

INTRODUCTION AND EXECUTIVE 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 and trap/pot fisheries. 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 July 2013, the proposed rule, and new information obtained during 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 estimates a minimum population size of 444. 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 0.9 (Waring et al., 2013).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 823 and has established a PBR level of 2.7 whales per year (Waring et al., 2013).
- **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 2,817 and PBR of 5.6 (Waring et al., 2013).
- **Minke Whale:** As previously noted, the minke whale (*Balaenoptera acutorostrata*) is not listed as endangered or threatened under the ESA.

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)).

The best estimate of the population of Canadian east coast minke whales is 20,741, with a minimum population estimate of 16,199. The PBR for this stock of minke whales is 162 (Waring et al., 2013).

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 2010³ (Waring et al. 2013). Humpback whales account for the greatest number of serious injury entanglements (35), followed by right whales (11); minke whales account for five serious injuries, while fin whales account for four. More detail relating to large whale entanglements is provided in Section 2.3: “Rationale for Rulemaking.”

Exhibit 1-1 SERIOUS INJURY ENTANGLEMENTS

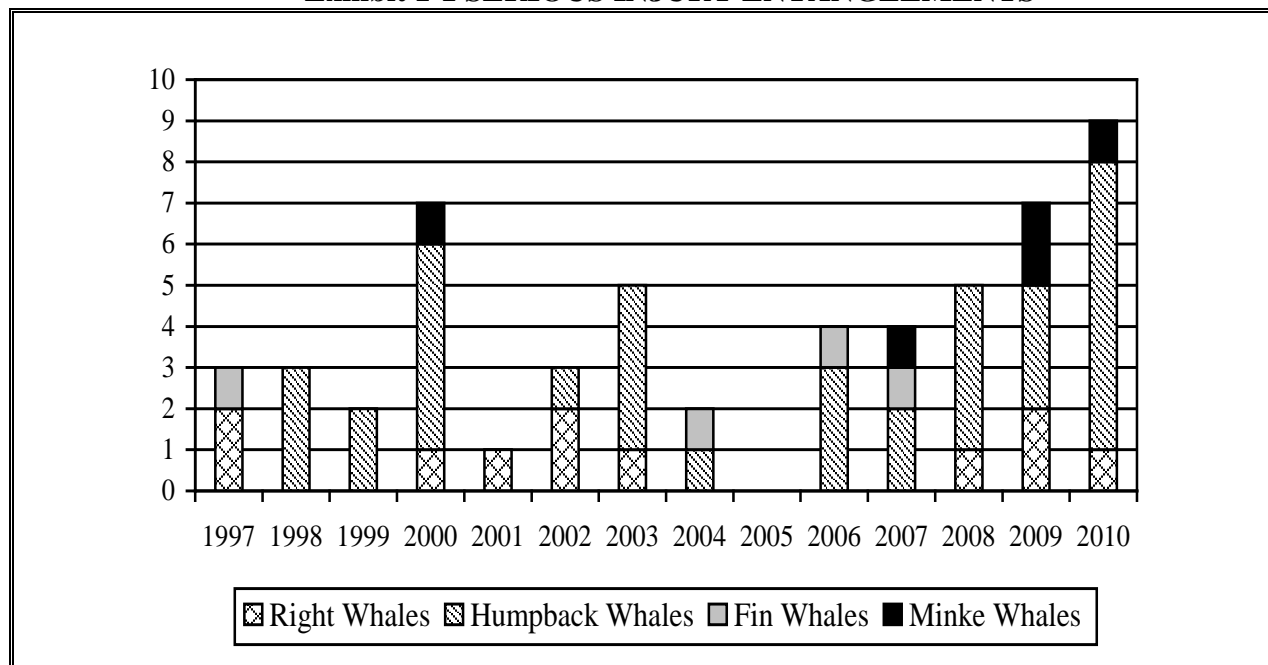
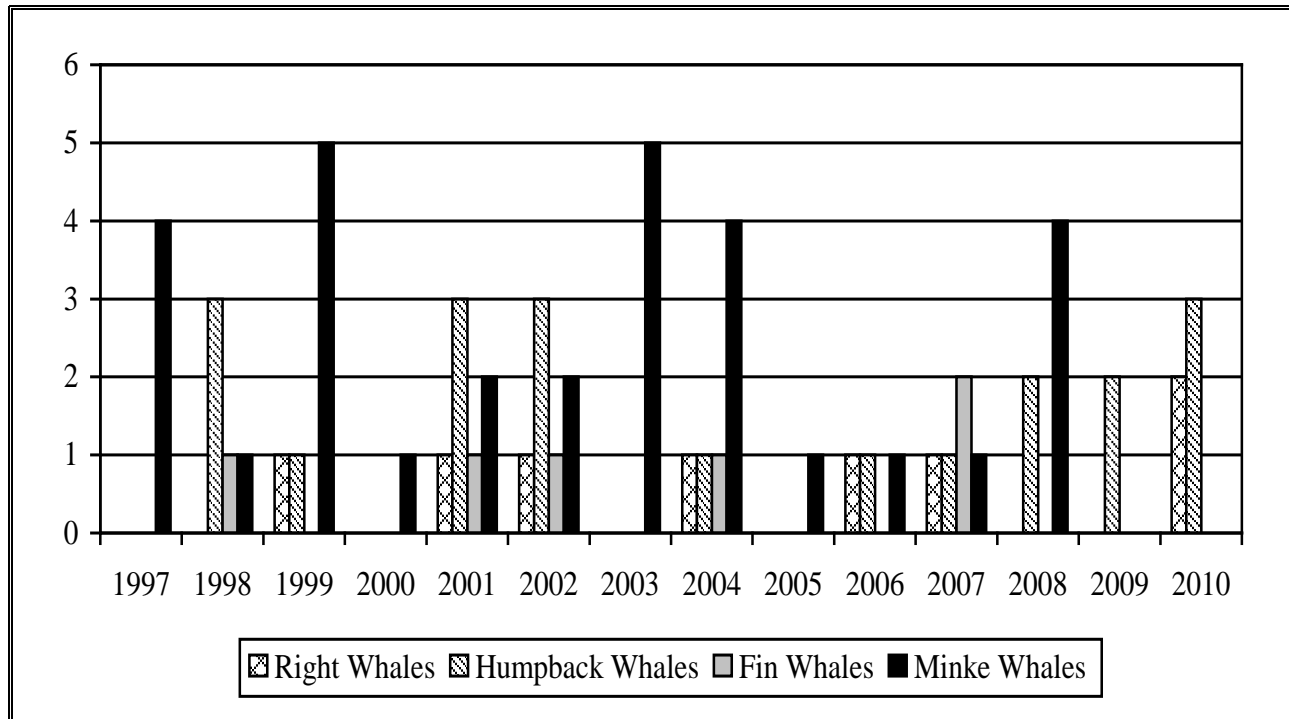


