



# History of the NOAA Fisheries Large Whale Disentanglement Network

Entanglement of marine mammals in fishing gear and/or marine debris is a significant problem throughout the world's oceans. Along the eastern seaboard of the United States, large whale entanglement reports have been received of humpback whales (*Megaptera novaeangliae*) and North Atlantic right whales (*Eubalaena glacialis*) and to a lesser extent minke whales (*Balaenoptera acutorostrata*), fin whales (*B. physalus*), sei whales (*B. borealis*) and blue whales (*B. musculus*). NOAA Fisheries Service, in cooperation with the Canadian Department of Fisheries and Oceans, and the United States Coast Guard recognized that measures were needed to protect endangered marine animals, in the waters of the United States and Maritimes Region of Canada.

Prior to the mid 1980's, entangled large whales were primarily seen on the east coast of the United States by fisherman tending to their gear. Only occasionally were these observations reported to authorities, which in turn notified a local volunteer stranding organization. Often times the volunteer network was ill equipped to safely handle many of the rescues, especially those involving entangled free-swimming large whales. The entanglement problem became more widely known as a few species (minke, humpback, and the North Atlantic right whale) washed ashore with either gear on the carcass or indication of a previous entanglement. It became apparent that something needed to be done to assist the entangled whales.

Coincidentally, during the same time period, the whale watching industry began to develop off the coast of the northeast U.S. As a result of sheer numbers; the booming new industry supplied a new set of eyes on the water yielding a increase in entanglement reports.



Some animals can be disentangled and released before they drown, starve, or die from infection. Because of the endangered status of many of these animals, especially the North Atlantic right whale, where approximately 350 animals are believed to exist, the successful release of just one animal may have a profound effect on the recovery of the population as a whole. In fact, a recent modeling study suggested that eliminating the deaths of just two female North Atlantic right whales per year could reverse the decline. However, it is recognized by many researchers that disentanglement is not the solution to the entanglement problem. This is shown by example of the North Atlantic right whale where even in the unlikely event that every entangled animal is found, reported and disentangled, there will always be some that will be missed and potentially die until preventive solutions are found.

In 1984 the Provincetown Center for Coastal Studies (PCCS) in partnership with NOAA Fisheries Service developed a technique for disentangling free-swimming large whales from life threatening entanglements. The technique known as “kegging,” is a modified variation adopted from 19th century Yankee whalers. Yankee whalers, after harpooning a whale, would attach kegs (barrels) to the harpoon line in order to slow the whale down by effectively tiring it out. Utilizing a similar technique for entangled free swimming large whales by snapping a control line to an existing trailing entanglement line allows responders to safely work with an entangled animal. Once the control line is established, additional buoys or floats (50 cm – 1M+ diameter) can safely be attached to the control line to slow the whale down by increasing the whales drag force through the water. The modified “kegging” technique is designed for easy snap on/snap off release in the unfortunate event that a rescue attempt fails. In extreme cases when buoys or floats are not sufficient to slow an animal down a sea anchor (an underwater type parachute) can be attached to the control line to slow and keep the whale at the surface so the disentanglement work can be conducted. It has been observed that North Atlantic right whales are the most difficult whales to disentangle because they are extremely powerful animals that put up a seemingly endless fight instead of giving into disentanglement efforts as humpbacks normally do. NOAA Fisheries Service and disentanglement network partners are constantly pursuing ways of improving the ability to work with North Atlantic right whales by developing new equipment and techniques for restraint, and through new approaches like medically supervised sedation. Currently there are only a handful of agencies and organizations that partner with NOAA Fisheries Service on the east coast of the United States that are authorized to perform this type of dangerous activity.



Over the next decade Provincetown Center for Coastal Studies and NOAA Fisheries Service continued working on the development of the technique to safely disentangle both anchored and free swimming large whales. In 1995 NOAA Fisheries Service issued a contract to disentangle large whales with PCCS. The timing of the 1995 NOAA Fisheries Service disentanglement contract was partly in response to the 1994 amendments to the Marine Mammal Protection Act (MMPA) of 1972. The 1994 amendments of the MMPA require an annual stock assessment report (SAR) for each stock of marine mammals that occur in waters under the jurisdiction of the United States. The SAR must be prepared by NOAA Fisheries Service and the U.S. Fish and Wildlife Service (USFWS), in consultation with regional scientific review groups (SRG's). The SRG's are comprised of a broad representation of marine mammal, fishery scientists, and members of the commercial fishing industry. The Stock Assessment Report must embody several items including an estimate of the Potential Biological Removal (PBR) for the stock. PBR is defined as "the maximum number of animals, not including natural mortalities, which may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population."

With these amendments to the MMPA, the number of commercial fishery incidental mortalities and serious injuries of marine mammals were mandated to be below PBR levels. This further strengthened the need for the marine mammal disentanglement contract. To achieve this goal the MMPA mandates that Take Reduction Teams (TRT's) appointed by NOAA Fisheries Service develop Take Reduction Plans (TRP's) for reducing the mortality and serious injury incidental to commercial fishing. All of the contracts that NOAA Fisheries Service has entered into for marine mammal disentanglement are an important part of the marine mammal Take Reduction Plan.

Between 1996 – 1999 the PBR level for the North Atlantic right whale was 0.4 (i.e. on average four whales killed every ten years). However, in 2000 NOAA Fisheries Service made a significant change to the PBR level. NOAA Fisheries Service revised the PBR from 0.4 to zero with the change in PBR taking affect in the beginning of 2000. This change requires that no (zero) Western North Atlantic right whales be killed. As a result of the amendments of the MMPA and the NOAA Fisheries Service 2000 change in PBR the importance of disentanglement as a management option is critical until a preventative solution is found and implemented.



NOAA Fisheries Service and Provincetown Center for Coastal Studies have established a large whale disentanglement program, also referred to as the Atlantic Large Whale Disentanglement Network (ALWDN), based on successful disentanglement efforts by many researchers and partners. Memorandums of Agreement (MOA's) were also issued between NOAA Fisheries Service and other Federal Government agencies to increase the resources available to respond to reports of entangled large whales anywhere along the eastern seaboard of the United States. There are currently over 500 members participating in the Atlantic Large Whale Disentanglement Network at various capacities.