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Environmental Assessment, Regulatory Impact Review, and Final Regulatory Flexibility Analysis

For the Final Pelagic Longline Take Reduction Plan

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Globicephala sp.

Globicephala sp.

Risso's dolphins

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EXECUTIVE SUMMARY

This environmental assessment (EA) is being prepared in accordance with the National Environmental Policy Act (NEPA, 42 USC 4321 et seq.), regulations issued by the Council on Environmental Quality (CEQ) (40 CFR Parts 1500-1508), and guidance issued by the National Oceanic and Atmospheric Administration (NOAA) in Administrative Order 216-6.

This EA analyzes the effects on the quality of the human environment caused by the implementation of a final rule, pursuant to the authority of the Marine Mammal Protection Act (MMPA), creating the Pelagic Longline Take Reduction Plan (PLTRP). The final PLTRP has both regulatory and non-regulatory measures. The regulatory measures include: limiting mainline length to 20 nautical miles (nm) or less within the Mid-Atlantic Bight (MAB); designating a special research area offshore of Cape Hatteras; and requiring that all pelagic longline vessels post an informational placard on careful handling and release of marine mammals in the wheelhouse and working decks of the vessel. Non-regulatory measures include: increased observer coverage to 12-15% in Atlantic pelagic longline fisheries off the U.S. East coast that interact with long- and short-finned pilot whales ("pilot whales") or Risso's dolphins; updating guidelines for careful handling and release of entangled or hooked marine mammals; encouraging vessel operators to maintain daily communication with other vessel operators regarding protected species interactions; and providing quarterly bycatch reports to the Pelagic Longline Take Reduction Team (PLTRT) for review.

NOAA's National Marine Fisheries Service (NMFS) is issuing this action to fulfill its obligations under the MMPA to reduce the serious injury and mortality of pilot whales and Risso's dolphins in the Atlantic pelagic longline fishery.

NMFS evaluated the following alternatives:

- Alternative 1: No Action Alternative: would maintain the status quo with existing regulations for the pelagic longline fishery under the Consolidated Atlantic Highly Migratory Species (HMS) Fishery Management Plan (FMP).
- Alternative 2: Implement the non-regulatory take reduction measures recommended in the Draft PLTRP, as described above. Implementing only these non-regulatory measures would allow time for collection of additional scientific data prior to implementing regulatory measures.
- Alternative 3: Preferred action: Implement a year-round mainline length reduction (20 nm or less in length) throughout the MAB, establish a special research area offshore of Cape Hatteras, require the posting of a placard on careful handling and release of marine mammals, and implement the non-regulatory take reduction measures in the Draft PLTRP.
- Alternative 4: Implement a year-round mainline length reduction (20 nm or less in length) throughout the MAB, a 6-month closure (July-December) of the southern sub-regional MAB area, and the non-regulatory take reduction measures recommended in the Draft PLTRP.

Both the No Action alternative and the non-regulatory measures by themselves (Alternative 2) are unlikely to sufficiently reduce the level of serious injuries and mortalities of pilot whales and Risso's dolphins, and thus would not meet the requirement of the MMPA. NMFS believes that the combination of regulatory and non-regulatory measures in the Preferred Alternative would greatly decrease serious injuries and moralities to pilot whales and Risso's dolphins and meet the requirements of the MMPA. The Preferred Alternative would also have a lower socioeconomic impact on the pelagic longline fishery and associated communities than a complete closure of the MAB or sections thereof, as in Alternative 4. For this reason, NMFS is implementing the Preferred Alternative.

ACRONYMS

ALWTRP	Atlantic Large Whale Take Reduction Plan
AOCTRT	Atlantic Offshore Cetacean Take Reduction Team
APA	Administrative Procedure Act
ATGTRT	Atlantic Trawl Gear Take Reduction Team
CBD	Center for Biological Diversity
CEQ	Council on Environmental Quality
CHSRA	Cape Hatteras Special Research Area
CV	Coefficient of Variation
EA	Environmental Assessment
EFH	Essential Fish Habitat
ESA	Endangered Species Act
FEIS	Final Environmental Impact Statement
FMP	Fishery Management Plan
FONSI	Finding of No Significant Impact
HMS	Highly Migratory Species
IRFA	Initial Regulatory Flexibility Act Analysis
MAB	Mid-Atlantic Bight
MMPA	Marine Mammal Protection Act
NOAA	National Oceanic and Atmospheric Administration
NEC	Northeast Coastal
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
PBR	Potential Biological Removal
PLTRP	Pelagic Longline Take Reduction Plan
PLTRT	Pelagic Longline Take Reduction Team
PRA	Paperwork Reduction Act
RFA	Regulatory Flexibility Act *or* Regulatory Flexibility Analysis
RIR	Regulatory Impact Review
SAMBI	South Atlantic Migratory Bird Initiative
SAR	Stock Assessment Report
SBA	Small Business Administration
USFWS	United States Fish and Wildlife Service
VEC	Valued Ecosystem Component
ZMRG	Zero Mortality Rate Goal

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1.0 INTRODUCTION

The National Marine Fisheries Service (NMFS) has prepared this Environmental Assessment (EA) in compliance with the National Environmental Policy Act (NEPA, 42 USC 4321 *et seq.*), regulations issued by the Council on Environmental Quality (CEQ) (40 CFR Parts 1500-1508), and guidance issued by the National Oceanic and Atmospheric Administration (NOAA) in Administrative Order 216-6. This EA evaluates the direct, indirect, and cumulative environmental impacts that would result from the action and other reasonable alternatives.

Additional documentation, including the Draft PLTRP (PLTRT 2006), proposed rule (73 FR 35623, June 24, 2008), and supporting administrative record, are located in the Protected Resources Division of the NMFS Southeast Regional Office, St. Petersburg, Florida.

1.1 Statutory Requirements

NMFS is mandated by the MMPA to reduce incidental mortality and serious injury of marine mammals associated with commercial fisheries. Section 118 (f)(1) of the MMPA requires the preparation and implementation of Take Reduction Plans to assist in the recovery or prevent the depletion of strategic marine mammal stocks that interact with Category I or II fisheries. The MMPA defines a strategic stock as a marine mammal stock in which direct human-caused mortality exceeds the potential biological removal (PBR) level for that stock, which is listed as a threatened or endangered species under the Endangered Species Act of 1973 (ESA), or which is declining and likely to be listed as a threatened or endangered species under the ESA or as depleted under the MMPA within the foreseeable future. PBR, as defined by the MMPA, is 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.

NMFS regulations at 50 CFR 229.2 define a Category I fishery as a commercial fishery that has frequent incidental mortality and serious injury of marine mammals, a Category II fishery as a commercial fishery that has occasional incidental mortality and serious injury of marine mammals, and a Category III fishery as a commercial fishery that has a remote likelihood of, or no known incidental mortality and serious injury of marine mammals. "Incidental," as per 50 CFR 229.2, means, with respect to an act, a non-intentional or accidental act that results from, but is not the purpose of, carrying out an otherwise lawful action. The focus of the PLTRP is the U.S. Atlantic pelagic longline commercial fishery targeting swordfish, tuna, and shark. The Atlantic pelagic longline fishery is a part of the Category I "Atlantic Ocean, Caribbean, Gulf of Mexico large pelagics longline fishery." The fishery also interacts with other marine mammals stocks protected under the MMPA.

As required by the MMPA, the immediate goal of a take reduction plan is to reduce, within six months of its implementation, the incidental serious injury or mortality of marine mammals from commercial fishing to levels less than PBR. The long-term goal is to reduce, within five years of its implementation, the incidental serious injury or mortality of marine mammals from commercial fishing operations to insignificant levels approaching a zero rate (i.e., zero mortality rate goal, or ZMRG), taking into account the economics of the fishery, the availability of existing technology, and existing state or regional fishery management plans. NMFS has established the insignificance threshold for ZMRG as 10% of PBR (69 FR 43338, July 20, 2004).

1.2 Settlement Agreement

In 2003, the National Marine Fisheries Service (NMFS) reached a settlement agreement with the Center for Biological Diversity (CBD) that required NMFS to convene a Take Reduction Team (the Pelagic

Longline Take Reduction Team, or PLTRT) by June 30, 2005, to address bycatch of long- and short-finned pilot whales and common dolphins in the Atlantic pelagic longline fishery.

The Western North Atlantic stocks of all three species were identified as strategic stocks at the time of the settlement agreement, although only the two pilot whale stocks had recent observed serious injuries and mortalities attributed to the longline fishery. Since then, their status has changed. Based on updated information, the 2005 U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments report (SAR) listed long- and short-finned pilot whales as non-strategic and indicated that serious injuries and mortalities in the pelagic longline fishery were primarily limited to the MAB (Waring et al. 2006). The 2006 SAR for long- and short-finned pilot whales lists their status as unknown, but the 2007 SAR states that the five-year estimated average annual human-related mortality does not exceed PBR and the stocks are not strategic (Waring et al. 2007, Waring et al. 2008). The 2007 SAR also emphasizes that the continuing inability to distinguish between species of pilot whales raises concerns about the possibility of mortalities of one stock or the other exceeding PBR (Waring et al. 2008). The 5-year average combined annual serious injury and mortality of long- and short-finned pilot whales incidental to the pelagic longline fishery is 109 (Coefficient of Variation, or CV=0.194, years 2002-2006) (Memorandum from Lance Garrison to PLTRT, RE: Update on recent marine mammal bycatch in the U.S. East Coast Pelagic Longline Fishery, 13 July 2007); the PBR for western North Atlantic pilot whales is 239.

Within the past five years, there have been no observed serious injuries or mortalities of common dolphins in the pelagic longline fishery; this stock was reclassified as non-strategic in the 2005 SAR, based on estimates of serious injuries and mortalities in both the pelagic longline fishery as well as other observed fisheries. The 2006 SAR lists the status of this stock as unknown, but the 2007 SAR acknowledges that the 5-year average annual human-related mortality does not exceed PBR and therefore the stock is not strategic (Waring et al. 2007, Waring et al. 2008).

Although not included in the settlement agreement, Risso's dolphins also sustain serious injuries and mortalities incidental to the Atlantic pelagic longline fishery. Estimated serious injury and mortality levels of Risso's dolphins exceed the insignificance threshold (10% of PBR), but do not exceed PBR, so the stock is non-strategic. The average annual serious injury and mortality incidental to the pelagic longline fishery is 20 Risso's dolphins (CV=0.381, years 2002-2006) (Memorandum from Lance Garrison to PLTRT, RE: Update on recent marine mammal bycatch in the U.S. East Coast Pelagic Longline Fishery, 13 July 2007); the PBR for western North Atlantic Risso's dolphin is 129.