Exhibit 1-2 presents available data on fatal entanglements of Atlantic large whales from 1997 through 2010 (Waring et al 2013). Minke whales account for the most known entanglement mortalities (31), followed by humpback whales (20), then right whales (8) and fin whale account for six.

³ “Serious injury” means any injury that will likely result in mortality (50 CFR 229.2).

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, noise pollution, climate change, and reductions in prey availability may have on whale stocks. These threats are discussed further in Chapter 9: Cumulative Effects Analysis.

Exhibit 1-2 FATAL ENTANGLEMENTS



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:

- Northeast/Mid-Atlantic American lobster trap/pot;
- Atlantic blue crab trap/pot;
- Atlantic mixed species trap/pot which includes, but is not limited to: crab (red, Jonah, and rock), hagfish, finfish (black sea bass, scup, tautog, cod, haddock, pollock, redfish (ocean perch), and white hake), conch/whelk, and shrimp;
- Northeast sink gillnet;
- Northeast anchored float gillnet;
- Northeast drift gillnet;
- Mid-Atlantic gillnet;
- Southeastern US Atlantic shark gillnet; and
- Southeast Atlantic gillnet.

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 increasing the number of traps per trawl, establishing a maximum breaking strength for vertical line, requiring weaker weak links, and seasonal closures. The alternatives would affect all trap/pot fisheries currently covered under the ALWTRP.

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. For reference, Exhibit 1-4 shows the Northeast Region's lobster management areas:

- **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:** This alternative would increase the number of traps per trawl based on area fished and miles fished from shore [(0-3), (3-12), and (12+)] in the Northeast Region (Maine-North Carolina). Maine waters are managed based on zone, and the proposed number of traps per trawl differ based on

- Maine zone. In the Southeast Region, measures include weaker weak links, a maximum breaking strength for vertical line, and requiring the use sinking line (free of objects) for the vertical line. The Alternative also includes a more robust gear marking program coast wide.
- **Alternative 3:** Alternative 3 is a combination of NMFS proposed traps per trawl (Alternative 2) and ideas from our State partners. Maine Department of Marine Resources provided a proposal for traps per trawl based on Maine zones and distance from shore that differ from NMFS [(0-3), (3-6), (6-12), and (12+)]. Massachusetts Division of Marine Fisheries proposed a closure in the Cape Cod Bay Critical Habitat area for all trap/pot fisheries from February 1 through April 30th. Rhode Island Department of Environmental Management requested a minimum 15 trap per trawl requirement in LMA 2 (12+) as opposed to NMFS' 20 trap per trawl limit. New Hampshire Department of Fish and Game requested that New Hampshire state waters be exempt from the Plan. NMFS proposal is in effect in all waters and times of year that are not covered by the State proposals. In the Southeast Region, measures include weaker weak links, a maximum breaking strength for vertical line, and requiring the use of sinking line (free of objects) for the vertical line. The Alternative also includes a more robust gear marking program coast wide.
 - **Alternative 4:** Alternative 4 is the same as Alternative 2 with the addition of closures in certain areas as proposed by the Conservation/Scientist stakeholder group (see Chapter 3 for charts of areas). Three trap/pot closures are included in this proposal; Jordan Basin (Nov 1 to Jan 31); Jeffreys Ledge (Oct 1 to Jan 31); and Cape Cod Bay to Great South Channel (Jan 1 to April 30). NMFS proposal is in effect in all waters and times of year that are not covered by the closures. In the Southeast Region, measures include weaker weak links, a maximum breaking strength for vertical line, and requiring the use of sinking line (free of objects) for the vertical line. The Alternative also includes a more robust gear marking program coast wide.
 - **Alternative 5:** Alternative 5 is a combination of Alternatives 3 and 4. Where proposed trap/pot closures overlap (eg, Cape Cod Bay) the larger closure in time and area is proposed. NMFS proposal is in effect in all waters and times of year that are not covered by the state proposals or closures. In the Southeast Region, measures include weaker weak links, a maximum breaking strength for vertical line, and requiring the use of sinking line (free of objects) for the vertical line. The Alternative also includes a more robust gear marking program coast wide.
 - **Alternative 6 (Draft):** Alternative 6 (Draft) is similar to Alternative 5 but only includes 1 of the three trap/pot closures proposed in Alternative 5. NMFS proposal is in effect in all waters and times of year that are not covered by the closures. For this Alternative NMFS proposal is modified in Massachusetts state waters. In the Southeast Region, measures include weaker weak links, a maximum breaking strength for vertical line, and requiring the use of sinking

line (free of objects) for the vertical line. The Alternative also includes a more robust gear marking program coast wide.

