



**NOAA  
FISHERIES**

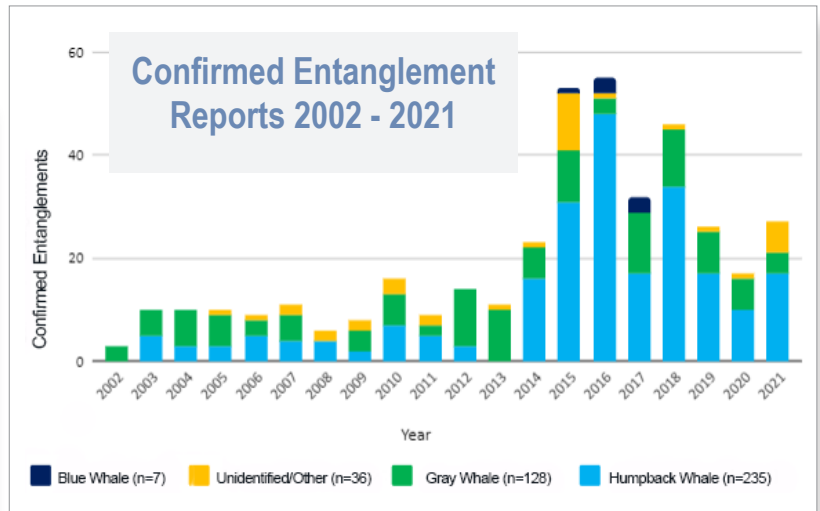
# 2021 West Coast Whale Entanglement Summary

Each year, 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. Included in this summary are the reports received or known to have originated from U.S. West Coast sources in 2021, along with other developments related to entanglements. NOAA Fisheries publishes a separate national entanglement report that summarizes national data on reports and confirmed entanglements, as well as highlights the U.S. Large Whale Entanglement Response Network’s emergency response activities.

In 2021, entanglement reporting on the U.S. West Coast continued to be higher than what had occurred historically prior to 2014, although the number

of reports was lower than during the peak years from 2015-2018 (Figure 1). While several measures have been implemented in recent years to reduce entanglement risks, it is difficult to determine their effectiveness as the COVID-19 pandemic likely continued to affect observations, reporting, and response in 2021. We confirmed 27 entangled whales off the coasts of Washington, Oregon, and California, or off the coast of other countries but entangled in U.S. commercial fishing gear. Similar to recent years, humpback whales continue to be the most common species entangled with 17 separate entanglements confirmed in 2021. Additional entanglements confirmed this year include: four gray whales, two transient killer whales, one fin whale, one minke whale, and two unidentified whales.

Below: Gray whale with rope around the head and trailing down the body. Reported off La Push, WA in June, 2021.



Above: Figure 1: Number of confirmed entanglements by species reported to the West Coast Region each year from 2002 to 2021.

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Above: Humpback whale entangled with gillnet around the tailstock and around the fluke. Entanglement reported off Los Angeles County, CA in November, 2021.

