

**NOAA
FISHERIES**

National Report on Large Whale Entanglements Confirmed in the United States in 2017



In 2017, 76 confirmed cases of large whale entanglements were documented along the coasts of the United States. Seventy of these U.S. entanglement cases involved live animals and six involved dead animals. All were independently confirmed by the Large Whale Entanglement Response Network. The number of confirmed cases for 2017 (n=76) does not include multiple reports of any individual entangled whale.

NOAA Fisheries tracks subsequent reports of a previously reported entangled whale to better understand the nature of the entanglement, associated injuries, and the animal's health status. The subsequent reports have been combined into a single record for the purposes of this summary to provide clarity on the number of entangled individuals. Fourteen additional cases were reported, but those entanglements could not be confirmed with the information received and the whales were not relocated by network members; thus, those reports were tracked but not included in the overall total. This summary report therefore represents a conservative estimate of the number of large whale entanglements confirmed in U.S. waters. Some of these entanglements may have originated in waters outside the United States given that large whales travel long distances between their feeding and breeding grounds, which can cross international boundaries and oceans. NOAA Fisheries tries to collect and identify entangling gear during each response in order to work with fishing communities to reduce future entanglements. However, definitive identification is not always possible.

Comparing Confirmed Entanglements in 2017 to Past Years

The number of confirmed entanglement cases nationwide in 2017 (n=76) is similar to the 10-year (2007-2016) average annual number of confirmed entanglements ($n=69.5 \pm 21.7$). Although the number of overall entanglements in 2017 is within the 10-year average, the number of entanglements exhibits a decrease from the higher numbers seen in recent years in the Northeast, Mid-Atlantic, and West Coast regions (Figure 1). The five most frequently entangled large whale species in 2017 were humpback whales (*Megaptera novaeangliae*), gray whales (*Eschrichtius robustus*), minke whales (*Balaenoptera acutorostrata*), blue whales (*Balaenoptera musculus*), and North Atlantic right whales (*Eubalaena glacialis*). In three cases, although the entanglement was confirmed, the whale could not be identified to species, and therefore is considered "unidentified."

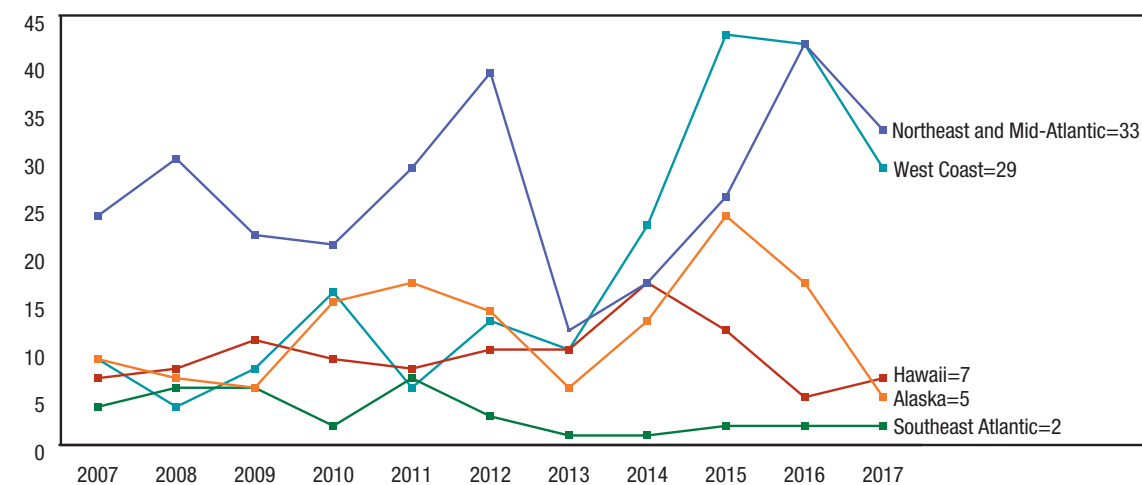
Entanglement responders from Georgia Department of Natural Resources work to remove gear from an entangled North Atlantic right whale on January 5, 2017. Photo taken under Permit No. 18786-02.





