

2011-2012 Season Summary
on
Large Whale Entanglement threat
and reports received around the Main Hawaiian Islands

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Background:

The Hawaiian Islands Humpback Whale National Marine Sanctuary (HIHWNMS) receives, and when appropriate, responds to, reports of humpback whales, and other marine animals in distress. The Sanctuary works closely with NOAA's National Marine Fisheries Services' (NOAA Fisheries) Pacific Islands Regional Office (PIRO), Office of Protected Resources (OPR), Pacific Islands Fisheries Science Center (PIFSC), and Office of Law Enforcement (OLE); Hawaii's Department of Land and Natural Resources (DLNR); and the United States Coast Guard (USCG). The Sanctuary coordinates response efforts involving entangled large whales around the main Hawaiian Islands. The Hawaiian Islands Large Whale Entanglement Response Network (HILWERN) is a collaborative effort between, the state and federal agencies already mentioned, local whale researchers, the tour industry, fishers, and many private citizens. The primary objectives of the Network are to provide safe and authorized response to entangled large whales (hopefully freeing some from life threatening entanglements in the process), and to gather valuable information from these response efforts that may mitigate entanglement threat and other threats, like ship strikes, in the future. All Network efforts involving close approach to large whales are authorized, and permitted, under NOAA Fisheries' Marine Mammal Health and Stranding Response Program (MMHSRP; permit # 932-1905).

The Hawaiian Islands Large Whale Entanglement Response Network, now in its 11th season, comprises over 230 members who have received various levels of training in order to support large whale response efforts statewide. More than 275 hours of training have been provided since 2002. To support the Network's response efforts, caches of specially designed equipment have been established on the islands of Hawaii, Maui, Oahu, and Kauai (see Figure 1).

Since 2002, the Sanctuary has received more than 211 reports of whales entangled in gear. The earliest confirmed report of a humpback whale entangled based on the breeding/ calving season was Nov 1 (2007), while the latest was April 25 (2008). Confirmed reports generally start in December, increase in frequency through February, and then decline into April. Only one confirmed large whale entanglement report (a sperm whale reported entangled north of Laysan Island on May 27, 2011) has been received in May (See Figure 2). The number of reports has generally increased each season (see Figure 3). Overall, 112 reports were confirmed as truly involving entangled large whales, representing as many as 70 different animals (see Figure 4). All, but three of these reports – a sei and two sperm whales, were humpback whales.

The Network does not or cannot respond to every report of an entangled whale. Past responses and thorough vetting of initial entanglement reports has shown that approximately half (48%) of reports here in Hawaii have been misreported or cannot be confirmed (Lyman *et al*, 2007). Continued outreach and efforts into reporting have decreased the number of misreported and unconfirmed reports over the years. This last season 45% (N=31) of reports were unconfirmed (i.e. unable to confirm or confirmed as not representing an entangled whale). Examples of misreports include: white-flipped humpback whales interpreted as carrying gear; animals in the proximity of gear, but not entangled; reflections off the wet backs of animals interpreted as buoys; calves being interpreted as gear; and surface behaviors, like breaching, being interpreted as animals trying to throw an entanglement. Figure 3 shows the total number of reports received each season broken down by confirmed and unconfirmed.

Figure 1: Location of confirmed humpback whale entanglement reports from Hawaii between 2002 and 2012, and network preparedness.



Since 2002, the Network has mounted over 121 on-water or in-air responses. In those cases when an on-water response should and could be mounted, the network has a 35.6% success rate freeing entangled large whales of all or significant amounts of gear. Many reports come in too late in the day; represent animals too far offshore, or in conditions that are not conducive (e.g. rough sea state) for mounting rescue efforts. However, the biggest contributor to an unsuccessful response is simply not re-locating the animal. If there is no standby vessel, then an entangled whale ends up being a rather large needle in an even larger haystack.

Figure 2: Entanglement reports throughout the season (2002 – 2012).