- **Alternative 6 (Preferred):** In response to comments received on the Draft Environmental Impact Statement (DEIS), NMFS formulated a final preferred alternative that builds upon Alternative 6 (Draft). Key differences under Alternative 6 (Preferred) include the following: (1) No gear marking would be required in Maine exempted waters; (2) New Hampshire state waters would be exempt from the traps per trawl requirement only; (3) a ¼ mile buffer was created around three inhabited islands in Maine to allow singles; (4) the Pocket Waters of Maine were defined as state waters and would have a minimum of two traps per trawl required; and (5) Rhode Island state waters would have a minimum of two traps per trawl required.

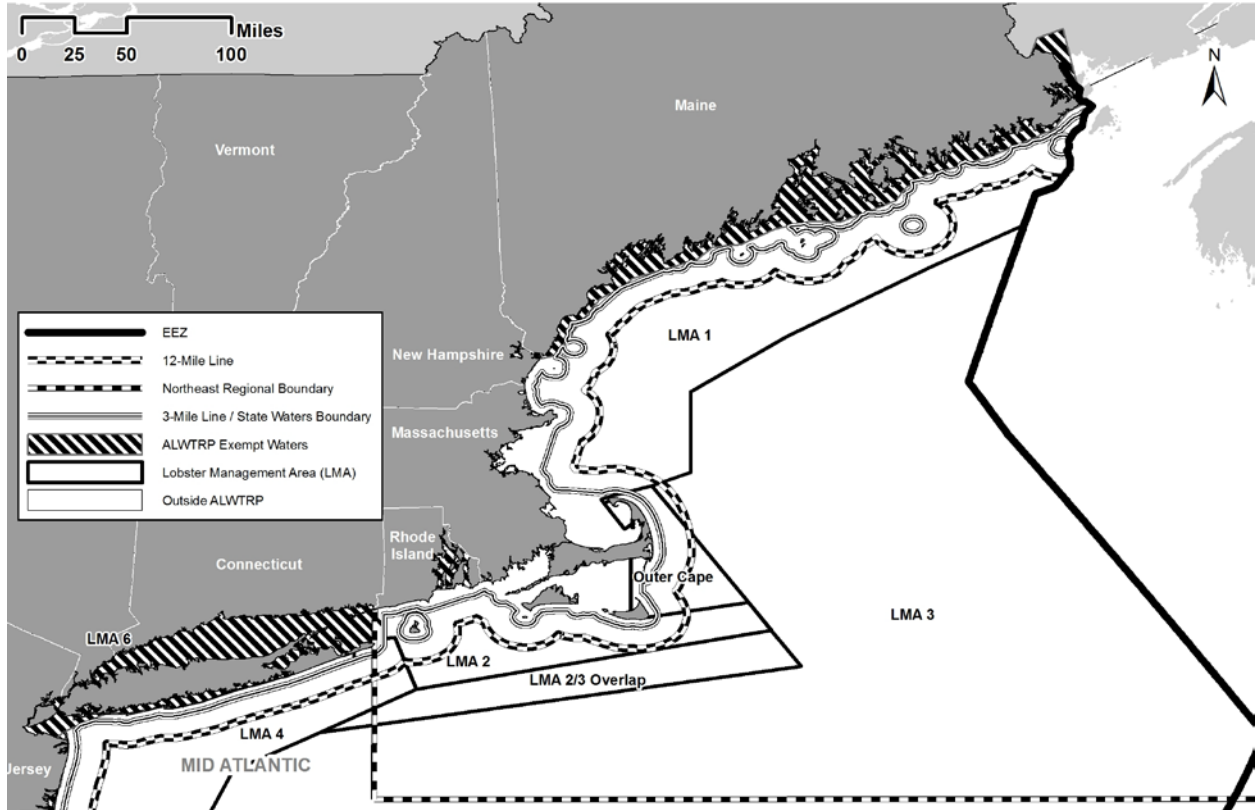
Exhibit 1-3
PROPOSED ALWTRP MANAGEMENT ALTERNATIVES 2-6
(Requirements in addition to current ALWTRP requirements (i.e., No Action alternative))

Location	Component	Alternative 2***	Alternative 3	Alternative 4	Alternative 5	Alternative 6 (Draft)	Alternative 6 (Preferred)
Northeast Region (Proposed Management measures include increasing the number of traps/trawl and/or closures and gear marking)							
Maine State Waters		2 to 4	2	= Alt. 2	= Alt. 3	= Alt. 3	= Alt. 3, and ¼ mile buffer around islands
Maine (3-12 mile)		5 or 10	-----	= Alt. 2	= Alt. 3	= Alt. 3	= Alt. 3
Maine (12+ mile)		10 or 20	15	= Alt. 2	= Alt. 3	= Alt. 3	= Alt. 3
Maine (3-6 mile)		-----	3	= Alt. 2	= Alt. 3	= Alt. 3	= Alt. 3
Maine (6-12 mile)		-----	5 or 10	= Alt. 2	= Alt. 3	= Alt. 3	= Alt. 3
NH State Waters		3	Exempt	= Alt. 2	= Alt. 3	= Alt. 3	=Alt. 3
MA State Waters		3	=Alt. 2	= Alt. 2	= Alt. 2	2	2
RI State Waters		3	=Alt. 2	= Alt. 2	=Alt. 2	=Alt. 2	2
LMA 1 (0-3 mile)		3	= Alt. 2	= Alt. 2	= Alt. 2	= Alt. 2	= Alt. 2
LMA 1 (3-12 mile)		10	= Alt. 2	= Alt. 2	= Alt. 2	= Alt. 2	= Alt. 2
LMA 1 (12+ mile)		20	= Alt. 2	= Alt. 2	= Alt. 2	= Alt. 2	= Alt. 2
LMA1/OC overlap (0-3 mile)		2	= Alt. 2	= Alt. 2	= Alt. 2	= Alt. 2	= Alt. 2
OC (0-3 mile)		2	= Alt. 2	= Alt. 2	= Alt. 2	= Alt. 2	= Alt. 2
OC (3-12 mile)		10	= Alt. 2	= Alt. 2	= Alt. 2	= Alt. 2	= Alt. 2
OC (12+ mile)		20	= Alt. 2	= Alt. 2	= Alt. 2	= Alt. 2	= Alt. 2
LMA 2 (0-3 mile)		3	= Alt. 2	= Alt. 2	= Alt. 2	= Alt. 2	= Alt. 2
LMA 2 (3-12 mile)		10	= Alt. 2	= Alt. 2	= Alt. 2	= Alt. 2	= Alt. 2
LMA 2 (12+ mile)		20	15	= Alt. 2	= Alt. 3	= Alt. 3	= Alt. 3
LMA 2/3 Overlap (12+mile)		20	= Alt. 2	= Alt. 2	=Alt. 2	=Alt. 2	=Alt. 2
LMA 3 (3-12 mile)		10	= Alt. 2	= Alt. 2	=Alt. 2	=Alt. 2	=Alt. 2
LMA 3 (12+ mile)		20	= Alt. 2	= Alt. 2	=Alt. 2	=Alt. 2	=Alt. 2
<i>Trap/pot Closure Areas</i>							
Jordan Basin (LMA 3, 12+mile)		20	20	Closed Nov. 1- Jan. 31	Closed Nov. 1- Jan. 31	20	20
Jeffreys Ledge (LMA1, 3-12+ mile)		10 or 20	10 or 20	Closed Oct. 1- Jan 31	Closed Oct. 1- Jan 31	10 or 20	10 or 20
Cape Cod Bay (LMA 1, 3-12+ mile)		10 or 20	Closed Feb 1- April 30	Closed Jan 1- April 30 (includes portion of OC and abuts GSC)	Closed Jan 1- April 30 (includes portion of OC and abuts GSC)	Closed Jan 1- April 30 (includes portion of OC)	Closed Jan 1- April 30 (includes portion of OC)