Figure 1: Confirmed large whale entanglements by region from 2007-2017

In 2017, most regions had a decrease or remained level in the number of entanglements when compared to recent years.



Entanglement responders from Georgia Department of Natural Resources (above) work to remove gear from an entangled North Atlantic right whale on January 5, 2017. Photo taken under Permit No.18786-02.

Humpback whale (*Megaptera novaeangliae*) (n=49 in 4 Regions): Humpback whale entanglements were only slightly elevated in 2017 compared to previous years (Table 1). Humpback whales are the most frequently reported entangled large whale species and represent 68.1 percent of all confirmed entanglements since 2007. NOAA Fisheries declared an Unusual Mortality Event (UME) for humpback whales due to elevated strandings along the U.S. East Coast, and three cases had evidence of entanglement or interactions with fishing gear.

Gray whale (*Eschrichtius robustus*) (n=11 in 1 Region): Gray whale entanglements in 2017 in U.S. waters were much higher than the 10-year average (Table 1). In the United States, gray whales only occur in the Pacific Ocean, and most gray whales migrate between their summer foraging grounds in Alaska and their winter breeding grounds in Mexico, passing by Washington,

Oregon, and California on each trip. (However, a few gray whales have been reported in the Arctic and Gulf of Alaska in winter). The increase in entangled gray whales may suggest the animals overlapped with West Coast fishing efforts more than usual in 2017 during their annual migrations.

Minke whale (*Balaenoptera acutorostrata*) (n=7 in 1 Region): Minke whale entanglements were elevated in 2017 compared to previous years (Table 1). All confirmed minke whale entanglements occurred along the coast of New England, in the Gulf of Maine. All entanglements involved line and pot gear and four of the whales were reported after they had died.

Blue whale (*Balaenoptera musculus*) (n=3 in 1 Region): Blue whale entanglements have only recently been documented in U.S. waters, and three cases were reported in 2017 (Table 1).

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The first known blue whale entanglement in U.S. waters was confirmed in 2015, and 2017 represents the third year in a row that NOAA Fisheries has documented an entanglement case for this species. Despite their global distribution, blue whales are most commonly found in U.S. waters along the West Coast, and all confirmed entanglements of blue whales have been off the coast of California. While the overall number of 2017 confirmed entangled blue whales remains small ($n=3$), and represents fewer animals than for some other species (Table 1), it is important to continue tracking entanglement trends in this species. Confirmed cases from the past 3 years suggest that entanglements may now represent an emerging threat to this species.

North Atlantic right whale (*Eubalaena glacialis*) ($n=2$ in 2 Regions): North Atlantic right whale entanglements in U.S. waters were lower in 2017 than the 10-year average (Table 1). Although the U.S. confirmed entanglements were

lower, the overall entanglement of this species remains high and of concern. Historically, North Atlantic right whales have migrated along the U.S. East Coast between their summer feeding grounds off the coasts of New England and Canada and their winter breeding grounds off the coasts of Georgia and northern Florida. NOAA Fisheries recently declared an Unusual Mortality Event (UME) for this species, based on a high number of dead whales discovered in Canadian and U.S. waters in 2017 and 2018. Five of the deaths in Canadian waters in 2017 were attributed to entanglements in fishing gear. In addition to two live entangled whales confirmed in U.S. waters, two North Atlantic right whales that stranded dead in U.S. waters are thought to have died due to entanglements. Given the endangered status of North Atlantic right whales—recent population estimates indicate only about 450 individuals remain—and declining trend of the species, any entanglement is a major threat to their recovery.