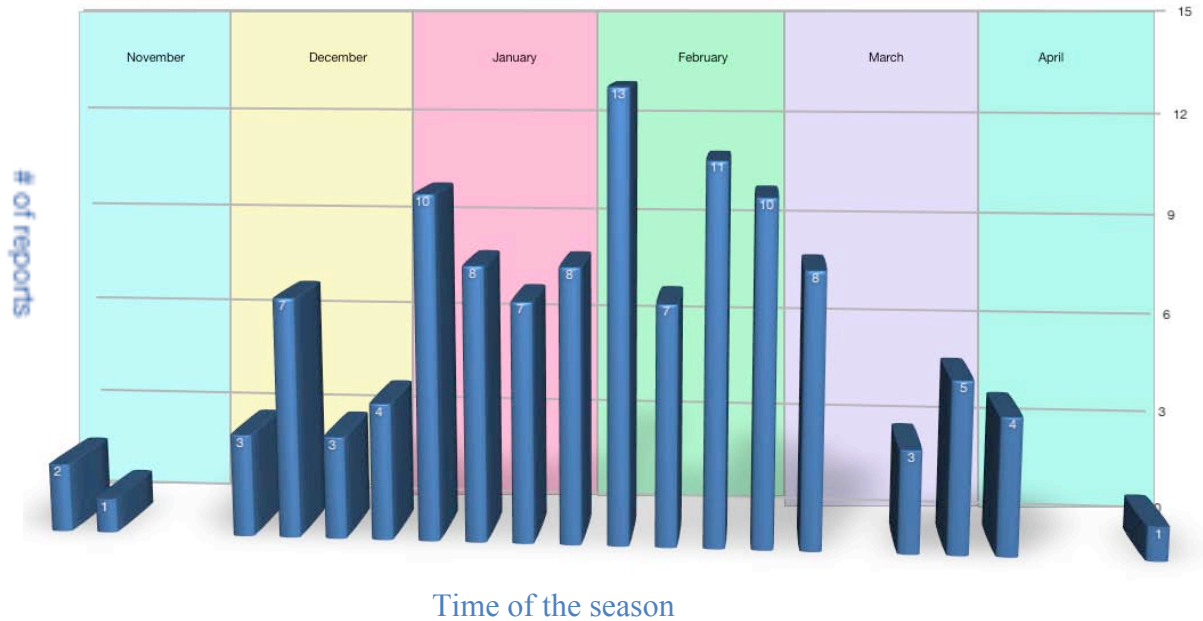


Figure 3: Large whale entanglement reports from Hawaii between 2002 and 2012.

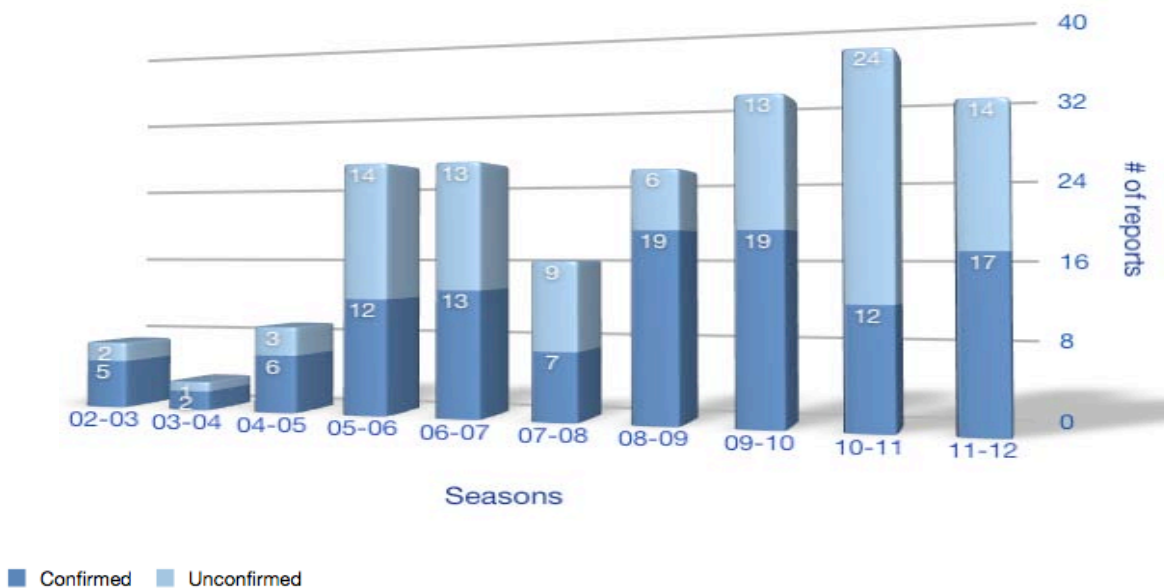


Figure 4: Number of confirmed animals reported entangled from Hawaii between 2002 and 2012.

