

U.S. Response to Inquiry Regarding: (1) what is being done to reduce entanglement of large whales in U.S. waters, (2) what is the response protocol once an entangled large whale is encountered, and (3) what is the U.S. policy regarding euthanasia of entangled large whales in U.S. waters.

Executive Summary

Entanglements of marine mammals are not only a problem along the United States coasts, but also a growing international issue. Scientists from the United States have played a leading role in developing indirect methods to estimate the extent and impact of large whale entanglement. In addition, the United States government, through the National Oceanic and Atmospheric Administration (NOAA) is working to address the problem both domestically and internationally. This report outlines recent activities within the United States government to prevent, mitigate and respond to large whale entanglements. However, because most large whale populations inhabit and migrate through the waters of many nations, it should be noted that marine mammal entanglements are a world-wide problem that are not restricted to the U.S. EEZ.

1. PREVENTION: What the U.S. is Doing to Reduce Large Whale Entanglements?

Efforts to reduce entanglements due to fishing gear in the North Atlantic. In 1996, NOAA established the Atlantic Large Whale Take Reduction Plan (ALWTRP) to reduce the level of serious injury and mortality of large whales (fin, humpback, and Northern right) in U.S. commercial fisheries. In general, the ALWTRP consists of a combination of regulatory and non-regulatory programs, including broad gear modifications, Dynamic Area Management, Seasonal Area Management, time-area closures, expanded disentanglement efforts, extensive outreach efforts in key areas, gear research, and an expanded right whale surveillance program to supplement the Mandatory Ship Reporting System. To supplement this program, NOAA and its partners have conducted extensive whale and gear research, including numerous studies to investigate the profile of gear in the water column, and test various gear modifications for gillnet and trap/pot gear. The Right Whale Sighting Advisory System has also been established to locate right whales and make mariners aware of their presence.

Efforts to reduce marine debris in the oceans. Marine debris is a significant threat to the world's oceans and inland waterways. Refuse dumped at sea, derelict fishing gear, and land-based sources of waste all contribute to the problem, and can impact U.S. resources despite originating in other countries or waters outside of U.S. jurisdiction. NOAA is involved in both domestic and international efforts to reduce marine debris in the ocean. The NOAA Marine Debris program has been in existence since 2005, and was built upon the foundations of a previous program on marine entanglement research and many international partnerships. At the international level, NOAA addresses marine debris from both policy and legal standpoints, as well as from a project or capacity-building level. The U.S. is also party to many international conventions and active in international fora dealing with marine debris.

2. MITIGATION: "What is the U.S. government's response to notification of an entangled whale?"

ATLANTIC OCEAN: U.S. disentanglement programs became more formal and organized in the early 1980's, when researchers began a pilot program focused on how to safely rescue large whales from entanglements. A technique for disentangling free-swimming large whales was developed and refined. Over the next decade, continued research on the development of a protocol to safely disentangle both anchored and free-swimming large whales was pursued. Since 1995, NOAA has maintained multi-year contracts to disentangle large whales and currently operates the Atlantic Large Whale Disentanglement Network (Network). NOAA is also working to develop new equipment and techniques specific to right whale disentanglement.

PACIFIC OCEAN: While efforts to address bycatch have been ongoing in the North Pacific for decades, reports of entangled whales are rare. In 2001, NOAA expanded efforts in the Pacific Ocean by implementing a more formal strategy focused on the safe release of large whales in life threatening entanglements, and obtaining information that will inform efforts to reduce the rate of entanglements in U.S. waters and beyond. Since then, approximately 30 Advanced Disentanglement trainings have been performed in Alaska, the West Coast, and Hawaii, and nearly 230 people have been

trained. Seventeen caches of specialized disentanglement equipment have also been strategically placed in Alaska, Oregon, Washington, California, and Hawaii.

3. INJURY ASSESSMENT "What is the U.S. doing to better understand entanglement injuries and address issues of animal welfare?"

Many of the responses and research efforts outlined above are being used to better document entanglements and to evaluate associated injuries in free swimming whales. The Network maintains communication with large whale monitoring programs and every effort is made to identify entangled whales. Once an animal is identified, its history is used to assess both current health status and the potential timing of the entanglement. Photographs are taken of entangled whales and are scored using standardized criteria on overall health, body and skin condition, entanglement injuries, and the nature and extent of entanglement. Using these criteria, the seriousness of the injuries are evaluated and a determination is made regarding the proper course of disentanglement action.