Location	Component	Alternative 2***	Alternative 3	Alternative 4	Alternative 5	Alternative 6 (Draft)	Alternative 6 (Preferred)
Mid-Atlantic Region							
New York, New Jersey, Delaware, Maryland, Virginia, North Carolina		Gear Mark/Monitor	= Alt. 2	= Alt. 2	= Alt. 2	= Alt. 2	=Alt 2
Southeast Region (Measures would apply in the area defined as Southeast US Restricted Area North)							
Florida State waters	Weak links	≤ 200 lbs	= Alt. 2	= Alt. 2	= Alt. 2	= Alt. 2	= Alt. 2
	Vertical Line	Breaking strength ≤ 1,500 lbs, must be one continuous piece of sinking line	= Alt. 2	= Alt. 2	= Alt. 2	= Alt. 2	= Alt. 2
	Other	Must use one buoy line with one trap, gear mark	= Alt. 2	= Alt. 2	= Alt. 2	= Alt. 2	= Alt. 2
Georgia State waters	Weak Links	≤ 600 lbs	= Alt. 2	= Alt. 2	= Alt. 2	= Alt. 2	= Alt. 2
	Vertical Line	Breaking strength ≤ 2,200 lbs, must be one continuous piece of sinking line	= Alt. 2	= Alt. 2	= Alt. 2	= Alt. 2	= Alt. 2
	Other	Must use one buoy line with one trap, gear mark	= Alt. 2	= Alt. 2	= Alt. 2	= Alt. 2	= Alt. 2
South Carolina State waters	Weak links	≤ 600 lbs	= Alt. 2	= Alt. 2	= Alt. 2	= Alt. 2	= Alt. 2
	Vertical Line	Breaking strength ≤ 2,200 lbs, must be one continuous piece of sinking line	= Alt. 2	= Alt. 2	= Alt. 2	= Alt. 2	= Alt. 2
	Other	Must use one buoy line with one trap, gear mark	= Alt. 2	= Alt. 2	= Alt. 2	= Alt. 2	= Alt. 2
Federal waters	Weak links	Status Quo	= Alt. 2	= Alt. 2	= Alt. 2	= Alt. 2	= Alt. 2
	Vertical Line	Must be one continuous piece of sinking line	= Alt. 2	= Alt. 2	= Alt. 2	= Alt. 2	= Alt. 2
	Other	Must use one buoy line with one trap, gear mark, bring gear back to shore at conclusion of trip	= Alt. 2	= Alt. 2	= Alt. 2	= Alt. 2	= Alt. 2

*** trawls with 5 or less traps will have 1 endline. 'Or' is based on Maine Zone. OC = Outer Cape, GSC= Great South Channel

Exhibit 1-4 NORTHEAST REGION LOBSTER MANAGEMENT AREAS



1.3 MAJOR CONCLUSIONS AND PREFERRED ALTERNATIVES

1.3.1 Biological Impacts of Alternatives

Gear modification requirements and closures 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:

- **Buoy Line Requirements:** The requirement to increase the number of traps per trawl in the Northeast is designed to reduce the amount of vertical lines in the water and thus, benefit large whales by reducing the frequency or severity of entanglement in buoy lines and associated gear. The Southeast requirements for a sinking line buoy line (free of objects) and lower breaking strengths of buoy line will also reduce the severity of entanglement in buoy lines.
- **Weak Link Requirements:** The potential regulatory changes analyzed include provisions such as requiring that lobster and other trap/pot gear employ a weak link on all floatation and/or weighted devices attached to the buoy line. The specified strength and placement of weak links 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 how trap/pot gear can be set. The requirement that vessels in the Southeast Federal waters remove their gear from the water and stow it on board before returning to port is designed to ensure that any interactions between gear 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 seasonal closures of known right whale habitat areas. The general objective of all these potential changes is to limit the frequency and severity of interactions between whales and regulated trap/pot 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 1-5 for the upper bound of these impacts).

