



North Atlantic Right Whales: Evaluating Common Misconceptions

Background

The North Atlantic right whale is one of the most endangered species of large whale with fewer than 350 whales remaining. The primary causes of mortality and injury to these whales are entanglements in fishing gear and strikes by vessels. Efforts to mitigate threats are ongoing and are complicated by the wide range of stakeholders involved. Conservation of this species requires the commitment of U.S. and Canadian federal agencies, state and provincial agencies, the fishing and shipping industries, non-governmental organizations, and coastal communities. Ensuring all stakeholders have access to accurate information is essential as these efforts continue to move forward.

Misconceptions	Information and Resources
<p>“There’s no point in trying to reduce entanglement risk; right whales will starve to death in the face of climate change”</p>	<p>It is true that warming waters are affecting the distribution of right whale prey, driving a shift to new feeding grounds. While these long-lived and highly mobile animals appear to be at least somewhat resilient to such climate-related prey shifts, the long-term impacts on their survival and reproduction are as yet undetermined. A 2019 study of causes of death of right whales found that between 2003 and 2018, 88% of animals had died of anthropogenic trauma. Thus, regardless of any potential negative impacts of climate change, acute human-caused sources of mortality and serious injury to right whales, and the long-term effects of sublethal entanglement on their health and reproduction, must be addressed to prevent this species from going extinct. Monitoring to detect shifts in right whale distribution can serve to promote awareness of emerging entanglement or vessel-strike risk to whales as they move into new areas. Unfortunately, it is the high energy cost of carrying entangling gear over time or the cases when entanglements and injuries prevent a whale from feeding effectively that likely lead some whales to starve to death.</p>
<p>“There are too many data gaps. More data are needed before we take action”</p>	<p>Data limitations produce uncertainty, and it takes time to collect more and better information. Despite gaps in knowledge concerning some portions of their seasonal movements and distribution, the volume of data available makes the North Atlantic right whale one of the best studied whale species in the world. We have decades of information on these whales and nearly all individuals in the population are known through photo-identification. We know that human activities are resulting in serious injury and death at unsustainable levels; action to mitigate these impacts cannot wait. We should take precautionary actions even if we do not have all the answers in hand. In the Gulf of Maine, ongoing passive acoustic research is being used to fill current data gaps regarding right whale presence throughout the year. Improved regulatory language will enable and encourage adaptive management.</p>
<p>“NMFS assigned too much responsibility for causing right whale mortality and serious injury to the U.S.”</p>	<p>The National Marine Fisheries Service (NMFS) assumed that 50% of right whale mortality and serious injury cases occur in U.S. waters. While this percentage is not exact, it is important to recognize that takes in U.S. waters still exceed legally permissible levels (the number of human-caused deaths that could occur and still allow this species to recover is less than 1 whale per year), so action is needed now to conserve the species (Figure 1). Moreover, because current targets to reduce entanglement risk to whales by 60-80% don’t account for undetected or unreported mortality, the true mortality is being underestimated, meaning that the proposed risk reduction targets should be even higher.</p>

