INTRODUCTION AND SUMMARY CHAPTER 1

The Atlantic Large Whale Take Reduction Plan (ALWTRP) is designed to protect three endangered species – the western North Atlantic stock of right whales, the Gulf of Maine stock of humpback whales, and the western North Atlantic stock of fin whales – from the risk of serious injury and death associated with entanglement in commercial fishing gear. The ALWTRP consists of both regulatory and non-regulatory measures that, in combination, seek to assist the recovery of these large whale species. Since its implementation in 1997, the National Marine Fisheries Services (NMFS) has modified the ALWTRP on several occasions to address the risk of entanglement in gear employed by gillnet fisheries and the American lobster trap/pot fishery. In light of continued entanglements, NMFS intends to promulgate additional regulatory requirements to further reduce the risks posed by commercial fishing gear.

This Environmental Impact Statement (EIS) evaluates the biological, economic, and social impacts of a range of alternatives for modifying the ALWTRP, including NMFS' preferred alternative. The discussion that follows briefly summarizes its content and key findings. Specifically:

- Section 1.1 provides information on the status of Atlantic large whale species and the nature of the entanglement problem;
- Section 1.2 describes current ALWTRP requirements, as well as the requirements of the regulatory alternatives considered in this analysis;
- Section 1.3 summarizes the conclusions of the biological, economic, and social impact analyses and identifies NMFS' preferred regulatory alternative;
- Section 1.4 describes changes made to the EIS in response to public comment on the Draft EIS issued in February 2005, the proposed rule published on June 21, 2005 (70 FR 35894), and new information obtained since the development of those documents;
- Section 1.5 discusses areas of controversy that may influence interpretation of the report's findings; and
- Section 1.6 describes the organization of the report's remaining chapters.

1.1 STATUS OF LARGE WHALES AND THE NATURE OF ENTANGLEMENTS

Right whales, humpback whales, and fin whales are listed as endangered species under the Endangered Species Act (ESA), and are, therefore, considered strategic stocks under the Marine Mammal Protection Act (MMPA). Section 118(f)(1) of the MMPA requires the preparation and implementation of a Take Reduction Plan (TRP) for any strategic marine mammal stock that interacts with Category I or II fisheries. A Category I fishery is one in which the mortality and serious injury rate of a strategic stock is greater than or equal to 50 percent of the stock's potential biological removal (PBR) level – defined under the MMPA as the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population (OSP).[1] A Category II fishery is one in which the mortality and serious injury rate of a strategic stock is greater than one percent but less than 50 percent of the stock's PBR. Because the strategic stocks noted above interact with Category I and II fisheries, under the MMPA, a TRP is required to assist in their recovery. In addition, the measures identified in the ALWTRP are beneficial to the survival of the Canadian east coast stock of minke whales, a species that is not listed as endangered or threatened under the ESA. The status of each of these species is discussed in Chapter 4 and summarized briefly below.

- **Right Whale**: The western North Atlantic right whale (*Eubalaena glacialis*) is one of the rarest of all large cetaceans and among the most endangered species in the world. NMFS considers the best estimate of the population of North Atlantic right whales to be approximately 300 (+/- 10%). NMFS believes that the stock is well below the OSP, especially given apparent declines in the population; as such, the stock's PBR level has been set to zero (Waring et al., 2006).[2]
- **Humpback Whale**: As noted above, the North Atlantic humpback whale (*Megaptera novaeangliae*) is listed as an endangered species under the ESA. For the Gulf of Maine stock of humpback whales, NMFS estimates a minimum population size of 647 and has established a PBR level of 1.3 whales per year (Waring et al., 2006).
- **Fin Whale**: NMFS has designated one population of fin whale (*Balaenoptera physalus*) as endangered for U.S. waters of the North Atlantic, although researchers debate the possibility of several distinct subpopulations. NMFS estimates a minimum population size of 2,362 and PBR of 4.7 (Waring et al., 2006).
- **Minke Whale**: As previously noted, the minke whale (*Balaenoptera acutorostrata*) is not listed as endangered or threatened under the ESA. The best estimate of the population of Canadian east coast minke whales is 3,618, with a minimum population estimate of 3,113. The PBR for this stock of minke whales is 31 (Waring et al., 2006).

[1] The optimum sustainable population of any stock or species is defined as the number of animals that will result in the maximum productivity of the stock or species, keeping in mind the carrying capacity of the habitat and the health of the ecosystem of which they form a constituent element (16 USC 1362(9)).

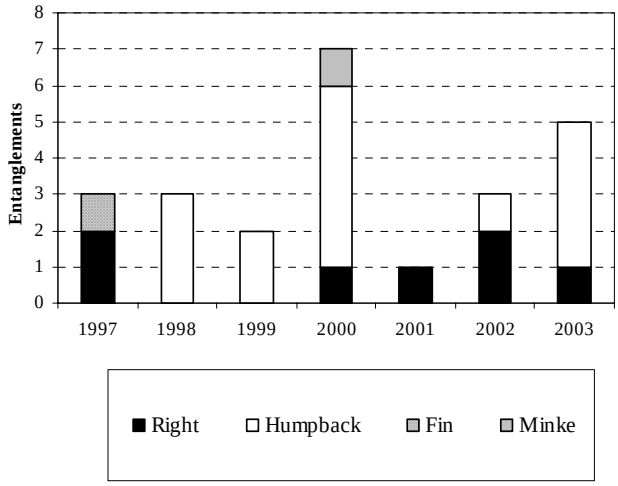
[2] The parameters for calculating the PBR level are described in the MMPA (See 16 USC 1362(20)).

Atlantic large whales are at risk of becoming entangled in fishing gear because the whales feed, travel, and breed in many of the same ocean areas utilized for commercial fishing. While fishing gear is in the water, whales may become incidentally entangled in the lines and nets that make up trap/pot and gillnet fishing gear. The effects of entanglement can range from no permanent injury to serious injury and death.

Exhibit 1-1 summarizes all known "serious injury" entanglements of right, humpback, fin, and minke whales from 1997 through 2003.[3] Humpback whales account for the greatest number of serious injury entanglements (15), followed by right whales (seven); minke whales and fin whales account for one serious injury each. More detail relating to large whale entanglements is provided in Section 2.3: "Rationale for Rulemaking."

Exhibit 1-1

SERIOUS INJURY ENTANGLEMENTS



Note: Observer effort increased significantly around 2000, which could have led to an increased number of entanglements observed.

Sources: Waring et al. (2003) and Waring et al. (2006).

Exhibit 1-2 presents available data on fatal entanglements of Atlantic large whales from 1997 through 2003. During this period, minke whales accounted for the greatest number of known entanglement mortalities (20), followed by humpback whales (10), then right whales (three) and fin whales (three).

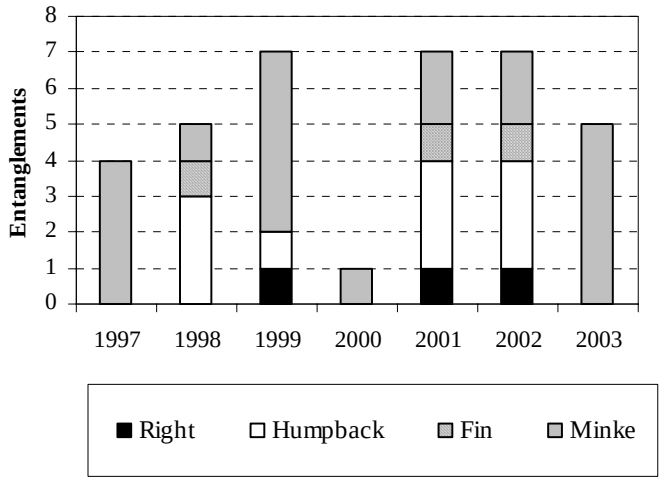
While entanglement is a significant source of risk for Atlantic large whales, other factors influence whale survival. Historically, commercial whaling has presented the greatest threat to whale stocks, and is largely responsible for reducing the populations of certain species to endangered status. Broad adherence to a voluntary international ban on commercial whaling has reduced this threat to the most seriously endangered species. However, other threats remain, including collisions between whales and ships, as well as the adverse effects that water pollution,

[3] "Serious injury" means any injury that will likely result in mortality (50 CFR 229.2).

noise pollution, climate change, and reductions in prey availability may have on whale stocks. These threats are discussed further in Section 9.4: "Effects of Past, Present, and Reasonably Foreseeable Future Actions."

Exhibit 1-2

FATAL ENTANGLEMENTS



Sources: Waring et al. (2003) and Waring et al. (2006).

1.2 ATLANTIC LARGE WHALE TAKE REDUCTION PLAN

1.2.1 Current ALWTRP Requirements

In response to its obligations under the MMPA, NMFS established the Atlantic Large Whale Take Reduction Team (ALWTRT) in 1996 to develop a plan for reducing the incidental take of large whales in commercial fisheries along the Atlantic Coast. The ALWTRT consists of representatives from the fishing industry, state and Federal resource management agencies, the scientific community, and conservation organizations. The intent of the ALWTRT is to provide recommendations to NMFS in developing and amending the ALWTRP.

The ALWTRP seeks to reduce serious injury to or mortality of large whales due to incidental entanglement in U.S. commercial fishing gear. The Plan consists of restrictions on where and how gear can be set; research into whale populations, whale behavior, and fishing gear; outreach to inform fishermen of the entanglement problem and to seek their help in understanding and solving the problem; enforcement efforts to help increase compliance with ALWTRP measures; and a program to disentangle whales that do get caught in gear. The fisheries currently regulated under the ALWTRP include the Northeast/Mid-Atlantic American lobster trap/pot fishery, the Northeast sink gillnet fishery, the Southeast Atlantic gillnet fishery, the Southeastern U.S. Atlantic shark gillnet fishery, and the Mid-Atlantic gillnet fishery.

The ALWTRP includes a variety of gear modification requirements and restrictions, a Seasonal Area Management (SAM) program, and a Dynamic Area Management (DAM)

program. The universal gear modification requirements apply to all lobster traps/pots and anchored gillnets, and include restrictions on floating buoy line at the surface, restrictions on wet storage of gear, and voluntary restrictions on knots in buoy lines. Other gear restrictions are area- and season-specific, and include closures and/or gear modifications for lobster traps/pots and anchored gillnets in the Cape Cod Bay Restricted Area from January 1 through May 15, and the Great South Channel Restricted Area from April 1 through June 30. These measures address times and locations where whale aggregations are greatest, and therefore the risk of entanglement is considered to be higher.