Exhibit 1-5						
COMPARISON OF IMPACTS BY ALTERNATIVE (assuming 100% suspend fishing): QUANTITATIVE RISK REDUCTION INDICATOR						
Regulatory Provision	Regulatory Alternatives					
	2	3	4	5	6 (Draft)	6 (Preferred)
Gear Requirements						
Buoy Line						
<i>Increase number of traps per trawl</i>						
Number of FTE Affected Vessels	1,817	1,392	1,834	1,400	1,364	1,357
<i>Breaking Strength</i>						
Number of FTE Affected Vessels	21	21	21	21	21	21
<i>Single buoy line provision</i>						
Number of FTE Affected Vessels	21	21	21	21	21	21
Weak Link						
Number of buoy lines affected	3,048	3,048	3,048	3,048	3,048	3,048
Set Restrictions						
Number of FTE Affected Vessels	12	12	12	12	12	12
Gear Marking						
Number of new marks	1.1 million	1.1 million	1.1 million	1.1 million	1.1 million	393,295
Seasonal Closure						
Closure in Jordan Basin (Nov. 1 – Jan. 31)						
Number of FTE Affected Vessels	0	0	5	5	0	0
# Reduction in VL	0	0	15,262	15,262	0	0
Closure in Jeffreys Ledge (Oct.1 - Jan. 31)						
Number of Affected Vessels	0	0	69	69	0	0
# Reduction in VL	0	0	15,262	15,262	0	0
Closure in Cape Cod Bay (Feb. 1 - Apr. 30)						
Number of Affected Vessels	0	16	0	0	0	0
# Reduction in VL	0	841	0	0	0	0
Closure in Massachusetts Restricted Area #1 (Jan. 1 - Apr. 30)						
Number of	0	0	110	110	0	0

FTE Affected Vessels						
# Reduction in VL	0	0	15,262	15,262	0	0
Closure in Massachusetts Restricted Area #2 (Jan. 1 - Apr. 30)						
Number of FTE Affected Vessels	0	0	0	0	109	109
# Reduction in VL	0	0	0	0	6,329	6,329
Total % Reduction in VL	35.3	29.7	36.5	30.9	29.1	29
Total % Reduction in CO	35.8	37.4	40.5	41.7	38	37.9
Notes: <ul style="list-style-type: none"> • The #Reduction of VL for Alternatives 4 and 5 is a combination of all the proposed closures. • FTE Active Vessels stands for Full Term Equivalent vessel. Using Federal and state data sources, the model estimates the number of commercial fishing vessels that participate in each fishery. Depending on the location and fishery, the model employs a variety of methods to estimate the number of active vessels this differs from the number of permitted vessels. Key: 0 = no change VL= Vertical Line CO= co-occurrence						

The co-occurrence value estimated in the model is an index figure, integrated across the spatial grid, indicating the degree to which whales and the vertical line employed in gillnet or trap/pot fisheries coincide in the waters subject to the Plan. Biological impacts are characterized with respect to the percentage reduction in the overall co-occurrence indicator each alternative would achieve.

Exhibit 1-5 displays the estimated change in co-occurrence under each action alternative relative to the no-action alternative (Alternative 1). Alternative 2, which includes trawling requirements but no closures, is estimated to yield a reduction in co-occurrence of approximately 36 percent. Alternatives 3 through 6 (Draft and Preferred) add incrementally to this reduction through closure of high-risk areas at various times of year. The estimated impact of these closures is greater when affected vessels are assumed to suspend fishing rather than relocate to alternative fishing grounds. The greatest reduction in co-occurrence is achieved under Alternative 5, which includes modified trawling requirements as well as three closures (Jeffreys Ledge, Massachusetts Restricted Area #1, and Jordan Basin). Under this alternative, the estimated upper-bound reduction in co-occurrence is 42 percent.

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 (Draft and Preferred) 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 requirements that could prove beneficial to potentially affected species of whales, porpoises, dolphins, seals, and sea turtles.

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 6.2). 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 to comply with the ALWTRP modifications includes the labor and material costs associated with weak links, gear marking, and buoy line (see Section 6.2.2.2). 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.

In addition, the costs associated with seasonal closures were analyzed (see Section 6.3). This analysis assumed a range of impacts resulting in an upper and lower bound depending on the industry's response to the closures.

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.

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 6.5 describes the estimated costs of compliance with potential changes to the ALWTRP.

1.3.2.3 Economic Impact Results

Exhibit 1-6 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). Depending on the alternative and scenario (upper versus lower bound) in question, the analysis indicates that the lobster fishery would incur roughly 80 percent to 90 percent of estimated costs. OTP vessels would also incur a significant share of costs, primarily because of the proposed minimum trawl-length requirements.⁴ The impact of the regulatory alternatives on other fisheries is likely to be minor, reflecting the costs associated with meeting new gear marking requirements.

⁴ Due to insufficient data on vessel activity, the analysis of compliance costs under Alternatives 2 through 6 excludes potential impacts on trap/pot vessels operating in the Northern Inshore shrimp fishery. The Vessel Trip Report data incorporated in the Vertical Line Model identify only two such vessels; this suggests that much of the activity of trap/pot vessels in this fishery is accounted for by vessels that are not subject to Federal reporting requirements, presumably because they do not hold a Federal permit and fish only in state waters. Much of this activity is likely to occur in portions of Maine state waters that are currently exempt from ALWTRP requirements; under Alternatives 2 through 6, vessels operating in these waters would only be subject to ALWTRP gear marking provisions. Given these considerations, it is unlikely that exclusion of the Northern Inshore shrimp fishery from the analysis will lead it to substantially understate the costs of complying with Alternatives 2 through 6.