1.3 Management Issues

There are several issues that complicate the management of this fishery and its interactions with marine mammals. First, long- and short-finned pilot whales are difficult to distinguish in the field because of similarities in size, form, and coloration. Therefore, references in SARs since 2000 have been made to the combined species, *Globicephala spp.*, with respect to both population size and serious injury and mortality due to commercial fishing. The two species also have a combined PBR. The ability to distinguish between the two pilot whale species is particularly relevant for the pelagic longline fishery, as the distributions of the two pilot whales species are thought to overlap along the mid-Atlantic coast of the U.S. between 35° N. lat. and 39° N. lat., which is the same area where the majority of interactions with the pelagic longline fishery are observed. NMFS currently does not have sufficient information to determine the impacts of the pelagic longline fishery on each species separately, but is working to improve the understanding of species delineation and distribution.

Second, the nature of interactions between the pelagic longline fishery and pilot whales is not well understood. These animals are difficult to study in the field, and information is limited. Because of this, the PLTRT provided research recommendations and priorities. Section 3.5 of this document and Table 5 in Section VII of the Draft PLTRP describe these research recommendations, including topics such as characterizing and evaluating the interactions of pilot whales and Risso's dolphins with pelagic longline

fishing gear during haul back, experimentation with gear and bait alterations, disentanglement techniques, and monitoring the effectiveness of implemented PLTRP management measures. The recommendations are important for focusing research to fill critical information gaps, and information gained from the research will improve NMFS's ability to manage marine mammals in the future.

Pilot whales, like some other marine mammals, have been observed to prey on longline bait and/or catch. Pilot whales may perceive catch on longline gear as an easy foraging opportunity, thus increasing the risk of serious injury and mortality to these animals. Depredation may also result in loss of catch and bait, damage or loss of gear, and loss of time fishing, leading to increased vessel costs for the fishermen. Observed types of injuries on pilot whales and Risso's dolphins include hooks inside or imbedded in the mouth as well as entanglements in gear or trailing gear. These are considered by NMFS to be serious injury because they are likely to lead to mortality. In the pelagic longline fishery, NMFS makes serious injury determinations on a case-by-case basis after reviewing observer data. These determinations are based on guidelines generated from the NMFS Serious Injury Workshop in 1997 (Angliss and DeMaster, 1998). For small cetaceans, including pilot whales and other delphinids, it was concluded that animals that had ingested hooks, were entangled, were released with significant amounts of trailing gear, were swimming abnormally, or had suffered some obvious severe external trauma should be considered seriously injured. Conversely, animals hooked externally or disentangled and released without trailing gear, that swam away normally should not be considered seriously injured.

1.4 PLTRT and Development of Consensus Recommendations

In accordance with the MMPA and the settlement agreement, NMFS convened the PLTRT in June 2005. NMFS announced the establishment of the PLTRT on June 22, 2005 in the Federal Register (70 FR 36120). The selection of team members followed guidance provided by Section 118 of the MMPA. NMFS strove to select an experienced and committed team with a balanced representation of stakeholders. Members of the PLTRT included fishermen and representatives of the Atlantic pelagic longline fishing industry, environmental groups, marine mammal biologists, fisheries biologists, and representatives of the Mid-Atlantic Regional Fishery Management Council, the Marine Mammal Commission, and NMFS.

Four professionally facilitated meetings and two full-team conference calls were held between June 2005 and May 2006. The PLTRT reached consensus at the May 2006 meeting, and on June 8, 2006, submitted to NMFS a Draft PLTRP including recommendations for management strategies and additional research needs, thus meeting the statutory requirements of the MMPA (PLTRT 2006). NMFS carefully considered the consensus recommendations of the PLTRT in drafting the proposed rule to implement the PLTRP, which published in the *Federal Register* on June 24, 2008 (73 FR 35623) and provided a 90-day public comment period, ending on September 22, 2008. The final rule to implement the PLTRP includes the regulatory and non-regulatory consensus recommendations of the PLTRT.

2.0 PURPOSE AND NEED FOR ACTION

The purpose of this action is to implement a take reduction plan, pursuant to section 118(f) of the MMPA, to reduce serious injuries and mortalities of pilot whales and Risso's dolphins in commercial pelagic longline fishing gear in the Atlantic. Bycatch of these species in this fishery is below PBR. Therefore, the goal of the PLTRP is to reduce, within 5 years of the plan's implementation, the mortality and serious injury of pilot whales and Risso's dolphins in the Atlantic pelagic longline fishery to insignificant levels approaching a zero rate (ZMRG).

This action is needed because current serious injury and mortality rates of pilot whales and Risso's dolphins in this fishery are above ZMRG and therefore, inconsistent with the mandates of the MMPA. This action is intended to meet the statutory mandates and requirements of the MMPA.

3.0 DESCRIPTION OF THE ACTION AND ALTERNATIVES

NMFS is implementing a PLTRP, based on the regulatory and non-regulatory measures of the Draft PLTRP in order to reduce serious injuries and mortalities of pilot whales and Risso's dolphins in the Atlantic pelagic longline fishery to insignificant levels approaching a zero rate, within 5 years of implementation. This section describes the action (the preferred alternative) and three alternatives considered for the PLTRP, developed through discussions and recommendations of the PLTRT and analyses conducted by NMFS scientists.

3.1 Geographic Scope of the Alternatives

The geographic scope of the PLTRP is the Atlantic Ocean off the east coast of the United States. Because most (81%) of the pilot whale interactions with the Atlantic pelagic longline fishery occur in the MAB, which is defined at 50 CFR 635.2 as an area bounded by straight lines connecting the mid-Atlantic states' internal waters and extending to 71° W. long. between 35° N. lat. and 43° N. lat. (Figure 1), most of the actions considered in the alternatives are focused on this geographical area.

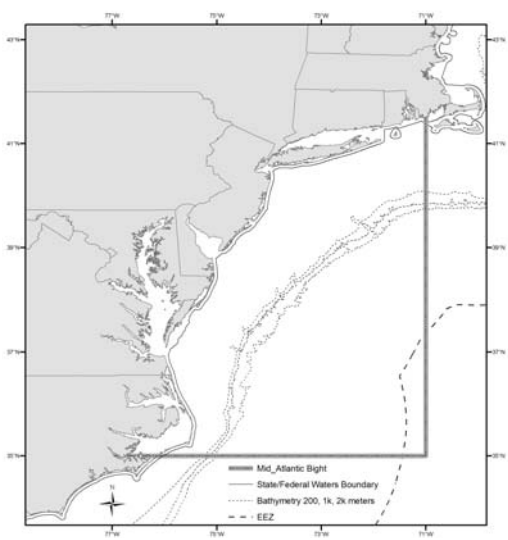

Figure 1. Boundaries of the Mid-Atlantic Bight.

3.2 Alternatives Considered

This section describes the action and three alternatives considered for the PLTRP.

3.2.1 Alternative 1. No Action

This alternative would maintain status quo management of the pelagic longline fishery under the HMS FMP. The implementing regulations for the FMP can be found at 50 CFR Part 635. While the rate of interactions with Risso's dolphins in this fishery has been decreasing since 2003, the rate of pilot whale interactions has been increasing, despite overall reductions in fishing effort (Fairfield-Walsh and Garrison

2007). Under this no action alternative, serious injury and mortality rates of pilot whales and Risso's dolphins in the Atlantic pelagic longline fishery would remain above insignificant levels, and therefore would not meet the goals of the PLTRP and mandates of the MMPA.

3.2.2 Alternative 2. Implement the non-regulatory take reduction measures recommended in the Draft PLTRP

This alternative would only implement the non-regulatory components recommended in the Draft PLTRP, while allowing time for collection of additional scientific data prior to implementing regulatory measures. This alternative is based on the assumption that fishermen are motivated to avoid interactions with marine mammals, as these interactions can result in significant economic loss due to both fish and gear loss, as well as present a risk to vessel operators and crew that try to release an entangled marine mammal. These non-regulatory management measures include:

3.2.2.1 Increase observer coverage to 12-15% in Atlantic pelagic longline fisheries off the U.S. East Coast that interact with pilot whales or Risso's Dolphins

NMFS would increase observer coverage in Atlantic pelagic longline fisheries off the U.S. East Coast that interact with pilot whales or Risso's dolphins, within the constraints of available funding, to ensure representative sampling of fishing effort. A simulation analysis evaluating the effects of increased observer coverage on the precision of bycatch estimates indicated: 1) 12-15% observer coverage would result in the most significant gains in precision, 2) setting a higher target in this range would "guard" against unforeseen problems placing observers on the vessels, and 3) further increases in coverage would yield relatively little additional precision despite significantly higher costs.

Pilot whales are primarily observed to interact with the longline fishery in the MAB and Northeast Coastal areas; Risso's dolphins also interact with the fishery in the Northeast Distant area. Based on these observations, NMFS would, within the constraints of its budget, increase observer coverage to 12-15%, in order of priority, in the 1) Cape Hatteras Special Research Area (CHSRA) (see section 3.2.3.2), 2) MAB, and 3) other areas, such as Northeast Coastal. While this measure is geared towards improving the precision of serious injury and mortality estimates, additional coverage would also better characterize fishing operations and marine mammal behavior, facilitate collection of data needed for research, and increase opportunities to collect biopsy samples from hooked or entangled marine mammals.

3.2.2.2 Update guidelines for careful handling and release of entangled or hooked marine mammals

NMFS would periodically update the careful handling and release guidelines, based on any new technologies, equipment, and methods for safer and more effective handling and release of entangled or hooked marine mammals.

3.2.2.3 Encourage vessel operators in the Atlantic federal EEZ off the U.S. East Coast to maintain daily communication with other vessel operators regarding marine mammal interactions

Daily communication among vessel operators would facilitate the exchange of information among fishermen regarding marine mammal interactions. Because of the difficulty of enforcing this as a regulatory measure, as well as the high cost of implementing real-time communication through a third party, NMFS would recommend to fishermen that daily communication become a best practice.

3.2.2.4 Provide quarterly bycatch reports to the PLTRT for review

NMFS would distribute quarterly bycatch reports to the PLTRT, upon their completion, to be used by the PLTRT to assess the effectiveness of take reduction measures.

NMFS believes, and the PLTRT recommended by consensus, that all the above non-regulatory measures should be implemented as a way to gather information from and share information with longline fishery participants in a way that regulatory actions cannot. Thus, non-regulatory measures will be considered as part of each following alternative (3 and 4), but only described in this section.

