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The North Atlantic Right Whale: Federal Management Issues

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Summary

The endangered North Atlantic right whale population has not recovered after commercial whaling ceased, unlike many other whale species. Despite U.S. efforts under the Endangered Species Act and the Marine Mammal Protection Act, the population has declined by about 2% per year since the early 1990s and now numbers about 300 individuals. Direct human-influenced mortality and serious injury come primarily from being struck by large ships and being entangled in commercial fishing gear. These human-influenced mortalities were compounded in the 1990s by alarmingly low calf production, possibly caused by insufficient prey, disease, endocrine disruption from pollution, or other unknown factors.

The National Marine Fisheries Service (NMFS) and the U.S. Coast Guard have implemented recommendations developed in a 1991 recovery plan for right whales to reduce harmful human interactions with this species, but it's too early to determine the impact of these efforts. NMFS has been working for several years to revise the 1991 plan, but has been criticized for slow progress on completing the updated plan.

Following a number of lawsuits beginning in 1994 and alleging various violations of federal law, actions were undertaken by the Commonwealth of Massachusetts, NMFS, and the Coast Guard to increase the protection afforded North Atlantic right whales. Meetings with shipping industry representatives continue in an effort to identify management options for reducing ship strikes. Meanwhile, NMFS has issued regulations to require gear modification in the lobster and gillnet fisheries to reduce whale entanglement.

In general, individuals and public and private organizations support efforts to increase protection for North Atlantic right whales. However, some proponents of the increasingly restrictive measures argue that these efforts do not provide enough protection for the whales or adequately meet their biological needs, while others (especially those in the shipping and commercial fishing industries) contend that these restrictions place unwarranted or unnecessary limits on industries that are already overburdened with regulations.

Congress has increased NMFS funding for research on and recovery of this species from $250,000 in FY1997 to $5 million in FY2001. Controversy arose over NMFS proposed spending of these funds because of 1) reported differences between NMFS spending proposals and the recommendations of independent scientists, conservationists, and industry; 2) the level of salary allocations within NMFS; and 3) the timeliness of NMFS contracting procedures.

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Introduction

Of the large whale species, the North Atlantic right whale is one of the most endangered.[1] Prized for centuries for their oil and baleen ("whalebone"),[2] right whales were one of the first whale species to be depleted, primarily because they were easy to kill.[3] By the 19th century, all stocks of the species were severely depleted throughout their ranges. The League of Nations banned right whale hunting in 1935. Additional protective measures, implemented under the Convention on International Trade in Endangered Species (CITES), the U.S. Endangered Species Act, and the U.S. Marine Mammal Protection Act, have resulted in no known deliberate killing of a right whale in the Northwestern Atlantic since 1951.[4]

Despite these efforts, only about 300 right whales[5] are believed to remain in the northwestern Atlantic. In contrast, the southern hemisphere right whale population has been increasing about 7% annually, and the California gray whale population has greatly increased under the same laws and treaties, although their population was never reduced to as few individuals as the right whale.[6] Scientists surmise that North Atlantic right whale recovery may be impeded by 1) human-induced injuries and mortalities from vessel and propeller strikes as well as entanglement in fishing gear

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[1]Although fewer than 100 right whales are believed to exist off the Pacific coast of the United States and Canada, and a much larger population occurs in the southern hemisphere (*i.e.*, off the coasts of Western Australia, South Africa, and Argentina), this report focuses exclusively on the North Atlantic population, which is reproductively isolated from the other two.

[2]Commercial whaling of the right whale for its oil and baleen was a profitable industry for more than 800 years. The oil was used in lamps, soap, and margarine as well as, more recently, in cosmetics. Baleen was once processed into corset and umbrella ribs, fans, clock springs, hairbrushes, and riding crops.

[3]The right whale was named by early whalers, who found that its coastal distribution, slow swimming speed, and tendency to float when killed made it the "right" whale to hunt.

[4]Russia has acknowledged that its whalers continued to kill substantial numbers of North Pacific right whales in the 1960s, despite international agreements to the contrary.