The SAM program was established by NMFS to protect predictable annual aggregations of North Atlantic right whales in the waters off Cape Cod and eastward to the boundary of the Exclusive Economic Zone (EEZ) from entanglement in lobster trap/pot and anchored gillnet gear. The SAM program incorporates two zones: SAM West, which is in effect from March 1 through April 30, and SAM East, which is in effect from May 1 through July 31. Lobster trap/pot and anchored gillnet gear set in the SAM zones during the designated times must be low risk gear. The ALWTRP defines low risk gear as gear that is *highly unlikely* to cause death or serious injury as a result of entanglement.

Under the DAM program, NMFS can temporarily restrict the use of lobster trap/pot and anchored gillnet fishing gear within defined areas north of 40°00′ N latitude to protect right whales. A DAM action is triggered by a single reliable report of an aggregation of three or more right whales within an area (75 square nautical miles) such that the whale density is equal to or greater than 0.04 right whales per square nautical mile. NMFS establishes a buffer zone around the whale aggregation and determines whether to impose temporary restrictions on fishing and/or fishing gear in the zone. Possible management options include mandatory removal of trap/pot and anchored gillnet gear unless modified to continue fishing in the DAM zone, and/or voluntary removal of gear and cessation of fishing in the DAM zone, during the restricted period.

Chapter 2 of this EIS reviews the current ALWTRP requirements in greater detail.

1.2.2 Alternatives Considered

NMFS is currently considering a suite of regulatory alternatives that would modify existing ALWTRP requirements to address ongoing entanglement issues. The alternatives under consideration would seek to reduce large whale entanglement through a variety of measures, such as expanding the scope of the ALWTRP to incorporate other trap/pot fisheries; reducing the vertical profile of groundlines; and mandating modifications to vertical lines, for example, by requiring the use of weak links of lower breaking strength.

Chapter 3 describes in detail the regulatory alternatives evaluated in this EIS. The primary features of these alternatives are summarized below and outlined for comparison in Exhibit 1-3:

- **Alternative 1 (No Action)**: Under Alternative 1, NMFS would continue with the status quo, i.e., the baseline set of ALWTRP requirements currently in place.

- **Alternative 2**: Alternative 2 would impose broad-based regulatory requirements on a year-round basis. Regulatory changes common to all fisheries would include mandatory use of weak links on all flotation or weighted devices attached to buoy lines; mandatory use of sinking and/or neutrally buoyant line in all groundline associated with trap/pot or gillnet gear (excluding drift and shark gillnets); and elimination of both the SAM and DAM programs. The elimination of the SAM and DAM programs and the requirement to use sinking and/or neutrally buoyant groundline would take effect 12 months after publication of the final rule; unless otherwise noted, all other requirements would take effect six months after the final rule is published.[4] Several new trap/pot fisheries would be brought under the Plan (including fisheries for black sea bass, scup, conch/whelk, shrimp, red crab, hagfish, and Jonah crab) and would be subject to requirements similar to the current and proposed requirements for the lobster trap/pot fishery. Alternative 2 also would extend ALWTRP requirements to the Northeast driftnet fishery (applying regulations similar to those that apply to the Mid-Atlantic driftnet fishery) and the Northeast anchored float gillnet fishery (applying requirements similar to those that apply to other components of the Northeast anchored gillnet fishery). In addition, a variety of new requirements would apply to specific fisheries and/or specific areas (see Exhibit 1-3). Finally, Alternative 2 would introduce a revised set of gear marking requirements for all fisheries, establish exempted areas where ALWTRP requirements would not apply, and introduce a variety of regulatory language changes.

- **Alternative 3***: Alternative 3* would entail the same requirements as Alternative 2, but would impose these requirements on a seasonal rather than year-round basis for fisheries in the Mid- and South Atlantic.[5]

- **Alternative 4**: Alternative 4 would entail the same requirements as Alternative 2, but would impose these requirements on a seasonal rather than year-round basis for fisheries in the South Atlantic.

- **Alternative 5**: Alternative 5 would modify or expand the provisions of the existing SAM program. It would expand the SAM East and SAM West zones; require the upper two-thirds of buoy lines in SAM waters to be made of sinking and/or neutrally buoyant line; and allow two buoy lines

[4] As formulated in the DEIS, Alternative 2 stipulated that broad-based requirements for the use of sinking and/or neutrally buoyant groundline would take effect on January 1, 2008, and that the SAM and DAM programs would be eliminated on that date. Delays in the rulemaking process have rendered this date impractical. To ensure that Alternative 2 remains practically viable, NMFS has updated it to specify that broad-based requirements for the use of sinking and/or neutrally buoyant groundline would take effect 12 months after publication of the final rule, and that the SAM and DAM programs would be eliminated when these broad-based requirements take effect. NMFS has made similar changes to the other alternatives that specified a January 1, 2008, effective date for some or all of these provisions (i.e., Alternatives 3*, 4, and 6 Draft*).

[5] Alternatives previously identified as preferred in the Draft Environmental Impact Statement (DEIS) are marked with an asterisk (*) throughout this report.

for all trawls in SAM waters except for the overlap with the Northern Nearshore Trap/Pot Waters, Stellwagen Bank/Jeffreys Ledge Restricted Area, and Federal waters of the Cape Cod Bay Restricted Area (May 16-December 31), in which trawls of four traps/pots or fewer would be restricted to a single buoy line. It would also include the weak link requirements described under Alternative 2, applying them year-round in northern waters and seasonally in other waters. Finally, Alternative 5 would bring the new fisheries addressed by Alternatives 2 through 4 under the ALWTRP; incorporate the same gear marking requirements, exempted areas, and regulatory language changes; and eliminate the DAM program six months after publication of the final rule. This alternative would not expand broad-based requirements coast-wide, such as the sinking and/or neutrally buoyant groundline requirements for trap/pot and anchored gillnet gear; requirements that gillnet gear in the Northeast meet anchoring standards or use five weak links or more per net panel; and requirements that gillnet gear in the Mid-Atlantic use five weak links or more per net panel. Also, the Northern Inshore Lobster Take Reduction Technology List would not be eliminated.

- **Alternative 6 Draft***: Alternative 6 Draft* would combine elements of Alternatives 3* and 5. Buoy line weak link requirements and broad-based gear requirements (net panel weak links, sinking and/or neutrally buoyant groundline, anchoring, gear marking, etc.) would be introduced on the same schedule and with the same seasonal and geographic provisions as described under Alternative 3*; however, DAM requirements would be eliminated six months after publication of the final rule (rather than 12 months after its publication), and the expanded SAM zone and SAM regulations described in Alternative 5 would apply from six months after publication of the final rule until 12 months after its publication, when the SAM program would be eliminated and all groundline associated with trap/pot and anchored gillnet gear would be required to be sinking and/or neutrally buoyant line.

- **Alternative 6 Final (Preferred)**: In response to comments received on the Draft Environmental Impact Statement (DEIS), NMFS formulated a final preferred alternative that builds on Alternative 6 Draft*. Key differences under Alternative 6 Final (Preferred) include the following: (1) an alternative weak link configuration would be allowed for anchored gillnets; (2) an alternative weak link and anchoring configuration would be allowed for anchored gillnets within 300 yards of the North Carolina shoreline; (3) exempted areas would be expanded in Maine and Long Island Sound, but revert to the status quo in Massachusetts; (4) a number of requirements pertaining to gillnet fisheries in Southeast waters would not be extended to waters east of 80^{o}00' W; and (5) buoy line marking requirements would be modified relative to Alternative 6 Draft*.

Exhibit 1-3

PROPOSED ALWTRP MANAGEMENT ALTERNATIVES 2 THROUGH 6 FINAL (PREFERRED) [1]
(Requirements in Addition to Current ALWTRP Requirements) [2]

Fishery/Region	Component	Alternative 2	Alternative 3*	Alternative 4	Alternative 5	Alternative 6 Draft*	Alternative 6 Final (Preferred)
Lobster – Northern Inshore and Nearshore Waters; Stellwagen Bank/Jeffreys Ledge Restricted Area; and Cape Cod Bay Restricted Area (5/16 – 12/31)[3]	Weak links	• Weak links on all flotation devices and/or weighted devices attached to the buoy line • Eliminates existing take reduction technology list; 600-lb weak links on all flotation devices or devices attached to buoy line; applies only to Northern Inshore lobster waters and state portion of Cape Cod Bay Restricted Area (May 16 to December 31)	= Alt. 2	= Alt. 2	Expanded SAM (see text)	= Alt. 3 but with expanded SAM introduced 6 mos. after publication; SAM effective for 6 mos., then eliminated; DAM eliminated six mos. after publication	= Alt. 6 Draft* but with trawls *of five or fewer traps* allowed only one buoy line in certain areas (see text)
	Groundline	• Sinking and/or neutrally buoyant groundline year-round (within 12 mos. of rule)					
	Other	• Trawls of four or fewer traps allowed only one buoy line; applies only to Northern Nearshore lobster waters, Stellwagen Bank/Jeffreys Ledge Restricted Area, and Federal portions of Cape Cod Bay Restricted Area (May 16 to December 31) • SAM/DAM eliminated 12 mos. after publication of final rule					
Lobster – Offshore	Weak links	• Weak links on all flotation devices and/or weighted devices attached to the buoy line • Buoy line weak link strength of 1,500 lbs	= Alt. 2 but requirements are seasonal for mid- and South Atlantic (see text)	= Alt. 2	Expanded SAM (see text)	= Alt. 3 but with expanded SAM introduced 6 mos. after publication; SAM effective for 6 mos., then eliminated; DAM eliminated six mos. after publication	= Alt. 6 Draft*
	Groundline	• Sinking and/or neutrally buoyant groundline year-round (within 12 mos. of rule)					
	Other	• SAM/DAM eliminated 12 mos. after publication of final rule • Extend southern boundary by following the 100 fa line from 35°30'N to 27°51'N, and then extend out to EEZ					
Lobster – Great South Channel Restricted Lobster Area (7/1 – 3/31)[3]	Weak links	• Weak links on all flotation devices and/or weighted devices attached to the buoy line • Buoy line weak link strength of 1,500 lbs in Great South Channel area that overlaps the LMA 2/3 overlap and LMA 3 (July 1 to March 31); 600-lb weak links for other areas	= Alt. 2 but requirements are seasonal for mid- and South Atlantic (see text)	= Alt. 2	Expanded SAM (see text)	= Alt. 3 but with expanded SAM introduced 6 mos. after publication; SAM effective for 6 mos., then eliminated; DAM eliminated six mos. after publication	= Alt. 6 Draft*
	Groundline	• Sinking and/or neutrally buoyant groundline year-round (within 12 mos. of rule)					
	Other	• SAM/DAM eliminated 12 mos. after publication of final rule					
Lobster – Southern Nearshore[3]	Weak links	• Weak links on all flotation devices and/or weighted devices attached to the buoy line	= Alt. 2 but requirements are seasonal for mid- and South Atlantic (see text)	= Alt. 2	Expanded SAM (see text)	= Alt. 3 but with expanded SAM introduced 6 mos. after publication; SAM effective for 6 mos., then eliminated; DAM eliminated six mos. after publication	= Alt. 6 Draft*
	Groundline	• Sinking and/or neutrally buoyant groundline year-round (within 12 mos. of rule)					
	Other	• Apply all requirements to currently unregulated portion of Lobster Management Area 6 that is not included in exempted waters • DAM eliminated 12 months after publication of final rule • Extend southern boundary by following the 100 fa line from 35°30'N to 27°51'N, and then extend inshore to coast or exemption line; area south of 35°30'N would use the 100 fa line to define Southern Nearshore Lobster Waters					