3.2.3 Alternative 3. Preferred Alternative: Implement the regulatory and non-regulatory take reduction measures recommended in the Draft PLTRP

The preferred alternative is based largely on the consensus recommendations of the PLTRT identified in the Draft PLTRP (PLTRT 2006). It includes regulatory measures described below, as well as the non-regulatory measures described in Alternative 2.

3.2.3.1 Limit mainline length to 20 nm or less within the Mid-Atlantic Bight

The action will limit the mainline length for all pelagic longline sets within the MAB region to not more than 20 nm. Although each line would be restricted to 20 nm or less, fishermen would be permitted to set more than one line at a time, as long as each line was 20 nm or less in length. A series of possible scenarios for this management measure were developed to account for varying degrees of possible "compensation" by fishermen for the reduction in effort associated with a mandated reduction in mainline length (see Table 5 in Section VII of the Draft PLTRP). This included cases where some fishermen might choose to set multiple longlines in the same general location to compensate for the reduced length of those lines, as well as more extreme cases where the number of hooks (total effort) in the water column remained the same as or even increased over status quo conditions. For each scenario, the expected catch of pilot whales, swordfish, tunas, leatherback turtles, and loggerhead turtles was modeled.

The PLTRT discussed limiting mainline length in all segments of the fishery, and also just the combined MAB and Northeast Coastal (NEC) segments. The decision to limit mainline length to 20 nm in the MAB only was based on the predictive model, which indicated measurable reductions in serious injuries and mortalities of pilot whales would be expected to occur without undue effects on target catch or bycatch of ESA-listed sea turtles. The predictive model showed an estimated 26% decrease in pilot whale interactions, assuming 50% compensation for lost fishing effort in additional sets. Details of the predictive model can be found in Section VII of the Draft PLTRP (PLTRT 2006).

The PLTRT also noted that it may be desirable to extend the limitation on mainline length to the NEC in the future based on the effectiveness of the measure in reducing marine mammal bycatch in the MAB, and bycatch rates in the NEC (see Section VIII(B)(2) of the Draft PLTRP (PLTRT 2006)).

3.2.3.2 Designate the CHSRA

The action designates a special research area offshore of Cape Hatteras, North Carolina (i.e., CHSRA). The CHSRA includes all waters inside and including the rectangular boundary described by the following lines: 35°N. lat., 75° W. long., 36°25'N,. lat., and 74°35'W long. (Figure 2). This research area encompasses a 2,288 square mile (5927 sq km) region that over the past five years has exhibited high fishing effort and high pilot whale bycatch rates. The CHSRA will enable focused research on pilot whale interactions with the pelagic longline fishery. The owner and operator of a vessel operating in the CHSRA needs to meet the following requirements: Any vessel with pelagic longline gear onboard that is fishing—which includes but is not limited to setting gear, hauling gear, or having gear that has drifted within the research area –needs to be in compliance with all current CHSRA requirements.

- The owner and operator of the vessel must be both willing and able to participate in government-sponsored research programs targeting marine mammal bycatch reduction; pilot whale behavior, biology, or ecology; or other related topics; and

- The owner and operator of the vessel must accept, facilitate, and be capable of taking research or government observers. For a vessel to meet this second requirement, it must comply with the observer requirements found at 50 CFR Part 600.725 and 600.746, and Part 635.7. Vessels that do not comply with all observer requirements will not be granted waivers and shall not fish or retain Atlantic HMS within the special research area.

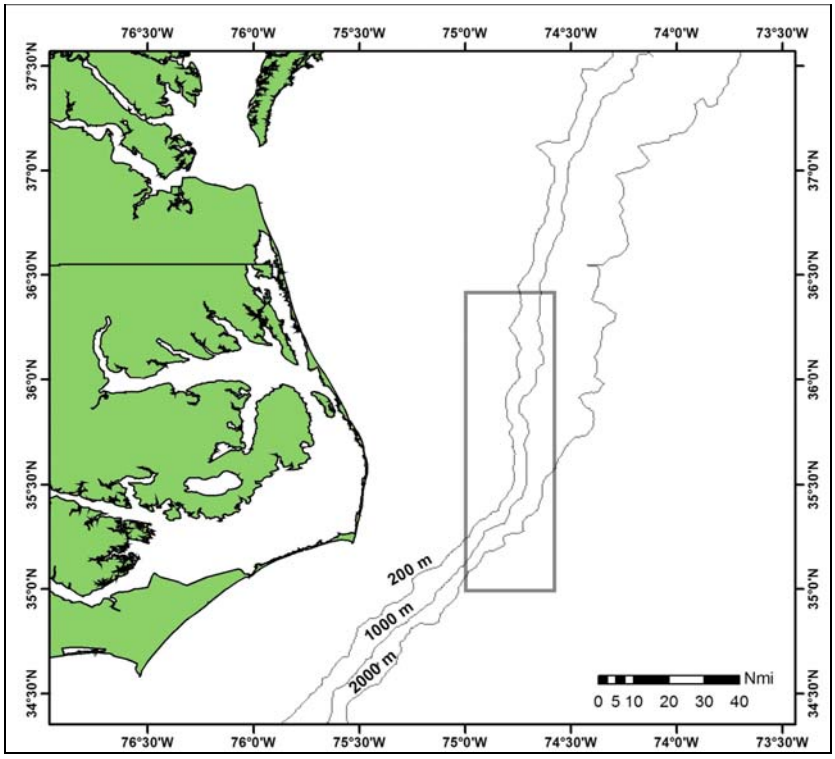

Figure 2. Boundaries of the CHSRA off of Cape Hatteras, North Carolina.

Previously, a number of vessels operating in this area have been too small to accommodate observers and have received waivers from the observer requirements. These vessels have never been observed, and, due to their size or methods of fishing, these vessels may have a different bycatch rate than the larger, observed vessels. Under this Alternative, vessels unable to accommodate observers are not permitted to fish within the CHSRA. The ability to observe all boats operating in this area will remove some of the existing uncertainty in calculating bycatch rates for this "hot spot" of marine mammal interactions.

3.2.3.3 Require that all pelagic longline vessels in the Atlantic federal EEZ off the U.S. East Coast post an informational placard on careful handling and release of marine mammals in the wheelhouse and working decks of the vessel

The placard is a laminated guide to careful handling and release of marine mammals and includes instructions for obtaining and completing the NMFS "Marine Mammal Injury/Mortality Reporting Form" in the event of an interaction with a marine mammal.

3.2.4 Alternative 4: Implement a year-round mainline length reduction (20 nm or less in length) throughout the Mid-Atlantic Bight, a 6-month closure of the southern Mid-Atlantic Bight sub-regional area, and the non-regulatory take reduction measures recommended in the Draft

PLTRP

Under this alternative, a six-month closure (July-December) of the southern MAB sub-regional area (Figure 3) and year-round mainline length reduction throughout the MAB, inclusive of that sub-regional area, would be implemented. The non-regulatory measures described in Section 3.2.2 would also be implemented.

The spatial patterns in the distribution of fishing effort based on logbook reports from 2001-2005 were used to explore the appropriate spatial scales at which the fishery aggregates its effort. The scales reflect the underlying spatial distribution of habitat variables that are likely to impact both the distribution of target and non-target species and pilot whales. The analysis indicated that spatial cells oriented along the shelf break in the MAB that were 50 km in the north-south direction were appropriate for aggregating and describing fishery activities (Figure 3).

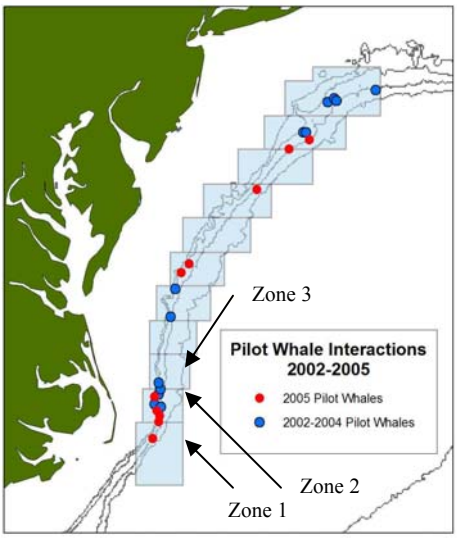

Figure 3. 50-km "zones" aggregating fishing activities. The three southern-most "zones" (1-3) form the southern MAB sub-regional area analyzed for a 6-month closure.

In this alternative, the six-month closure would affect the three zones making up the southern MAB sub-regional area (zones 1-3, see Figure 3). This sub-regional area was singled out as the area in which interactions with pilot whales in the longline fishery, particularly in recent years, were highly clustered in space. This was also an area of high pilot whale sightings rates during the 2004 NMFS Southeast Fishery Science Center survey (see Figure 4). By focusing the closure on a "hot spot" area, maximum benefit could be derived at a lower economic cost to the fishery.

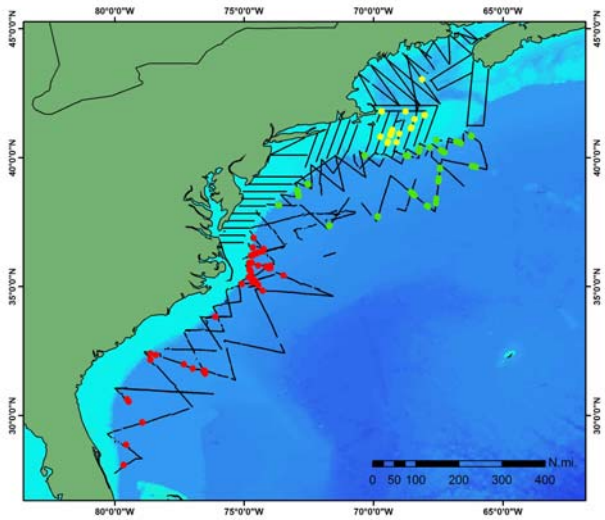

Figure 4. Pilot whale sightings from NMFS summer 2004 cetacean surveys. Yellow dots indicate sightings from Northeast Fisheries Science Center aerial survey; green dots indicate sightings from Northeast Fisheries Science Center offshore vessel survey; red dots represent sightings from Southeast Fisheries Science Center vessel survey. Note cluster of sightings off the coast of North Carolina, which corresponds to zones 1-3 in Figure 3.

The mainline length restriction would apply throughout the MAB. This restriction is also part of Alternative 3. See section 3.2.3.1 for more information.