[5]A 1999 stock assessment by the National Marine Fisheries Service estimated the minimum population to be 291 individuals.

[6]The lowest estimated number of California gray whales was possibly less than 1,000 in the early 1900s. In addition, female California gray whales may give birth every 2 to 3 years compared to every 3 to 6 years for North Atlantic right whales. These differences may partially explain the different recovery response.

and 2) limited food supplies resulting in a decline in reproductive success and an increase in the calving interval. The National Marine Fisheries Service (NMFS) and the U.S. Coast Guard have implemented recommendations developed in a recovery plan for right whales to reduce harmful human interactions with this species in U.S. waters.

Common Names

North Atlantic right whale. Also, northern right whale, Biscayan right whale, nordkaper, and black right whale.

Scientific Name

Eubalaena glacialis, family Balaenidae (right whales). Based on recent genetic studies, most scientists recognize the reproductively isolated North Pacific *(E. japonica*)[7] and southern hemisphere (*E. australis*) right whales as separate species.

Historic Range

Before modern commercial whaling began, North Atlantic right whales were found from the western coasts of Iceland and Greenland to Delaware Bay, and south to Bermuda, Florida, and the Gulf of Mexico. Also in the eastern Atlantic, from the northern coasts of Scandinavia, around the British Isles and the Bay of Biscay (bordered by France and Spain), and down to the northwestern coast of Africa.

Current Range

Twentieth century sightings have occurred from Iceland to Florida, including in the Gulf of St. Lawrence and off Newfoundland, New England, and the mid-Atlantic states. In addition, a few right whales continue to be sighted in the northeastern Atlantic (*e.g.*, off Norway). Right whales are now seldom observed in some inshore areas where they once were common, such as Delaware Bay and in the Strait of Belle Isle between Newfoundland and Labrador. Sightings north of Nova Scotia are comparatively rare. It is unknown whether the few right whales observed in the northeastern Atlantic are remnants of a separate northeastern Atlantic population of around a dozen, whether the northwestern Atlantic population actually consists of two partially overlapping stocks with one stock using habitat in the northeastern Atlantic, whether these whales indicate recolonization of the northeastern Atlantic by individuals from the northwestern Atlantic, or some other relationship. There have been no confirmed sightings in the Bay of Biscay or off northwest Africa in recent years.

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[7]While this report documents the substantial efforts being taken to protect North Atlantic right whales, this closely related species in the North Pacific (and occasionally observed in Alaskan waters) has received scant notice or attention. This critically endangered population of less than 100 individuals was severely damaged by illegal Soviet whaling in the 1960s, and no calves have been confirmed in more than 100 years. This species may be in an even more precarious condition than the North Atlantic right whale and may warrant similar urgent attention.

North Atlantic right whales are now usually found in five areas: 1) Canada's Bay of Fundy (a feeding and potentially important breeding area); 2) the Scotian Shelf south and southwest of Nova Scotia, including Brown's and Roseway Bank and Roseway Basin;[8] 3) along the coast of northern Florida and Georgia (the only known calving area for this species); 4) Cape Cod Bay (a feeding and nursery area); and 5) the Great South Channel, east of Cape Cod (another feeding area). The relative importance of these five areas to right whales may reflect the extensive research and whalewatching effort expended there; other areas (*e.g.*, Platts Bank, Cashes Ledge, Jeffreys Ledge, Fippennies Ledge, Block Island Sound) have not received as much attention, but aggregations of right whales have been noted feeding in these areas.

Habitat

North Atlantic right whales typically migrate along the U.S. coast in shallow waters on their way between northern feeding grounds in the Gulf of Maine and off the Canadian Maritimes and the southern calving and offshore areas. However, at least a third of the population cannot be accounted for during the summer, and may remain offshore. Some pregnant females migrate each year from feeding grounds in the north to calving grounds along the coast between the mouth of the Altamaha River, Georgia, and Sebastian Inlet (south of Cape Canaveral), Florida. It is unknown where the rest of the population overwinters (probably offshore), although as much as 20-30% may remain to feed in coastal waters off Massachusetts from December until June annually.