NOAA held a workshop in 2006 to further evaluate and develop criteria for visual and remote health assessments of free swimming whales. In September 2007, NOAA will be hosting another workshop to re-evaluate criteria for determining serious injury, to evaluate the survival of entangled animals for which no disentanglement was attempted, to evaluate the success of disentanglement efforts, and to standardize the criteria for evaluation and assessment. NOAA has also recently completed a Right Whale necropsy manual, and is funding necropsies on stranded right whales to determine causes of death. Finally, NOAA continues to support efforts to develop new tools for assessment or mitigation, as well as databases or websites to enhance communication between disentanglement efforts, health assessments efforts, research programs and marine mammal stranding networks.

QUESTION: "If disentanglement is not possible, under what conditions would the U.S. government authorize an entangled whale be euthanized?"

RESPONSE: Using the assessments and evaluations above, NOAA would consider using humane euthanasia methods if a whale has an entanglement that is causing serious and/or increasing injury, the animal's condition is deteriorating, there are no options for disentanglement, and there is thought to be no chance of survival. Criteria for assessing these situations are currently being developed using survival, entanglement, and stranding records. When criteria and methods for humane euthanasia are developed, NOAA and its response team will evaluate each situation and determine whether euthanasia is the best option and logistically possible give the nature of the situation. It must be noted that unless the animal is tagged or easily recognizable, the chances of following an individual whale for a period of time to assess the animal's condition are low, and the ability to mount an off shore effort is difficult on short notice. NOAA and its partners maintain web-based catalogues of entanglements and develop action plans for each animal, so that better assessments can be made in a timely manner.

Of the utmost importance is the safety of the individuals responsible for carrying out any actions related to the disentanglement or euthanasia of entangled large whales. Free swimming animals that are entangled, even if weakened or in poor condition, constitute a potentially severe risk to individuals required to approach such animals.

INTRODUCTION

Entanglements of marine mammals are not only a problem along the United States coasts, but also a growing international issue. Entanglement can affect all species of cetaceans, pinnipeds, sea turtles, and sea birds. In the case of large whales, the entanglement problem primarily affects humpback whales (*Megaptera novaeangliae*), Northern right whales (*Eubalaena glacialis*), and to a lesser extent minke whales (*Balaenoptera acutorostrata*), fin whales (*B. physalus*), gray whales, and blue whales (*B. musculus*). It is not clear if the entanglement of large whales in manmade materials (primarily stationary fishing gear) has been a problem for whales since the development of commercial fisheries; however, it is likely that the problem became exacerbated with the introduction of strong, non-degrading, synthetic ropes and net (Lien et al, 1981; Lien et al, 1985). In modern times, the first report that entanglements could have a significant impact on large whale populations came from Jon Lien in Newfoundland, Canada (Lien, 1994), who documented a dramatic increase in known fatal entanglements of humpback whales that was thought to be due to a shift in humpback distribution to near shore waters, following an apparent shift in prey (capelin) in the late 1970's and early 1980's. Lien set up a release program to deal with the entangled whales that tended to be anchored in heavy, shallow water cod traps.

During this period in the United States, reports of entangled large whales were rare, and when reported they were mostly free-swimming (e.g. towing rope or net). It was not until the early 1990's that the potential extent and impact that entanglements might have on some populations, particularly right whales (Kraus, 1990; Hamilton et al, SC/M98/RW28, 1998; Caswell et al, 1999) and humpback whales (Volgenau et al, 1995; Robbins and Mattila, 2001) was determined. For instance, for Northern right whales during 2000 to 2004, 8 out of 14 records of mortality or serious injury (including records from both the United States and Canadian waters) involved entanglement or fishery interaction (NOAA Publication, U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments – 2006 draft). For Gulf of Maine humpback whales during 2000 to 2004, there were 4 mortalities and 8 cases of serious injury that were attributed to fishery interactions. During that time there were a number of disentangled whales, including 10 in 2003.

The Stock Assessment Report for North Pacific humpback whales provides an update of entanglement information from 2001-05. Entanglement threats in this area include salmon set gillnets, salmon drift gillnets, purse seines, pot gear. During this time period, the number of serious injuries and mortalities resulting from entanglement averaged 3 animals per year from a stock with a conservative abundance estimate of approximately 3700 animals. Records of humpback whale entanglements from Hawaii are incomplete, so the estimates of the number of entangled humpback whales in this stock should be considered a minimum (Angliss and Outlaw, 2007).