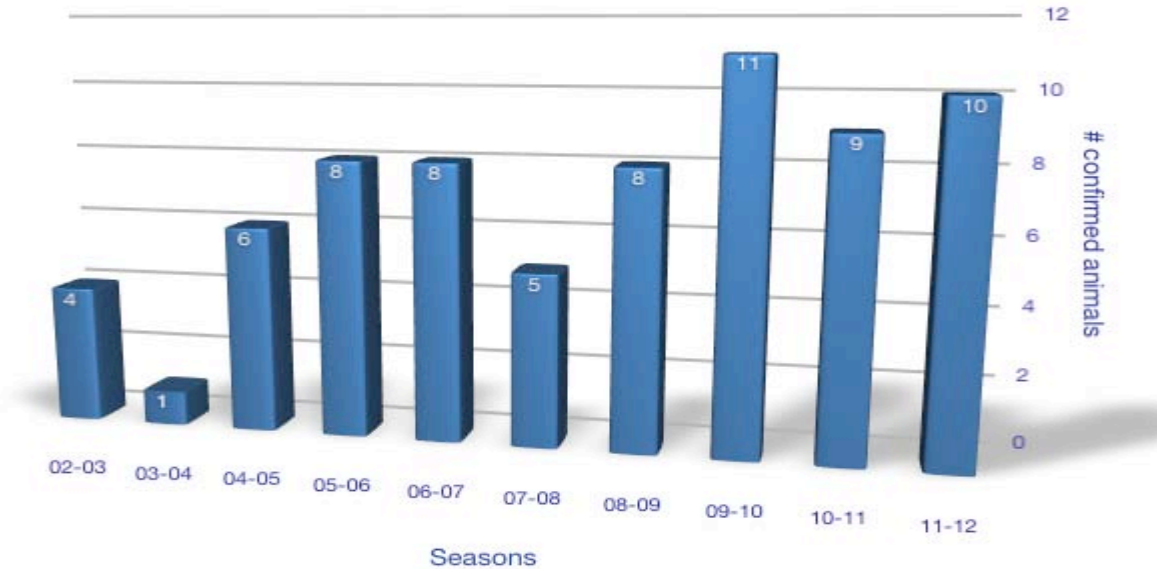
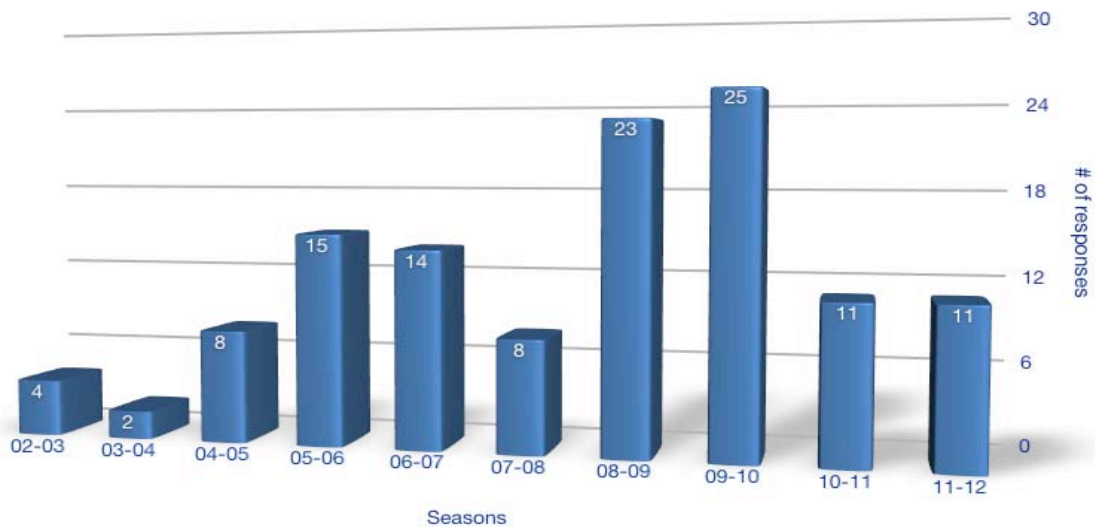


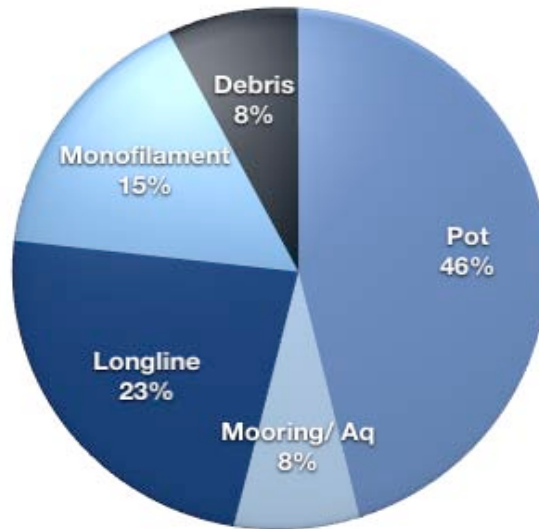
Figure 5: Number of responses to entangled whales in Hawaii between 2002 and 2012.