Fluctuations in the amount and location of available food most likely determine where the whales may be found from year to year. Right whales selectively feed on small planktonic invertebrates called calanoid copepods.[9] To catch them, the whales swim open-mouthed to allow the water to pass into the oral cavity and out through their baleen plates, which hang down from the upper jaw and are effective strainers.

Population Trends

Although at least 10,000 (and perhaps several times this number) right whales may have inhabited the North Atlantic Ocean prior to the advent of commercial whaling, the estimated current northwestern Atlantic population is about 300. Through a 20-year photo-identification program, almost every individual whale in the present population has been identified. Although this population increased at a rate of about 2.5% annually during the 1980s, it has decreased by about 2% per year since the early 1990s.[10]

After maturing at about eight years of age, female right whales can give birth to a single offspring every three to five or more years. During the 1990s, the average

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[8]Use of this area appears to have declined since 1993.

[9]These small planktonic crustaceans form one of the major links of the marine food web. For more information, see [http://www.coastalstudies.org/stellwagen/zoo2.htm].

[10]Marine Mammal Commission. *Annual Report to Congress, 1999* (Bethesda, MD: Jan. 31, 2000), p. 11.

interval between births for mature females increased from less than four years to nearly six years.[11] This increasing interval between pregnancies, coupled with human-influenced mortalities, contributed to the population decline in the 1990s.

Major Threats

The primary human factors inhibiting right whale recovery are probably ship strikes and entanglement in certain types of fishing gear, together causing mortality or serious injury to an estimated average of 2.4 right whales per year.[12] Other threats include changes in food supply and its distribution. The harmful effects of habitat degradation and pollution on North Atlantic right whales are often assumed, but have not been verified. Disturbance from vessels may alter whale behavior, but it is unclear whether this has impaired right whale recovery.

Right whales are particularly susceptible to the dangers posed by ships and fishing gear, because this species' seasonal distribution and migratory movements pass through heavily trafficked areas, and because of this whale's buoyancy, comparatively slow swimming speed, habit of resting near and on the surface, and surface courtship and skim-feeding. Between 1970 and 1999, a total of 45 right whale mortalities were recorded. Of these, 13 (29%) were newborn whales, which are believed to have died from perinatal complications or other natural causes. Another 16 (35%) were determined to be the result of ship strikes, three (7%) were related to entanglement in fishing gear (in two cases, lobster gear, and the third in gillnet gear), and 13 (29%) were of unknown cause. At a minimum, therefore, 42% of the observed mortalities during this period, and 59% of the non-calf deaths, were attributable to human impacts. Oftentimes, the whales are not killed outright but are fatally injured and eventually die because of internal damage or impairment.

Fishing gear, such as lobster trap/pot lines and gillnets, can entrap and entangle whales. Although only three known right whale deaths between 1970 and 2000 were caused by gear entanglement, more than 60% of right whales have scars which are believed to be from fishing gear. Between 1994 and 1998, there were 8 known instances where entanglement was the primary or secondary cause of serious injury to or death of a right whale. Fishing gear entanglement can lead to long-term deterioration of a right whale and, according to some researchers, may be responsible for higher levels of mortality than previously thought.[13] Even minor entanglement involving the baleen may interfere with the normal hydraulic sealing mechanism of the mouth, increasing the energy demands for normal swimming, and reducing the probability of successful reproduction.

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[11]Kraus, S., *et al.* "Status and trends in reproduction in the North Atlantic right whale." *Journal of Cetacean Research and Management*, Special Issue 2 (in press).

[12]*U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments – 2000*, NOAA Technical Memorandum NMFS-NE-162, at [http://www.nefsc.nmfs.gov/psb/assesspdfs.htm], March 9, 2001.

[13]Knowlton, A.R., and S.D. Kraus. "Mortality and serious injury of northern right whales (*Eubalaena glacialis*) in the western North Atlantic Ocean." *Journal of Cetacean Research and Management*, Special Issue 2 (in press).