Exhibit 1-6								
DISTRIBUTION OF ESTIMATED ANNUAL COMPLIANCE COSTS BY FISHERY (2011 dollars)								
Regulatory Alternative	Fishery						Total	
	Lobster Trap/Pot		Other Trap/Pot		Blue Crab	Gillnet		
	Lower	Upper	Lower	Upper			Lower	Upper
Alternative 1 (No Action)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Alternative 2	\$1,814,000	\$4,546,000	\$430,000	\$849,000	\$7,000	\$5,000	\$2,255,000	\$5,407,000
Alternative 3	\$1,645,000	\$3,600,000	\$414,000	\$833,000	\$7,000	\$5,000	\$2,070,000	\$4,445,000
Alternative 4	\$3,121,000	\$6,550,000	\$430,000	\$849,000	\$7,000	\$5,000	\$3,562,000	\$7,411,000
Alternative 5	\$2,954,000	\$5,551,000	\$414,000	\$833,000	\$7,000	\$5,000	\$3,379,000	\$6,396,000
Alternative 6 (Draft)	\$2,192,000	\$4,361,000	\$416,000	\$836,000	\$7,000	\$5,000	\$2,620,000	\$5,208,000
Alternative 6 (Preferred)	\$1,482,000	\$3,637,000	\$416,000	\$835,000	\$7,000	\$5,000	\$1,910,000	\$4,484,000

Note: Values may not sum to the totals shown due to rounding.

Of the action alternatives, estimated costs are lowest for Alternative 3. This alternative incorporates less stringent trawling requirements than specified under Alternative 2 and includes only the CCB Restricted Area closure, which affects relatively few vessels and poses limited costs. Alternative 4 is likely to pose the greatest costs. It includes three closures, two of which (Jeffreys Ledge and Massachusetts Restricted Area #1) cover large areas. The estimated impact of the closures specified under this alternative ranges from \$1.3 million to \$2.1 million per year. The cost of complying with Alternative 5 is likely to be somewhat less than that of complying with Alternative 4. The difference is attributable to a difference in trawling requirements, which are slightly less stringent under Alternative 5. In general, compliance with gear configuration requirements imposes the greatest costs, with estimates ranging as high as \$4.4 million per year. The costs attributable to the seasonal closure of restricted areas also contribute significantly to the estimate of total compliance costs under Alternatives 4, 5, 6 (Draft and Preferred). In the upper bound scenario, the overall estimate for Alternative 6 (Preferred) is slightly higher than that for Alternative 3, but lower than the estimates for the other action alternatives. Gear marking costs are significantly lower under Alternative 6 (Preferred) because it does not require gear in Maine waters landward of the ALWTRP exemption line to be marked. In the lower bound scenario, this leads the estimate of total compliance costs for Alternative 6 (Preferred) to be lower than the corresponding figures for the other action alternatives.

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.

Hancock and Knox counties report the greatest value of landings with ALWTRP gear (\$108.7 million and \$94.6 million, respectively), as well as the greatest number of vessels fishing with such gear (approximately 949 and 953, respectively). The exposure of these counties to adverse impacts is heightened by the fact that landings made with ALWTRP gear account for a high percentage (91 percent in both cases) of overall ex-vessel revenues. Washington County (ME) is also highly exposed, with potentially affected landings of \$51.8 million. Each of these counties is highly dependent on fishing, as measured by Hall-Arber et al.'s OARS score. Moreover, the high poverty and unemployment rates in these counties suggest that they have limited capacity to absorb additional economic stress. As a result, they are particularly vulnerable to the impacts of ALWTRP regulations. Exhibit 1-7 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.

To identify potentially hard-hit sectors of the commercial fishing industry, the analysis compares estimates of average vessel compliance costs to estimates of average gross revenue per vessel. There is no clearly-defined threshold at which annualized costs represent a large enough percent of annual revenues that a vessel operator would cease fishing, or would otherwise suffer social and economic hardship.

Vessels that would not be affected by the seasonal closure of designated areas (Alternative 2) are likely to face substantially lower cost burdens than those affected by such closures (Alternatives 3-6 (Draft and Preferred)). In light of this difference, the analysis in Chapter 7 separately describes the estimated impact of Alternative 6 (Preferred) on these two groups of vessels.

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.

Exhibit 1-7		
KEY COMMUNITIES AFFECTED BY ALWTRP MODIFICATIONS		
At-Risk County¹	State	Major Ports²
Washington	ME	Beals Island/Jonesport, Cutler, Eastport, Lubec
Hancock	ME	Stonington/Deer Isle, Bucksport
Waldo	ME	Belfast, Searsport, Northport
Knox	ME	Rockland, Vinalhaven, Port Clyde
Lincoln	ME	South Bristol, Boothbay Harbor
Sagadahoc	ME	Georgetown, Phippsburg
Cumberland	ME	Portland, Harpswell
York	ME	Kennebunkport/Cape Porpoise, York
Rockingham	NH	Hampton/Seabrook, Portsmouth, Isle of Shoals
Essex	MA	Gloucester, Rockport, Marblehead
Suffolk	MA	Boston Harbor
Norfolk	MA	Cohasset
Plymouth	MA	Plymouth, Scituate, Hingham
Barnstable	MA	Sandwich, Hyannis, Chatham, Provincetown, Woods Hole
Dukes	MA	Vineyard Haven
Bristol	MA	New Bedford, Fairhaven, Westport
Newport	RI	Jamestown, Newport, Tiverton, Sakonnet Point
Washington	RI	Point Judith/Galilee
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).		

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 previously exempted waters. 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, some smaller vessels may have a hard time increasing the number of traps per trawl. Finally, the compliance cost burden may create a competitive disadvantage for smaller lobster vessels, causing industry consolidation.
- Competition for fishing grounds may increase if changes to the ALWTRP include the seasonal closure of certain fishing grounds. Most notably, fishermen who would otherwise fish in the closed area may relocate their effort to new grounds, increasing competition in those areas. Competition for fishing grounds may also increase to the extent that fishermen relocate from their traditional fishing grounds to exempted waters or waters that are otherwise subject to more moderate regulation. Tension, resentment, and conflict may result from attempts made by outsiders to exploit areas where they have not historically participated. Fishermen who are ultimately excluded from alternate grounds, and subsequently must sit out the season, may experience stress and anxiety associated with inactivity and lost income.