# 2021 Entanglement Report Locations

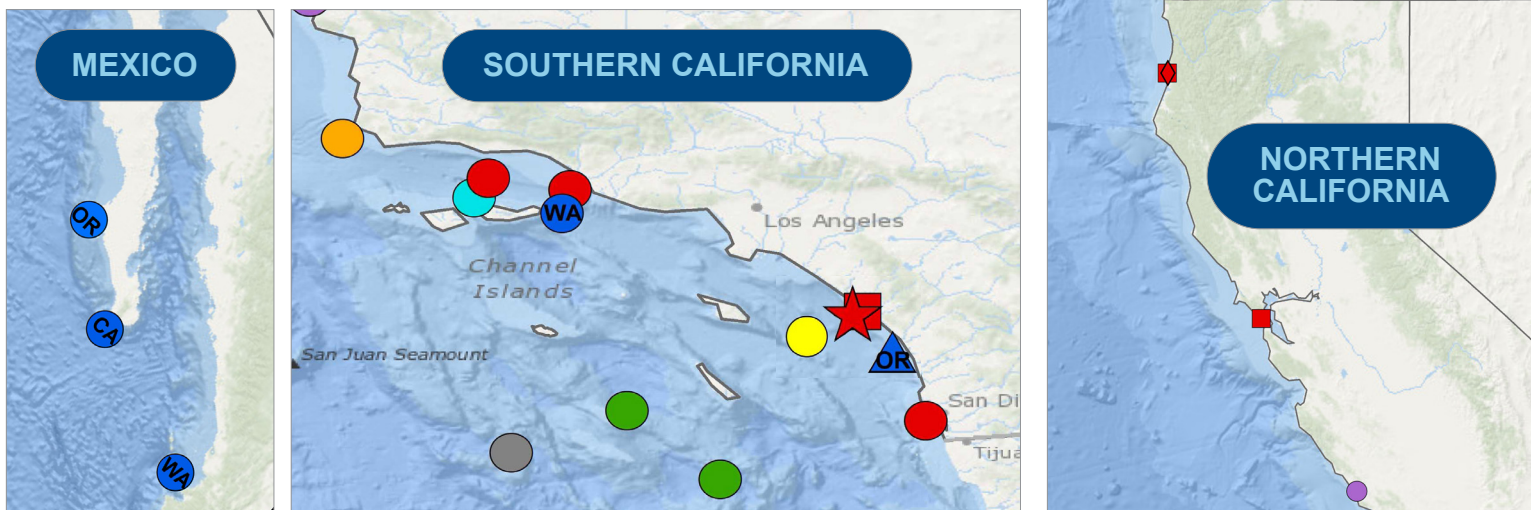
## GEAR TYPES

- Commercial Dungeness crab
- Experimental commercial box crab
- Commercial spiny lobster
- Gillnet
- Commercial spot prawn
- Recreational hook and line
- Drift gillnet
- Unidentified gear

## SPECIES

- ★ Fin whale
- Gray whale
- Humpback whale
- ✱ Killer whale
- ▲ Minke whale
- ◆ Unidentified whale

The origins of reported commercial Dungeness crab gear entanglements that were identified are labeled as follows in the map: CA, OR, WA and U for unidentified (gear was from either OR or Puget Sound).



Species	Confirmed (Unconfirmed)	Report Location of Confirmed Reports	Fisheries
Humpback	17 (3)	11 CA, 1 OR, 2 WA, 3 Mx	5 commercial Dungeness crab, 2 CA large mesh drift gillnet, 1 CA experimental box crab, 1 unidentified gillnet, 1 CA commercial spiny lobster, 1 CA commercial spot prawn, 1 recreational hook and line, 5 unknown
Gray	4 (3)	3 CA, 1 WA	4 unknown
Transient Killer	2 (0)	2 WA	2 unknown
Fin	1 (0)	1 CA	1 unknown
Minke	1 (0)	1 CA	1 commercial Dungeness crab
Unidentified	2 (5)	1 CA, 1 OR	2 unknown

## Alive/Dead Explanatory Notes

All confirmed entanglement reports were associated with live whales. One unidentified whale suspected to have been entangled (unconfirmed) was reported dead.

### Entanglement Response Outcomes

- In 2021, Covid-19 reduced overall reporting and entanglement response network capabilities. Social distancing is almost impossible in the close quarters and small vessels required on these entanglement events. There were also fewer vessels on the water available to help sight entanglements, and to standby and assist with documentation and reporting. As a result, the few responses that were initiated were often limited in capacity.
- 19 cases where a response was initiated (4 gray, 13 humpback, 1 minke, 1 unidentified whale).
  - 3 response cases (2 humpback, 1 minke whale) where all gear was removed.
  - 4 response cases (1 gray, 3 humpback whales) where some but not all the gear was removed.
  - 12 response where no gear was removed.
- There were 8 cases where no response was initiated (1 fin, 4 humpback, 2 killer, 1 unidentified whales).
- There was 1 case where the whale (1 transient killer whale) self-released from the gear.
- There were responses initiated for 4 unconfirmed reports.

- The origins of commercial Dungeness crab gear entanglements were CA (1), OR (2), and WA (2). Another case involved commercial Dungeness crab gear that appears to have been from either OR or Puget Sound, WA.
- 3 humpback whale entanglements were reported from Mexico this year with commercial Dungeness crab gear—one from each state: CA, OR, WA.
- Both Washington commercial Dungeness crab entanglements included a summer tag, indicating the entanglement occurred after May 1, 2021.
- Minke whale entanglement was identified with OR Dungeness crab gear.
- 1 additional gray whale stranded dead in WA (not entangled) with wounds consistent with a previous entanglement (March).