Table 1: The number of confirmed entanglements in 2017 and the 10-year average number of entanglements for each large whale species

Species	Confirmed Entanglements in 2017	10-Year Average (2007-2016)
Humpback Whale	49	47.6 ± 19.5
Gray Whale	11	6.3 ± 4.2
Minke Whale	7	5.0 ± 1.5
Blue Whale	3	0.4 ± 0.9
North Atlantic Right Whale	2	4.6 ± 2.6
Unidentified Whale	2	2.1 ± 1.8
Fin Whale	1	2.9 ± 1.5
Sei Whale	1	0.3 ± 0.5
Bowhead Whale	0	2.1 ± 1.8
Sperm Whale	0	0.4 ± 0.9

Five most frequently entangled large whale species in 2017:



humpback whales



gray whales



minke whales



blue whales



North Atlantic right whales

Location of Confirmed Entanglement Cases

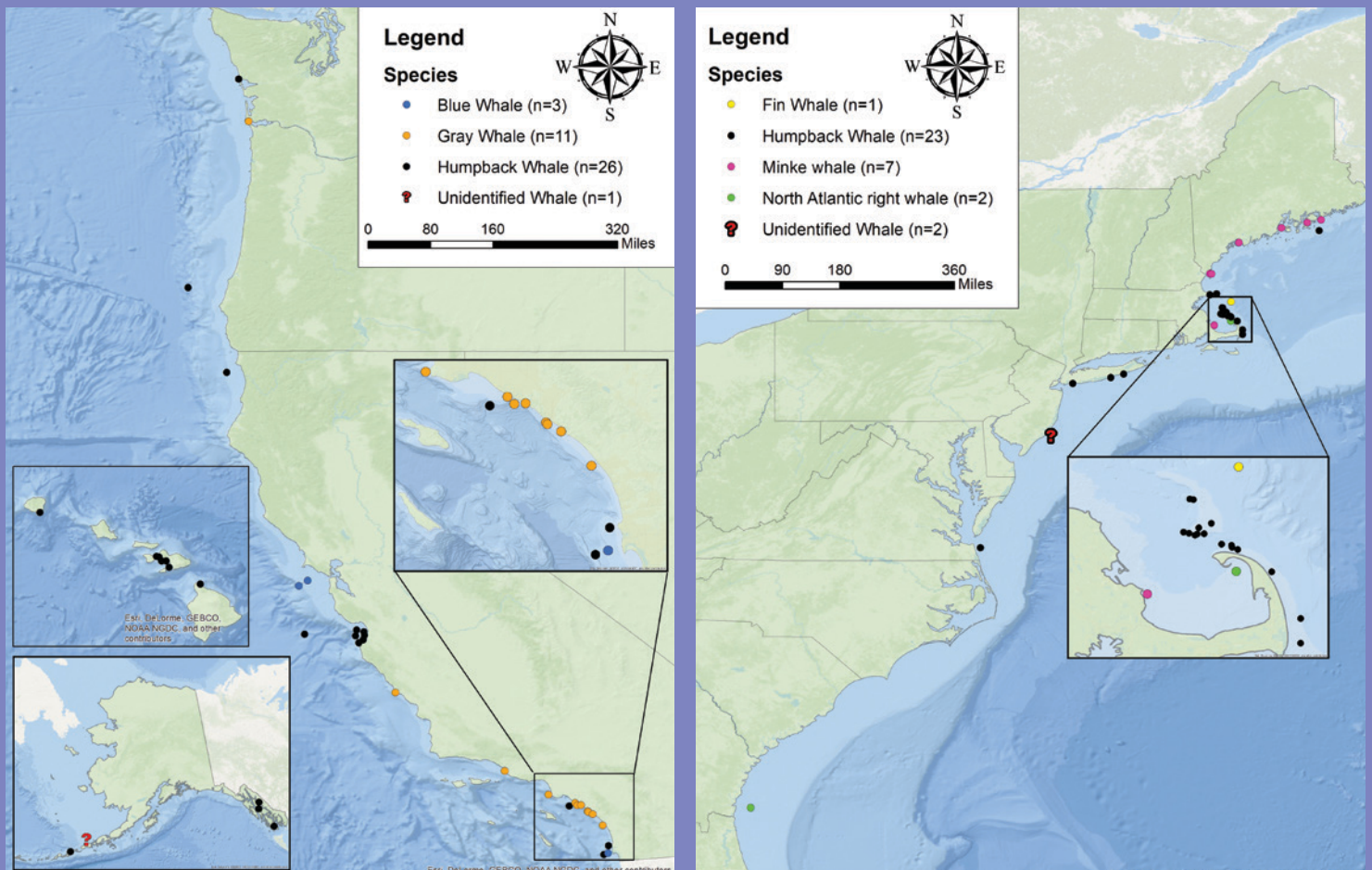
In 2017, large whale entanglements were reported and confirmed in the waters of 13 states, along all U.S. coasts except within the Gulf of Mexico. More than half of all confirmed entanglements occurred in two states—32.9 percent in California waters (n=25) and 26.6 percent in Massachusetts waters (n=20). In California, a large number of entangled humpback whales were found in Monterey Bay (n=7) and most of the entangled gray whales were found in the lower half of the Southern California Bight (n=8). A high number of humpback whale entanglements were confirmed off the coast of the Main Hawaiian Islands (n=7), accounting for 14.3 percent of all humpback whale entanglements and 9.2 percent of all entanglements for all species combined. The entanglements off the coast of Massachusetts were concentrated along Cape Cod and Stellwagen Bank, and primarily involved humpback whales (n=16) (Figure 2).



