

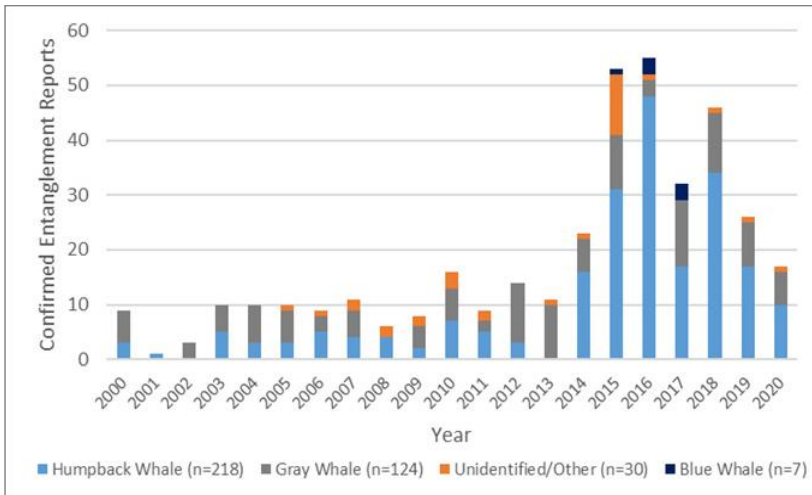


**NOAA
FISHERIES**
WEST COAST REGION

2020 West Coast Whale Entanglement Summary

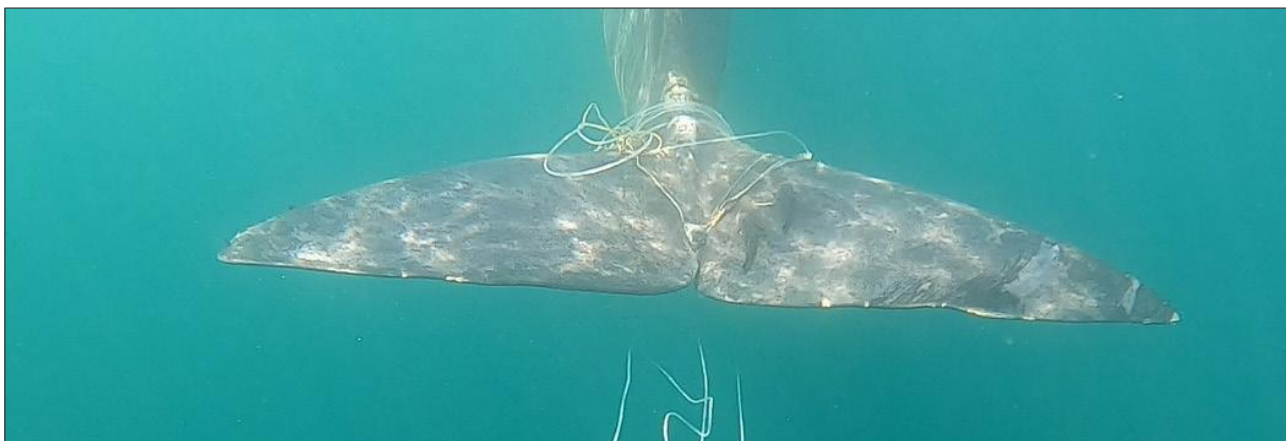
Each year, NOAA's National Marine Fisheries Service (NOAA Fisheries) collects, verifies, documents, and responds to reports of large whale entanglements along the U.S. West Coast from a variety of sources including boaters, fishermen, law enforcement, marine resource agencies, and the public. The reports received or known to have originated from U.S. West Coast sources in 2020, along with other relevant information and developments surrounding the entanglement issue on the U.S. West Coast, are included in this summary. NOAA Fisheries publishes a separate national entanglement report that summarizes national data on reports and confirmed entanglements, as well as highlights emergency response activities to help whales in U.S. waters by the U.S. Large Whale Entanglement Response Network nationwide.