Exhibit 1-3

PROPOSED ALWTRP MANAGEMENT ALTERNATIVES 2 THROUGH 6 FINAL (PREFERRED) [1]
(Requirements in Addition to Current ALWTRP Requirements) [2]

Fishery/Region	Component	Alternative 2	Alternative 3*	Alternative 4	Alternative 5	Alternative 6 Draft*	Alternative 6 Final (Preferred)
Black Sea Bass, Scup, Conch/Whelk, Shrimp, Hagfish, and Jonah Crab (trap/pot fisheries)[4]	Weak links	• Weak links on all flotation devices and/or weighted devices attached to the buoy line • Buoy line weak link strength of 1,500 lbs for fisheries in Offshore lobster waters and Great South Channel that overlaps the LMA 2/3 Overlap and LMA 3 (July 1 to March 31); 600-lb weak links for fisheries in other areas	= Alt. 2 but requirements are seasonal for mid- and South Atlantic (see text)	= Alt. 2 but requirements are seasonal for South Atlantic (see text)	Expanded SAM (see text)	= Alt. 3 but with expanded SAM introduced 6 mos. after publication; SAM effective for 6 mos., then eliminated; DAM eliminated six mos. after publication	= Alt. 6 Draft* but with trawls *of five or fewer traps* allowed only one buoy line in certain areas (see text)
	Groundline	• Sinking and/or neutrally buoyant groundline year-round within 12 mos. of rule's publication; effective six months after publication in SAM waters and in Cape Cod Bay between January 1 and May 15.					
	Other	• Fold in under existing ALWTRP regulations (e.g., trawls of four or fewer traps allowed only one buoy line in Northern Nearshore lobster waters, Stellwagen Bank/Jeffreys Ledge Restricted Area and Federal portions of Cape Cod Bay Restricted Area from May 16 to December 31) • Define southern boundary using definitions discussed under Southern Nearshore Lobster Waters and Offshore Lobster Waters • Apply all requirements to currently unregulated portion of Lobster Management Area 6 that is not included in exempted waters • SAM/DAM eliminated 12 mos. after publication of final rule					
Red Crab (trap/pot)[4]	Weak links	• Weak links on all flotation devices and/or weighted devices attached to the buoy line • Buoy line weak link breaking strength of 2,000 lbs for operations in offshore lobster waters	= Alt. 2 but requirements are seasonal for mid- and South Atlantic (see text)	= Alt. 2 but requirements are seasonal for South Atlantic (see text)	Expanded SAM (see text)	= Alt. 3 but with expanded SAM introduced 6 mos. after publication; SAM effective for 6 mos., then eliminated; DAM eliminated six mos. after publication	= Alt. 6 Draft*
	Groundline	• Sinking and/or neutrally buoyant groundline year-round (within 12 mos. of rule)					
	Other	• Fold in under existing ALWTRP regulations • Define southern boundary using definitions discussed under Southern Nearshore Lobster Waters and Offshore Lobster Waters • Apply all requirements to currently unregulated portion of Lobster Management Area 6 that is not included in exempted waters • SAM/DAM eliminated 12 mos. after publication of final rule					
Gillnet – Northeast, Anchored[5]	Weak links	• Weak links on all flotation devices and/or weighted devices attached to the buoy line • Increase number of 1,100-lb weak links per panel from one to five or more, depending on net size, year-round	= Alt. 2 (but requirements are seasonal south of 40°N)	= Alt. 2	Expanded SAM (see text)	= Alt. 3 but with expanded SAM introduced 6 mos. after publication; SAM effective for 6 mos., then eliminated; DAM eliminated six mos. after publication	= Alt. 6 Draft* with additional option for net panel weak link configuration (see text)
	Groundline	• Sinking and/or neutrally buoyant groundline year-round (within 12 mos. of rule)					
	Other	• SAM/DAM eliminated 12 mos. after publication of final rule • All anchored gillnets must be anchored with the holding power of at least a 22-lb Danforth-style anchor at each end of net string • Fold in Northeast anchored float gillnet fishery under existing ALWTRP regulations					

Exhibit 1-3

PROPOSED ALWTRP MANAGEMENT ALTERNATIVES 2 THROUGH 6 FINAL (PREFERRED) [1]
(Requirements in Addition to Current ALWTRP Requirements) [2]

Fishery/Region	Component	Alternative 2	Alternative 3*	Alternative 4	Alternative 5	Alternative 6 Draft*	Alternative 6 Final (Preferred)
Gillnet – Northeast, Driftnet[6]	Weak links	• One 1,100-lb weak link per panel when fishing tended gear at night	= Alt. 2 (but requirements are seasonal south of 40°N)	= Alt. 2	Expanded SAM (see text)	= Alt. 3 but with expanded SAM introduced 6 mos. after publication; SAM effective for 6 mos., then eliminated; DAM eliminated six mos. after publication	= Alt. 6 Draft* but without weak link requirement
	General	• Fold in and regulate same as Mid-Atlantic driftnet • Seasonal closures in Cape Cod Bay (Jan. 1 to May 15) and Great South Channel (April 1-June 30)					
Gillnet – Mid-Atlantic, Anchored[7]	Weak links	• Weak links on all flotation devices and/or weighted devices attached to the buoy line • All nets must return to port with the vessel *or* contain five or more (rather than one) 1,100-lb. weak links per net panel, depending on size (and be anchored at each end of net string with an anchor having the holding power of a 22-lb Danforth-style anchor, as previously required)	= Alt. 2 but requirements are seasonal (see text)	= Alt. 2	Expanded SAM (see text)	= Alt. 3 but with expanded SAM introduced 6 mos. after publication; SAM effective for 6 mos., then eliminated; DAM eliminated six mos. after publication	= Alt. 6 Draft* but with (1) option for net panel weak link configuration; and (2) alternative weak link and anchoring option for vessels within 300 yds. of NC shoreline (see text)
	Groundline	• Sinking and/or neutrally buoyant groundline year-round (within 12 mos. of rule)					
	Other	• Time period for all requirements expanded to year-round (vs. current period of Dec. 1 to March 31) • Includes gillnets that are weighted to bottom but do not have an anchor on either end and gillnets that are anchored at each end but not weighted to the bottom • DAM eliminated 12 months after publication of rule • Waters between 72°30'W and EEZ that are south of VA/NC border and north of SC/GA border folded into Mid-Atlantic anchored gillnet regulations					
Gillnet – Mid-Atlantic, Driftnet[7]	Weak links	• One 1,100-lb weak link per panel when fishing tended gear at night	= Alt. 2 but requirements are seasonal (see text)	= Alt. 2	Expanded SAM (see text)	= Alt. 3	= Alt. 6 Draft* but without weak link requirement
	General	• Time period for all requirements expanded to year-round (vs. current period of Dec. 1 to March 31) • Waters between 72°30'W and EEZ that are south of VA/NC border and north of SC/GA border folded into Mid-Atlantic drift gillnet regulations					

Exhibit 1-3

PROPOSED ALWTRP MANAGEMENT ALTERNATIVES 2 THROUGH 6 FINAL (PREFERRED) [1]
(Requirements in Addition to Current ALWTRP Requirements) [2]

Fishery/Region	Component	Alternative 2	Alternative 3*	Alternative 4	Alternative 5	Alternative 6 Draft*	Alternative 6 Final (Preferred)
Shark Gillnet – Southeast[8]	General	• Extend 80°00' W longitude boundary and associated requirements to EEZ • Replace current time period (November 15 to March 31) as follows: - From 32° N to 29°00'N: Restrictions apply from November 15 to April 15 - From 29°N to 26°46.5'N: Restrictions apply from December 1 to March 31 (keep 27°51'N as southern line of "Restricted Area" during this time period) • Strikenet gear in Southeast U.S. Restricted Area must be removed immediately if right, humpback, or fin whale moves within 3 nautical miles (year-round) • Require use of vessel monitoring system in lieu of 100% observer coverage	= Alt. 2 but requirements are seasonal (see text)	= Alt. 2 but requirements are seasonal (see text)	Expanded SAM (see text)	= Alt. 3	= Alt 6 Draft*, but driftnet, night/visibility set and spotter plane restrictions and VMS requirement are removed in waters east of 80°W; current observer requirements retained north of 27°51'N; VMS allowed as a substitute for observer coverage in the waters between 27°51'N and 26° 46.5'N[9]
Gillnet – Southeast[10]	General	• Extend 80°00' W longitude boundary and associated requirements to EEZ • Replace current area/time management measures as follows: - From SC/GA border to 29°00'N: Restrictions apply from November 15 to April 15 - From 29°00'N to 27°51'N: Restrictions apply from December 1 to March 31 • Require gear modification similar to Mid-Atlantic anchored gillnets that are weighted to bottom but do not have anchor at either end (e.g., weak links in net panels and on buoys; year-round)	= Alt. 2 but requirements are seasonal (see text)	= Alt. 2 but requirements are seasonal (see text)	Meet existing requirements for Mid-Atlantic gillnets	= Alt. 3	= Alt 6 Draft*, but with 1) an additional option for net panel weak link configuration (see text); and 2) removal of night set restrictions in waters east of 80°W
	Weak links	• Weak links on all flotation devices and/or weighted devices attached to the buoy line • All nets must return to port with the vessel *or* contain five or more (rather than one) 1,100-lb. weak links per net panel, depending on size (and be anchored at each end of net string with an anchor having the holding power of a 22-lb Danforth-style anchor, as previously required)					
	Groundline	• Sinking and/or neutrally buoyant groundline year-round (within 12 mos. of rule)					