Positive Impacts

Changes to the ALWTRP may also have a variety of positive social impacts. 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.

In addition, it is possible that in some cases, the management measures under consideration would have a beneficial effect on fishermen. The potential for such impacts was noted in a 2012 report on a collaborative pilot project conducted by the Maine Department of Marine Resources, the Gulf of Maine Lobster Foundation, and the lobster industry (Maine DMR, 2012). This project sought to determine the impact of fishing longer trawls in areas in which lobstermen traditionally have fished singles or pairs. The fishermen participating in this effort noted several potential benefits of switching to trawls. In particular:

- Several fishermen noted they were able to haul traps configured in trawls more quickly than the same number of traps configured as singles, potentially resulting in decreased time spent at sea;
- Several individuals noted that their success in grappling for lost gear was greater with trawls than with singles. Thus, those who switch from singles to trawls may spend less time in their efforts to recover lost gear.⁵

Exhibit 1-8 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 have very similar implications. Because the impact estimates are subject

⁵ These time savings may be offset by an increased incidence of hang downs with longer trawls; however, the anecdotal evidence suggests that trawls did not hang-down with any greater frequency than the usual single/double trap configured gear.

to uncertainty, the minor variations that exist among these alternatives do not allow easy differentiation.

Based on the consideration of the relative costs and benefits of the alternatives, NMFS initially identified Alternative 5 as the preferred alternative in the DEIS. The rationale provided in the DEIS emphasized that this alternative achieved a high reduction in co-occurrence and provided the greatest protection to whales.

Comments on the DEIS have guided NMFS' development of a final preferred alternative: Alternative 6 (Preferred). This alternative integrates changes to Alternative 6 (Draft) that takes into account the comments regarding the safety of those fishing in smaller vessels around islands and close to shore. Alternative 6 (Preferred) also reduces the economic impact of the proposed action while sacrificing few large whale protection benefits. These changes and reasons for the changes are as follows:

- Alternative 6 (Preferred) would require the same number of trap/pot closures as proposed under Alternative 6 (Draft); however, this is less than the number of closures proposed under the original preferred alternative in the DEIS (Alternative 5). NMFS received numerous public comments opposing the three closures stating economic concerns and lack of evidence that the three closures would maximize the conservation benefit to large whales. Alternative 6 (Preferred) will implement one trap/pot closure in an area known to be an important right whale habitat.
- Alternative 6 (Preferred) would require a minimum of two traps per trawl in Rhode Island state waters. This is similar to what was proposed for Massachusetts waters under Alternative 6 (Draft). Numerous commenters cited safety concerns for those fishing in inshore waters that would prevent them from fishing with a minimum of three traps per trawl. Allowing two traps per trawl instead of three would alleviate safety concerns while still resulting in a reduction of vertical lines since single traps would be banned.
- NMFS received numerous comments opposing the proposed gear marking in the exempted waters. Many considered this impractical and potentially costly. Alternative 6 (Preferred) would not require gear marking in exempt waters but would still increase the length and frequency of the marks in regulated waters.
- Alternative 6 (Draft) proposed to exempt New Hampshire state waters from the ALWTRP including both current and proposed management measures. Alternative 6 (Preferred) would exempt New Hampshire state waters from the proposed management measures only. Those fishing in state waters would not have to follow the proposed minimum number of traps per trawl requirement; however, they would still be required to mark their gear and following current regulations (use of weak links and sinking groundline, etc).
- Alternative 6 (Preferred) includes two changes in the coastal waters of Maine to address the numerous comments NMFS received about safety concerns regarding the proposed number of traps per trawl. First, a ¼ mile buffer would be created around three inhabited islands in Maine (Monhegan, Ragged, and Matinicus) that would allow those fishing in

these areas to continue to fish with single traps. Second, NMFS would allow those fishing in Maine's pocket waters to abide by the proposed traps per trawl requirement for state waters even though Maine's pocket waters occur outside the 3-mile line traditionally used to define state waters. NMFS Office of Law Enforcement defines these waters as state waters for enforcement purposes. To ease enforcement and address safety concerns NMFS would adopt this definition of pocket waters.

Because the alternatives all affect roughly the same number of vessels, the expected magnitude of such impacts across alternatives is likely to be similar. The potential for increased crowding, competition and gear conflicts, however, is greatest under Alternatives 4 and 5, which include the most extensive seasonal area closures.

The public welfare benefits associated with increased whale protection are likely to be similar across all alternatives. As noted, the analysis measures the change in whale protection offered by a given alternative as a change in the co-occurrence of whales and vertical lines. By this measure, Alternative 5 offers the greatest protection to whales, with a reduction in co-occurrence (upper bound scenario) of 42 percent. Alternative 2 offers the least benefit, with a reduction in co-occurrence (lower bound scenario) of 36 percent. These biological benefits have socioeconomic implications for the general public. Increasing whale populations would have a positive impact on the consumer surplus derived from whale watching (a use benefit) and may increase producer surplus for operators of whale watch vessels. Likewise, whale conservation may enhance intrinsic values that society holds for healthy, flourishing whale populations.