Since 2003, the Network has removed over 6,700 feet of entangling gear¹ from 16 whales (15 humpbacks and 1 sei whale) around the main Hawaiian Islands. Animals have been confirmed entangled in local fishing gear (traps and monofilament), mooring gear, marine debris, and actively fished gear set as far away as Alaska. To date, 10 humpbacks reported entangled in Hawaii have been confirmed to have gear from Alaska. Seven (7) of the reports of Alaska gear were commercial trap gear. The greatest known straight-line distance (accounting for obstacles)

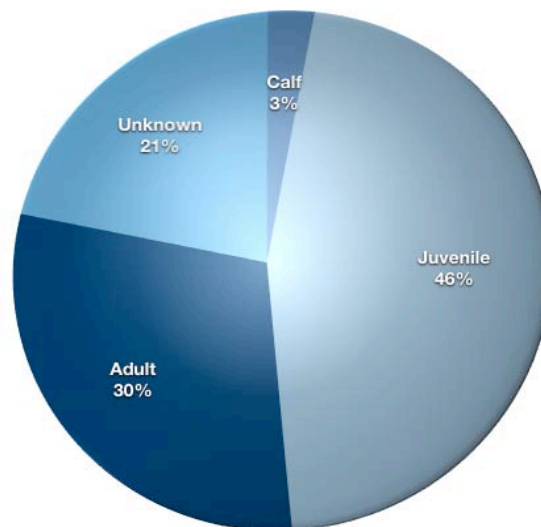
a whale carried gear is over 2,450 nm (between Wrangell, Alaska and the island of Maui). Over the last several years the number of entanglements involving local pot gear has increased. To date, at least 8 animals have been reported entangled in trap gear set around the main Hawaiian Islands.

Figure 6: Percentage of gear types removed from or documented on entangled humpback whales off Hawaii between 2003 and 2012.



Since 2001 the largest percentage of animals confirmed entangled have been juveniles (N=32). Many of these reports were received early in the season. Reports of juveniles are based on size, and thus may represent a degree of error (e.g. a small adult male may be reported as a juvenile). Adults were the next most frequent age class at 30% (N=21). Only 2 calves have been confirmed entangled in Hawaii since 2001 (see Figure 7).

Figure 7: Age class² of humpback whales reported entangled in Hawaii between 2002 and 2012.



2011-2012 season:

The 2011-2012 humpback whale season (November 1, 2011 – May 15, 2012) had the third greatest number of large whale entanglement reports of any season since 2002. Thirty-one (31) reports were received. Seventeen (17) reports were confirmed and these amounted to at least 10 different animals.

Figure 8: Location of initial confirmed large whale entanglement reports from Hawaii during the 2011- 2012 season



The network mounted 6 on-water and 5 aerial response efforts. Three animals self-released or freed themselves of gear. Two animals were not candidates for disentanglement. One of the animals was essentially hooked in light gauge monofilament line and the other was over 1200 nm north of the islands. Four animals were never re-located during response efforts. One disentanglement effort towards a humpback whale off Maui was unsuccessful. Maui Nui (waters leeward of the island of Maui) had the most confirmed cases of entangled large whales this season with 4 cases. There were 2 off Oahu, 1 off Kauai, 2 from the island of Hawaii, and 1 report representing Oceania (see Figure 8).