In 2020, entanglement reporting on the U.S. West Coast continued to be higher than what had occurred historically prior to 2014, although fewer confirmed reports were received than in any year since 2013 (Figure 1). A total of 17 whales were confirmed entangled off the coasts of Washington, Oregon, and California in 2020. Similar to recent years, humpback whales continue to be the most common species entangled with 10 separate entanglements confirmed in 2020. There were also six gray whales and one sperm whale confirmed entangled. Information on the identified origins of entanglements, the locations of observations, and known outcomes from these entanglements are provided in this summary. In addition, other important entanglement developments during 2020 are also summarized.



Above: Figure 1. Number of confirmed entanglements by species reported to the West Coast Region each year from 2000 to 2020.

Below: Humpback whale entangled with an unidentified gillnet around head (and over back) reported off San Diego, CA.



Left: Sperm whale fluke entangled with unidentified monofilament line, reported off Santa Barbara, CA.

2020 Entanglement Report Locations

SPECIES KEY

- Humpback Whale
- Gray Whale
- ▲ Sperm Whale

FISHERY

Washington Dungeness Crab (1)

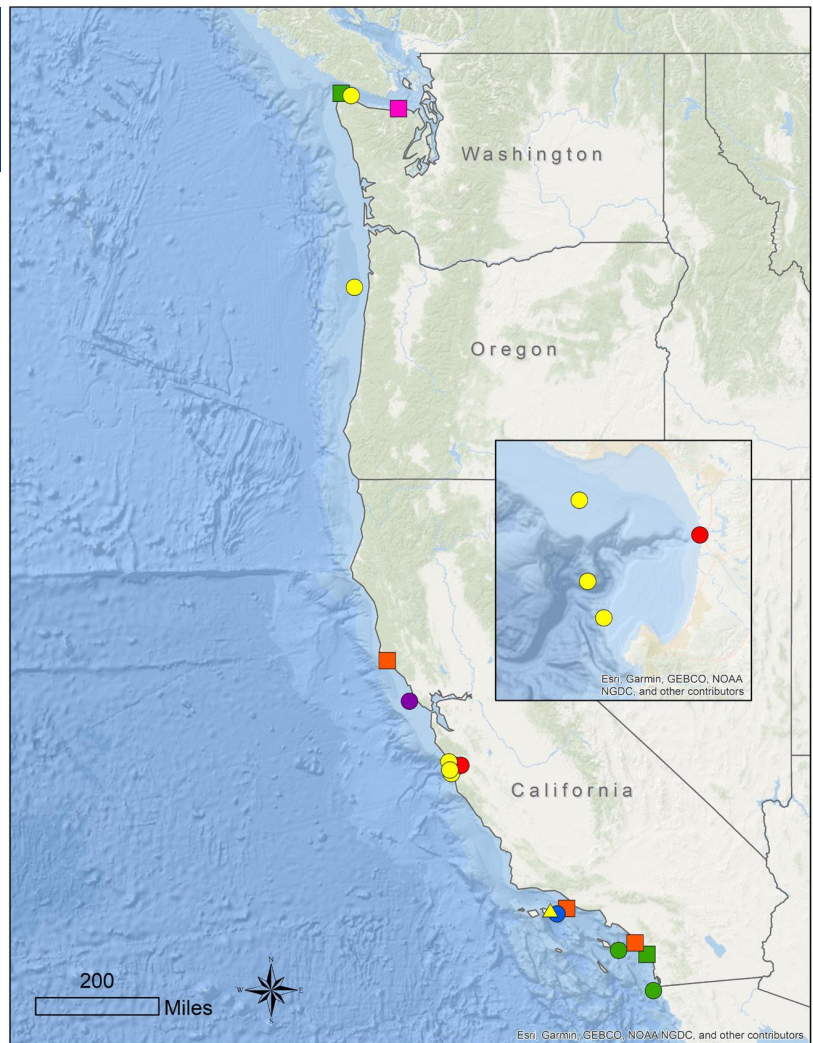
Oregon Dungeness Crab (1)