NOAA, in cooperation with the Canadian Department of Fisheries and Oceans (DFO) and the United States Coast Guard (USCG), recognize that measures are needed to protect endangered marine animals in the waters of the United States and Maritimes Regions of Canada. Some animals, primarily large whales, can become entangled in fishing gear or marine debris, with the potential to drown, starve, or die from infection as a result. Because of the endangered status of many of these animals, especially the North Atlantic right whales, the successful release of just one animal may have a significant 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 right whales per year could reverse the decline, albeit slowly since right whales only calf every 3 to 6 years per adult female. However, it is recognized by many scientists and biologists that disentanglement is not the solution to the entanglement problem.

This report will outline recent activities within the United States government to address these issues, including efforts to prevent, mitigate, and respond to large whale entanglements with a focus on North Atlantic right whales and humpback whales.

Understanding the extent of the Issue

Most large whale entanglements are never seen or documented by organized fisheries observer programs (SC/59/BC1, SC/59/BC2) or at sea research programs. This makes understanding the extent of large whale bycatch very difficult. Scientists from the United States have played a leading role in developing indirect methods to estimate the extent and impact of large whale entanglement (Kraus, 1990; Volgenau et al, 1995; Hamilton et al, 1998; Caswell et al, 1999; Robbins and Mattila, 2001; Johnson et al, 2005; Read et al, 2006; Bradford et al, 2006; Mattila and Lyman, 2006).

The first attempt to understand the reliability of opportunistic reports of large whale entanglements was presented at this year's IWC Scientific Committee meeting (Robbins et al, 2007a), as well as a review of what can be learned through the process of disentangling whales (Mattila et al, 2007). In addition, new techniques to estimate entanglement rates and mortality, including discussion of potential mark/recapture methodologies for determining mortality of both entangled and

disentangled large whales, were presented (see SC/59 Scientific Committee report appendices for BC and E subcommittees). Also presented was the first attempt to estimate entanglement rates for a population across the entire North Pacific Ocean basin habitat, which was led by U.S. scientists (Robbins et al, 2007b).

Because most large whale populations inhabit and migrate through the waters of many nations, NOAA has taken a broad view of the issue, and have supported NOAA staff to conduct large whale entanglement seminars and/or disentanglement trainings in several countries throughout the Pacific, including: Mexico, Japan, Korea, Australia, New Zealand and the SPREP region of the South Pacific, sharing the expertise that they have developed over many years. In addition, NOAA has sponsored humpback whale surveys in the waters of American Samoa in the South Pacific. These surveys included the gathering images for the first estimates of entanglement rates for a large whale population in Oceania.

Based on the above, the potential adverse impacts of large whale entanglements on whale populations and animal welfare is clearly not restricted to the US EEZ. This is a world-wide problem that should be dealt with in a comprehensive and strategic manner by the IWC member nations.

1. PREVENTION: What the U.S. is Doing to Reduce Large Whale (With a Focus on North Atlantic Right Whale) Entanglements?

Efforts to reduce entanglements due to fishing gear:

North Atlantic Case Study

NOAA developed the Atlantic Large Whale Take Reduction Plan (ALWTRP) pursuant to the U.S. Marine Mammal Protection Act (MMPA) in order to reduce the level of serious injury and mortality of three strategic stocks of large whales (fin, humpback, and North Atlantic right) in those U.S. commercial fisheries with a frequent or occasional likelihood of, or known incidental mortality or serious injury of marine mammals. The measures identified in the ALWTRP were also intended to benefit minke whales, which are also known to be taken incidentally in gillnet and trap/pot fisheries.

The Atlantic Large Whale Take Reduction Team (ALWTRT) was initially established in 1996 to discuss large whale interactions with the Northeast sink gillnet fishery, the Northeast/Mid-Atlantic American lobster trap/pot fishery, the U.S. Mid-Atlantic coastal gillnet fishery, and the Southeastern U.S. Atlantic shark gillnet fishery. The Southeast Atlantic coastal gillnet fishery, as well as the Atlantic mixed species trap/pot (e.g., hagfish, Jonah crab, red crab, shrimp, black sea bass, and conch/whelk) fisheries, were recently added to the ALWTRT process.