The combination of elements in this alternative was selected for consideration because the predictive modeling analyses suggested that only the combination of region-wide restrictions in mainline length and seasonal closure of the southern MAB would result in predicted reductions in pilot whale interactions approaching 70%. Short-term, sub-regional area closures alone would result in relatively small reductions in the overall number of pilot whale interactions, and sub-regional applications of the restrictions on mainline length alone would also result in only limited benefit. Details of the predictive model can be found in Section VII of the Draft PLTRP (PLTRT 2006).

3.4 Alternatives Considered but Rejected

NMFS and the PLTRT discussed several other potential management measures, but did not consider them as alternatives because they were either financially or physically unfeasible, or there was a lack of data to suggest that they would reduce serious injury and mortality of marine mammals. These measures included strategies for avoiding exposure to vessel gear, and strategies to reduce the probability of an interaction once in the animals are in the vicinity of gear.

Additionally, NMFS considered implementing an “active avoidance” measure in the 50-km zone just north of Cape Hatteras. Active avoidance is intended to prevent exposure of pelagic longline gear to pilot whales and Risso’s dolphins, particularly when there is a high probability of an interaction. Pilot whale interactions with pelagic longline fishing are concentrated in space and time, particularly in the zone north of Cape Hatteras where interaction rates are high (zone 2, see Figure 3). In this scenario, an automatic short-term closure (1-2 months) of the zone would immediately be implemented based on a trigger event of one pilot whale interaction with pelagic longline fishing gear. However, analyses by NMFS scientists indicated that short-term closure on a sub-regional scale was not likely to have any significant, quantifiable impact on reducing pilot whale interactions. Thus, this option, or other similar variations, was not considered further since it is unlikely to achieve the necessary reduction in serious injuries and mortalities of pilot whales and Risso’s dolphins.

3.5 Research Needs

The Draft PLTRP includes numerous research strategies and data "mining" recommendations (PLTRT 2006). The recommendations are important for focusing research to fill critical information gaps. Additionally, the recommendations for using information and data that have already been collected promote efficiency and prevent research efforts from being duplicated. Information gained from research would aid in further refining the PLTRP's management measures in the future.

The PLTRT identified research strategies that addressed information needs for the following: (1) avoiding exposure to vessel/gear, (2) reducing the probability of an interaction once whales are in the vicinity of longline gear, and (3) minimizing impacts of an interaction once it has occurred. The PLTRT recommended that priority be given to research on species that are closest to or exceed PBR, research that evaluates the effects of implemented management measures, and research on species abundance, mortality, and post-hooking survivorship. The PLTRT further divided the research recommendations into short-, medium-, and long-duration projects. A full list of the research recommendations is provided in Section IX of the Draft PLTRP (PLTRT 2006).

The research recommendations do not constitute specific proposed projects and are not included in the alternatives considered, nor are they being analyzed in this EA. However, NMFS will consider the PLTRT's recommendations for additional research and data collection when establishing funding priorities, and will follow the recommendations to the extent that good scientific practice and resources allow. As feasible and appropriate, NMFS will consult with PLTRT members during this process.

4.0 AFFECTED ENVIRONMENT

There are three broad categories that NMFS uses to evaluate the environmental impacts of actions: physical, biological, and socioeconomic. This description of the affected environment provides a view on current conditions and serves as a baseline against which to compare impacts of implementing the alternatives.

4.1 Physical Environment

The physical area affected by the action is the MAB (defined at 50 CFR 635.2 as an area bounded by straight lines connecting the mid-Atlantic states of New Jersey, Delaware, Maryland, Virginia, and North Carolina's internal waters and extending to 71°W long. between 35°N lat. and 43°N lat). Within the MAB is a particular area of interest, the CHSRA, which is located off the coast of North Carolina at: Southern latitude 35°N, Western longitude 75° W, Northern latitude 36°25'N, and Eastern longitude 74°35'W (See Figure 2).

The area's main bathymetric feature is the continental shelf break (Figure 5). Along the shelf break is a major front or edge of water created by the Gulf Stream, which veers off into the Atlantic and merges with the Labrador Current, leaving relatively cold-water temperatures in the immediate vicinity of the shelf break. It is along this front of water and the warm core rings it creates, that the most desirable pelagic longline fishing grounds occur. Risso's dolphins and long- and short-finned pilot whales are known to occur and feed in this area.

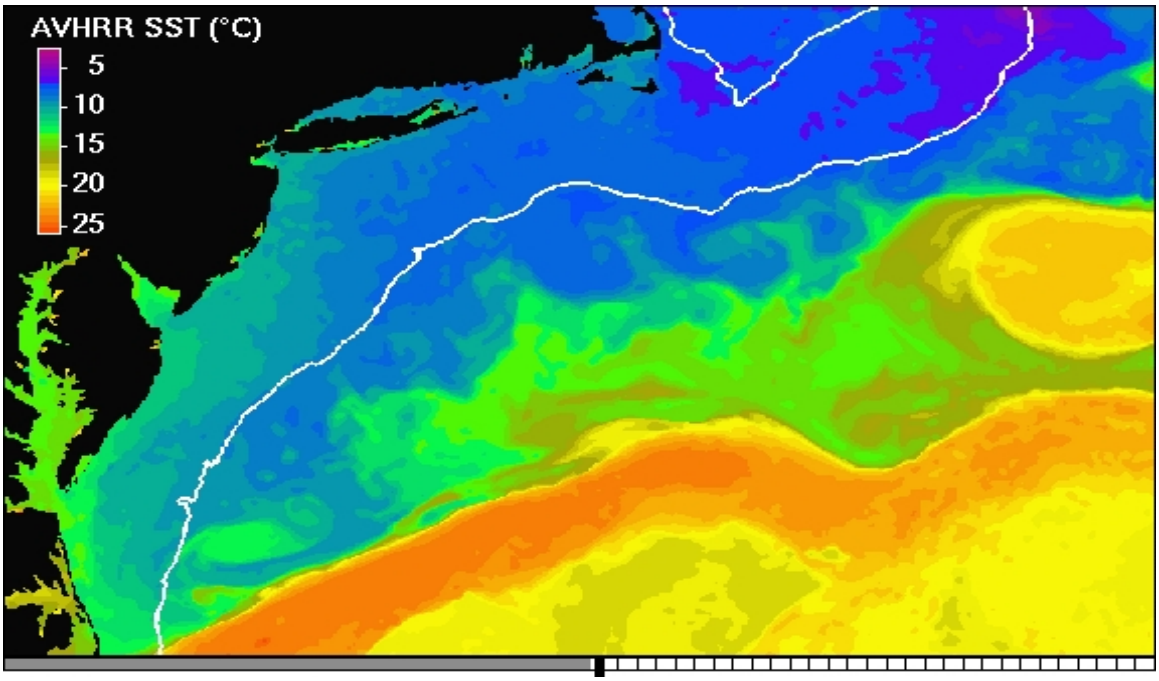

Figure 5. Average sea surface temperature in the MAB for the month of April. The white contour is the 100-m isobath, representing the continental shelf break. Source: http://www.oc.nps.navy.mil/~paduan/OC4331/GulfStreamSST.html

4.2 Biological Environment

Key biological components of the environment that may be affected by the final PLTRP alternatives include pilot whales and Risso's dolphins, other protected species, and target and non-target catch of the U.S. Atlantic pelagic longline fishery.

4.2.1 Long- and Short-finned Pilot Whales and Risso's Dolphins

In the MAB, the Atlantic pelagic longline fishery interacts with two species of pilot whales that occur in that area. Long-finned pilot whales are distributed worldwide in cold temperate waters in both the Northern (North Atlantic) and Southern Hemispheres. In the North Atlantic, the species is broadly distributed and thought to occur from 40° to 75° N. lat. in the eastern North Atlantic and from 35° to 65° N. lat. in the western North Atlantic (Abend and Smith 1999). Short-finned pilot whales are also distributed worldwide in warm temperate and tropical waters. In U.S. Atlantic waters, this species is found in the Gulf of Mexico and in the western North Atlantic as far north as the central MAB. Both species tend to favor the continental shelf break and slope, as well as other areas of high relief, but are also present offshore in the pelagic environment. In the western North Atlantic, they may be associated with the north wall of the Gulf Stream and with thermal fronts (Waring et al. 1992).

The two pilot whale species are difficult to distinguish during visual abundance surveys and therefore, in many cases, reference is made to the combined species, *Globicephala spp*. Due to this difficulty, the species' boundaries for short-finned and long-finned pilot whales in the western North Atlantic have not been clearly defined. However, their distributions are thought to overlap along the U.S. mid-Atlantic coast between 35° and 39° N. lat. (Payne and Heinemann 1993, Bernard and Reilly 1999).

The greatest area of overlap in distribution of the two pilot whale species seems to be confined to an area along the shelf edge between 38° and 40° N. lat. in the MAB, where long-finned pilot whales are present in winter and summer and short-finned pilot whales are present at least in summer (Waring et al. 2008).

Stock structure is not well known for long-finned or short-finned pilot whales in the North Atlantic. Indirect and direct studies on long-finned pilot whales indicate that there is some degree of stock differentiation within the North Atlantic (Mercer 1975, Bloch and Lastein 1993, Abend and Smith 1995, Abend and Smith 1999, Fullard et al. 2000). For short-finned pilot whales, there is no available information on whether the North Atlantic stock is subdivided into smaller stocks.

The total number of pilot whales off the eastern U.S. and Canadian Atlantic coast is unknown, although estimates from particular regions of their habitat (e.g., continental slope) exist for select time periods (see Waring et al. 2006 for a complete summary). Observers at sea cannot reliably distinguish long- and short-finned pilot whales visually. As a result, sightings of pilot whales are not identified to species and resulting survey estimates are considered joint estimates for both species. The best available estimate for *Globicephala spp*. in the U.S. EEZ is the sum of the estimates from the summer 2004 U.S. Atlantic surveys, 31,139 (CV=0.27), where the estimate from the northern U.S. Atlantic is 15,728 (CV=0.34), and from the southern U.S. Atlantic is 15,411 (CV=0.43) (Waring et al., 2008). This joint estimate is the most recent available, and these surveys include the most complete coverage of the species' habitat (although the PLTRT recognized that this estimate was limited to the U.S. EEZ). For *Globicephala spp*., the minimum population estimate, which accounts for uncertainty in the best estimate (Wade and Angliss 1997), is 24,866.

Risso's dolphins occur worldwide in warm temperate and tropical waters roughly between 60° N. and 60° S. lat., and records of the species in the western North Atlantic range from Greenland south, including the Gulf of Mexico (Kruse et al. 1999). In the U.S. Atlantic EEZ, the species is most commonly seen in the MAB shelf edge year round and is rarely seen in the Gulf of Maine (Waring et al. 2004). Risso's dolphins are pelagic, preferring waters along the continental shelf edge and deeper, as well as areas of submerged relief such as seamounts and canyons (Kruse et al. 1999). There is no information available on population structure for this species.