An entangled humpback whale off of San Diego, CA. Documented large whale entanglements often involve the tail and flukes. Photo taken under Permit No. 18786. Credit: Keith Yip

Figure 2: The locations of all confirmed entanglement sightings in 2017.

Areas with significant numbers of whale entanglements include Massachusetts, California, and Hawaii.



Sources of Entanglements

Approximately 70 percent of confirmed cases in 2017 were entangled in fishing gear (line and buoys, traps, monofilament line, and nets). Another 24 percent of confirmed cases involved line that could not be attributed to a fishery (i.e., no clear evidence of traps, nets, or other gear associated with fishing). Although various marine industries introduce gear into the ocean (e.g., ropes, lines, nets, chains, and cables), one of the most common sources is commercial or recreational fishing. Therefore, it is likely some of the cases involving only line were incidental to fishing activities. Conversely, only 2 percent of entanglements were caused by non-fishery-related marine debris or were of unknown origin not related to fishing gear, further highlighting that fishing gear remains the largest entanglement threat to large whale species.

Rescue Operations to Disentangle Large Whales

Of the 76 confirmed large whale entanglements in 2017, the Large Whale Entanglement Response Network was able to mount a response to 50 cases, and 25 animals (32.9%) were fully or partially disentangled (Table 2). Separately, one blue whale was disentangled by members of the public, and therefore did not require a network response.¹ While the network mobilized a response for an additional 24 live whales reported to the hotlines, those animals were not located by responders, and are presumed to still be entangled, have died, or have shed their gear.

¹ Section 101(d) of the Marine Mammal Protection Act (MMPA) allows "Good Samaritans" to assist entangled marine mammals under special conditions. However, since the Endangered Species Act (ESA) does not have a comparable provision, the "Good Samaritan Exemption" does not apply to ESA-listed species of large whales. Thus, only professionally-trained responders authorized under MMPA/ESA Permit No. 18786-02 should attempt rescues of ESA-listed species. Due to human safety concerns, we further recommend that only professionally trained responders attempt whale disentanglements, even if legal under the MMPA.