California Dungeness Crab (1)

Spot Prawn (1)

Gillnet (4)

Unknown (9)



Species	Confirmed (U)	Report Location	Fisheries
Humpback	10 (3)	8 CA, 1 OR, 1 WA	2 commercial Dungeness crab, 2 unidentified gillnet, 1 commercial spot prawn, 5 unidentified
Gray	6 (4)	4 CA, 2 WA	1 commercial Dungeness crab, 1 tribal gillnet, 1 unidentified gillnet, 3 unidentified
Sperm	1 (0)	1 CA	1 unidentified

Alive/Dead	Entanglement Response Outcomes
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<p>2 humpback whales and 1 gray whale were reported as dead</p> <ul style="list-style-type: none"> • 1 humpback whale entangled with Oregon commercial Dungeness crab gear washed ashore dead in California (June), • 1 dead humpback whale entangled with unidentified line and buoys was caught in a groundfish trawl net in OR (July), • 1 gray whale died entangled in a tribal salmon gillnet in Washington (August). • All the remaining entanglement reports were associated with live animals. 	<p>In 2020, the COVID-19 pandemic reduced overall reporting and entanglement response network capabilities as social distancing could not be achieved on the small vessels required for entanglement events. There were also fewer vessels both on the water and available to sight entangled whales and provide documentation and reporting. As a result, the few responses that were initiated were limited in capacity.</p> <ul style="list-style-type: none"> • There were 8 cases where a response was initiated (5 humpback, 2 gray, 1 sperm whale). <ul style="list-style-type: none"> • 2 response cases (1 gray, 1 humpback whale) where all gear was removed, • 1 response cases (humpback whale) where some but not all the gear was removed, • 1 response case (humpback whale) documented a self-released from the gear, • 4 response where no gear was removed (2 humpback whales, 1 gray, 1 sperm whale). • There were 9 cases where no response was initiated (5 humpback, 4 gray whales). • In addition, there were 3 responses for reports that could not be confirmed
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Explanatory Notes

<ul style="list-style-type: none"> • One humpback whale entanglement involved multiple sets of California Dungeness crab gear from two different fishermen. • The origins of commercial Dungeness crab gear entanglements were: California (1), Oregon (1), and Washington (1).

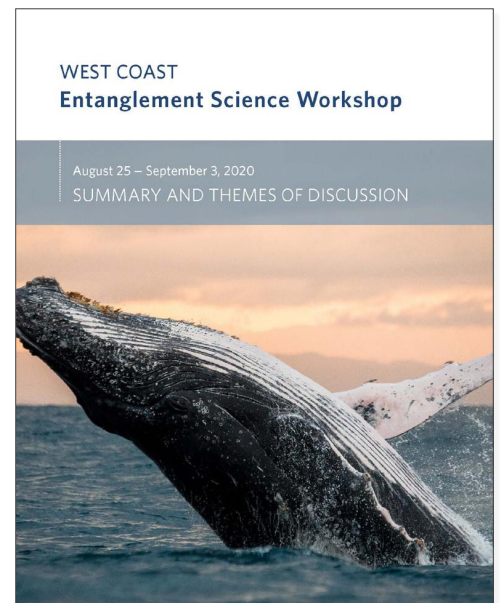
West Coast Entanglement Science Workshop

The West Coast Entanglement Science Workshop convened in August by The Nature Conservancy and the California Ocean Protection Council, in partnership with NOAA Fisheries, Pacific States Marine Fisheries Commission, and fishery managers from California, Oregon, and Washington.