Another impediment to the whales' recovery is a low rate of reproduction, coupled with a relatively high mortality rate (compared to other whale species) from both human and natural factors. This was compounded in the 1990s by alarmingly low calf production, possibly caused by insufficient prey, disease, endocrine disruption from pollution,[14] or other unknown factors. In addition, it is unknown whether vessel noise and transits in the right whale calving area could disrupt critical acoustic communications between mother and calf, leading to calf separation and subsequent death. Recent evidence suggests that the right whale calving rate is influenced by food availability in the shelf waters of the eastern United States and Canada.[15] A lack of food (nutrition) reduces fecundity either by preventing pregnancy or by causing natural abortion as a result of the female's reduced fitness.

International Protection

The right whale was initially protected from hunting in 1935 by a resolution adopted by the League of Nations.[16] In 1949, the International Whaling Commission (IWC) banned all killing of right whales. Additionally, they are now listed under Appendix I of CITES, a treaty observed by 152 nations,[17] including the United States.

Domestic Protection

Right whales are protected in the United States by the Endangered Species Act (ESA, 16 U.S.C. 1531 *et seq.*) and the Marine Mammal Protection Act (MMPA, 16 U.S.C. 1361 *et seq.*). Both laws have provisions against harming and harassing species. Under section 7 of the ESA, each federal agency must ensure that any activity it authorizes or funds is not likely to jeopardize the continued existence of an endangered species, such as the North Atlantic right whale. Section 118 of the MMPA requires "the immediate goal that incidental kill or incidental serious injury of marine mammals permitted in the course of commercial fishing operations be reduced to insignificant levels approaching a zero mortality and serious injury rate."

Involved Federal Agencies

Numerous federal agencies are involved in the management and/or protection of the North Atlantic right whale. They include NMFS and the National Ocean Service (NOS) within the National Oceanic and Atmospheric Administration (NOAA), the Minerals Management Service (MMS) within the Department of the Interior, the Environmental Protection Agency (EPA), the Army Corps of Engineers (COE), the U.S. Coast Guard (USCG), and the U.S. Navy (USN).

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[14]See CRS Report RS20778, *Endocrine Disruption: An Introduction*.

[15]The dramatic increase in number of calves born in late 2000 and early 2001 (a total of at least 26 calves have been reported, compared to only one birth the previous year) may support this theory, since food was much more abundant in 1999-2000.

[16]However, neither Japan nor the Soviet Union signed this resolution, and both nations continued to kill North Pacific right whales.

[17]As of March 2001. See [http://www.cites.org/CITES/eng/index.shtml].

NMFS administers the ESA and MMPA for right whales, including enforcement, rule making, permit review and issuance, research (both biological and fishing gear-related), and tailors fishery management practices to minimize the entanglement threat and other impacts. NOS establishes programs - both educational and enforcement/management - within National Marine Sanctuaries that further protect right whales in concert with NMFS programs. NOS also provides data/research in support of our understanding of right whale habitat use and needs. MMS provides research to determine right whale use and habitat requirements within areas that may be proposed or have the potential for oil and gas or other mineral extraction efforts. The EPA undertakes assessment studies of potential impacts of discharge of point or non-point source pollution on right whales. The COE conducts assessment studies of potential impacts of construction projects within all navigable marine waters on right whales. The USCG and USN assess the potential impacts of their normal vessel operations and/or training exercises on right whales. The USCG is also responsible for enforcement of the MMPA, ESA, and all fisheries laws within the U.S. Exclusive Economic Zone.