Abundance estimates for Risso's dolphins off the U.S. or Canadian Atlantic coast are unknown, although eight estimates from particular regions of their habitat do exist for select time periods (Waring et al. 2006). Sightings of Risso's dolphins are almost exclusively in the continental shelf edge and continental slope areas. The best available estimate for Risso's dolphins in the U.S. EEZ is the sum of the estimates from the summer 2004 U.S. Atlantic surveys, 20,479 (CV=0.59), where the estimate from the northern U.S. Atlantic is 15,053 (CV=0.78), and from the southern U.S. Atlantic is 5,426 (CV=0.540) (Waring et al., 2008). This joint estimate is the most recent available, and the surveys have the most complete coverage of the species' habitat (although the PLTRT recognized that this estimate was limited to the U.S. EEZ). The minimum population estimate for the western North Atlantic Risso's dolphin, which accounts for uncertainty in the best estimate (Wade and Angliss 1997), is 12,920.

A discussion of pilot whales' and Risso's dolphins' sensory abilities and foraging ecology, which are relevant to the nature of their interactions with the longline fishery, appears in Section IV of the Draft PLTRP (PLTRT 2006), and is incorporated by reference. These animals' behavior around commercial longline gear, particularly depredation activity, may be a key factor leading to hooking and entanglement. A description of the nature of these interactions can be found in Section III(C) of the Draft PLTRP (PLTRT 2006), and is incorporated by reference.

4.2.2 Other Marine Mammal Species

Section 4.3.2.3 of the Atlantic Large Whale Take Reduction Plan (ALWTRP) Final Environmental Impact Statement (FEIS) provides information on the range, abundance, and average annual fishery-related mortality associated with specific stocks of marine mammals that are potentially affected by the PLTRP, including spotted dolphins, striped dolphins, offshore bottlenose dolphins, and common dolphins. This section is incorporated by reference. The ALWTRP FEIS also provides information in

Section 4.1.4 on minke whales, including range, life history, abundance, and factors that may affect their survival (including entanglement). This section is also incorporated by reference.

Information on the stock definition, range, abundance, and annual human-caused mortality and serious injury of pantropical spotted dolphins (Western North Atlantic stock), pygmy sperm whales (Western North Atlantic stock), Northern bottlenose whales (Western North Atlantic stock), and unidentified beaked whales (Cuvier's and Mesoplodon beaked whales, Western North Atlantic stocks) is provided in the 2007 SAR for these stocks, and is incorporated by reference (Waring et al. 2008).

4.2.3 Other Protected Resources

The PLTRP may benefit other protected species that inhabit the same waters as pilot whales and Risso's dolphins. Evidence suggests that some of these species can become hooked or entangled in longline fishing gear; therefore, this risk may be affected by the PLTRP.

4.2.3.1 Sea Turtles

Although all six species of sea turtles found in U.S. waters are potentially impacted by the Atlantic pelagic longline fishery, leatherback and loggerhead turtles are by far the dominant species caught. Interactions with green, Kemp's ridley, hawksbill, and olive ridley turtles occur only on rare occasions. The 2004 biological opinion on the U.S. Atlantic pelagic longline fishery analyzed the effects of the fishery as it was prosecuted at the time and as it would be prosecuted under proposed regulations requiring new sea turtle bycatch and mortality reduction measures (for details on the proposed regulations, see 69 FR 6621, February 11, 2004). The opinion concluded that the fishery would not jeopardize the continued existence of any of these less frequently caught species (NMFS 2004a). There is no new information to alter that conclusion; therefore, this EA focuses on loggerhead and leatherback sea turtles.

A thorough review of the life history, status and trends, and threats for sea turtles is available in section 3.2 of the February 15, 2006 Biological Opinion on the Continued Authorization of Snapper-Grouper Fishing Under the South Atlantic Snapper-Grouper Fishery Management Plan (NMFS 2006a), and that section is herein incorporated by reference. Section 4.3.2.5 of the ALWTRP FEIS also provides information on the range, abundance, average annual fishery-related mortality, and threats to loggerhead and leatherback sea turtles, and is incorporated by reference (NMFS 2007). Additional information can be found in the recovery plans for each species, available in the NMFS website and herein incorporated by reference:

Green turtle: http://www.nmfs.noaa.gov/pr/pdfs/recovery/turtle_green_atlantic.pdf
Hawksbill: http://www.nmfs.noaa.gov/pr/pdfs/recovery/turtle_hawksbill_atlantic.pdf
Kemp's ridley: http://www.nmfs.noaa.gov/pr/pdfs/recovery/turtle_kempsridley.pdf
Leatherback: http://www.nmfs.noaa.gov/pr/pdfs/recovery/turtle_leatherback_atlantic.pdf
Loggerhead: http://www.nmfs.noaa.gov/pr/pdfs/recovery/turtle_loggerhead_atlantic.pdf

(Websites accessed January 2009)

4.2.2.2 Sea Birds

Gannets, gulls, greater shearwaters, and storm petrels are occasionally hooked by Atlantic pelagic longlines. These species and all other seabirds are protected under the Migratory Bird Treaty Act. Seabird populations are often slow to recover from excess mortality as a consequence of their low reproductive potential (one egg per year and late sexual maturation). The majority of longline interactions with seabirds occur as the gear is being set. The birds eat the bait and become hooked on the line. The line then sinks and the birds are subsequently drowned.

Both the Bermuda petrel and roseate tern are protected under the ESA and occur within the area affected by the proposed PLTRP. Bermuda petrels are occasionally seen in the waters of the Gulf Stream off the

coasts of North and South Carolina during the summer. Sightings off the Carolinas have been of solitary birds. This pelagic species ranges widely on the open ocean; however, it is considered rare and only occurs in low numbers off the Atlantic coast (Alsop 2001). Roseate terns occur widely along the Atlantic coast during the summer but in the southeast region they are found mainly off the Florida Keys (unpublished USFWS data). Interaction with fisheries has not been reported as a concern for either of these species. (SAFMC and NMFS 2006).

To reduce the incidental takes of seabirds, the United States has developed a National Plan of Action in response to the Food and Agriculture Organization of the United Nations International Plan of Action (http://www.fakr.noaa.gov/protectedresources/seabirds/npoa/npoa.pdf). Although the Atlantic pelagic longline interactions will be considered in the plan, NMFS has not identified a need to implement gear modifications to reduce seabird takes by Atlantic pelagic longline fisheries.

In general, takes of seabirds have been minimal in the fishery, most likely due to the setting of longlines at night and/or fishing in areas where birds are largely absent. Section 3.4.1.2 of the HMS FMP (NMFS 2006b) includes information on seabird bycatch in the U.S. Atlantic pelagic longline fishery from 1992-2005, the release status of seabird bycatch in the fishery, and preliminary expanded estimates of seabird bycatch and bycatch rates in the fishery from 1997-2004, using data from the Pelagic Observer Program. This section is incorporated by reference.

4.2.2.3 Target and Non-target Catch

A description of the life history, species biology, stock status and outlook, effects of regulation, and recent and ongoing research for the species targeted by the U.S. Atlantic pelagic longline fishery, including Atlantic swordfish, Atlantic bluefin tuna, Atlantic BAYS tuna (bigeye, albacore, yellowfin, skipjack), and Atlantic sharks, and non-target species caught in the fishery (e.g., Atlantic billfish) can be found in Section 3.2 of the HMS FMP (NMFS 2006b), and is incorporated by reference.

4.3 Socioeconomic Environment

The final PLTRP affects the U.S. Atlantic pelagic longline commercial fishery for tuna, shark, and swordfish. This fishery has experienced significant change over the past decade. In 2006, there were approximately 103 active vessels in the U.S. fishery, reflecting a decrease from a high of 501 active vessels in 1994. Most recently, a suite of measures designed to reduce bycatch or bycatch mortality, particularly of sea turtles, have been implemented, including time/area closures, gear and safe handling and release requirements for sea turtle interactions, and the switch from traditional “J” hooks to circle hooks. The domestic pelagic longline fleet is also fishing within the context of a broader international pelagic longline fishery. While the U.S. fleet comprises less than 10% of the longline fishing effort in the Atlantic Ocean and adjacent waters, foreign vessels use similar gear and fishing practices and most certainly interact with pilot whales, Risso’s dolphins, and potentially other marine mammals.

A description of the economic status of commercial HMS fisheries, including average ex-vessel prices per pound dressed weight for Atlantic HMS by gear, species, and area; revenues; and wholesale market price information can be found in Section 3.5.1 of the HMS FMP (NMFS 2006b), and is incorporated by reference. More information on the economics of the affected fishery can be found in the Regulatory Impact Review and Final Regulatory Flexibility Analysis sections of this EA.

Chapter 9.0 of the HMS FMP (NMFS 2006b) identifies and describes the HMS fishing communities, including those that may be affected by the final PLTRP, and is incorporated by reference. As described in the referenced chapter, the communities profiled were originally selected due to the proportion of HMS landings in the town, the relationship between the geographic communities and the fishing fleets, the existence of other community studies, and input from the HMS and Billfish Advisory Panels. Thus, these are the communities that are likely to experience the greatest impact from any change involving the management of HMS fisheries.

5.0 ENVIRONMENTAL CONSEQUENCES

This section describes and analyzes the anticipated environmental consequences of implementing the preferred alternative and other alternatives on the resources described in the Affected Environment section (Section 4). It also presents the scientific and analytical basis for comparison of alternatives (see Table 5.5.1).

5.1 Effects on the Physical Environment

The four alternatives would not change the nature of pelagic longline fishing or any other use of the environment, so implementation of any of the alternatives is not expected to cause additional degradation of water quality, air quality, or the physical environment. No discernible increase in environmental contaminants or solid waste disposal is anticipated. Implementation of any of the alternatives is not expected to change the pelagic longline fishery's effects on historic or cultural resources in the area; therefore, coordination with the State Historic Preservation Officer under the National Historic Preservation Act is not required.