Exhibit 1-3

PROPOSED ALWTRP MANAGEMENT ALTERNATIVES 2 THROUGH 6 FINAL (PREFERRED) [1]
(Requirements in Addition to Current ALWTRP Requirements) [2]

Fishery/Region	Component	Alternative 2	Alternative 3*	Alternative 4	Alternative 5	Alternative 6 Draft*	Alternative 6 Final (Preferred)
All Fisheries	Exempted Areas	• Areas landward of 72 COLREGS line, with exceptions for Boston Harbor, Gardiners Bay (NY), and portions of the Maine coast • No requirement for sinking and/or neutrally buoyant groundline in waters greater than 280 fathoms	= Alt. 2	= Alt. 2	= Alt. 2	= Alt. 2	= Alt 6 Draft*, but 1) modified exempt areas in Maine, Massachusetts and Long Island Sound; and 2) no net panel weak link or anchoring requirement in waters greater than 280 fathoms
	Gear Marking	• Remove current ALWTRP gear marking scheme (except net panel marking for shark gillnet gear) • Mark surface buoys with vessel or permit number • Mark buoy lines with one 4-inch mark every 10 fathoms or one 4-inch mark in the center of buoy lines 10 fathoms or less (shark vessels with buoy lines < 4 feet are exempt)	= Alt. 2	= Alt. 2	= Alt. 2	= Alt. 2	= Alt 6 Draft*, but one 4-inch mark midway on all buoy lines

Key:
* = Specified as a Preferred Alternative in the DEIS

Notes:
[1] The requirements discussed under each alternative would be effective six months after publication of the final rule, unless otherwise noted.
[2] See Section 1.2.1 for a description of the current ALWTRP requirements. Note that Alternative One is the No Action Alternative.
[3] Northeast/Mid-Atlantic American lobster trap/pot fishery in the 2003 List of Fisheries.
[4] Atlantic mixed species trap/pot fishery in the 2003 List of Fisheries. The trap/pot fisheries affected by this action could include other species (e.g., blue crab), although these species are caught primarily in exempt waters.
[5] Northeast sink gillnet fishery in the 2003 List of Fisheries
[6] Northeast drift gillnet fishery in the 2003 List of Fisheries
[7] Mid-Atlantic gillnet fishery in the 2003 List of Fisheries
[8] Southeastern U.S. Atlantic shark gillnet fishery in the 2003 List of Fisheries
[9] VMS substituted for observer requirement south of 27° 51' N. lat. effective thirty days after publication of the final rule.
[10] Southeast Atlantic gillnet fishery in the 2003 List of Fisheries

In addition to the alternatives evaluated in the course of the current rulemaking, it is important to note that NMFS will be considering management options to further reduce the entanglement risks associated with vertical line in the course of a future rulemaking action. NMFS and others are currently researching additional ways to reduce the risks associated with vertical line, such as investigating the profiles of vertical line with different buoy line configurations (e.g., sinking/neutrally buoyant vs. floating) as well as other modifications (e.g., requiring a minimum number of traps per trawl in certain areas). NMFS and others are also investigating how whales utilize the water column, including their foraging ecology and diving behavior, which will help to determine the appropriate mitigation strategies to reduce the risk of entanglement in vertical line. NMFS is presently developing management options to further discuss with the ALWTRT and is investigating effort reductions that are occurring through fishery management plans and protected species actions (e.g., take reduction plans, sea turtle regulations). NMFS believes that these steps are necessary and appropriate before it proposes further measures to reduce the risks associated with vertical line.

1.3 MAJOR CONCLUSIONS AND PREFERRED ALTERNATIVES

1.3.1 Biological Impacts of Alternatives

Gear modification requirements are a key component of the ALWTRP modifications under consideration. Section 5.1 of this EIS discusses the potential impact of these requirements on whale survival. The major requirements affecting whale survival include:

- **Groundline Requirements:** The requirement to use sinking and/or neutrally buoyant groundline is designed to reduce the amount of line in the water column, thereby reducing the likelihood that large whales will be killed or seriously injured as a result of entanglement in commercial fishing gear.

- **Buoy Line Requirements:** The regulatory changes under consideration would extend universal buoy line requirements (which prohibit any portion of the buoy line floating at the surface) to a number of new fisheries. It is believed that the extension of this requirement to these fisheries would benefit large whales by reducing the frequency or severity of entanglement in buoy lines and associated gear.

- **Weak Link and Anchoring Requirements:** The potential regulatory changes analyzed include provisions such as requiring that lobster and other trap/pot gear employ weak links on all floatation and/or weighted devices attached to the buoy line. The specified strength and placement of weak links (i.e. buoyline and net panel) is designed so that, if a large whale does become entangled, it could exert enough force to break the weak link. Thus, the risk of serious injury or mortality would be reduced.

- **Set Restrictions and Gear Stowing Requirements:** The potential regulatory changes under analysis include several restrictions on where

and when gillnet gear could be used. The night set restrictions under consideration are designed to reduce the risk that poor visibility would contribute to an entanglement; the prohibition on the use of strikenets when visibility is less than 500 yards has a similar purpose. The requirement that driftnet vessels in the Northeast and Mid-Atlantic remove their gear from the water and stow it on board before returning to port is designed to ensure that any interactions between driftnets and whales would be observed and reported in a timely fashion, permitting a more rapid response.

In addition to gear modification requirements, the potential changes to the ALWTRP include a range of restrictions on the location and timing of fishing activity. These include the expansion of the SAM zone under Alternatives 5, 6 Draft*, and 6 Final (Preferred); seasonal closures of newly regulated fisheries in right whale restricted areas; expansion of the geographic scope of Southeast monitoring and restricted areas under Alternatives 2 through 6 Draft*; changes to exempted waters in the Northeast and Mid-Atlantic; deep water exemptions; inclusion of other trap/pot vessels in the SAM and DAM programs; and the inclusion of seasonal restrictions on fishing activity in the Southeast and/or Mid-Atlantic. The general objective of all these potential changes is to limit the frequency and severity of interactions between whales and regulated trap/pot and gillnet gear while avoiding implementation of costly requirements that yield limited risk reduction.

The biological impacts analysis incorporates quantitative and qualitative indicators that facilitate comparison of the impact of the regulatory alternatives on potential entanglement risks (see Exhibit 1-4). These indicators suggest that, aside from Alternative 1 (No Action), Alternative 5 is the regulatory alternative that differs most significantly from the others. The impacts associated with Alternative 5 would be significantly less than those associated with Alternatives 2 through 4, 6 Draft*, and 6 Final (Preferred), primarily because Alternative 5 would not impose as broad a set of gear modification requirements.

The most notable differences in the estimated impacts of Alternative 6 Final (Preferred) and Alternatives 2, 3*, 4, and 6 Draft* are primarily attributable to differences between Alternative 6 Final (Preferred) and the other alternatives in the designation of exempted areas. As Exhibit 1-4 indicates, Alternative 6 Final (Preferred) would require vessels to convert an estimated 23.9 million fathoms of groundline from floating to sinking and/or neutrally buoyant line; this figure is approximately 77 percent of the total that would be converted to sinking and/or neutrally buoyant line under Alternatives 2, 3*, 4, and 6 Draft*. Similarly, Alternative 6 Final (Preferred) would require weak links to be installed on all flotation and/or weighted devices attached to 24.8 million fathoms of buoy line, approximately 81 to 82 percent of the total length of buoy line that would be affected by this requirement under Alternatives 2, 3*, 4, and 6 Draft*.

The differences between Alternative 6 Final (Preferred) and Alternatives 2, 3*, 4, and 6 Draft* with respect to the two indicators noted above likely overstate any actual differences in the degree to which these alternatives would reduce entanglement risks. The designation of exempted areas under each of these alternatives is based on a review of large whale sightings data to determine where whales are likely to be found. While Alternative 6 Final (Preferred) would exempt areas off the coast of Maine and in Long Island Sound that would be regulated

under Alternatives 2, 3*, 4, and 6 Draft*, large whales are, amongst other reasons, unlikely to occur or spend significant time in these areas. As a result, Alternatives 2, 3*, 4, and 6 Draft* would likely offer little additional risk reduction relative to Alternative 6 Final (Preferred).

With respect to most other indicators, the impacts of Alternative 6 Final (Preferred) are similar to those of Alternatives 2, 3*, 4, and 6 Draft*. The most notable exception is the number of "area-days" for which broad-based gear modification requirements would be in effect. This indicator is designed to capture seasonal differences in the application of regulations under each alternative, and is calculated by multiplying the square nautical miles of area protected under the ALWTRP by the number of days each year that seasonal gear modification requirements would apply. By this measure, Alternative 2 would provide the highest degree of protection (an estimated 92 to 93 million area-days subject to broad-based gear modification requirements), followed by Alternative 4 (79 million area-days) and Alternatives 3*, 5, 6 Draft*, and 6 Final (Preferred), with approximately 65 million area-days each. As noted in the DEIS, however, the actual risk-reduction potential of these alternatives is unlikely to vary as much as this indicator implies. The seasonal exemptions provided under Alternatives 3*, 4, 6 Draft*, and 6 Final (Preferred) are premised on the migratory patterns of large whales. Current understanding of these patterns suggests that the risk of entanglement for a whale in the Mid-Atlantic or Southeast during the summer months (June through August) is low. As a result, year-round requirements in the Mid-Atlantic or Southeast would likely offer little additional risk reduction relative to seasonal standards.