Recent Developments and Controversy

Right whale research within NMFS has been funded by Congress since 1986. Initial appropriations totaled $500,000 in FY1986, and $200,000-$250,000 annually for FY1987-FY1997. Funding was increased to $350,000-$400,000 annually for FY1998-FY1999. In FY2000, NMFS received a substantial increase to $4.1 million[18] for a larger focus on fishing gear modification research, funding of the Sighting Advisory System in the Northeast and the Early Warning System in the Southeast, funding for a disentanglement network, satellite tagging research, surveys of previously unknown habitat, genetic and reproductive research, acoustic research, and improved coordination with the Navy and Coast Guard to reduce ship strikes in whale habitat areas.[19] Right whale research funds were further increased to $5 million for FY2001. Of this $5 million, a total of $2.9 million was directed to the Northeast Consortium (University of New Hampshire, University of Maine, Massachusetts Institute of Technology, and Woods Hole Oceanographic Institution) for a competitive grants program.[20]

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[18]NMFS had requested less than $500,000; the large increase has been attributed to lobbying by non-profit groups.

[19]Controversy arose over NMFS proposed spending of these funds because of 1) reported differences between NMFS spending proposals and the recommendations of independent scientists, conservationists, and industry; 2) the level of salary allocations within NMFS; and 3) the timeliness of NMFS contracting procedures.

[20]The Northeast Consortium [http://www.northeastconsortium.org/] was created in 1999 to encourage and fund effective, co-equal partnerships among commercial fishermen, researchers, and other stakeholders to become active participants in cooperative research and development of selective fishing gear technology. Most of the expertise on right whales resides outside the federal government. Thus, NMFS has facilitated conservation research through subcontracting to scientists at private, non-profit organizations and academic institutions.

A Final Recovery Plan for the Northern Right Whale was completed in December 1991 by NMFS. Recovery Plan Implementation Teams were formed in 1993 in the Southeast United States and in 1994 in the Northeast to identify actions federal agencies could initiate.[21] The Southeast Implementation Team initiated an education campaign to improve public awareness of the whales and reduce human-induced injuries. It also assisted in developing the Early Warning System for alerting mariners to the presence of right whales, to diminish the number of ship strikes.[22] The Northeast Implementation Team sponsored the development of a training video "Right Whales and the Prudent Mariner," focusing on right whale/ship interactions in the Gulf of Maine. Although the majority of the videos produced targeted the commercial shipping industry and were distributed to merchant marine personnel, the Naval Undersea Warfare Center Division Newport tailored a version to cover their test and evaluation operations in the Block Island and Cape Cod areas. In addition, the Northeast Team helped develop and distribute right whale information placards and brochures to fishermen, recreational boaters, and commercial shipping interests. With the passage of time, the 1991 Plan has become increasingly outdated due to advances in understanding the biology and management of the right whale. NMFS has been working for several years to revise the 1991 plan, but has been criticized for slow progress on completing the updated plan.

Following a number of lawsuits beginning in 1994 and alleging various violations of the MMPA, the ESA, and other laws, actions were undertaken by the Commonwealth of Massachusetts, NMFS, and the Coast Guard to increase the whale protection efforts. As of early 2001, the Humane Society of the United States and the Conservation Law Foundation had similar litigation pending in the First District Court, Boston, against the Secretary of Commerce; the Undersecretary of Commerce for Oceans and Atmosphere, NOAA; the Assistant Administrator for Fisheries, NMFS; and the Regional Administrator, NMFS Northeast Region, for failure to adequately protect right whales under the MMPA and the ESA, and for violations of the Administrative Procedures Act.[23]

Effective July 5, 1994, three areas of the right whale's U.S. range were declared to be critical habitat by NMFS.[24] This designation increased public awareness concerning the plight of this species and strengthened the protection offered by the ESA and the MMPA by insuring that habitat was not modified even when the whales are not present. It also helped to determine which activities (such as wastewater

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[21]The Plan's recommendations included: 1) education and enforcement to reduce ship strikes and fishing gear entanglement; 2) designation of the three key habitat areas as critical habitat; and 3) restrictions on recreational whalewatching.

[22]Flights are conducted by a consortium of state and federal agencies to detect right whales off the coasts of Florida, Georgia, and South Carolina. These flights not only document the distribution of right whales, but this information can be relayed to ships which are requested to take voluntary action to avoid the whales.