The ALWTRP was implemented in 1997, and has been modified on several occasions since to reduce the serious injury and mortality of large whales in gillnet and lobster trap/pot gear. Presently, NOAA is considering regulating other trap/pot and gillnet fisheries under the ALWTRP. The ALWTRP covers the U.S. Atlantic Exclusive Economic Zone from Maine through Florida (26°46.5'). In general, the ALWTRP consists of a combination of regulatory and non-regulatory programs, including broad gear modifications, Dynamic Area Management (DAM), Seasonal Area Management (SAM), time-area closures, expanded disentanglement efforts, extensive outreach efforts in key areas, gear research, and an expanded right whale surveillance program to supplement the Mandatory Ship Reporting System.

The DAM program clarifies NOAA's authority to temporarily restrict the use of lobster trap/pot and gillnet fishing gear within defined areas to protect North Atlantic right whales, and establishes criteria and procedures for implementing the DAM program in areas north of 40° N. latitude. A DAM zone will be triggered by a single reliable report from a qualified individual of 3 or more right whales within an area (75 nm²) such that right whale density is equal to or greater than 0.04 right whales per nm². Under the DAM program, NOAA may: (1) require the removal of all lobster trap/pot and anchored gillnet fishing gear for a 15-day period; (2) allow modified lobster trap/pot and anchored gillnet gear within a DAM zone for a 15-day period; and/or (3) issue an alert to fishermen requesting the voluntary removal of all lobster trap/pot and anchored gillnet gear for a 15-day period, and asking fishermen not to set any additional gear in the DAM zone during the 15-day period.

The SAM program defines two areas based on the annual predictable presence of North Atlantic right whales, and covers approximately 5,000 nm² (9265 km²) from Cape Cod eastward to the Hague Line. In this area, gear restrictions for lobster trap/pot and anchored gillnet gear are applied. Lobster trap/pot and anchored gillnet gear set within each SAM area are

restricted to those designated as Low Risk Gear (Level II), which is defined as gear where death or serious injury resulting from entanglement would be highly unlikely.

NOAA is presently considering modifications to the ALWTRP to reduce the potential for entanglements and minimize adverse impacts if entanglements occur. An associated proposed rule and Draft Environmental Impact Statement (DEIS) have been issued, the final EIS and final rule are expected to be approved in 2007. Some of the modifications that are being considered include: the use of sinking and/or neutrally buoyant groundline (in reference to trap/pot gear, groundline is a line connecting lobster traps in a lobster trap trawl; with reference to gillnet gear, groundline is a line connecting a gillnet or gillnet bridle to an anchor or buoy line); additional weak link requirements for net panels and buoy lines; and expanded gear marking. In addition, NOAA is considering adding new trap/pot fisheries under the ALWTRP (e.g. black sea bass, hagfish). In response to a lethal entanglement of a right whale calf in 2006, NOAA has issued two temporary rules prohibiting gillnet fishing in the Southeast U.S. Restricted Area during the last two right whale calving seasons. NOAA has also issued a proposed rule to permanently prohibit, with limited exemptions, gillnet fishing in areas of the Southeast Atlantic used by right whales as a calving area. A final rule is expected to be approved in 2007.

NOAA and its partners have conducted extensive whale and gear research to support management-related issues under the ALWTRP. For example, the Right Whale Sighting Advisory System is a multi-institutional effort to locate right whales and to make mariners aware of their presence. Also, NOAA and its partners have conducted numerous studies to investigate the profile of gear in the water column, and test various gear modifications for gillnet and trap/pot gear.

Coordination between research (both whale and gear) and management is critical in order to help NOAA and the ALWTRT effectively reduce the serious injury and mortality of right, humpback, and fin whales in commercial fisheries. Although much progress has been made over the years, more research is needed to further support management. Thus, NOAA has identified and prioritized the following: 1) whale research needs related to large whale behavior, including habitat usage, as well as foraging, migration and breeding ecology, and 2) gear research needs related to reducing risks associated with vertical line (also referred to as buoy line: a line connecting fishing gear in the water to a buoy at the surface of the water) and groundline (see previous definition). Critical whale research gaps includes information on the behavior of right whales in the water column over rocky, coral or wreck habitats (e.g. inshore areas and depths over 100 fathoms), as well as on the migratory corridor and breeding grounds. Important fishing gear research needs include the development of lipid soluble rope that would quickly deteriorate if it came in contact with a whale.