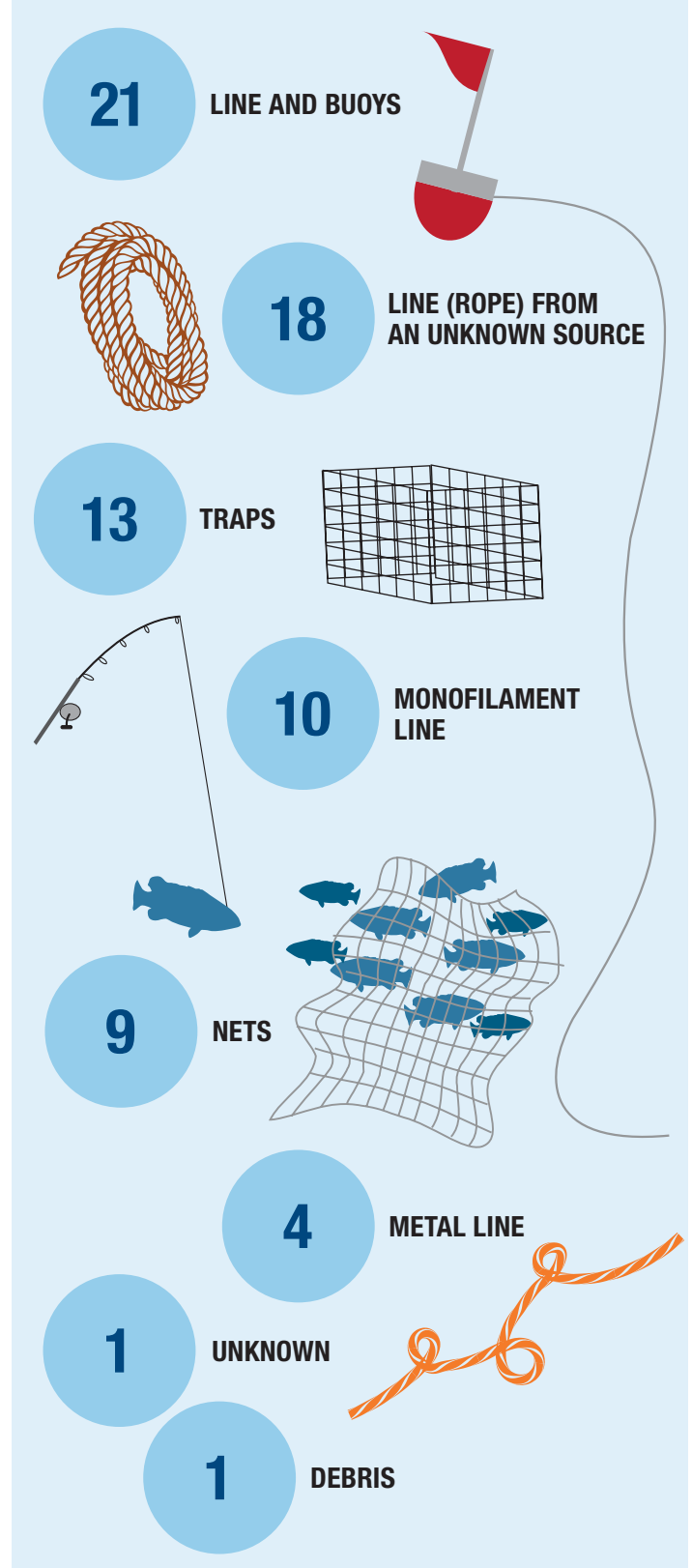
Table 2: The outcomes of all confirmed 2017 entanglement cases.

Approximately half of network responses ended with the whale partially or fully disentangled.

Outcome	No Response	Response Initiated	Total
Full or Partially Disentangled	1	20	21
Self-Release	2	2	4
Presumed Alive/Entangled	21	24	45
Dead	2	4	6
Total	26	50	76

Figure 3: The number and sources of confirmed entanglement cases in 2017.

The majority of entanglements were caused by fishing gear.



The National Large Whale Entanglement Response Network

NOAA Fisheries coordinates the national Large Whale Entanglement Response Network, which is composed of four regional networks on the East Coast (from Maine to Texas) and West Coast (from Washington to California), and in Alaska and Hawaii. Network members represent a wide range of industry, non-profit, academic, and government organizations, and they are trained and authorized by NOAA Fisheries to conduct entanglement response activities. All large whale entanglement response operations on Endangered Species Act—listed species are conducted under the authority of the Marine Mammal Protection Act/Endangered Species Act Scientific Research and Enhancement Permit (No. 18786-02) issued to the Marine Mammal Health and Stranding Response Program, and the trained professional expert responders are listed as Co-Investigators under the permit. Responders are categorized into five levels, based on training and expertise:

- Level One and Two responders are trained to assess entangled large whales, and may be asked to assist in entanglement response activities by tracking and documenting the entanglement case from a distance.
- Level Three responders closely approach entangled whales for visual health assessments, and may attach tracking devices

to the entangling gear so that the whale can be followed and quickly located.