In addition to impacts on large whale species, changes to ALWTRP regulations may affect other aspects of the marine environment, including other protected species, essential fish habitat (EFH), and directed catch and bycatch in affected fisheries. Analysis of these issues, addressed in Section 5.2 of this EIS, suggests no significant differences among Alternatives 2 through 6 Final with respect to impacts on essential fish habitat, directed catch, or bycatch; in each case, the impacts are generally expected to be minor. The alternatives differ, however, with respect to the ancillary benefits they would afford other protected species. These differences stem from differences in the extent to which the alternatives would mandate broad-based gear modification requirements that could prove beneficial to potentially affected species of whales, porpoises, dolphins, seals, and sea turtles. Under Alternative 5, for example, broad-based gear modification requirements would not be instituted; as a result, any ancillary benefits to other protected species would be limited primarily to those associated with the expansion of SAM requirements to additional fisheries and additional areas, to the extent that other protected species are present in these areas during the times that the requirements are in effect. Under Alternative 2, however, broad-based gear modification requirements would be in effect in all ALWTRP-regulated waters at all times; thus, protected species that inhabit Mid-Atlantic or Southeast waters year-round, such as bottlenose dolphins, could benefit from these requirements throughout the year. Alternatives 3*, 4, 6 Draft*, and 6 Final (Preferred) would also apply broad-based gear modification requirements, but would do so on a seasonal basis in the Mid-Atlantic and Southeast; during the periods that these requirements would be in effect, they could offer ancillary benefits to other protected species.

Exhibit 1-4

COMPARISON OF IMPACTS BY ALTERNATIVE: QUANTITATIVE RISK REDUCTION INDICATORS[1]

	Regulatory Alternatives						
	No Action 1	**2**	**3***	**4**	**5**	**6 Draft***	**6 Final (Preferred)**
Changes in the Number of Affected Vessels							
Newly regulated lobster trap/pot vessels	0	11	10	11	10	10	5
Newly regulated gillnet vessels[2]	0	616	604	615	604	604	604
Newly regulated other trap/pot vessels	0	418	416	418	416	416	431
Major Gear Requirements							
Fathoms of groundline converted (millions)[3]	0	31.2	31.1	31.2	0.2	31.1	23.9
Fathoms of buoy line with weak links installed on all flotation and/or weighted devices (millions)	0	30.7	30.6	30.7	30.6	30.6	24.8
Number of weak links installed on all flotation and/or weighted devices off the main buoy line (thousands)	0	345.7	344.7	345.7	344.7	344.7	281.4
Number of gillnet net panels with multiple weak links installed (thousands)	0	125.9	124.9	125.9	2.0	125.0	126.7
Number of gillnet net panels with 1 weak link installed (thousands)	0	60.7	59.6	60.6	118.6	59.6	59.6
Number of gillnet strings with anchors installed (thousands)	0	2.9	2.9	2.9	<0.1	2.9	2.9
Number of new gear marks (millions)	0	2.2	2.2	2.2	2.2	2.2	0.3
Set and Stow Restrictions							
Newly affected vessels - night set restrictions[2]	0	56	44	45	44	44	44
Newly affected vessels - gear stowing restrictions[2]	0	614	604	614	604	604	604
Newly affected vessels – one buoy line per trawl of four traps or fewer[4]	0	20	20	20	20	20	NA
Right Whale Area Restrictions[5]							
Newly regulated vessels in Great South Channel (April 1 – June 30)	0	<1	<1	<1	<1	<1	<1
Newly regulated vessels in Cape Cod Bay (January 1 – May 15)	0	2	2	2	2	2	2
Fathoms of buoy line converted in Cape Cod Bay (January 1 – May 15)	0	1,349	1,349	1,349	1,349	1,349	1,349
SAM Program[6]							
Newly regulated vessels in SAM program[6, 7]	0	<1	<1	<1	24	24	25
Fathoms of buoy line converted[6, 8]	0	924	924	924	24,483	25,331	25,331
Number of buoy lines eliminated[6]	0	7	7	7	NA	NA	NA
DAM Program[9]							
Newly regulated vessels in DAM program	0	267	266	267	NA	NA	NA
Fathoms of buoy line converted (thousands)	0	369.7	368.8	369.7	NA	NA	NA
Seasonality							
Area-Days: Trap/pot (millions)[10]	0	91.9	65.2	78.6	65.2	65.2	65.1
Area-Days: Gillnet (millions)[10]	0	92.8	65.5	78.9	65.5	65.5	65.4

Key:
NA = not applicable
* = Specified as a Preferred Alternative in the DEIS

Notes:

1 Numbers presented in this table represent changes incremental to the baseline. Since Alternative 1 is equivalent to no action, all values equal zero.

2 Estimates of newly regulated vessels assume that 50 percent of Mid-Atlantic driftnet vessels are currently regulated by ALWTRP requirements that apply in the Mid-Atlantic from December 1 through March 31. All others (i.e., those active only between April 1 and November 30) would be newly regulated.

3 This number includes groundline that would be converted as a result of SAM, DAM, and Cape Cod Bay Restricted Area requirements, as well as groundline that would be converted as a result of broad-based gear modification requirements.

4 This restriction is a new requirement for other trap/pot vessels fishing in Northern Nearshore waters and Stellwagen Bank/Jeffreys Ledge.

5 The use of driftnets or anchored float gillnets would be prohibited in the Cape Cod Bay Restricted Area from January 1 through May 15, and in the Great South Channel Restricted Gillnet Area from April 1 through June 30. The use of mixed species trap/pot gear would be prohibited in the Great South Channel Restricted Area from April 1 through June 30.

6 Under Alternatives 2, 3*, 4, 6 Draft*, and 6 Final (Preferred), the SAM program and all gear requirements unique to this program would be eliminated 12 months after publication of the final rule.

7 Under Alternatives 2 through 4, this figure represents the number of other trap/pot vessels that would be newly subject to SAM requirements. Under Alternatives 5, 6 Draft*, and 6 Final (Preferred), this figure also includes the change in the number of vessels subject to SAM requirements as a result of changes in the SAM zone's boundaries.

8 Until 12 months after publication of the final rule, Alternatives 2 through 4 would require that buoy lines be made entirely of non-floating line. Under Alternatives 5, 6 Draft*, and 6 Final (Preferred), vessels would be allowed to use floating line in the bottom third of the buoy line. Under Alternatives 5, 6 Draft*, and 6 Final (Preferred), this figure represents the net change in the fathoms of buoy line converted, including both increases and decreases in buoy line converted as a result of changes in the SAM zone's boundaries.

9 Under Alternatives 2 through 4, the DAM program and all gear requirements unique to this program would be eliminated 12 months after publication of the final rule. Under Alternatives 5, 6 Draft*, and 6 Final (Preferred), the program would be eliminated six months after publication of the final rule.

10 This indicator is designed to capture seasonal differences in the application of regulations under each alternative, and is calculated by multiplying the square nautical miles of area protected under the ALWTRP by the number of days each year that seasonal gear modification requirements would apply.

1.3.2 Economic Impacts of Alternatives

The economic impact analysis, discussed in Chapter 6 of this EIS, examines estimated compliance costs for model vessels and calculates the overall cost to the commercial fishing industry of complying with the regulatory changes under consideration. The analysis measures the cost of complying with these new requirements relative to the status quo – i.e., a baseline scenario that assumes no change in existing ALWTRP requirements. Thus, all estimates of compliance costs are incremental to those already incurred in complying with the ALWTRP.

1.3.2.1 Estimated Vessel Compliance Costs

The economic impact analysis first calculates the compliance costs for model vessels, defined by species sought and fishing location (see Section 6.1.2). Estimated vessel compliance costs include both the expenses associated with reconfiguring gear as required under the new ALWTRP regulations and the costs (or savings, for some vessel groups) associated with replacing gear more (or less) frequently due to gear loss.

The cost associated with converting trap/pot and gillnet gear to comply with the ALWTRP modifications includes the labor and material costs associated with weak links, groundline, gear marking, buoy line, and anchoring modifications (see Section 6.1.2.1). Annualized costs are derived from estimates of the initial cost fishermen would incur to convert their gear before the regulations come into effect, as well as ongoing costs thereafter. A seven percent discount rate is used to annualize costs. Appendix 6-C (see Chapter 6) provides a detailed discussion of the individual parameters used in estimating gear conversion costs.

In addition, certain ALWTRP gear modifications could affect gear loss (see Section 6.1.2.2). The analysis assumes that vessels converting from floating groundline and buoy line to sinking and/or neutrally buoyant line, as well as vessels using only one buoy line, would lose an additional five to ten percent of their gear each year. In contrast, the analysis anticipates that vessels currently subject to SAM area regulations would lose less gear due to a change in regulations that would permit them to use a second buoy line on trawls or strings, and to use floating line on the bottom third of their buoy line.

1.3.2.2 Total Industry Compliance Costs

Once compliance costs for the model vessels are calculated, the analysis estimates the number of vessels represented by each model vessel (i.e., the number of vessels within a particular category). The analysis uses data on Federal and state-permitted vessels to estimate the number of vessels in each category, identifying vessels that have actively fished with the applicable gear types and might therefore be affected by changes to the ALWTRP. After identifying and removing vessels that operate within exempt waters, each of the remaining vessels is assigned to the appropriate model vessel category (see Section 6.1.3).

The product of the annualized compliance cost estimate for each model vessel and the number of affected vessels in each category provides an estimate of annualized compliance costs for the category as a whole. The sum of compliance costs across all vessel categories provides an estimate of annualized compliance costs for the commercial fishing industry. Section 6.2 describes the estimated costs of compliance with potential changes to the ALWTRP.

1.3.2.3 Economic Impact Results

Exhibit 1-5 summarizes the estimated industry compliance costs for each of the regulatory alternatives, breaking the results down by fishing sector (lobster, other trap/pot, and gillnet). As shown, the incremental costs imposed on the fishing industry are estimated to equal approximately $19.2 million per year under Alternatives 2, 3*, 4, and 6 Draft*. Under Alternative 6 Final (Preferred), the incremental costs are estimated to be roughly $13.4 million per year. The impact of the new standards on lobster vessels would account for over 90 percent of these costs.

Aside from Alternative 1 (No Action), the regulatory alternative that differs most significantly from the others with respect to estimated economic impacts is Alternative 5. The analysis suggests that this alternative would impose incremental regulatory costs of approximately $1.3 million annually. Costs would be lower in this case because Alternative 5 would not impose as broad a set of gear modification requirements, but would instead modify the SAM zone and focus primarily upon the regulation of vessels fishing in that zone. Section 6.2 provides more detailed information on industry compliance costs.