More detailed information on measures undertaken to prevent or reduce entanglements in fishing gear are outlined in Appendices 1-3 (available on request from the Secretariat).

Efforts to reduce marine debris in the oceans.

In addition to the problem of entanglement in fishing gear, large whales may become entangled in marine debris. Marine debris is a significant threat to the world's oceans and inland waterways. Refuse dumped at sea, derelict fishing gear, and land-based sources of waste and trash all contribute to the problem and can impact U.S. resources despite originating in other countries or waters outside of our national jurisdiction. The NOAA Marine Debris program has been in existence since 2005, and was built upon the foundations of a previous program on marine entanglement research and many international partnerships. Since 2005, the program has (1) reviewed and inventoried existing debris projects in NOAA; (2) conducted two workshops with internal and external partners focused on the activities and needs of NOAA and the marine debris community; (3) developed a two-year implementation plan; (4) established bi-weekly marine debris meetings with representatives from over ten offices across five NOAA line offices; (5) identified regional coordinators to promote the program's objectives; (6) established an outreach program; and (7) created three competitive grant programs for distributing funds. Additional details can be found at <http://marinedebris.noaa.gov/>.

At the international level, NOAA addresses marine debris from both policy and legal standpoints, as well as from a project or capacity-building level. The U.S. is party to many international conventions and active in international fora which impact marine debris. Additionally, NOAA is engaged in several international projects and capacity-building efforts to address marine debris, including:

- Collaboration with the United Nations Environment Programme (UNEP) to provide technical assistance to countries in the Wider Caribbean Region
- A NOAA and Indonesian partnership to share examples of how the U.S. Sea Grant Network operates and responds to coastal hazards, including marine debris
- The United Nations Open-ended Informal Consultative Process on Oceans (UNICPO) to engage in focused discussions on marine debris, a topic of discussion at the June 2005 meeting.

2. MITIGATION: "What is the U.S. government's response to notification of an entangled whale?"

Atlantic Ocean

Prior to the mid 1980's, entangled large whales were primarily only seen on the east coast of the United States by fisherman tending to their gear. Only occasionally were these observations reported to authorities, who 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. In 1984, in an effort to improve the success rates of large whale disentanglements, New England researchers, under guidance from NOAA, began a pilot program focused on how to safely rescue large whales from fishing and other gear involved in whale entanglements.

In 1984, a technique for disentangling free-swimming large whales from life threatening entanglements began to be developed. The technique known as "kegging," is a modified variation adopted from 19th century Yankee whalers. After harpooning a whale, Yankee whalers would attach kegs (barrels or other means of floatation) to the harpoon line in order to slow the whale down by effectively tiring it out. Development of a similar technique for entangled, but free-swimming large whales, by attaching a control line to an existing trailing entanglement line was implemented. Once the control line is attached, additional buoys or floats (50 cm – 1 M+ diameter) can safely be attached to the control line to slow the whale down by increasing the whale's 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 enough 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. Experience with disentanglement responses over multiple years has confirmed the suspicion that right whales are the most difficult whales to disentangle because they are extremely powerful, and put up a violent and seemingly endless fight instead of giving into disentanglement efforts as humpbacks normally do. NOAA Fisheries is pursuing ways of improving their ability to work with right whales by developing new equipment and techniques for restraint, and through new approaches like medically supervised sedation.

Coincidentally, during the same time period, the Northeast United States whale watching industry began to develop. As a result of sheer numbers, the booming new industry supplied a new set of eyes on the water, yielding a dramatic increase in entangled whale sightings. Over the next decade, continued research on the development of a protocol to safely disentangle both anchored and free-swimming large whales was pursued. In addition, NOAA has maintained multi-year contracts to disentangle large whales since 1995, and currently operates the Atlantic Large Whale Disentanglement Network (Network) (See Appendix 4- available on request at Secretariat).

Pacific Ocean

While efforts to address bycatch have been ongoing in the North Pacific for decades, reports of entangled whales were rare, and most disentanglement attempts were done opportunistically on a case by case basis. In 2001, NOAA significantly increased its efforts in the Pacific by supporting and implementing a more formal strategy that not only attempted to safely disentangle large whales in life threatening entanglements, but also attempted to document these cryptic events. The emphasis was placed on the safe release of the whale, but also on obtaining information that would help to inform efforts to reduce the rate of entanglements in U.S. waters and beyond (SC/59/BC1, SC/59/BC2, SC/59/BC15 and SC/58/BC2).