5.2 Effects on the Biological Environment

5.2.1 Alternative 1. No Action

The No Action alternative is the least restrictive of the alternatives. Under this alternative, no gear restrictions or effort reductions would be implemented. No additional monitoring or voluntary measures to reduce the effects of marine mammal bycatch in the pelagic longline fishery would occur. This alternative would not be expected to reduce serious injuries and mortalities of pilot whales and Risso's dolphins resulting from interactions with pelagic longline gear. In fact, the risk of serious injury and mortality to pilot whales and Risso's dolphins might increase because depredation is a learned behavior that may be passed down to successive generations of animals. Furthermore, this alternative would not be consistent with requirements pursuant to Section 118 of the MMPA. This alternative would result in no change to the pelagic longline fishery, so no change in impacts to other biological resources would be expected.

5.2.2 Alternative 2. Implement the non-regulatory take reduction measures recommended in the Draft PLTRP

5.2.2.1 Increase observer coverage to 12-15% in Atlantic pelagic longline fisheries off the U.S. East Coast that interact with pilot whales or Risso's dolphins

The proposed increase in observer coverage would allow the collection of more representative data and improve the precision of marine mammal bycatch estimates. This information on the fishery's operations and its interactions with marine mammals would better inform management decisions and potentially increase the effectiveness of management measures implemented in the future. However, by itself, this measure would not provide any positive or negative impacts to marine mammals and other species because it is a tool only for observation, and does not directly reduce interactions.

5.2.2.2 Update guidelines for careful handling and release of entangled or hooked marine mammals

As gear technology changes and handling and release techniques are refined and improved, NMFS would communicate these changes to vessel owners and operators. With input from scientists and fishery representatives, careful handling and release guidelines would be updated, published, and made readily

available to the fishing community. Outreach efforts would be likely to increase fishermen's adherence to the guidelines. Any improvements in handling and release of entangled or hooked marine mammals would be expected provide benefits to affected marine mammals and other biological resources as applicable. However, this measure would only be effective and conservation benefits achieved if fishermen were trained in the recommended methods and if the information and equipment for disentanglement, de-hooking, and release were readily available. Protected species handling and release workshops are already a requirement under HMS regulations, and the requirement for posting the placards is a component of the preferred alternative, Alternative 3.

5.2.2.3 Encourage vessel operators in the Atlantic federal EEZ off the U.S. East Coast to maintain daily communications with other vessel operators regarding marine mammal interactions

NMFS would encourage communication between pelagic longline fishing vessels in order to prevent pilot whales from interacting with the gear. This would be considered an active avoidance measure, since the objective is for one or more vessels to facilitate the prevention of any other vessels from traveling to an area where marine mammals have been observed. Avoiding large pods of pilot whales would be expected to decrease the risk of depredation on bait or catch for fishermen and decrease the chance of hooking or entanglement to the pilot whales, thus providing a positive conservation benefit to pilot whales and other marine mammals. No benefit would be expected for other biological resources.

5.2.2.4 Provide quarterly bycatch reports to the PLTRT for review

Providing quarterly bycatch reports to the PLTRT would assist the team in making adaptive management decisions. Using up-to-date information would allow for earlier detection of changes in bycatch rates and support a quicker management response if bycatch rates were to increase or if the predicted decrease in bycatch from implementation of the PLTRP were not seen. These capabilities would be expected to be beneficial to pilot whales, marine mammals, and other protected species taken by this fishery. However, as with increased observer coverage, this component of the alternative would not be expected to provide direct impacts to marine mammals and other species because it is a tool only for discussion of the problem, and would not directly reduce interactions.

5.2.3 Alternative 3. Preferred Alternative: Implement regulatory and non-regulatory take reduction measures recommended in the Draft PLTRP

<u>Non-regulatory actions</u>

The biological consequences of the non-regulatory actions included under this Alternative are described in Section 5.2.2.

<u>Regulatory actions</u>

5.2.3.1 Limit mainline length to 20 nm or less within the Mid-Atlantic Bight

A reduction in mainline length to 20 nm or less is be expected to provide important reductions in the serious injury and mortality of pilot whales and other marine mammals. As described in previous sections, NMFS scientists used logistic regression modeling to explore scenarios of for possible compensation by fishermen for the reduction in effort associated with mandated reduction in mainline length. The model predicted a reduction in pilot whale interactions of 26% by limiting mainlines in the MAB to no greater than 20 nm, assuming a 50% compensation in fishing effort.

In the modeling exercise, predicted target species catches generally followed expected trends relative to changes in the number of hooks in the water column (i.e., decreased with fewer hooks in the water, and increased with more hooks in the water). Non-target finfish catch would be expected to follow similar

trends. Some scenarios showed an expected reduction in pilot whale takes with relatively little change in expected target species catch. For all scenarios, the leatherback turtle bycatch was predicted to decline. However, loggerhead turtle bycatch rates were predicted to increase due to the compensation of increasing the number of sets in the water. It should be noted that, except for the later half of 2004, these data do not include changes to the fishery as a result of gear and bait requirements to reduce sea turtle interactions (e.g., circle hook requirements). Incorporating these changes to the fishery might impact expected bycatch of turtles, potentially reducing the take of these animals.

5.2.3.2 Designate the CHSRA

The designation of a special research area off of Cape Hatteras, NC and requirement for vessel owners and operators in the area to be both willing and able to participate in government-sponsored research will facilitate the collection of scientific data, and crucial research in an area known for high bycatch rates. Section IX of the Draft PLTRP describes the PLTRT's research recommendations, including short-, medium- and long-duration projects aimed at collecting critical information needed by the team in order to make informed and adaptive management decisions for the pelagic longline fishery (PLTRT 2006). One major obstacle the team faced when creating the Draft PLTRP was a lack of data; therefore this management measure is one of great importance to the long-term success of this plan. The application of the data collected and research conducted via the proposed CHSRA is expected to reduce serious injuries and mortalities of pilot whales and Risso's dolphins resulting from interactions with pelagic longline gear over the long term.

In addition to the biological benefits gained from research, the requirement to carry observers if requested is also expected to provide benefits to marine mammal species and other protected species. This requirement will prohibit vessels unable to accommodate observers from fishing in the area, thereby reducing fishing effort by these small vessels and any associated interactions in the CHSRA. Allowing additional information (observer data) to be gathered, facilitating better management may benefit marine mammals, as well as other species observed.

5.2.3.3 Require that all pelagic longline vessels in the Atlantic federal EEZ off the U.S. East Coast post an information placard on careful handling and release of marine mammals in the wheelhouse and working decks of the vessel

The required posting of the placard is expected to facilitate improved handling and release of hooked or entangled marine mammals, potentially resulting in fewer animals being released with hooks in their mouths or trailing gear after being hooked or entangled in pelagic longline gear. This reduction in serious injuries and mortalities will be beneficial to and aid in the recovery and continued survival of these marine mammals.

This component of the Alternative is not expected to have any impact on other protected species or other biological resources.

5.2.4 Alternative 4. Implement a year-round mainline length reduction (20 nm or less in length) through the Mid-Atlantic Bight, a 6-month closure of the southern Mid-Atlantic Bight sub-regional area, and the non-regulatory take reduction measures recommended in the Draft PLTRP

This alternative would provide the greatest expected conservation benefit to pilot whales and Risso's dolphins. The biological consequences of the non-regulatory actions included under this Alternative are described in Section 5.2.2. As described in Section 5.2.3.1, the restriction on mainline length to 20 nm or less in the MAB would be expected to reduce pilot whale interactions by 26%, assuming 50%

compensation in fishing effort. However, the mainline length reduction in combination with the six-month closure (July-December) of the southern MAB sub-regional area would be expected to result in an estimated 70% reduction in interactions of pilot whales, assuming fishing effort lost due to the closure is spread evenly to other areas in the MAB. Declines in the number of interactions with Risso's dolphins would also be expected.

Predicted target species catches generally follow expected trends relative to changes in the number of hooks in the water column (i.e., decreased with fewer hooks in the water, and increased with more hooks in the water) depending on the level of effort compensation (See Section VII of the Draft PLTRP (PLTRT 2006)). Assuming some level of reduction in fishing effort due to the seasonal closure, catches of target species would be expected to decrease. Non-target finfish catch would be expected to follow similar trends. Therefore, this Alternative would be expected to result in some conservation benefit to target and non-target species.

The model further predicted that leatherback turtle bycatch would decline from the status quo under all compensation scenarios, but loggerhead turtle bycatch was predicted to increase under all scenarios except "no compensation," due to an increase in the number of sets in the water. It should be noted that these data do not include "circle hook" effort except for the later half of 2004, and incorporating that factor may impact expected bycatch rates of turtles, potentially reducing the number of sea turtle takes by the fishery.

5.3 Effects on the Socioeconomic Environment

The following is a brief discussion of expected effects to the socioeconomic resources by the preferred alternative and other alternatives. A full discussion of the socioeconomic consequences that would result from each alternative is contained within the Regulatory Impact Review (RIR) and Final Regulatory Flexibility Analysis (FRFA) (see Sections 7 and 8).

5.3.1 Alternative 1. No Action

The no action alternative would produce no socioeconomic cost or benefit beyond the status quo. It would not limit pelagic longline gear in any way beyond what is already required by current regulations, nor would it restrict fishing in any additional areas of the pelagic longline fishery. Consequently it would not impose any direct costs on pelagic longline fishermen or indirect costs on related economic sectors, or affect the people and communities that participate in and depend on this fishery. However, marine mammal depredation will continue and potentially increase, resulting in increased damage to gear and loss of bait and catch.

This alternative would not meet the goal of the PLTRP, or the mandates set forth in the MMPA, to reduce serious injuries and mortalities of pilot whales and Risso's dolphins to insignificant levels approaching zero. With the no action alternative, the increasing trend in pilot whale takes might continue and might require more restrictive management measures in the future such as time/area closures, which would likely impose significant social and economic impacts over a larger geographic area and for large number of fishermen and fishing communities.

5.3.2 Alternative 2. Implement the non-regulatory take reduction measures recommended in the Draft PLTRP

Only one of the non-regulatory actions in Alternative 2 would be expected to have any economic impact. The increase in observer coverage would require vessels to accommodate an observer more frequently than is currently required, which might slightly increase the vessel's annual operating costs. However, this cost is minimal, and since some observer coverage is already mandated, the overall effects are negligible. No social impacts would be expected from increasing observer coverage.

The other measures, including encouraging pelagic longline vessel operators to maintain daily communications regarding marine mammal interactions, updating careful handling and release guidelines, and proving quarterly bycatch reports to the PLTRT would have no economic or social impact.

Potential reductions in marine mammal interactions and depredation associated with this Alternative would be expected to have a positive economic impact by reducing the damage to fishing gear and the levels of bait and catch loss.

5.3.3 Alternative 3. Preferred Alternative: Implement the regulatory and non-regulatory take reduction measures recommended in the Draft PLTRP

Alternative 3 is expected to have the same economic impacts as Alternative 2, plus additional impacts associated with the regulatory measures.