Figure 9: Number of entanglement reports by month for the 2011-2012 season

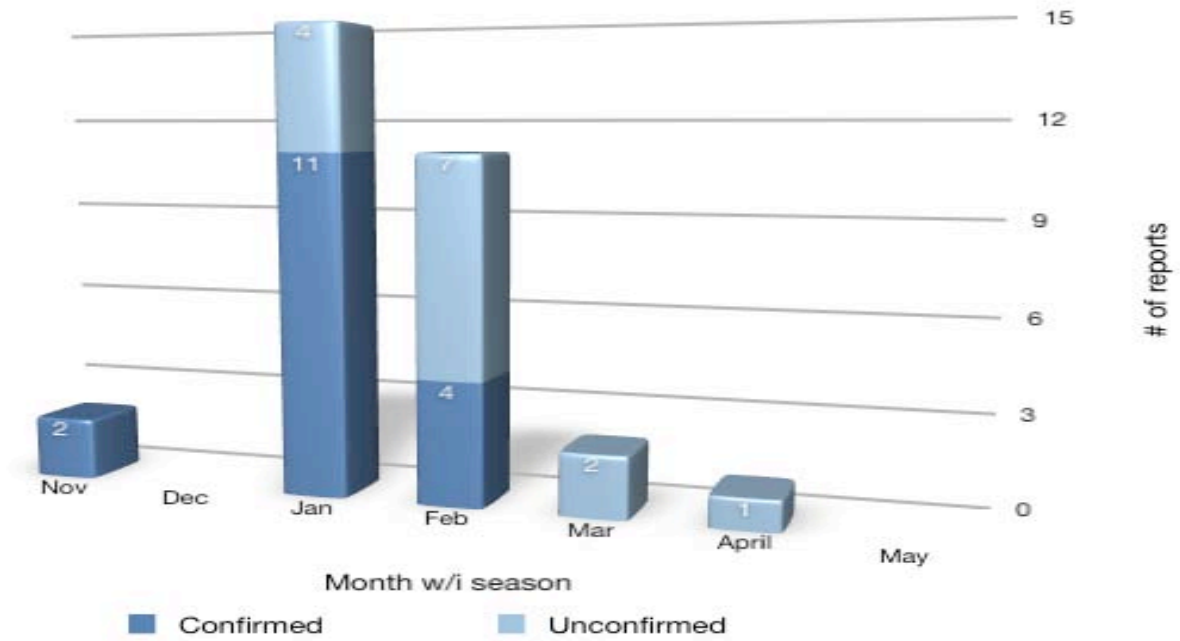
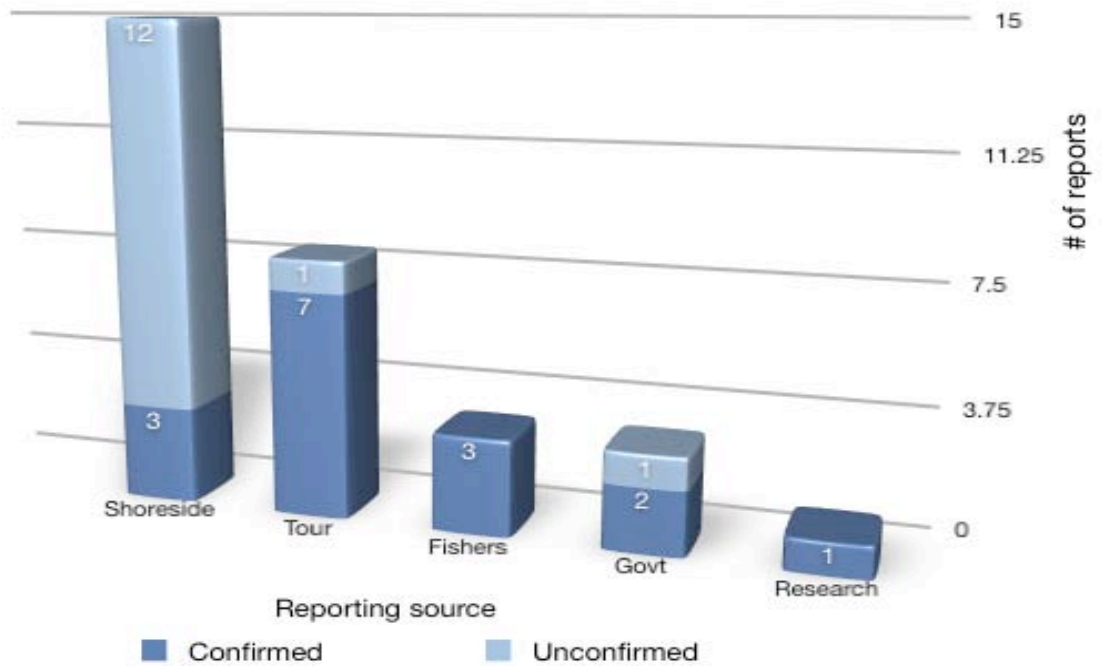


Figure 10: Number of entanglement reports by reporting source (2002-2012)



Of the gear removed or documented on the animals this season, 1 was longline, 1 was monofilament (hook and line), 1 was local crab pot (trap) gear, 1 was likely pot gear from Alaska, 1 was mooring gear, and 5 were not identified (see Figure 11). This season 7 of the reports involved juveniles, 2 were adults, and 1 was unknown.