The workshop consisted of science presentations by researchers and targeted discussions with invited fishery managers, fishing industry representatives, and nongovernmental stakeholders to help inform development of management strategies to reduce whale and sea turtle entanglement risk within U.S. West Coast fixed-gear fisheries. Topics included:

- Management frameworks for entanglement risk
- Forecasting and monitoring marine species dynamics
- Understanding fishing dynamics
- Understanding metrics for entanglement science
- Social and economic dimensions of managing entanglements
- Overcoming barriers to gear innovations
- Understanding and framing risk and tradeoff decisions

A summary report including recordings of presentations can be found on the California Ocean Protection Council's workshop web page: <https://www.opc.ca.gov/west-coast-entanglement-science-workshop/>.



Whale Entanglement Scars

While no blue whales were confirmed entangled in 2020, there was a well-documented blue whale with scarring along its back that is consistent with a recent previous entanglement (photo 1). In another case, a humpback whale was found dead on the beach with its fluke severed (photo 2), consistent with injuries that are expected to occur when entanglements are wrapped tightly around the tail (photo 3).

These reports highlight the challenging nature of work to understand the full extent of the entanglement issue given that: (1) not all entanglements that occur are documented and reported; (2) entanglements are almost never observed as they are occurring; and (3) often times the documentation that is gathered from reports only provide limited amounts of direct information. NOAA Fisheries is engaged in significant efforts with many partners to document, investigate, and analyze numerous pieces of forensic data and other information to reconstruct the sequence of events from each case reported. This detective work ultimately contributes to solving the bigger puzzle of how human activities impact populations of protected species.



Photo 1: Blue whale with scars consistent with indications of entanglement. Appears that line migrating down the back, towards the tail. Documented off Santa Barbara, CA.



Photo 2: dead humpback whale with its fluke likely severed from a previous entanglement, documented on Manchester State Beach, CA.



Photo 3: dead humpback whale entangled with fishing gear wrapped around the tail, in the process of severing the flukes from the whale, documented at Point Reyes, CA.

Publication Notes and Helpful Links:

- NOAA Tech Memo publication summarizing WCR whale entanglements from 1982-2017 published in February 2020 (<https://www.fisheries.noaa.gov/resource/document/large-whale-entanglements-us-west-coast-1982-2017>)
- Jarrod Santora et al. paper published in February 2020: Habitat compression and ecosystem shifts as potential links between marine heatwave and record whale entanglements (<https://www.nature.com/articles/s41467-019-14215-w>)
- NOAA Integrated Ecosystem Assessment page for reducing West Coast whale entanglements: (<https://www.integratedecosystemassessment.noaa.gov/regions/california-current/cc-projects-whale-entanglement>)

How to Report an Entangled Whale

The public plays an important role in saving distressed whales, like those that become entangled. Prompt reporting and monitoring of the animal are the best ways to help.

You can report whales in distress to either:
the 24/7 reporting hotline:
1-877-SOS-WHALE
(767-9425)
or
the United States Coast Guard on VHF CH-16

Entangled whales are unpredictable and potentially dangerous. Please keep a safe distance and do not approach the animal. You can continue to monitor the animal's condition and document the encounter while waiting for a response team to arrive.

What to include in your Report

1. Location of the animal;
2. A detailed description of the color and gauge of rope;
3. Location of gear on the whale;
4. Color and size of buoys;
5. Direction of the whale's movement, including whether it is solitary or with a group;
6. Behavior of the whale, including whether it is surfacing or diving, and the length of dive times;
7. Species of whale; and
8. Size and condition of the whale.

Documentation in the form of photos and videos of the entangled whale can provide valuable information to the responders and resource managers. The information from each whale entanglement contributes to our larger knowledge-base and can be a valuable tool in helping to prevent future entanglements.



Fin whale (*Balaenoptera physalus*) 75-85 feet



Humpback whale (*Megaptera novaeangliae*) 40-60 feet



Gray whale (*Eschrichtius robustus*) 39-46 feet



Blue whale (*Balaenoptera musculus*) 88-108 feet