The mainline length restriction is expected to affect landings of target species, according to model predictions (See Section VII of the Draft PLTRP (PLTRT 2006)), and therefore fishery revenues. Predicted changes in revenue depend on the level of compensation in fishing effort, and are estimated to range from an increase of $777,747 (full compensation in the number of hooks fished) to a loss of $819,523 (no compensation in the number of hooks fished), with a loss of $239,383 estimated for 50% compensation in the number of hooks fished. It is important to note that these values are based solely on an analysis of revenue under existing operations and do not account for potential changes in operations and associated costs under this alternative.

This change in revenues would impact 41 or fewer vessels per year based on current trends in the number of active pelagic longline vessels and the number of vessels that operated in the MAB in 2006. If one assumes that 41 vessels are affected by this restriction, then per vessel impacts range from an increase of $18,969 per vessel to a decrease of $19,988 per vessel, with an estimated decrease of $5,838 with 50% compensation in fishing effort.

The designation of the CHSRA is expected to impact commercial fishermen in several ways. First, small vessels unable to carry an observer will not be allowed to fish inside the CHSRA and thus will lose any potential landings from that area. Fishermen may compensate for these losses by fishing in other areas or around the perimeter of the CHSRA or upgrading their vessels to accommodate observers. Second, there may be costs associated with participation in research. Insufficient information is available to estimate the cost of these impacts, and these impacts would vary depending on the nature of the research project, but the costs are not likely to be large and would be short-term relative to the longer-term access to a productive area for fishing. If a vessel refuses to participate in a research project once selected, the vessel is prohibited from fishing in the CHSRA. These vessels will lose any potential landings from the area, but may compensate by fishing in other areas or around the perimeter of the CHSRA.

The requirement to post the careful handling and release placard will not have any economic costs because the placard will be provided by NMFS.

Any reduction in catch for commercial fishermen such as those expected under this Alternative will lead to a loss of income, which may make it more difficult for fishermen to stay in business. Associated socioeconomic impacts might also include reductions in the number of crew hired, reduced landings which could affect the processing sector, and possible loss of jobs in businesses dependent on this fishery.

5.3.4 Alternative 4. Implement a year-round mainline length reduction (20 nm or less in length) throughout the Mid-Atlantic Bight, a 6-month closure of the southern Mid-Atlantic Bight sub-regional area, and the non-regulatory take reduction measures recommended in the Draft

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Alternative 4 includes economic costs associated with the year-round mainline length restriction throughout the MAB plus the costs associated with a six-month closure of the southern MAB sub-regional area. It also includes the costs of the non-regulatory measures described under Alternative 2.

This alternative would likely result in larger economic impacts to small entities than the preferred alternative. The economic impact of the closure, assuming all catch is lost during the closed period with no effort redistribution, is estimated to be $770,000. This is likely an underestimate of the actual costs since it reflects only lost catch. However, there is a high likelihood of effort redistribution to areas with similar fishing potential by the highly mobile fishing fleet, and therefore, these estimates may represent the high end of potential lost catch.

The closure plus the mainline restriction would be expected to result in a reduction in the total number of hooks fished. The combination of different (though not necessarily lower) catch rates and reduced effort result in an estimated costs of $1.64 million for this Alternative. Again, this reflects only lost catch and no compensation or redistribution of effort. This reduction in revenues would impact 41 or fewer vessels per year based on current trends in the number of active pelagic longline vessels and the number of vessels that operated in the MAB in 2006. If one assumes that 41 vessels are affected by this restriction, then per vessel impacts are estimated to be $40,000.

Because this Alternative would be expected to have the greatest economic impact on the fishery, the greatest negative social impacts would also be expected. The predicted reductions in catch would lead to a loss of income, which might make it more difficult for fishermen to stay in business. Associated impacts include potential reduction in the number of crew hired, reductions in landings that could affect the processing sector, and possible loss of jobs in businesses dependent on this fishery. While the actual social impacts cannot be estimated, this Alternative would likely have the greatest negative social impacts relative to the other Alternatives.

5.4 Cumulative Impacts

Cumulative impacts are those combined effects on the quality of the human environment that result from the incremental impact of the preferred alternative and other alternatives when added to other past, present, and reasonably foreseeable future actions, regardless of what federal or non-federal agency or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR § 1508.7). The purpose of the cumulative impacts analysis is to ensure that federal decisions consider the full range of an action's consequences, incorporating this information into the planning and decision making processes.

5.4.1 Valued Ecosystem Components

The following valued ecosystem components (VECs) may be affected by the PLTRP, and are considered in this analysis:

- **Long- and Short-finned pilot whales and Risso's dolphins.** This VEC includes the three cetacean species that are the focus of the PLTRP.
- **Other protected species**. Other protected species include other marine mammals, sea turtles, and seabirds that may interact with the U.S. Atlantic pelagic longline fishery and are classified as (1) endangered or threatened under the ESA, or (2) otherwise protected under the Marine Mammal Protection Act.

- **Target and non-target fish stocks .** This VEC includes the tuna, swordfish, and shark stocks targeted by the U.S. Atlantic Pelagic Longline Fishery and non-target fish taken as bycatch in the fishery (e.g., billfish).
- **Fishing dependent communities.** This VEC includes all coastal communities whose economies and social structure are substantially dependent on or affected by U.S. pelagic longline fishing activities and income.

5.4.2 Geographic and Temporal Scope

Although the area subject to the requirements of the final PLTRP is the Atlantic Ocean off the east coast of the United States, the geographic scope of this cumulative effects analysis varies by VEC. Section 4, the Affected Environment, describes the geographic scope of each VEC.

The temporal scope of the analysis also varies by resource. In all instances, the analysis attempts to take into account both present and reasonably foreseeable future actions that could affect valuable physical, biological, or socioeconomic resources. The discussion of past actions and events reflects underlying differences in the availability of historical information, as well as differences in the period of time that must be considered to provide adequate context for an understanding of current circumstances.

5.4.3 Effects of Past, Present, and Reasonably Foreseeable Future Actions

5.4.3.1 Pilots whales and Risso's dolphins

Pilot whales and Risso's dolphins have documented interactions with commercial fisheries in addition to the Atlantic pelagic longline fishery. The 2007 SAR lists the Western North Atlantic stocks of long- and short-finned pilot whales as interacting with the following fisheries: Mid-Atlantic bottom trawl; Northeast bottom trawl; Gulf of Maine/George's Bank herring mid-water trawl JV (joint venture) and TALFF (foreign fishing operations); Northeast mid-water trawl (including pair trawl); Mid-Atlantic mid-water trawl (including pair trawl), and Canadian gillnet, trap, and trawl fisheries. The Western North Atlantic stock of Risso's dolphins interacts with the Northeast sink gillnet fishery (Waring et al. 2008). Table 1 in the 2007 SAR includes an estimate of the total number of serious injuries and mortalities, across all fisheries, for each stock. The total estimated take of pilot whales (long- and short-finned combined) from fisheries is 163, which is below their PBR of 249. The total estimated take of Risso's dolphins from fisheries is 40, which is below their PBR of 129.

Efforts have been undertaken to reduce the risk of interactions with commercial fishing gear. In 1996, the Atlantic Offshore Cetacean Take Reduction Team (AOCTRT) was formed to address the interaction of Western North Atlantic stocks of pilot whales, among other species, with the HMS pelagic longline, pair trawl, and pelagic driftnet fisheries for Atlantic tunas, sharks, and swordfish. A draft plan to reduce takes resulting from these types of gear was submitted in 1999, but an Atlantic Offshore Cetacean Take Reduction Plan was not finalized as a separate entity. Instead, several protective measures were implemented for these fisheries through the HMS FMP. NMFS prohibited the use of pair trawls and swordfish driftnets in Atlantic pelagic fisheries, and implemented several other AOCTRT recommendations for the pelagic longline and shark gillnet fisheries. Subsequent to the 1999 draft plan, the pelagic longline fishery has been substantially modified to reduce bycatch of nontarget species (e.g., billfish and sea turtles).

More recently, the Atlantic Trawl Gear Take Reduction Team (ATGTRT) was convened to address takes of pilot whales, white-sided dolphins, and common dolphins in the Mid-Atlantic mid-water trawl (including pair trawl), Mid-Atlantic bottom trawl, Northeast mid-water trawl (including pair trawl), and Northeast bottom trawl fisheries. The ATGTRT has met three times, in September 2006, April 2007, and

May 2008. The ATGTRT is in the process of developing an Atlantic Trawl Gear Take Reduction Strategy. The ATGTRT has recommended that research and education and outreach plans be developed as part of an overall take reduction strategy to reduce the level of interactions between marine mammals and the affected fisheries. Draft research and education and outreach plans have been completed.

The Atlantic Large Whale Take Reduction Plan (ALWTRP) currently regulates, among other fisheries, the Northeast sink gillnet fishery, which has documented takes of Risso's dolphins. A combination of broad-based gear modifications and time/area closures has been implemented and is designed to reduce interactions between the affected fisheries and large whale species. The requirements of the ALWTRP may also serve to reduce the level of interactions with smaller cetaceans, including Risso's dolphins.

The SARs also describe other sources of mortality for these species, such as contaminants and water pollution. Potential contaminants include polychlorinated byiphenyls (PCBs), chlorinated pesticides (DDT, DDE, etc.), and toxic chemicals. The population effect of the observed levels of these chemicals is unknown. However, a number of Federal statutes and international agreements are designed to control water pollution at the national or international level. Past and present actions examined include the Clean Water Act; the Coastal Zone Management Act of 1972; the Marine Protection, Research, and Sanctuaries Act of 1972; the Oil Pollution Act of 1990; and international laws regarding marine pollution. The continued efforts to control water pollution at the national and international level may have a positive effect on these marine mammals.

5.4.3.2 Other Protected Species

5.4.3.2.1 Other Marine Mammals

Other marine mammals potentially affected by the final PLTRP are identified in Section 4.2.2, and include minke whale, common dolphin, Atlantic spotted dolphin, pantropical spotted dolphin, striped dolphin, offshore bottlenose dolphin, pygmy sperm whale, Northern bottlenose whale, and unidentified beaked whales.

As described in the previous section, interactions with commercial fisheries are an important source of serious injury and mortality for many marine mammal stocks. The stocks identified above are taken in various U.S. fisheries, including pelagic longline, Northeast sink gillnet, mid-Atlantic gillnet, mid-Atlantic bottom trawl, Northeast bottom trawl, Bay of Fundy herring weir, Northeast/mid-Atlantic American lobster trap/pot, and Southeastern U.S. Atlantic shark gillnet fisheries.