Misconceptions	Information and Resources, continued
<p>“Canada is not doing enough to mitigate risks to right whales”</p>	<p>Canada has been a part of right whale conservation and protection efforts for many years. They re-routed shipping lanes in the Bay of Fundy in 2003 to protect right whales from vessel strikes, and the Campobello Whale Rescue Team has been disentangling whales in the Canadian Maritimes since 2002. In 2017, a large number of whales arrived in the Gulf of St. Lawrence; this shift in distribution resulted in whale presence in new areas without established protections. When several whales died due to entanglements and vessel strikes in the Gulf of St. Lawrence, Canada reacted swiftly and comprehensively to mitigate these threats. Canada put numerous measures into place to reduce entanglement and vessel strike in the Gulf of St. Lawrence. Canada is now addressing the problem in other parts of Atlantic Canada. Many Canadian measures are adaptive – for example, sightings of right whales trigger fishery closures and mandatory speed limits. Canada requires gear marking and reporting of lost gear and interactions between whales and gear or vessels. Canada is also investing in ropeless/buoyless technology – small experimental sections of the snow crab fishery are currently open only to fishers using ropeless gear.</p>
<p>“There are no right whales in Maine waters”</p>	<p>While there are no regular aerial surveys in the Gulf of Maine, reports from whale watching vessels, opportunistic sightings, and passive acoustic monitoring have all indicated the regular presence of right whales in Maine waters. The WhaleMap application displays visual and acoustic detections of right whales, and in recent years detections in Maine have occurred most frequently in offshore waters from late summer through fall, as well as in January. Passive acoustic monitoring stations and gliders also have revealed substantial numbers of right whales to be present in the northern and central Gulf of Maine. Large numbers of right whales used to feed in the lower Bay of Fundy after leaving Cape Cod Bay. While those numbers are down, some whales still use this area and likely spend time in Maine waters when travelling from Cape Cod Bay to the Bay of Fundy.</p>

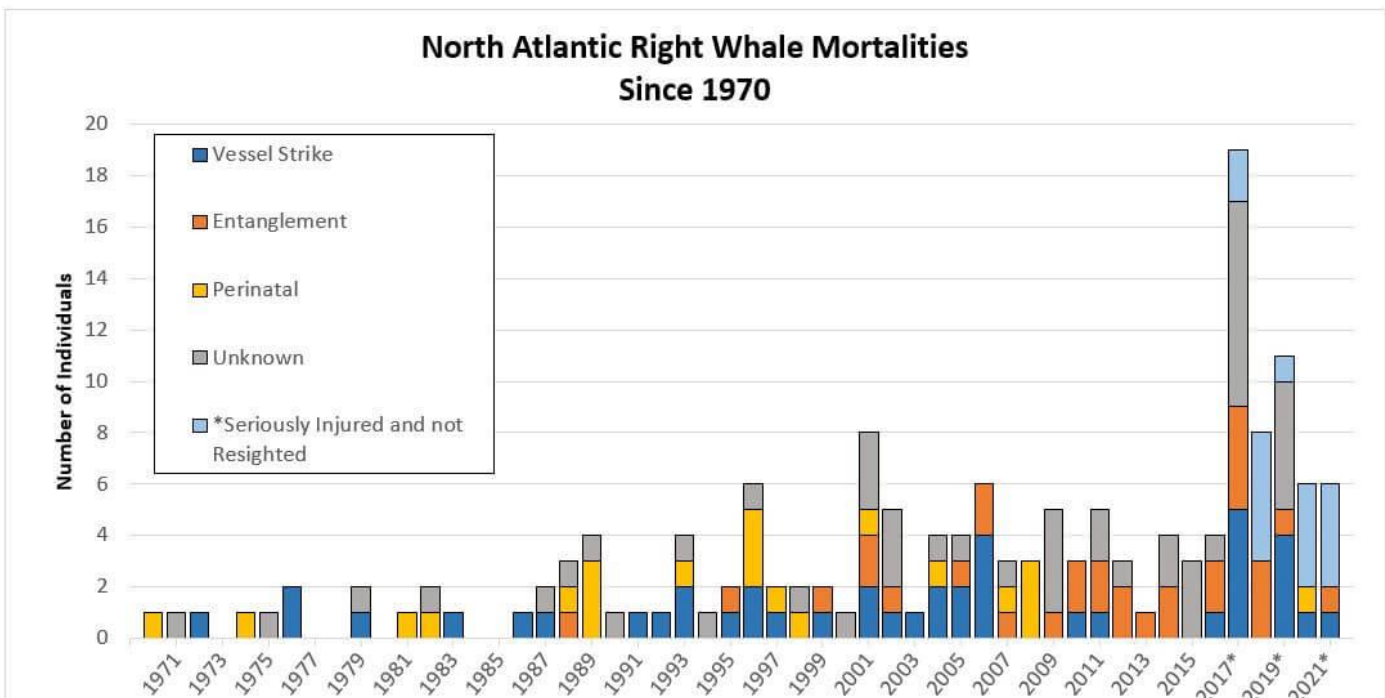


Figure 1: North Atlantic right whale deaths from ship strikes, entanglements in fishing gear, perinatal (newborn) deaths, and unknown causes. The number of human-caused deaths per year that would allow this species to recover is less than 1. (Figure credit: NMFS)