- Level Four responders use tools to cut and remove the entangling gear. Level Four responders can perform these activities on all whale species except North Atlantic right whales, as this species is particularly dangerous to disentangle.
- Level Five responder duties are similar to Level Four, but may remove entangling gear from all species of whales, including North Atlantic right whales.

In general, Level One and Two responders are fishermen, boaters, and other members of the public who are trained to spot entangled whales and assess the situation. More than 100 individuals have completed the basic training to date. Responders at Level Three, Four, and Five are authorized under the MMPA/ESA permit to conduct entanglement response activities, including documenting the entanglement with photos and videos, attaching satellite tracking buoys, assessing the health of an entangled whale, and removing the entangling gear or debris. Nationwide, 86 people are authorized as Level Three, Four, and Five responders, and they are located across a wide geographic range (Figure 4).

Table 3: The total number of permitted Level Three, Four, and Five entanglement responders

	Level 3	Level 4	Level 5
Atlantic Coast	32	7	6
Pacific Coast	31	9	1
Total	63	16	7

An entangled humpback whale off of California in July 2017. Entanglements involving the mouth can be life-threatening, as they prevent the whale from feeding. Credit: Bryant Anderson/NOAA Fisheries, photo taken under permit 18786-01.

Large whales are the largest animals on Earth, and disentangling them is inherently dangerous. NOAA supports the network by providing tools, training, and funding across the country to ensure that these activities are conducted in a manner that emphasizes human and animal safety. In 2017, NOAA conducted 47 training sessions, many of which were provided to current network members to help strengthen and increase their skills. Nine of these trainings were specifically provided to commercial fishermen and the public to help increase the capacity of the network by ensuring new Level One and Two responders are ready and available to assist as needed.

In 2017, the Large Whale Entanglement Response Network community suffered a great tragedy when a Canadian responder died during a rescue operation for an entangled North Atlantic right whale in the Gulf of St. Lawrence. The community is a close-knit group of international colleagues, and U.S. and Canadian responders train together and use the same protocols. NOAA temporarily suspended large whale entanglement response in the United States for several weeks while the circumstances surrounding the incident were investigated to determine whether additional precautions should be taken to prevent future accidents. NOAA Fisheries developed an online training course and required every U.S. entanglement responder to take it before operations resumed approximately 1 month after the tragedy. Twelve trainings were offered between July 18 and 27, and were made available to international colleagues. More than 90 people participated globally, including most of the U.S. Level Three and Four Responders, and all of the Level Five Responders.