[23]Humane Society of the United States v. Mineta et al, No. 00-CV-12069-DPW (D. Mass filed October 6, 2000).

[24]"Designated Critical Habitat; Northern Right Whale," 59 *Federal Register* 28793 (June 3,1994).

disposal in adjacent waters) outside the proscribed area were subject to ESA section 7 consultations.

In October 1994, NMFS was petitioned by a Massachusetts environmental group to establish a protection zone of 500 yards around each right whale, in the belief that vessel activity, including engine noise and wakes, disturbed the whales and could adversely alter their behavior.[25] The restriction, which prevents vessels and individuals from approaching the whales to reduce the risk of disturbance, was implemented in March 1997 and is enforced by NMFS and the Coast Guard.[26] Some whalewatching operators objected to the no-approach zone, since it restricts their commercial activity. In addition, some scientists object to the rule, since it precludes data collection from whalewatching vessels. These scientists believe this rule has been the primary cause for a 20% reduction in the number of right whales identified in southern New England waters, compared to the identification rate prior to the rule's promulgation.

Since 1994, the Southeastern Early Warning System has been refined, and a similar program was initiated in 1996 to cover waters off the coast of Massachusetts. Based on a NOAA/NMFS initiative, and with contributions from several organizations, NOAA and the U.S. Coast Guard established the Mandatory Ship Reporting System. This system provides mariners with information on right whales and collects data on ship distribution and movements - information that can subsequently be used to define high-risk areas for these whales. In June 1999, the Coast Guard published interim final regulations for the Mandatory Ship Reporting System covering all U.S. critical habitat for North Atlantic right whales.[27] Under these regulations, all commercial vessels larger than 300 gross tons were required to notify U.S. authorities before entering defined right whale habitat areas.[28] Sovereign immune vessels (*e.g.*, military ships, government-owned research vessels) are encouraged, but not required, to notify U.S. authorities.[29] The reporting system facilitates understanding of the use of critical habitat by ships, and allows vessels to be instructed in means of reducing the likelihood of ship strikes on whales. An NMFS-sponsored Ship Strike Committee held a series of meetings in 2000 with

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[25]The Commonwealth of Massachusetts already had a 500-yard no-approach regulation in place (322 Code of Massachusetts Regulations 12.01-12.05).

[26]"North Atlantic Right Whale Protection," 62 *Federal Register* 6729 (Feb. 13, 1997).

[27]"Mandatory Ship Reporting Systems," 64 *Federal Register* 29229 (June 1,1999).

[28]Some critics suggest that vessels less than 300 gross tons are just as capable of harming right whales, and that little biological justification exists for this arbitrary tonnage threshold.

[29]During the right whale calving period, the Navy's Fleet Area Control and Surveillance Facility (FACSFAC) receives information from a variety of sources on right whale sightings along the Florida/Georgia coast and disseminates the locations to Navy ships, along with recommendations regarding speed, relocating exercises, *etc.* In addition, the Sighting Advisory System (SAS) broadcasts right whale sighting information to northeastern maritime interests, including the Navy. In turn, when operating in the Cape Cod Test Area, the Navy reports any right whales observed during aerial or shipboard surveillance to the SAS for broadcast.

shipping industry representatives at various locations along the east coast. This Committee is preparing a report on management options for reducing ship strikes.

A number of efforts have focused on fishing gear entanglement. In August 1996, NMFS established an Atlantic Large Whale Take Reduction Team (TRT) pursuant to requirements of 1994 amendments to the MMPA. Based primarily on a February 1997 report by this TRT,[30] NMFS developed and published a proposed Atlantic Large Whale Take Reduction Plan (TRP).[31] Although the TRP specified multiple high risk areas that required additional fishing gear modifications, it did not include area closures as an option. Nonetheless, NMFS regulations implementing the TRP proposed fishery time and area closures, marking of fishing gear to identify ownership, and gear design alternatives. Elements of the commercial fishing industry strongly opposed some of the specifics of the NMFS proposed rule (*e.g.*, the weak link below a surface buoy with a breaking strength no greater than 50 pounds) as incompatible with the practical realities of setting and retrieving fishing gear. Modifications responding to fishing industry concerns were incorporated in an interim final rule published in July 1997.[32] After continued entanglement problems under the interim final rule, NMFS issued modified final regulations in February 1999.[33] Because of continuing entanglement concerns, NMFS reconvened the Atlantic Large Whale TRT early in 2000 to consider additional closures and restrictions on commercial fishing. As a result of those meetings, and based on gear research conducted since 1997, new modifications were implemented for all lobster and gillnet gear in December 2000.[34]