Misconceptions	Information and Resources, continued
<p>“No right whale deaths or serious injuries have been attributed to Maine lobster gear”</p>	<p>In the majority of entanglements reviewed (42 of 61 from 2009-2018), gear was not present or could not be identified, therefore, it is not reasonable to assume that any given fishery bears zero responsibility. The absence of evidence is not evidence of absence. Known entanglements in Maine lobster gear include three involving live whales in the early 2000s – two were disentangled and the third was only partially disentangled, continued to have gear on its body for at least 11 years, and is now presumed dead. In 2012, an entangled right whale was found dead in what was determined to be “New England lobster gear”. The uncertainty about which fishery was involved on that occasion could have been at least partially resolved if fishery-specific gear marking had been mandated decades ago. The Maine lobster gear marking regulations implemented in 2020 should help scientists document where entanglements do and do not occur. When pot/trap lines co-occur with right whales, as they do in the Gulf of Maine, there is a risk of entanglement, and Maine lobster gear could be responsible for some right whale entanglements. Over 85 percent of all North Atlantic right whales show evidence of past entanglements, and on average, 15 to 26 percent experience at least one entanglement event each year. And, as noted above, presently one whale death from entanglement or other causes per year is not sustainable.</p>
<p>“The lobster fishery is being unfairly targeted”</p>	<p>Right whales are susceptible to entanglement in the lines used with pot/trap gear, especially vertical lines. While some lines pose a greater risk than others, line of nearly any diameter can entangle right whales and cause injury and death. If the geographic distribution of any pot/trap gear overlaps with the distribution of right whales, there is a risk of entanglement. There are more, by orders of magnitude, lobster pots/traps in the water than pots/traps for any other fishery. Lobster fishing grounds overlap extensively with the distribution of right whales, and, it is thus reasonable to assume that the lobster fishery is responsible for many of the entanglements that occur in New England waters. In addition to mitigating risk from the lobster fishery, the Atlantic Large Whale Take Reduction Team is working to assess risk associated with gillnet and other pot/trap fisheries. Not just targeting fisheries, NMFS also released a report in June 2020 assessing the effectiveness of the vessel speed rule in reducing vessel strikes of right whales. Public comments on this report are currently being reviewed and will likely result in rulemaking to further reduce the risk of vessel strike to right whales.</p>
<p>“The decision support tool is unreliable”</p>	<p>The decision support tool helps managers assess entanglement risk to whales and evaluates the effectiveness of risk reduction measures. The tool was peer reviewed in 2019 and found to incorporate the best available science. Reviewers noted, however, that the quality of available data on whale distribution, location of the fishery, and configuration of gear could be improved. In response, NMFS, in consultation with the Atlantic Large Whale Take Reduction Team, researchers, and fishing communities, continues to incorporate new sightings and fisheries data and integrate new analyses as they become available to update and improve the decision support tool.</p>
<p>“Ropeless fishing will never work”</p>	<p>While there is still work to be done, transitioning to ropeless is doable, and the progress toward making this gear practical and economically viable is accelerating. When fully developed, tested, and implemented, use of ropeless gear should substantially reduce the threat of right whale entanglements. NMFS has a plan and a timeline in place to begin operationalizing ropeless fishing in federal waters in 2025; recent developments may advance this timeline. Funding is key for progress to continue so the 2025 timeline can be achieved.</p>