# Identifying the Sources of Entanglements - Gear Marking is the Key!

Gear marking is an incredible tool used to understand the origins of entangling gear and prevent whale entanglements in the future. When we receive a report of an entangled whale, NOAA Fisheries works closely with state, federal, and tribal fishery managers, as well as other experts to identify and verify that the origins of the entangling gear are accurately identified. U.S. West Coast states have implemented requirements for gear marking in both commercial and recreational fisheries that help us identify the origins of entanglements.



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Above: Underwater picture shows multiple wraps of line around the humpback whale tail and the yellow buoy tag and buoy. Entanglement reported from Mexico in June 2020.

Below: Humpback whale entanglement reported from Mexico, shows three buoys and a summer buoy tag from Washington commercial Dungeness crab.



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## Dungeness Crab Buoy Tags

- Buoy tags are required in U.S. West Coast Dungeness crab fisheries as part of implementing trap limit programs.
- We can use the color/shape patterns to identify the state and gear type associated with entanglements when buoy tags are documented.
- These markings contribute to why Dungeness crab gear is the most common origin of entanglements identified.<sup>1</sup>

## Recent Improvements in Gear Marking

- California Department of Fish & Wildlife requires that all buoys used in commercial trap fisheries be marked on multiple sides with letters specific to each fishery.<sup>2</sup>
  - In 2021, we identified three humpback whale entanglements originating from California fisheries using the new letter markings in combination with other information.
- Washington Department of Fish & Wildlife requires buoy lines used in the coastal commercial Dungeness crab gear to be marked with 12 inches of red in at least two places: no more than six ft from the main buoy and from the pot.<sup>3</sup>
  - The red line marks were not evident in the documentation of the 2 Washington coastal commercial Dungeness crab entanglements we identified through buoy tags in 2021.



Above: This buoy marked with the letter “S” was involved with a humpback whale entanglement reported near Santa Barbara, CA.

## Understanding Timing

- It is a challenge to pinpoint the timing of when entanglements are actually occurring knowing that whales can be entangled for weeks or months before being detected.
- New regulations for coastal commercial Dungeness crab fisheries in Oregon<sup>4</sup> and Washington<sup>5</sup> require summer buoy tags to be attached to buoys after May 1 each year.
- In 2021, we identified two entanglements that had summer buoy tags, indicating generally the time period when the entanglement occurred.

## Looking Ahead

Forensic review of entanglement reports by NOAA Fisheries and stakeholders have informed gear marking advancements that are helping to increase our ability to identify the origins of entanglements. However, additional advancements in gear marking are needed across all potential sources of entanglements. Ideally, all gear deployed (line, buoys, netting) would be marked in a manner that has a good chance of being documented during entanglement events. Additional improvements in gear marking and increased awareness of how to document the gear involved will further help us evaluate the origins of U.S. West Coast entanglements.

<sup>1</sup> <https://www.fisheries.noaa.gov/resource/document/large-whale-entanglements-us-west-coast-1982-2017>

<sup>2</sup> <https://wildlife.ca.gov/Notices/Regulations/Marking>

<sup>3</sup> <https://wdfw.wa.gov/fishing/commercial/crab/coastal/regulations-licensing>

<sup>4</sup> <https://secure.sos.state.or.us/oard/viewSingleRule.action?ruleVrsnRsn=283998>

<sup>5</sup> <https://app.leg.wa.gov/WAC/default.aspx?cite=220-340-480>

## Publication Notes and Helpful Links:

- Samhouri et al. (2021): Marine heatwave challenges solutions to human-wildlife conflict: <https://www.fisheries.noaa.gov/feature-story/climate-extreme-intensifies-conflict-between-people-and-whales>
- Feist, B.E., J.F. Samhouri, K.A. Forney, and Lauren E. Saez. 2021. Footprints of fixed-gear fisheries in relation to rising whale entanglements on the U.S. West Coast. *Fish Manag Ecol.* 28:283–294.
- NOAA Integrated Ecosystem Assessment page for 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, including those that are 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 and legal 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. Description of rope: color, size; line marking description/ location on line;
3. Location of gear on the whale;
4. Description of buoys: color, size, markings; description of buoy tag;
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 if they can be safely gathered 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