Exhibit 1-5

ESTIMATED INCREASE IN ANNUALIZED ALWTRP COMPLIANCE COSTS

Economic Impact	Regulatory Alternative	Lobster Trap/Pot Vessels	Other Trap/Pot Vessels	Gillnet Vessels	Total
Average Increase in Annualized Compliance Costs For Vessels Affected by Changes in ALWTRP Regulations	Alternative 1 (No Action)	$0	$0	$0	N.A.
	Alternative 2	$4,900	$1,100	$800	N.A.
	Alternative 3*	$4,900	$1,100	$800	N.A.
	Alternative 4	$4,900	$1,100	$800	N.A.
	Alternative 5	$300	$200	$200	N.A.
	Alternative 6 Draft*	$4,900	$1,100	$800	N.A.
	Alternative 6 Final (Preferred)	$4,300	$900	$700	N.A.
Number of Vessels Affected by Changes in ALWTRP Regulations	Alternative 1 (No Action)	0	0	0	0
	Alternative 2	3,686	418	1,044	5,148
	Alternative 3*	3,678	416	1,024	5,118
	Alternative 4	3,686	418	1,035	5,139
	Alternative 5	3,678	416	1,024	5,118
	Alternative 6 Draft*	3,678	416	1,024	5,118
	Alternative 6 Final (Preferred)	2,889	431	1,033	4,353
Total Increase in Annualized Compliance Costs for Vessels Affected by Changes in ALWTRP Regulations	Alternative 1 (No Action)	$0	$0	$0	$0
	Alternative 2	$17,939,000	$448,900	$844,500	$19,232,400
	Alternative 3*	$17,894,600	$453,500	$835,100	$19,183,200
	Alternative 4	$17,939,000	$448,900	$842,900	$19,230,800
	Alternative 5	$1,001,700	$91,300	$178,500	$1,271,400
	Alternative 6 Draft*	$17,906,300	$453,800	$835,600	$19,195,600
	Alternative 6 Final (Preferred)	$12,288,000	$393,000	$717,300	$13,398,300

Key:
* = Specified as a Preferred Alternative in the DEIS

Note: Totals may not sum due to rounding.

1.3.3 Social Impacts of Alternatives

The analysis of social impacts, discussed in Chapter 7, considers how compliance with the regulatory alternatives could affect the socioeconomic viability of fishing, fishermen's quality of life, and the economic welfare of the general public.

1.3.3.1 Potentially Affected Communities

The social impact analysis first uses county-level data on affected fishing vessels to identify the communities at greatest risk of experiencing adverse social impacts stemming from the ALWTRP modifications under consideration (see Section 7.3). The analysis uses additional county-level socioeconomic data to characterize key features of the at-risk communities, examining economic, demographic, and social features that may influence the impact of the regulations on the region.

The analysis defines at-risk counties as those with over 100 active vessels that must comply with ALWTRP requirements and which report annual landings of greater than two million pounds by vessels using gear potentially subject to regulation under the ALWTRP. Based on these criteria, Exhibit 1-6 lists the at-risk counties. The list is heavily weighted toward the Northeast, particularly several coastal counties in Maine where lobstering is prevalent. Although the dealer and processing sectors are small to medium in size in these areas, they are frequently part of small communities and play an important role in regional economies in the state. Several of the Maine counties are rural and have limited economic diversification and/or higher than average unemployment and poverty rates. Other at-risk communities include urbanized ports (e.g., Gloucester, Portland, and New Bedford) where fishing activities are linked to major processing operations.

1.3.3.2 Comparison of Vessel Compliance Costs to Ex-Vessel Revenues

To further examine the potential for socioeconomic impacts from the revised ALWTRP requirements, this analysis considers the economic burden placed on different classes of vessels (see Section 7.4.1). Placing vessel compliance costs in the context of typical ex-vessel revenues helps determine whether the costs will be significant enough to cause behavioral changes (e.g., vessel retirement) on the part of vessel operators. The analysis defines "heavily affected" vessels as those for which annualized compliance costs exceed 15 percent of mean annual revenues. The analysis further defines "at risk" vessels as those for which annualized compliance costs are between 5 and 15 percent of mean annual revenues.

Exhibit 1-6

KEY COMMUNITIES AFFECTED BY ALWTRP MODIFICATIONS

At-Risk County[1]	State	Major Ports[2]
Washington	ME	Beals Island and Jonesport, Cutler, Eastport, Lubec
Hancock	ME	Stonington/Deer Isle
Knox	ME	Rockland, Vinalhaven
Lincoln	ME	South Bristol, Boothbay Harbor
Cumberland	ME	Portland, Harpswell
York	ME	Kennebunkport/Cape Porpoise
Rockingham	NH	Hampton/Seabrook, Portsmouth, Isles of Shoals
Essex	MA	Gloucester, Rockport, Marblehead
Plymouth	MA	Plymouth, Scituate
Barnstable	MA	Sandwich, Hyannis, Chatham, Provincetown
Bristol	MA	New Bedford, Fairhaven, Westport
Washington	RI	Point Judith/Galilee
Newport	RI	Jamestown, Newport, Tiverton, Sakonnet Point
Suffolk	NY	Hampton Bays, Montauk, Greenport
Ocean	NJ	Point Pleasant, Long Beach/Barnegat Light

Notes:

[1] For this analysis, at-risk counties are defined as those with over 100 active vessels that must comply with ALWTRP requirements and which report annual landings of greater than two million pounds by vessels using gear potentially subject to regulation under the ALWTRP. This list is heavily weighted toward the Northeast, particularly several coastal counties in Maine where lobstering is prevalent.

[2] Major ports based on Hall-Arber et al. (2001) and McCay and Cieri (2000).

A comparison of annualized vessel compliance costs to mean annual revenues suggests that a limited subset of vessel operators under Alternative 6 Final (Preferred) are likely to face costs significant enough to drive them out of business. Although uncertainties exist in the analysis, the vessels categorized as heavily affected seem to be few in number (relative to the full set of ALWTRP vessels) and small in size. Therefore, they employ a relatively small number of fishermen and account for a relatively small share of landings. Hence, effects on dealers and processors are likely to be minor. Under Alternative 6 Final (Preferred), numerous other vessels (approximately 1,980) fall in the at-risk vessel category (for which annualized costs represent 5 to 15 percent of mean annual revenues). The at-risk vessels are dominated by Class II lobster vessels; of these, the most affected subsets are vessels in Maine, which are expected to experience greater gear loss costs.

Under Alternatives 2, 3*, 4, and 6 Draft*, the analysis identifies a much larger number of heavily affected vessels than under Alternative 6 Final (Preferred). Most notably, numerous Class II lobster vessels fishing Maine inshore waters have cost-revenue ratios that exceed the 15 percent threshold. In general, the greater number of heavily affected vessels under these alternatives is attributable to slightly higher average compliance costs as well as to the application of an exemption line that would make approximately 50 percent of Maine state waters subject to ALWTRP requirements, as opposed to 29 percent under Alternative 6 Final (Preferred). In contrast, analysis of Alternative 5 (the modified SAM) shows very few vessels would face compliance costs that would qualify them as heavily affected.

For all the alternatives, it is difficult to discern precisely how the operators of heavily affected vessels will respond to the regulations. The assumption that all heavily affected vessels will cease fishing is highly conservative, and fishermen identified as heavily affected might find it economically possible to adjust to the modified ALWTRP regulations (e.g., by restricting their effort to exempted waters) rather than leave fishing. Furthermore, the groundline buyback programs currently underway will help to defray some gear conversion costs and may help some vessels continue to operate.

1.3.3.3 Other Socioeconomic Impacts

Negative Impacts

Fishermen may realize a variety of other negative social impacts in complying with ALWTRP modifications (see Section 7.5.1):

- To avoid the requirements associated with the new ALWTRP regulations, fishermen may choose to fish increasingly in exempted waters (see Section 3.1.2 for a description of the exempted areas under the proposed requirements). This could cause congestion, gear conflicts, and competition for fishing grounds in exempted waters to increase.

- Furthermore, revised ALWTRP gear modification requirements may result in an increased incidence of gear loss. In addition to the costs incurred to replace lost gear, fishermen may spend more time and resources hauling, grappling for, and repairing gear. This could potentially increase the hours that fishermen spend at sea.

- Likewise, certain modifications to ALWTRP requirements may have safety implications for fishermen. For example, sinking and/or neutrally buoyant groundline is more likely to snag on hard bottom and marine debris, and hauling snagged gear could be dangerous.

- Finally, the compliance cost burden may create a competitive disadvantage for smaller lobster vessels, causing industry consolidation.

Positive Impacts

Changes to the ALWTRP may also have a variety of positive social impacts. First, fishermen may experience safety benefits (see Section 7.5.2):

- Alternatives 2 through 6 Final (Preferred) call for the elimination of the DAM program six to 12 months after publication of the final rule (depending on the alternative). Industry advocates have asserted that DAM provisions can be burdensome, requiring unanticipated gear removals that can cause safety issues in times of bad weather.

- Alternatives 2 through 6 Final (Preferred) also call for the elimination of SAM rules that currently limit fishermen to one buoy line per trawl or string. The addition of a second buoy line may help avoid gear conflicts and reduce gear loss, grappling, and associated safety issues.

Second, to the extent that the new ALWTRP regulations successfully protect and restore whale populations, members of the public who view and photograph whales would benefit from the regulations. Annual revenues from the New England whale watching industry total approximately $30 million, and studies indicate that consumers' enjoyment increases with the number of whales and species sighted. Consequently, whale watch operators could benefit from increased ridership and revenues as whale populations stabilize or increase.

Economic research indicates that society places a value on the knowledge that unique environmental resources exist, even without using the resource directly (often referred to as the "existence value" of a resource). Therefore, the preservation of right, humpback, fin, and minke whales would have an existence value that is not explicitly quantified in this EIS.

Exhibit 1-7 summarizes the social impact conclusions discussed above.