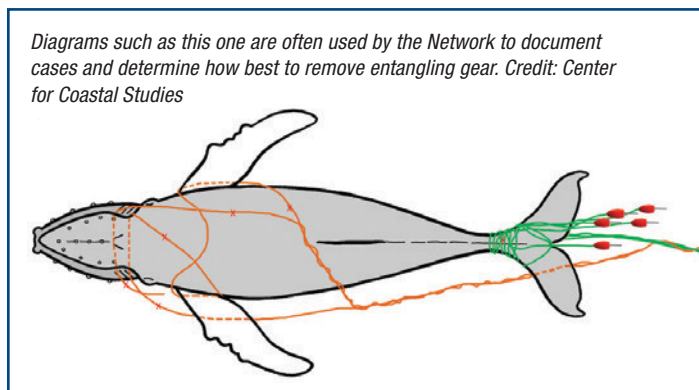
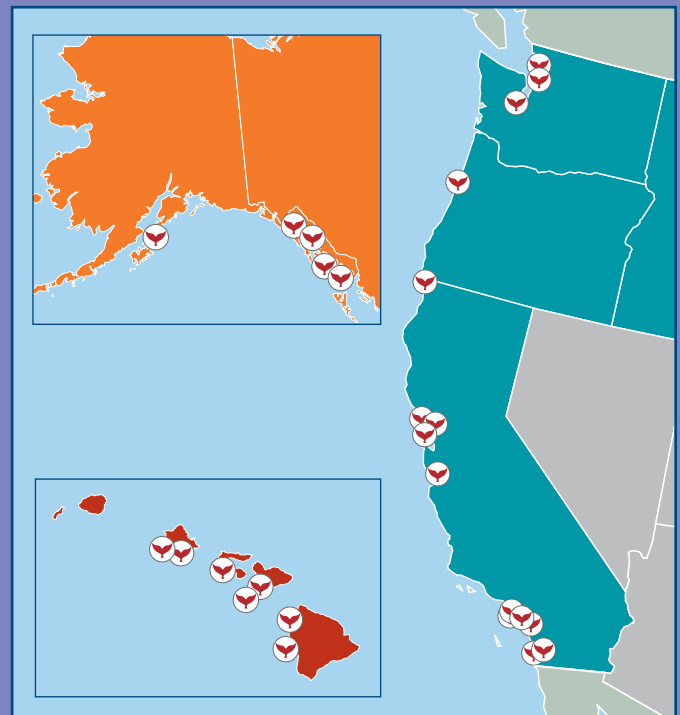
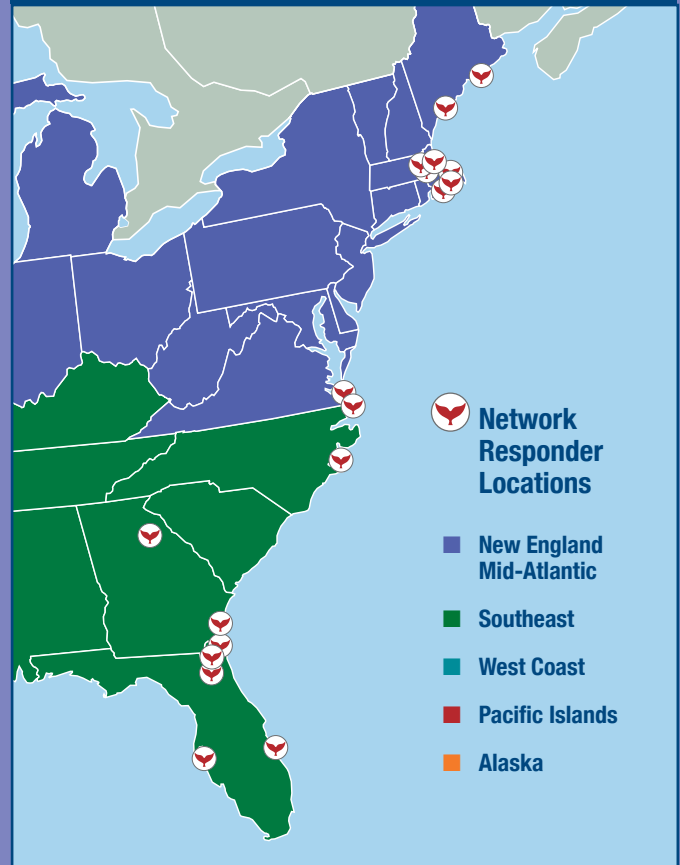


