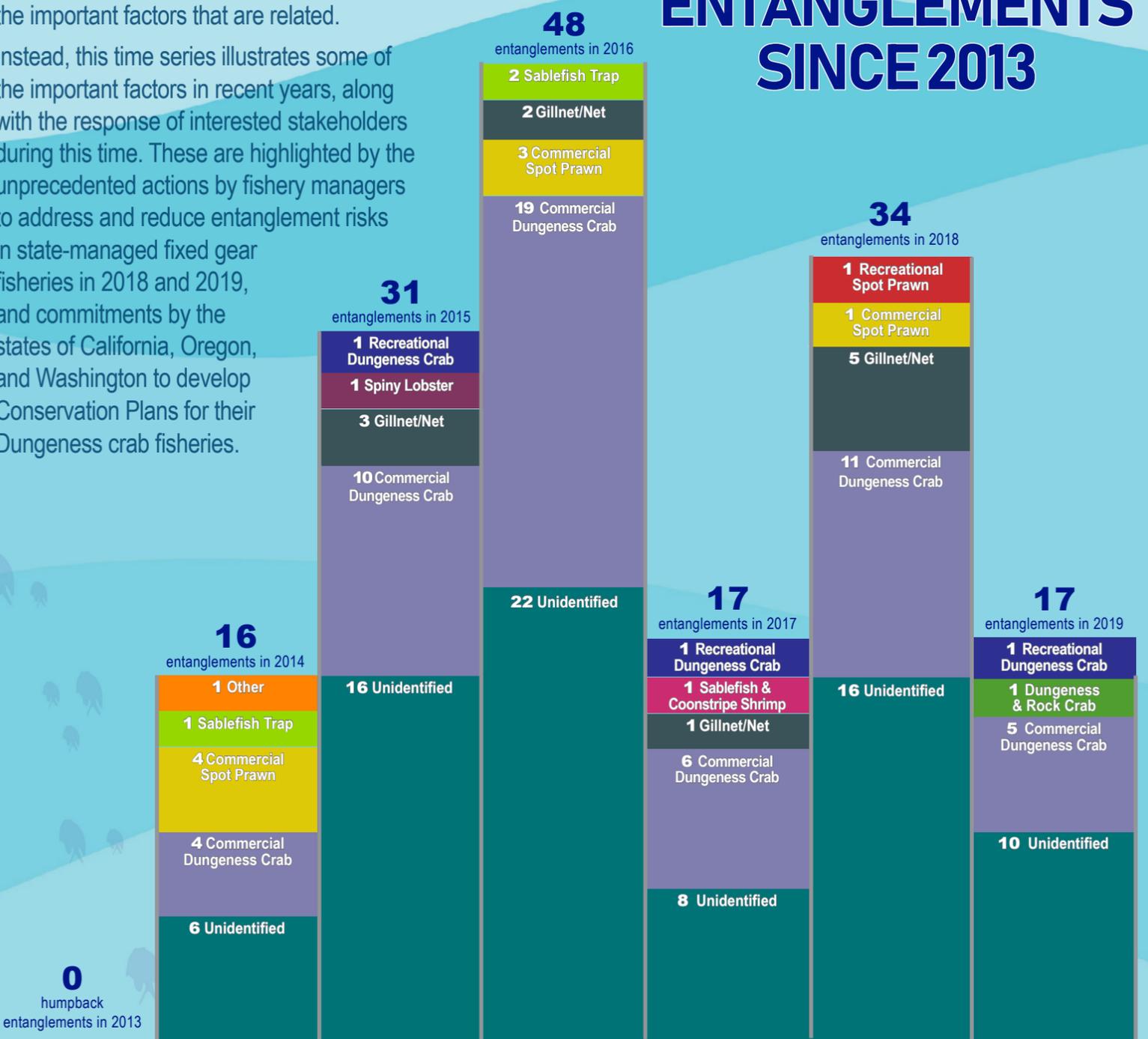
**NOAA**  
**FISHERIES**  
WEST COAST REGION



Since 2013, there has been a large increase in the overall number of whale entanglements reported along the U.S. west coast. While ~50% of entanglement reports cannot be attributed to a specific source, Dungeness crab fishing gear is the most common source that has been identified during this period. The causes for the increase in reported entanglements are complex, and the time series of developments as presented here does not attempt to explain or account for all the important factors that are related.

Instead, this time series illustrates some of the important factors in recent years, along with the response of interested stakeholders during this time. These are highlighted by the unprecedented actions by fishery managers to address and reduce entanglement risks in state-managed fixed gear fisheries in 2018 and 2019, and commitments by the states of California, Oregon, and Washington to develop Conservation Plans for their Dungeness crab fisheries.

# HUMPBACK WHALE ENTANGLEMENTS SINCE 2013



## 2013 2014 2015 2016 2017 2018 2019

NOAA West Coast Region and Northwest and Southwest Fisheries Science Centers have been directly involved in providing scientific and management expertise and support to interested stakeholders through a wide variety of interactions as these entanglements have unfolded. In particular, NOAA Fisheries works to understand the ecosystem dynamics that are contributing to entanglement risk and develop the means to provide information, analysis, and advice to managers and interested stakeholders as quickly as possible.

### MANAGEMENT ACTIONS

- Summer 2015** NOAA Fisheries/ California Department of Fish & Wildlife (CDFW) whale entanglement public meeting convened in response to increased entanglement reports.
- Fall 2015** California Dungeness Crab Fishing Gear Working Group convened. ([link](#))

- Spring 2017** Pacific States Marine Fisheries Commission (PSMFC)/ NOAA Fisheries Workshop on Gear Innovations to Reduce Whale Entanglement ([link](#))
- Spring 2017** Oregon Whale Entanglement Working Group convened. ([link](#))
- Fall 2017** Washington Whale Entanglement Working Group convened. ([link](#))

- Summer 2018** PSMFC/NOAA Fisheries Whale Entanglement Forensic Review Workshop ([link](#))
- Fall 2018** CA legislation passed provides authorities to take action in commercial Dungeness crab fishery in response to entanglement issue. ([link](#))

- Spring 2019** Statewide closure of commercial CA Dungeness crab fishery in concert with litigation settlement ([link](#))
- Spring/Summer 2019 - CA, OR, and WA** announce intentions to draft Conservation Plans and seek ESA permits for their commercial Dungeness crab fisheries.
- Fall 2019** Washington Department of Fish & Wildlife proposes regulations in the commercial Dungeness crab fishery to take action in response to entanglement issue. ([link](#))
- Fall 2019** CDFW Director delays opening of commercial Dungeness crab season to avoid marine life entanglement risk. ([link](#))



**SCIENCE**  
**Summer/ Fall 2018** California Current Ecosystem (CCE) Marine Mammals Survey – NOAA Fisheries survey collects data on whale population abundance, environmental monitoring, photo ID, entanglement reporting.

**MANAGEMENT ACTIONS**  
**2013** Trap limit programs and buoy tags are in effect for CA/OR/WA Commercial Dungeness crab fisheries.

**MANAGEMENT ACTIONS**  
**Late 2015 to Spring 2016** Unprecedented delays in Dungeness crab seasons delayed for domoic acid concerns.