Figure 11: Percentage of gear types found entangling whales during the 2011-2012 season.

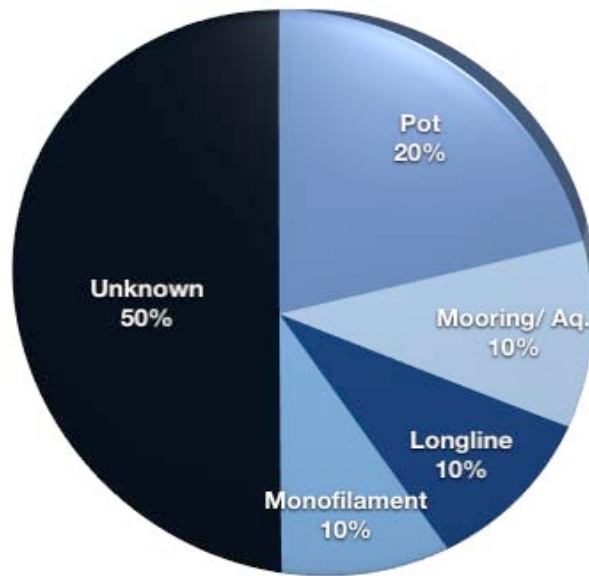
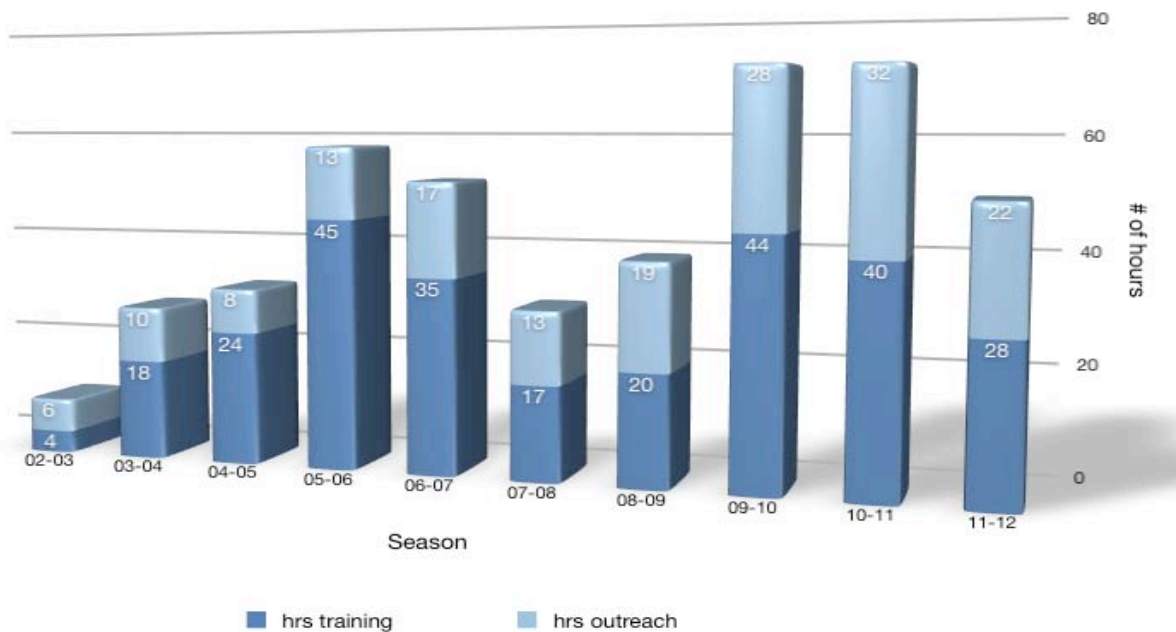


Figure 12: Amount of outreach and training targeted towards entanglement threat and response (2002 – 2012) in Hawaii.



The season was unique in several ways:

1. While January and February are peak report months, with February typically edging out January, this season almost all the reports were received in January and only a few in February (see Figure 9). The latter half of the season was unusually quiet.
2. The number of reports and number of entangled animals were on par with recent seasons; however, the numbers of opportunities to respond were fewer. The fewer responses may have been due in part to lack of standby support, location of reports (remoteness), and fact that several animals freed themselves of the gear prior to any response effort.
3. While the number of responses was lower, there was a higher percentage that involved aerial assets. The US Coast Guard once again lead the effort, but the Civil Air Patrol was also instrumental in providing aerial support towards large whale entanglement response.