1.3.4 Preferred Alternative

Integration of the biological, economic, and social impact findings allows for a meaningful comparison of the regulatory alternatives. Integrating these findings typically allows formulation of measures that characterize the benefits derived relative to the costs (or other negative effects) incurred. However, in the case of the ALWTRP modifications, development of a unifying cost-benefit analysis is complicated by two factors:

- First, the costs and benefits are characterized using diverse metrics (e.g., dollars, increased use of low-risk gear, numbers of heavily affected vessels) that cannot be readily reduced to a single measure. In many cases, costs or benefits are described only in qualitative terms or are characterized with imperfect indicators (e.g., comparative measures of risk reduction potential).

- Second, as acknowledged above, several of the regulatory alternatives – particularly Alternatives 2, 3*, 4, and 6 Draft* – have very similar implications. Because the impact estimates are subject to uncertainty, the minor variations that exist between these alternatives do not allow easy differentiation.

Exhibit 1-7

SUMMARY OF SOCIOECONOMIC IMPACTS BY ALTERNATIVE

Parameter	Alternative 1 (No Action)	Alternative 2	Alternative 3*	Alternative 4	Alternative 5	Alternative 6 Draft*	Alternative 6 Final (Preferred)
Number of Heavily Affected Vessels	0	952	952	952	1	952	173
Total Employment on Heavily Affected Vessels	0	1,904	1,904	1,904	2	1,904	304
Impacts on Dealers	None	- Short term supply disruptions possible	- Short term supply disruptions possible	- Short term supply disruptions possible	- Minor	- Short term supply disruptions possible	- Minor
Impacts on Processors	None	- Short term supply disruptions possible	- Short term supply disruptions possible	- Short term supply disruptions possible	- Minor	- Short term supply disruptions possible	- Minor
Other Potential Negative Social Impacts	None	- Competition for fishing grounds in exempted waters - Safety and time implications of gear loss - Burden greatest on small vessels; potential industry consolidation	- Competition for fishing grounds in exempted waters - Safety and time implications of gear loss - Burden greatest on small vessels; potential industry consolidation	- Competition for fishing grounds in exempted waters - Safety and time implications of gear loss - Burden greatest on small vessels; potential industry consolidation	- Minor	- Competition for fishing grounds in exempted waters - Safety and time implications of gear loss - Burden greatest on small vessels; potential industry consolidation	- Competition for fishing grounds in exempted waters - Safety and time implications of gear loss - Burden greatest on small vessels; potential industry consolidation

Exhibit 1-7

SUMMARY OF SOCIOECONOMIC IMPACTS BY ALTERNATIVE

Parameter	Alternative 1 (No Action)	Alternative 2	Alternative 3*	Alternative 4	Alternative 5	Alternative 6 Draft*	Alternative 6 Final (Preferred)
Positive Social Impacts	None	- Removal of DAM program may increase safety and make requirements more predictable - Public welfare benefits of increased whale protection (greatest benefit relative to other alternatives)	- Removal of DAM program may increase safety and make requirements more predictable - Public welfare benefits of increased whale protection (slightly lesser benefit relative to Alternative 2)	- Removal of DAM program may increase safety and make requirements more predictable - Public welfare benefits of increased whale protection (slightly lesser benefit relative to Alternative 2)	- Removal of DAM program may increase safety and make requirements more predictable - Public welfare benefits of increased whale protection (significantly lesser benefit relative to Alternative 2)	- Removal of DAM program may increase safety and make requirements more predictable - Public welfare benefits of increased whale protection (slightly lesser benefit relative to Alternative 2)	- Removal of DAM program may increase safety and make requirements more predictable - Public welfare benefits of increased whale protection (slightly lesser benefit relative to Alternative 6 Draft*)

Key:
* = Specified as a Preferred Alternative in the DEIS

Differentiating among the alternatives therefore requires careful, critical consideration of the cost and benefit estimates developed. Because it would require year-round use of low-risk gear along the entire Atlantic coast, Alternative 2 clearly is the most conservative, risk-averse approach to the protection of endangered whales. However, the seasonal exemptions provided under Alternatives 3*, 4, 6 Draft*, and 6 Final (Preferred) are premised on the movement of whales. Therefore, the residual potential for entanglement of whales in Mid-Atlantic or South Atlantic waters during summer months is minor; i.e., year-round requirements are likely to offer little additional risk reduction benefit.

Furthermore, close examination of the compliance cost estimates suggests that the costs associated with the seasonal implementation of gear conversion requirements may be over-estimated. The analysis posits that fishermen will convert gear even if the requirements only apply in certain months, a very conservative assumption. According to comments provided by fishermen during the scoping process, many fishermen in the Mid- and South Atlantic use separate sets of gear to target different species at different times of year. If conversion of only winter gear is required, compliance costs will be less than those estimated. In addition, some of the fishermen in the Mid-Atlantic and South Atlantic areas may choose to confine their fishing effort to months when the requirements are not in effect, avoiding the regulation completely. Such behavior would reduce the cost of complying with Alternatives 3*, 4, 6 Draft*, and 6 Final (Preferred) without increasing risk to whales.

Based on consideration of the relative costs and benefits of the alternatives, NMFS initially identified two preferred alternatives in the DEIS: Alternative 3* and Alternative 6 Draft*. The rationale provided in the DEIS emphasized that these alternatives offered the flexibility of seasonal restrictions for both the Mid- and South Atlantic regions, potentially allowing fishermen to pursue lower-cost compliance strategies. The risk-reduction tradeoff was seen as minimal, given that entanglement risk in the Mid- and South Atlantic is low in the summer months (due to whale migratory patterns). Alternative 6 Draft* offered the added protection of temporarily expanding the SAM zone; while the SAM requirements would eventually be eliminated, they would remain in effect until the broad-based gear modifications are fully implemented.

Comments on the DEIS have guided NMFS' development of a final preferred alternative: Alternative 6 Final (Preferred). This alternative integrates minor changes to Alternative 6 Draft* that reduce the economic impact of the proposed action while sacrificing few, if any, large whale protection benefits. In particular:

- Alternative 6 Final (Preferred) would expand exempted areas in Maine and Long Island Sound, based on a NMFS analysis that, amongst other reasons, concludes that large whales are sighted infrequently and do not spend significant periods of time in these waters.

- For similar reasons, Alternative 6 Final (Preferred) would not extend ALWTRP regulations that apply to gillnet fisheries in the South Atlantic to waters east of 80°00' W. NMFS' evaluation of the whale sightings data found little evidence that large whales in Southeast waters – particularly

right whales – can be found in waters east of the current boundary of the Southeast U.S. Restricted Area and Southeast U.S. Observer Area (i.e., 80°00' W).

- NMFS received numerous comments opposing the gear marking scheme proposed in several of the alternatives. Rather than marking buoy lines every ten fathoms, Alternative 6 Final (Preferred) calls for one mark midway on the buoy line in the water column. Many groups considered the original proposal impractical and potentially costly.

- Alternative 6 Final (Preferred) would offer additional flexibility on the specific configuration of gillnet weak links. Fishermen, scientists, and other reviewers suggested an alternative weak link placement for net panels that NMFS believes will reduce compliance costs and prove equally effective in protecting large whales. The alternative configuration would be offered for all anchored gillnets.

- Gillnetters fishing within 300 yards of shore in North Carolina expressed safety concerns related to the proposed anchoring requirements involving 22-pound Danforth-style anchors. Thus, Alternative 6 Final (Preferred) would allow gillnets in these waters to employ an eight-pound Danforth-style anchor on the offshore end and a 31-pound dead weight on the inshore end, in combination with 600-pound (rather than 1,100-pound) net panel weak links. These changes would offer a similar level of protection for large whales and may also benefit smaller protected species (due to the lower breaking strength).

- Alternative 6 Final (Preferred) would grant an exemption to gillnet panel weak link and anchoring requirements to vessels fishing at depths greater than 280 fathoms. Whales are not likely to occur in waters of this depth; hence, this change would not compromise the protectiveness of the proposed action. Furthermore, NMFS has not tested the operational feasibility of using weak links in gillnets set at such depths.

NMFS believes that its preferred alternative addresses the "Purpose and Need for Action" stated in this EIS, incorporating measures that will help to conserve large whales by reducing the potential for interactions with commercial fishing gear that may lead to serious injury or mortality. The measures stipulated under this alternative include expanding the scope of the ALWTRP to address other trap/pot fisheries; reducing the vertical profile of groundline in the water column; and mandating gear modifications to vertical lines (e.g., by requiring gear marking and the use of weak links of lower breaking strength). In addition, NMFS believes that its preferred alternative achieves these goals while reducing, to the extent possible, the adverse socioeconomic impacts of the rule. In particular, the expansion of exempted areas under Alternative 6 Final (Preferred) applies to waters where whales are unlikely to be at risk, thereby reducing compliance costs with little, if any, adverse impact on whale conservation. This

alternative will also provide an optional weak link configuration for gillnet panels, enabling fishermen to comply at a lower cost but in a manner that is likely to yield similar conservation benefits. Establishment of seasonal rather than year-round requirements in Mid-Atlantic and South Atlantic waters will also enable fishermen to pursue lower-cost compliance strategies with minimal, if any, adverse impact on whale conservation, given that entanglement risk in the Mid- and South Atlantic is low in the summer months. Thus, Alternative 6 Final (Preferred) incorporates modifications that respond to comments on the preferred alternatives specified in the DEIS (Alternative 3* and Alternative 6 Draft*) while retaining the features of these alternatives that are critical to meeting NMFS' obligations under the MMPA and ESA.

1.4 CHANGES FROM DEIS TO FEIS

In response to public comment on the DEIS and proposed rule, as well as new information obtained since the development of these documents, NMFS has made a number of changes to the EIS. The most important substantive changes include:

- Modifications to Alternative 6 Draft*, which resulted in the addition of Alternative 6 Final (Preferred) to the analysis. Alternative 6 Final incorporates, among other elements, modifications to exempted areas; modifications to the boundaries of gillnet management areas in the South Atlantic; optional net panel weak link configurations; optional net panel weak link and anchoring configurations within 300 yards of the shoreline in North Carolina; and modification to the buoy line gear marking scheme. Discussion of Alternative 6 Final (Preferred) has been added to Volume I of the EIS wherever the regulatory alternatives under consideration are discussed (i.e., Chapters 1, 3, 5, 6, 7, 8, 9, 10, and 11).