Exhibit 1-8							
SUMMARY OF SOCIOECONOMIC IMPACTS BY ALTERNATIVE							
Parameter	Alternative 1 (No Action)	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6 (Draft)	Alternative 6 (Preferred)
Number of Heavily Affected Vessels (Upper Bound Scenario)	0	0	0	163	163	90	90
Total Employment on Heavily Affected Vessels (Upper Bound Scenario)	NA	NA	NA	330	330	179	179
Anticipated Reduction in Lobster Landings (Upper Bound Scenario)	0	1,283,000 lbs.	997,000 lbs.	2,112,000 lbs.	1,807,000 lbs.	1,235,000 lbs.	1,231,000 lbs.
Impacts on Dealers	No change	Minor short-term supply disruptions possible	Minor short-term and seasonal supply disruptions possible	Minor short-term and seasonal supply disruptions possible	Minor short-term and seasonal supply disruptions possible	Minor short-term and seasonal supply disruptions possible	Minor short-term and seasonal supply disruptions possible
Impacts on Processors	No change	Minor short-term supply disruptions possible	Minor short-term and seasonal supply disruptions possible	Minor short-term and seasonal supply disruptions possible	Minor short-term and seasonal supply disruptions possible	Minor short-term and seasonal supply disruptions possible	Minor short-term and seasonal supply disruptions possible
Other Potential Negative Social Impacts	No change	Minor	Some potential for increased congestion and gear conflict	Greater potential for increased congestion and gear conflict	Greater potential for increased congestion and gear conflict	Moderate potential for increased congestion and gear conflict	Moderate potential for increased congestion and gear conflict
Positive Social Impacts (Reduction in Baseline Co-occurrence Score, Upper Bound Scenario)	No change (0.0 percent change in baseline co-occurrence score)	Public welfare benefits of increased whale protection (36.1 percent change in baseline co-occurrence score)	Public welfare benefits of increased whale protection (37.7 percent change in baseline co-occurrence score)	Public welfare benefits of increased whale protection (40.8 percent change in baseline co-occurrence score)	Public welfare benefits of increased whale protection (42.0 percent change in baseline co-occurrence score)	Public welfare benefits of increased whale protection (38.2 percent change in baseline co-occurrence score)	Public welfare benefits of increased whale protection (38.2 percent change in baseline co-occurrence score)

The minimum trawl length requirements yield the greatest reduction in co-occurrence for the associated compliance cost. In contrast, closures are less cost-effective, as evidenced by their higher cost per unit reduction in co-occurrence.

Alternative 3 is the most cost-effective of the alternatives (\$56,000 to \$119,000 per unit of co-occurrence reduction). This is in part because the costs attributed to the seasonal closure of the Cape Cod Bay Restricted Area are relatively low. In addition, this alternative includes modifications to the gear reconfiguration requirements specified in Alternative 2 that are estimated to have a greater impact on co-occurrence at a lower total cost. On this basis, Alternative 3 can be considered superior to Alternative 2.

NMFS has considered the benefit and cost information presented above and designated Alternative 6 (Preferred) as its preferred alternative. The reduction in co-occurrence achieved under this alternative is greater than that estimated for some of the other alternatives considered, including than that achieved under Alternatives 2, or 3. The reduction in co-occurrence achieved under Alternative 4 and 5 is greater than that achieved under Alternative 6 (Preferred) but does so at a higher estimated cost. NMFS believes that its preferred alternative addresses the Purpose and Need for Action stated in this FEIS, 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. In addition, NMFS believes that its preferred alternative achieves these goals while reducing, to the extent possible, the adverse socioeconomic impacts of the rule. On this basis, NMFS believes that Alternative 6 (Preferred) offers the best option for achieving compliance with MMPA and ESA requirements.

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 (Preferred) to the analysis.
- Alternative 6 (Preferred) was chosen as the preferred alternative instead of Alternative 5 which was previously labeled as preferred in the DEIS. Alternative 6 (Preferred) incorporates modifications to exemptions and required number of traps per trawl in New Hampshire and Rhode Island state waters; addition of a ¼ mile buffer around three inhabited Maine islands; defining Maine's pocket waters as state waters; and modification to the gear marking scheme. Discussion of Alternative 6 (Preferred) has been added to Volume I of the EIS where appropriate.
- Updates to the large whale entanglement information presented in Chapter 2 of Volume I.

- Updates on recent actions for Fishery Management Plans, which is incorporated into Chapters 4 and 9.
- Expansion of “other affected species” section to further discuss the effects of climate change, ocean noise, offshore wind/energy projects and exempted areas on sea turtles.
- Updates and adjustments to the analysis of Alternatives presented related to correcting a coordinate of Maine’s 6-mile line.
- Addition of Volume II of the EIS, which describes NMFS’ response to comments received during the public comment period on the DEIS and proposed rule; provides a summary of written and oral comments received during the scoping meetings following the agency’s publication of the Notice of Intent to prepare an EIS; and provides copies of written comments on the DEIS that were received.

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 2011, and further refined the alternatives based on public comment on the DEIS. 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 risk associated with vertical line immediately and not wait for the rulemaking process. 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 decreasing the number of vertical lines in the water or modifying the gear so that the resulting entanglement does not result in a serious injury or mortality. 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.

- Specification of areas and times of proposed closures 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 gear modification requirements 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 (DFO) 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. The working group published a recovery strategy for the North Atlantic Right Whale in June 2009. DFO is currently working on action plans to address

the implementation of the recovery strategy. NMFS is continuing to work with the Canadian government to develop and implement protective measures for right whales in Canadian waters. In addition, NMFS is working with Canadian whale biologists and support teams to improve and expand disentanglement efforts in Canadian waters.

- Some segments of the commercial fishing industry have expressed concern over the trawling up requirements, stressing safety issues for those that operate in smaller vessels nearshore. The alternatives considered in this EIS offer options for these vessels.
- A final area of controversy has been the rate at which new requirements 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 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 (Chapter 13), a list of persons or agencies receiving the FEIS for review (Chapter 14), and a glossary, list of acronyms, and index (Chapter 15).

Volume II of the EIS is organized as follows:

- **Chapter 1** describes NMFS response to comments received during public comment periods for the DEIS and proposed rule.
- **Chapter 2** provides a summary of written and oral comments received during the scoping period following the agency's publication of the Notice of Intent to prepare an EIS.
- **Chapter 3** provides copies of written comments on the DEIS that were received.

1.7 REFERENCES

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