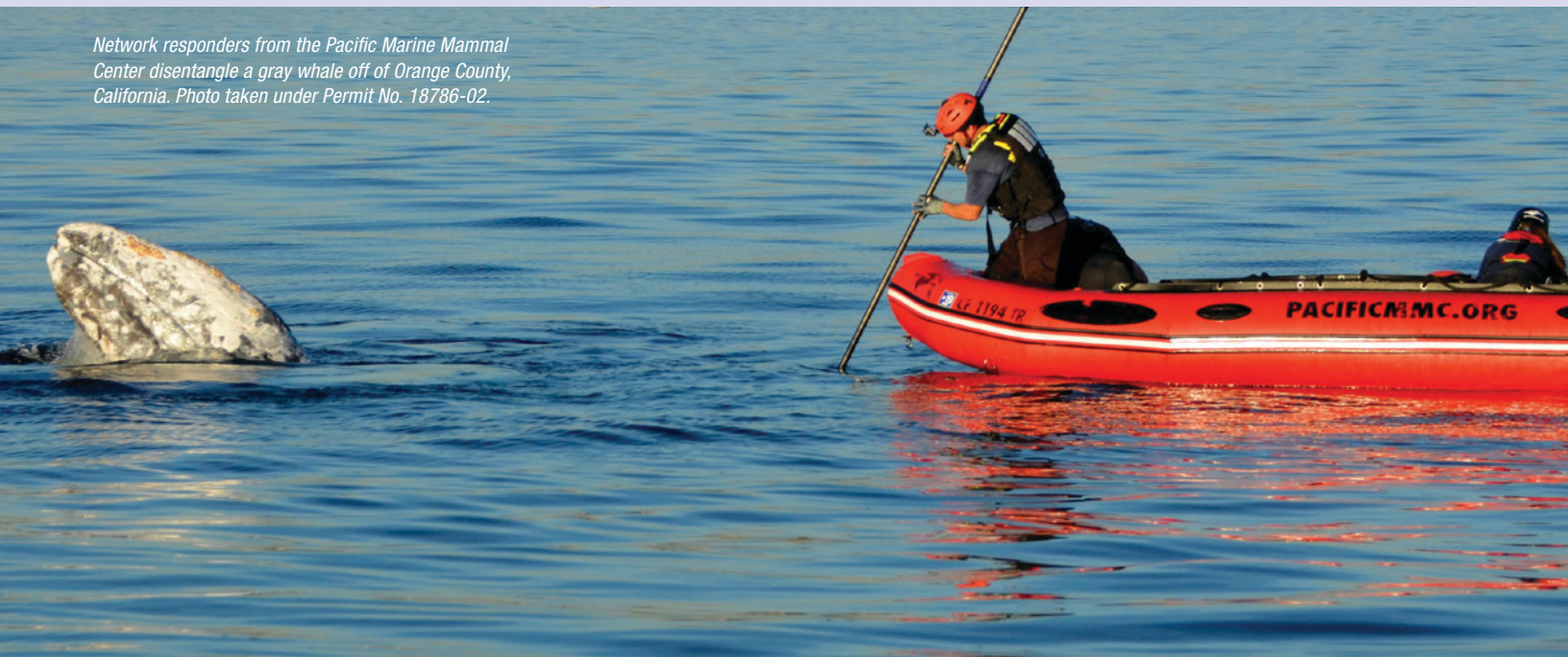
Figure 4: The locations of all Level Three, Four, and Five responders in the Large Whale Entanglement Response Network.

Note that multiple responders may be based at the same location, and often respond outside of their immediate area.



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Network responders from the Pacific Marine Mammal Center disentangle a gray whale off of Orange County, California. Photo taken under Permit No. 18786-02.



When reporting an entangled whale, please include the following information:

1. Location of the animal.
2. A detailed description of the entangling gear or debris.
3. Where the entanglement is located on the animal.
4. The direction and speed that the whale is moving, and if it is solitary or with other whales.
5. The behavior of the whale.
6. Species of the whale.
7. The approximate size and condition of the whale.

What Members of the Public Can Do

The Large Whale Entanglement Response Network relies on reports of entangled whales from the public. If you encounter a whale that may be entangled, please contact your local network via the 24/7 regional hotline or contact the U.S. Coast Guard on VHF CH-16.

Regional Entanglement Hotlines	
Atlantic and Gulf Coasts	1-866-755-6622
California, Oregon, and Washington	1-877-SOS-WHAlE (1-877-767-9425)
Alaska	1-877-925-7773
Hawaii	1-888-256-9840

Photos or videos of the whale (from a safe and legal distance of at least 100 yards) can also provide valuable information to entanglement responders. **Only trained and permitted responders should attempt to disentangle or closely approach an entangled large whale.** Whales are unpredictable and attempting to remove an entanglement is extremely dangerous to both you and the whale. Entanglement response should only be conducted by members of the Large Whale Entanglement Response Network who have been trained and authorized by NOAA Fisheries.



Marine Mammal Health and Stranding Response Program
Marine Mammal and Sea Turtle Conservation Division
Office of Protected Resources

www.fisheries.noaa.gov/marine-life-in-distress