Summary of 2011-2012 season disentanglement reports and efforts:

- Thirty-one (31) reports of entangled whales were received this season (14 unconfirmed and 17 confirmed).
- As in the past, shore-side reports were typically unconfirmed (12 of the 14 unconfirmed cases)
- Fishers, tour operators, and researchers continue to be the most reliable reporters (11 out of 12 confirmed)
- As many as 10 humpback whales were confirmed entangled in gear, which represents the third highest number of animals reported within a season.
- Six (6) of the entangled whales were initially sighted within Sanctuary waters.
- Maui Nui waters had the most reports (1 of Kauai, 2 off Oahu, 4 off Maui, 2 off Big Island, and 1 Oceania).
- Seven reports involved juveniles, 2 were adults, and 1 unknown.
- There were 11 responses mounted, which was equal to last season, but down overall.
- Responses represented 6 on-water and 5 aerial efforts. Aerial responses represented a higher percentage of response efforts when compared to the past with nearly half the response efforts.
- USCG and Civil Air Patrol made up the aerial response effort.
- Overall there was a large aerial component to season's reporting and response. Four (4) aerial platforms (3 –tour and 1 private) reported entangled whales, while 5 aerial platforms (3 – USCG and 2 Civil Air Patrols) responded to entangled whales.
- The United States Coast Guard mounted at least 9 responses towards entangled whales, or mounted a surface or aerial-based effort in 100% of cases
- DLNR were involved in 2 response efforts.
- Six (6) trained network members got hands-on experience in large whale entanglement response (e.g. disentanglement or tagging efforts).
- Research organizations, Hawaii Whale Research Foundation/ Dan McSweeney, Hawaii Marine Mammal Consortium, NOAA's Pacific Islands Fisheries Science Center, Liquid Robotics, and Hawaiian Islands Humpback Whale National Marine Sanctuary assisted on response efforts.

- Tour industry platforms from Seafire Snorkelling Adventures, Pacific Whale Foundation, Blue Hawaiian Helicopters, Sunshine Helicopters, Holoholo Charters, Capt. Andy's Tours, Blue Dolphin Tours, Napili Explorer, Bubbles Below Charters, and Maui Diamond II Seasports, and Trilogy Excursions assisted and were instrumental in providing sightings and monitoring of animals.
- Three fishing vessels reported and/or supported efforts (Maggie Joe Charters, Aikane Sportfishing, and commercial fisherman, Dustin Akita)
- Support was also provided by the United States Coast Guard (Kauai, Oahu, and Maui stations) and the USCG Auxiliary; Hawaii's Division of Aquatic Resources (Kona and Maui offices), the Department of Conservation and Recreation (DOCARE) and Ocean Safety; Kahoolawe Island Reserve Commission (KIRC); the Civil Air Patrol (CAP); the US Navy (PMRF); and NOAA's National Marine Fisheries Services' Pacific Islands Regional Office, Pacific Islands Fisheries Science Center, Office of Law Enforcement, and NOAA Corps.