- Changes in the effective date of certain regulatory requirements. As formulated in the DEIS, Alternatives 2, 3*, 4, and 6 Draft* stipulated that broad-based requirements for the use of sinking and/or neutrally buoyant groundline would take effect on January 1, 2008, and that the SAM and DAM programs would be eliminated on that date or 6 months after publication of the final rule (depending on the alternative). Delays in the rulemaking process have rendered this date impractical. To ensure that these alternatives remain practically viable, NMFS has updated them to specify that broad-based requirements for the use of sinking and/or neutrally buoyant groundline would take effect 12 months after publication of the final rule, and that the SAM and DAM programs would be eliminated when most or all of the broad-based requirements take effect. Consistent with these changes, Alternative 6 Final (Preferred) specifies that broad-based requirements for the use of sinking and/or neutrally buoyant groundline would take effect 12 months after publication of the final rule, the DAM program would be eliminated 6 months after publication of the final rule, and the SAM program would be eliminated when the groundline requirement takes effect. The change in

effective dates has been incorporated into Volume I of the EIS wherever the regulatory alternatives under consideration are discussed and analyzed (i.e., Chapters 1, 3, 5, 6, 7, 8, 9, 10, and 11)

- Updates to the large whale entanglement information presented in Chapters 1 and 2 of Volume I (e.g., reference to Waring et al., 2006).

- Discussion of ongoing section 7 consultations on Fishery Management Plans (FMPs), which is incorporated in Chapters 2 and 12 of Volume I.

- Information on the section 7 consultation on the ALWTRP, which is incorporated in Chapters 2 and 12 of Volume I.

- Expansion of the “Other Affected Species” section of Chapters 4 and 9 (Volume I) to discuss the olive ridley sea turtle, based on information indicating that this species may be present in the action area.

- Updates and adjustments to the analysis of Alternatives 2 through 6 Draft* presented in Chapters 1, 5, 6, 7, 8, 9, 10, and 11 of Volume I related to changes in labor and material costs, the amount of groundline that the analysis assumes anchored gillnet vessels typically employ, and identification of seasonally exempt vessels within the Southern Nearshore Lobster Trap/Pot fishery.

- Updates and adjustments to the analysis of Alternatives 2 through 6 Draft* presented in Chapters 1, 5, 6, 7, 8, 9, 10, and 11 of Volume I to reflect the promulgation of state commercial fishing regulations that prohibit the use of fixed gear with "positively buoyant" (i.e., floating) groundline in Massachusetts waters.

- Addition of sensitivity analyses examining the impact of alternate assumptions on estimated compliance costs (see Appendix 6-J, Volume I).

- An update of the discussion of groundline buyback programs to incorporate the Gulf of Maine Lobster Foundation's Bottom Line Project (see Chapter 7, Volume I).

- Addition of Volume II of the EIS, which describes NMFS’ response to comments received via letter, fax, or email during the public comment periods for the DEIS and the proposed rule (Chapter 1); provides a summary of the written and oral comments received during the scoping/public comment period following the agency’s publication of the Notice of Intent to prepare an EIS for the ALWTRP (Chapter 2); and provides copies of written comments on the DEIS that were received via letter, fax, or email (Chapter 3).

1.5 AREAS OF CONTROVERSY

Numerous interest groups have participated in the formulation and refinement of the ALWTRP. In addition to ALWTRT meetings, NMFS supported this rulemaking by conducting a series of public meetings held at various locations on the east coast during the summer of 2003. Through public outreach, NMFS has attempted to gather and accommodate many viewpoints, pursuing whale conservation objectives while remaining sensitive to the many regulatory pressures on the fishing industry. The dialogue that has occurred highlights a number of key areas of controversy that NMFS attempted to address in the regulatory alternatives examined:

- Whale conservationists emphasize that whale entanglements have continued despite the existing ALWTRP requirements. Some conservationists think that NMFS should reduce the profile of groundline and the risk associated with vertical line immediately. Continued serious injury and mortality of right, humpback, and fin whales due to entanglement is the primary motivating factor behind refinement of the ALWTRP. The alternatives under consideration seek to reduce large whale entanglement by expanding the scope of the ALWTRP to include other trap/pot fisheries; reducing the vertical profile of groundline in the water column; and mandating gear modifications to vertical lines, for example, by requiring gear marking and the use of weak links of lower breaking strength. NMFS will be considering management options to further reduce entanglement risks associated with vertical line through a future rulemaking action. Chapter 3 of Volume I further explains the revisions under consideration to the existing ALWTRP.

- A fundamental issue concerns the significance of fishing gear entanglement within the overall context of factors that contribute to Atlantic large whale mortality. The cumulative effects analysis in this EIS considers other stresses on whales (for example, ship strikes and water pollution) and the measures underway to address these stresses through other initiatives.

- Many ALWTRT participants have voiced dissatisfaction with the requirements of the DAM program. Removal of gear from designated areas can pose significant costs and safety issues for fishermen. The ALWTRP revisions evaluated in this EIS would eliminate the DAM program and place greater reliance on broad-based gear modifications for whale protection. Similarly, some groups have been critical of the SAM program; several of the alternatives considered in this EIS would eliminate and/or modify SAM requirements.

- Specification of areas and times during which ALWTRP requirements are in effect is a major issue of concern. Because whales exhibit regular behavioral patterns (e.g., migration, feeding), NMFS seeks to maximize the effectiveness of the ALWTRP by designating requirements tailored by

region and season. Development of these spatial and temporal requirements involves the consideration of uncertainties and the integration of complex technical input from NMFS researchers and other experts. This EIS examines regulatory alternatives that introduce new exempted areas, seasonal restrictions, and other provisions that incorporate information about whale movements and behavior. Although much of this information is subject to uncertainty, the information employed in developing the spatial and temporal elements of the alternatives under consideration is the best information currently available.

- Delineation of exempt waters has been a key issue. Conservation advocates stress that extending regulations to all waters offers the greatest protection against entanglement, while other groups argue for exemptions in nearshore waters where recorded whale activity is minimal. NMFS examined right, humpback, and fin whale sightings data in relation to nearshore waters along the east coast of the U.S. This analysis revealed that large whales rarely venture into certain nearshore areas. The alternatives considered in this EIS include modifications to exempted areas that take into account the available data on large whale sightings, amongst other factors.

- The fishing industry is concerned that interactions between large whales and Canadian fishing gear are not being adequately addressed and that the U.S. fishing industry is bearing the entire regulatory burden by being held responsible for all large whale entanglements. Although the measures under consideration in this EIS are designed to address entanglement risks posed by fisheries in U.S. waters, NMFS recognizes that large whales face entanglement risks throughout their range. For example, NMFS is working with representatives from the Canadian Department of Fisheries and Oceans to develop and implement protective measures for right whales in Canadian waters. In anticipation of the implementation of Canada's new Species at Risk Act, the group was reconstituted in January 2003. The group remains focused on species-specific conservation, but the charge for the working group has been expanded to include joint assessments, listing criteria, and recovery planning and implementation in a broader sense to include all transboundary marine mammal and protected species stocks (with the exception of Atlantic salmon). The working group's primary efforts are focused on right whale recovery. NMFS is continuing to work with the Canadian government to develop and implement protective measures for right whales in Canadian waters. The working group has met on an annual basis since being reconstituted in 2003. In addition, NMFS is working with Canadian whale biologists and support teams to improve and expand disentanglement efforts in Canadian waters.

- Members of the ALWTRT have expressed concerns associated with using sinking and/or neutrally buoyant groundline on rocky and other benthic habitats, in particular concerns about abrasion of the line, potential gear loss, and the lack of scientific data regarding large whale foraging behavior along the East Coast. Section 3.2 of Volume I explains the need for further research and discussions related to large whale distribution and behavior, as well as the need for further research and discussions related to the operational feasibility of low profile line.

- Some segments of the commercial fishing industry have expressed concern over gillnet anchoring requirements, stressing safety issues for vessels that operate within 300 yards of the shoreline in North Carolina, where movement of anchored nets is complicated by weather and surf conditions. The alternatives considered in this EIS offer options for these gillnet vessels.

- Perspectives on gear marking requirements also differ. While some emphasize that gear marking can provide useful information in the wake of entanglement incidents, others stress that certain gear marking approaches are costly, time-consuming, and may pose safety issues. The alternatives considered in this EIS include buoy line and surface buoy marking requirements, and incorporate these viewpoints.

- A final area of controversy has been the rate at which new requirements (particularly those for sinking and/or neutrally buoyant groundline) are introduced. In general, conservationists and NMFS have recommended a more rapid phase-in, while fishing interests have recommended a longer phase-in. The alternatives considered in this EIS seek to balance these recommendations.

1.6 REPORT STRUCTURE

The remainder of Volume I of this EIS is organized as follows:

- **Chapter 2** reviews the entanglement problem and discusses current ALWTRP requirements.

- **Chapter 3** describes the proposed alternatives for modifying the ALWTRP.

- **Chapter 4** examines the affected environment, focusing on the status of Atlantic large whales and the basic features of the regulated fisheries.

- **Chapter 5** analyzes the biological impacts of the alternatives.

- **Chapter 6** analyzes the economic impacts of the alternatives.

- **Chapter 7** analyzes the social impacts of the alternatives.

- **Chapter 8** reviews and summarizes the findings of the biological, economic, and social impact analyses.

- **Chapter 9** examines the cumulative impacts of the alternatives.

- **Chapter 10** provides the Regulatory Impact Review (RIR), as required by Executive Order 12866.

- **Chapter 11** provides the Final Regulatory Flexibility Analysis (FRFA), in accordance with the requirements of the Regulatory Flexibility Act (RFA) of 1980. The purpose of this analysis is to evaluate the impacts that the regulatory alternatives under consideration would have on small entities and to examine opportunities to minimize these impacts.

- **Chapter 12** briefly summarizes the statutes and executive orders that have guided development of this EIS and explains how the document meets the requirements of all applicable laws.

The document also includes a list of preparers and contributors (section 13.0), a list of persons or agencies that received copies of the FEIS for review (section 14.0), and a glossary, list of acronyms, and index (section 15.0).

Volume II of this EIS is organized as follows:

- **Chapter 1** describes NMFS' responses to comments received via letter, fax, or email during the public comment periods for the DEIS and the proposed rule.

- **Chapter 2** provides a summary of the written and oral comments received during the scoping/public comment period following the agency's publication of the Notice of Intent to prepare an EIS for the ALWTRP.

- **Chapter 3** provides copies of written comments on the DEIS that were received via letter, fax, or email.

1.7 REFERENCES

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