Since that time, approximately 30 Advanced Disentanglement trainings, many of which involved hands-on components, have been performed in Alaska, along the U.S. West Coast, and Hawaii. To date nearly 230 people have been trained to respond to large whale entanglements within a system of hierarchical roles or "levels" (based on those developed for the network on the Atlantic coast) that range from documentation and assessment to complete disentanglement efforts. Additionally, to support disentanglement efforts and supply teams with proper equipment, 17 caches of specialized disentanglement equipment have been strategically placed in Alaska, Oregon, Washington, California, and Hawaii. These caches contain equipment that supports safe documenting, assessing, monitoring, tagging, and freeing of large whales entangled in manmade materials.

3. INJURY ASSESSMENT "What is the U.S. doing to better understand entanglement injuries and address issues of animal welfare?"

Many of the responses and research efforts outlined above are being used to better document entanglements, and evaluate the injuries in free swimming whales. The network maintains communication with the large whale monitoring programs and every effort is made to identify entangled whales. For some species, this can be done fairly rapidly. Once an animal is identified, the animal's history becomes very important in assessing both current health status and the potential timing of the entanglement by comparing past photographs with the current assessment. Photographs are taken of entangled whales and are scored using standardized criteria on overall health, body condition, entanglement injuries, nature of entanglement, including severity of entanglement and skin condition. Using these criteria, the seriousness of the injuries are evaluated, and a determination is made as to whether the animal needs to be or can be disentangled, or if the entanglement or injuries are minimal and likely to be resolved without human intervention.

NOAA held a workshop in 2006 to further evaluate and develop the criteria for visual and remote health assessments of free swimming whales (IWC/SC/59/DW2), using the techniques developed by the New England Aquarium for North Atlantic right whales. These criteria will be used to further evaluate the health of individual whales as compared to the overall population or over time. In addition, NOAA will be hosting a Serious Injury Workshop in September 2007 to re-evaluate criteria for determining serious injury, to evaluate the survival of entangled animals for which no disentangling was attempted, to evaluate the success of disentangling efforts and to standardize the criteria for evaluation and assessment. NOAA has also recently completed a Right Whale necropsy manual and is funding the stranding network to perform complete and thorough necropsies on right whales to determine cause of death and circumstances of death, with emphasis on documentation of ship strikes and entanglements. In order to ensure collaboration between the disentangling teams and the stranding teams, disentangling team members often attend necropsies on animals that have entanglement injuries or are known to have been previously entangled. Finally, NOAA continues to support efforts to develop new tools for assessment or mitigation and databases or websites to enhance communication between disentangling efforts, health assessments efforts, research programs and the stranding networks.

QUESTION: "If disentangling is not possible, under what conditions would the U.S. government authorize an entangled whale be euthanized (e.g., the whale was either too entangled to disentangle or too injured to reasonably be expected to recover.)"

RESPONSE: Using the assessments and evaluations above, NOAA would consider using humane euthanasia methods if a whale has an entanglement that is causing serious and/or increasing injury, the animal's condition is deteriorating, there are no options for disentangling, and there is thought to be no chance of survival. Criteria for assessing these situations are currently being developed using survival, entanglement, and stranding records. Once criteria and methods for humane euthanasia are developed, NOAA and its response team will evaluate each situation individually to determine whether euthanasia is the best option and possible given the logistics of the situation.

Of the utmost importance is the safety of the individuals responsible for carrying out any actions related to the disentangling or euthanasia of entangled large whales. Beach cast animals represent a unique logistic situation, where an animal can be approached and euthanized, as appropriate. However, free swimming animals that are entangled, even if weakened or in poor condition, constitute a potentially severe risk to individuals required to approach such animals. As noted above, free-swimming right whales tend to be one of the more difficult large whales to approach and handle in a safe manner.

It must also be noted that unless the animal is tagged or easily recognizable, the chances of following an individual whale for a period of time to assess the animal's condition are low, and the ability to mount an offshore effort is difficult on short notice. Entangled animals may only be seen once in a season, then not seen for several months or more. This makes evaluation, decision making, and response extremely challenging. NOAA and its partners maintain web-based catalogues of entanglements and develop action plans for each individual so that better assessments can be made in a timely manner.

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