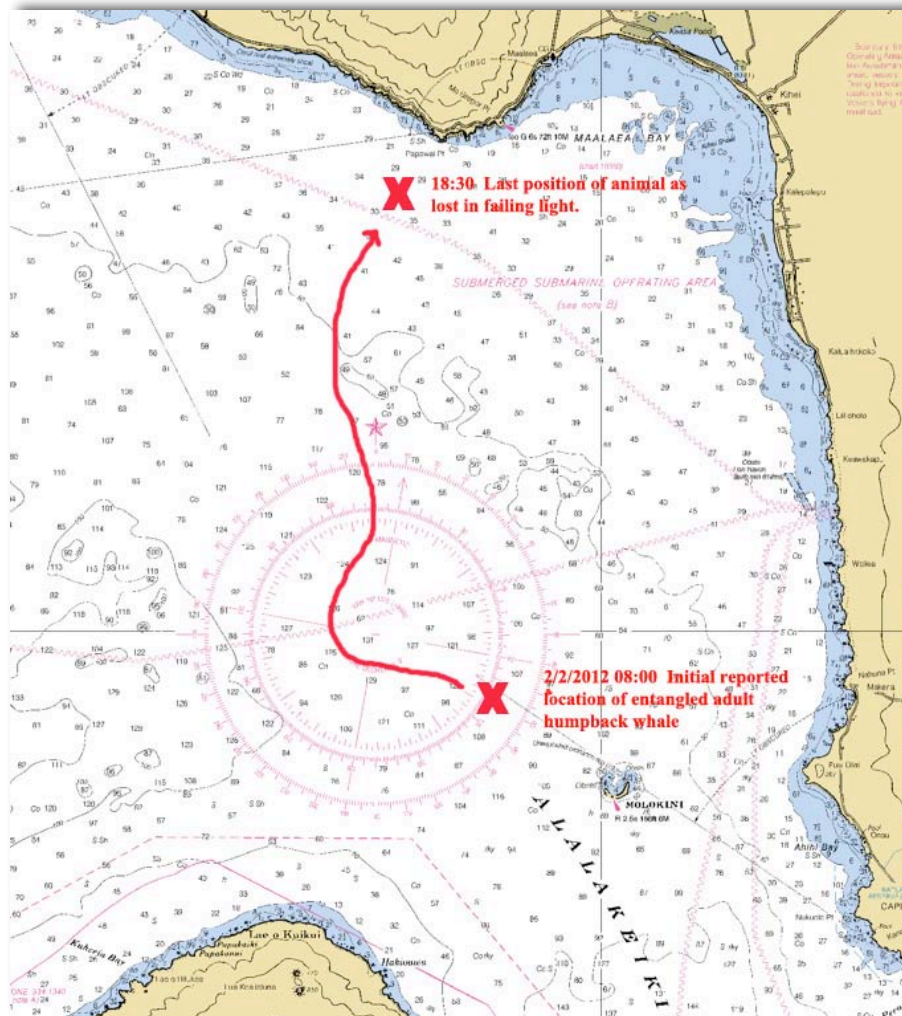
Case report of disentanglement efforts:

2/2/2012 Response to an adult humpback whale of Kihei, Maui:



An adult humpback whale was reported entangled in variety of medium to heavy gauge line (up to ~ 3/4" diameter) by the dive vessel, Maui Diamond II, and later by other tour vessels in the area. The Coast Auxiliary also monitored the animal and obtained documentation. The entanglement originated from the mouth, forming a bridle over the back, before trailing approximately 15 feet behind the flukes as frayed ends. Three bundles of gear were along the left side of the mouth, at level of dorsal fin, and at the tailstock area. The total amount of gear likely represented 100s of feet of line and a significant amount of drag. The entanglement was likely more involved, or at least had changed over time, since fresh line scars existed across the back and the dorsal fin had been chafed down and notched. The pectoral flippers were not

believed to be involved and the tailstock was observed free of gear. Two red polyballs, likely representing primary and pickup buoys were at the dorsal fin area and tailstock respectively. Both had black numbered markings. The animal was mobile and just slightly emaciated, but otherwise in fair condition.



A rapid first response effort to assess, document and tag the animal was mounted by USCG and NOAA Fisheries. Assessment and documentation were successful, but the team was unable to grapple into the limited amount of frayed trailing gear attached to the increasingly evasive animal. The Sanctuary vessel, Koholā, joined the effort midday with authorized responders made up of Sanctuary staff, NOAA Corp and tour industry on board. Efforts to grapple into the entangling gear for tagging and/ or disentanglement purposes continued until light failed. Unfortunately, the animal remained evasive, spent much of the time in the windline, and had so little gear trailing, that all attempts to grapple the gear failed.

No other sightings/ reports were obtained on the animal, and the gear remained unidentified. The outcome of the case remains unknown.

References:

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Robbins, J., J. Kenney, S. Landry, E. Lyman, and D. Mattila. Reliability of eyewitness reports of large whale entanglement. . International Whaling Commission Paper. SC/59/BC2

Acknowledgements:

Finally, much credit goes to the on-water community of tour boat operators, fishermen (fishers), biologists, and others that report, assess, help document, and many times stand by the animals until additional help can arrive. Ed Lyman of NOAA's Hawaiian Islands Humpback Whale National Marine Sanctuary, and David Schofield of NOAA Fisheries Pacific Islands Regional Office coordinate the large whale entanglement response effort. However, it is the efforts of the on-water community that makes the difference on whether an entangled whale is ultimately saved, and information gained to reduce the entanglement threat to these magnificent animals in the future.

¹ Represents line greater than or equal to 3/8" diameter

² Age class determination based on size, rather than known age of animal.