A whale disentanglement program was also developed to alleviate gear entanglement situations. Hundreds of fishermen have volunteered for training to participate at one of three levels of response to entanglements. The increased vigilance of fishermen in spotting entangled whales and their willingness to abandon fishing operations to track a whale pending the arrival of the disentanglement team has been the key to several successful disentanglements.

In general, individuals and public and private organizations support efforts to increase protection for North Atlantic right whales. However, some proponents of increasingly restrictive measures argue that these efforts do not provide enough protection for the whales or adequately meet their biological needs, while others

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[30]The TRT did not reach a consensus on a recommendation to NMFS, and its report largely reflected the views of TRT members from the environmental community. Dissenting members representing both the fishing industry and relevant state marine resource agencies submitted an alternative report and recommended plan of action.

[31]"Atlantic Large Whale Take Reduction Plan Regulations," 62 *Federal Register* 16519 (April 7, 1997).

[32]"Atlantic Large Whale Take Reduction Plan Regulations," 62 *Federal Register* 39157 (July 22, 1997).

[33]"Atlantic Large Whale Take Reduction Plan Regulations," 64 *Federal Register* 7529 (Feb. 16, 1999).

[34]65 *Federal Register* 80368 (Dec. 21, 2000). For updated information on the Atlantic Large Whale TRP, see [http://www.nero.nmfs.gov/whaletrp/].

(especially those in the shipping and commercial fishing industries) contend that these restrictions place unwarranted or unnecessary limits on industries that are already overburdened with regulations. Shippers fear that speed restrictions and vessel routing measures could affect the economics of shipping and place some ports at a relative disadvantage to others. While many commercial fishermen support whale protection, they are increasingly concerned that litigation and economics might dismantle fisheries to assure this protection. Fishermen question the effectiveness of fishing regulations in specific areas and seasons since these whales' migrations are extensive and not fully understood. In addition, they fear that they will be forced to bear an unequal share of the regulatory burden for protecting right whales, since the U.S. government can regulate fishing out to 200 miles, while foreign-flagged commercial vessel traffic can be regulated only out to 12 miles.

Perhaps one of the most controversial aspects of this issue could occur in relation to the Marine Mammal Protection Act if the North Atlantic right whale should become the first species under this Act to have its potential biological removal (PBR) level set at zero.[35] If NMFS were to completely close fixed-gear fisheries[36] to meet a PBR goal of zero take, it would be an unprecedented action.

Conclusion

North Atlantic right whales are still threatened by shipping and fishing gear. Technological advances (*e.g.*, sonar or other means of detecting right whales) may enable both industries to coexist with right whales. Funds allocated by Congress in the last two years were intended to improve right whale protection without putting anyone out of business. NMFS has been criticized for its handling of whale protection funds and conservation groups have initiated lawsuits. However, an updated recovery plan, adequate funding for both management and research, accountability to Congress for funds provided, and independent peer-review of funded research may begin to solve many of these problems.

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[35]The PBR level is used to establish limits on incidental marine mammal mortality for commercial fishing operations. For a discussion of PBRs, see pages 9-10 of CRS Report RL30120, *Marine Mammal Protection Act: Reauthorization Issues for the 107th Congress*.

[36]Fixed gear is fishing gear that is secured or weighted (anchored) to the bottom of the sea, as opposed to mobile gear, such as seines and trawls, that is not secured or anchored.