Through Section 118 of the MMPA and the implementation of Take Reduction Teams, NMFS has sought to reduce the level of interactions between marine mammals and commercial fisheries. These include the AOCTRT, which addressed sperm whales, pilot whales, common dolphins, bottlenose dolphins, Atlantic spotted dolphins, and pantropical spotted dolphins; the ALWTRT, which addresses large whale species including minke whales; and the ATGTRT, which focuses on pilot whales, common dolphins, and white-sided dolphins.

Various regulatory and non-regulatory strategies are currently employed in the Atlantic pelagic longline fishery and other longline fisheries (Atlantic dolphin and wahoo; Hawaii-based pelagic longline; U.S. bottom longline, and worldwide longline fisheries) to reduce bycatch of marine mammals, sea turtles, and other species. These strategies are detailed in Section VI of Draft PLTRP (PLTRT 2006); this section is incorporated by reference.

5.4.3.2.2 Sea Turtles

Section 9.4.2.5 of the ALWTRP FEIS (NMFS 2007) includes a detailed discussion of the major threats to sea turtles and the significant actions taken or planned by NMFS and other agencies to mitigate the risks and rebuild populations of sea turtles. These threats include various anthropogenic factors that may affect

turtle nesting habitat: beach erosion; beach armoring and nourishment; artificial lighting; beach cleaning; increased human presence; recreational beach equipment; beach driving; coastal construction and fishing piers; exotic dune and beach vegetation; and poaching. An increased human presence at some nesting beaches or close to nesting beaches has led to secondary threats such as the introduction of exotic fire ants and an increased presence of native species (e.g., raccoons, armadillos, and opossums) that feed on turtle eggs. When sea turtles shift from the land environment to the pelagic and benthic marine environments, the principal anthropogenic threats they face originate from commercial fisheries and the threat of submersion and drowning from entanglement in commercial fishing gear. Additional anthropogenic threats to sea turtles in the marine environment include oil and gas exploration, underwater explosions, hopper dredging, offshore artificial lighting, power plant entrainment and/or impingement, entanglement in debris, marine pollution (including the ingestion of marine debris), marina and dock construction and operation, boat collisions, and poaching.

Section 3.9.9.2 of the HMS FMP (NMFS 2006b) includes information on steps NMFS has taken in recent years to reduce sea turtle bycatch and bycatch mortality in domestic longline fisheries. These actions have focused on gear modifications and release guidelines. These sections are incorporated by reference. In particular, on July 6, 2004, NMFS implemented additional regulations for the Atlantic pelagic longline fishery to further reduce the mortality of incidentally caught sea turtles (69 FR 40734). These measures include requirements on hook type (circle hooks instead of the traditional "J" hook), hook size, bait type, dipnets, lineclippers, and safe handling guidelines for the release of incidentally caught turtles. These requirements were developed based on the results of the 2001-2003 experiment in the Northeast Distant area (Watson et al, 2003; Watson et al., 2004, Shah et al. 2004). These requirements are predicted to decrease the number of total interactions, as well as the number of mortalities, of both leatherback and loggerhead sea turtles. Post-release mortality rates are expected to decline due to a decrease in the number of turtles that swallow hooks which engage in the guy or throat, a decrease in the number of turtles that are foul-hooked, and improved handling and gear removal protocols.

5.4.3.2.3 Seabirds

Seabirds are incidentally taken in pelagic longline fisheries. Past and present actions by NMFS to reduce the interactions with the pelagic longline fishery are presented in Section 3.9.9.3 of the HMS FMP (NMFS 2006b); this section is incorporated by reference.

Several initiatives exist for conservation planning of birds. The North American Bird Conservation Initiative is a framework for integrated bird conservation planning in North America, and the Waterbird Conservation for the Americas, which produced the North American Waterbird Conservation Plan, and North American Colonial Waterbird Conservation Plan. The South Atlantic Migratory Bird Initiative (SAMBI) provides a regional framework for the conservation of birds and bird habitats that has implications at multiple scales: local, state, regional, pelagic, international, and hemispheric. This plan identifies priority species, priority habitats, priority areas, and strategies to achieve the conservation of "all birds across all habitats" in the South Atlantic region. This Plan is a result of the collaboration of federal, state, non-governmental, and private interests to build a cohesive strategy for bird conservation in the southeastern United States.

Though seabird conservation is addressed in national plans as well as in SAMBI, the management of seabirds falls under the jurisdiction of the U.S. Fish and Wildlife Service (USFWS). A primary goal of the USFWS is to identify bird species of high conservation concern with the intent to implement proactive management and conservation actions to alleviate the need for any future listings of seabirds under the ESA. These identified bird species are included in the USFWS's "Birds of Conservation Concern 2002" (USFWS 2002).

As part of this goal, the USFWS is developing a Waterbird Conservation Plan for the Southeast U.S. Identified within this draft regional plan are marine bird species that represent the USFWS' highest

conservation priorities for the southeast region. Several species described in the draft southeast regional plan are listed in the Southeast United States Priority Bird List. The list focuses on species vulnerable to incidental capture in fishing gear. Conservation actions through this Plan are anticipated to have positive effects on the seabird species affected by the pelagic longline fishery.

5.4.3.3 Target and non-target fish stocks

NMFS had taken a number of actions in the past in order to, among other things, rebuild overfished HMS stocks and prevent overfishing of HMS stocks and reduce non-target fish bycatch. These actions have included FMPs, FMP amendments, and framework actions. A summary of these actions is detailed in Section 3.1 of the HMS FMP (NMFS 2006b), and is incorporated by reference. NMFS can reasonably expect to implement additional regulations in the future to address the management and conservation of Atlantic HMS. Future actions may include: changes to time/area closures; modifications to Essential Fish Habitat (EFH) descriptions; modifications to swordfish quotas; modifying handling and release requirements for sea turtles in other HMS fisheries; and, actions taken to reduce protected species interactions in HMS fisheries, particularly in the pelagic longline fishery (e.g., reinitiating consultation under Section 7 of the ESA).

5.4.3.4 Fishing dependent communities

Section 4.8.3 of the HMS FMP (NMFS 2006b) describes cumulative economic and social impacts associated with the management measures leading up to and including the consolidated fishery management plan, and is incorporated by reference. Additional, specific information on economic and social impacts affecting HMS fishing-dependent communities can be found in Section 4.6 of the Final Supplemental Environmental Impact Statement on reductions in sea turtle bycatch and mortality in the Atlantic pelagic longline fishery, and is incorporated by reference (NMFS 2004b). In summary, while certain actions have resulted in negative socio-economic impacts, all of the past, present, and reasonably foreseeable future actions described in these sections are expected to ensure the long-term sustainability and continued economic viability of the pelagic longline fishery consistent with applicable law. Management and conservation measures promote the recovery and rebuilding of target species and protected resources, which provide for the continued operation of the fishery.

5.4.4 Consequences of the Alternatives Considered

An analysis of the direct and indirect impacts of the final PLTRP and alternatives on the VECs can be found in Section 5 of this document.

5.4.5 Cumulative Effects of the Alternatives Considered

In this section, the incremental effects of the final PLTRP and alternatives are considered in the context of the cumulative effects described in section 5.4.3 on the four VECs. Cumulative impacts are assessed using the following terms:

- “Positive effect” means that the cumulative effects of an alternative are expected to improve the status of the resource relative to its current status under past, present, and reasonably foreseeable future actions.
- “Negative effect” means that the cumulative effects of an alternative are expected to adversely affect the status of the resource relative to its current status under past, present, and reasonably foreseeable future actions.
- “Neutral effect” means that the cumulative effects of an alternative are expected to be no different than they had been under past, present, and reasonably foreseeable future actions.
- “None identified” means that no cumulative effect is foreseen, but one might exist in the future.

5.4.5.1 Alternative 1. No Action

The No Action alternative is expected to have negative effects on pilot whales and Risso's dolphins in light of the continued risk of entanglement. There would be no reduction in serious injuries and mortalities resulting from interactions with pelagic longline gear, and takes would continue at potentially unsustainable levels. The status of pilot whales may be positively affected in the future by the implementation of a take reduction plan for Atlantic trawl fisheries; however, entanglement in pelagic longline gear would continue to threaten both pilot whales and Risso's dolphins.

This alternative is expected to have a neutral effect on other protected species. The fishery will continue to interact with these species at current levels, and cumulative effects would be expected to be no different than they would under past, present, and reasonably foreseeable future actions.

This alternative is expected to have a neutral cumulative effect on target and non-target fish stocks. Under the no action alternative, the fishery would continue as it has been prosecuted. The cumulative effects on these stocks are expected to continue as described in Section 5.4.3.3.

There may be slightly negative cumulative social and economic impacts affecting fishing-dependent communities under this alternative. Pilot whales and Risso's dolphins may continue or increase their depredation behaviors on pelagic longline gear, potentially leading to increased damage to (and reduced value of) target catch and increased "stealing" of bait (and less ability to catch the target species). These two effects would be expected to slightly reduce the income generated by this fishery. If the level of serious injury and mortality of pilot whales or Risso's dolphins increases, or if the status of these stocks decreases, NMFS would be required to implement additional measures (e.g. time/area closures) to protect them, which would likely have a larger economic impact and negatively affect fishing-dependent communities. In the context of past, present, and reasonably foreseeable future actions, the cumulative effects of the No Action alternative on this VEC are expected to be neutral to slightly negative.

5.4.5.2 Alternative 2. Implement the non-regulatory take reduction measures recommended in the Draft PLTRP

This alternative is expected to have a slightly positive cumulative effect on pilot whales, Rissos' dolphins, and other protected species. The non-regulatory measures included in this alternative would benefit the affected stocks directly and indirectly through potential reductions in take as fishermen learn more about how to safely release marine mammals, and through gathering data to better inform management. These measures complement past, present, and reasonably foreseeable future actions to reduce takes in commercial fisheries, but may not be enough to sufficiently reduce the level of takes to insignificant levels.

This alternative is expected to have a slightly positive cumulative effect on target and non-target fish stocks. The non-regulatory measures in this alternative do not affect fishing or the way the fishery is prosecuted, but data gathered through increased observer coverage may help manage the fishery. All other cumulative effects on these stocks are expected to continue as described in Section 5.4.3.3.

This alternative is expected to have a neutral effect on fishing-dependent communities. The only component of this alternative that may affect the fishery participants is an increase in observer coverage, which may be require vessels to carry observers more frequently than in the past and therefore incur costs of accommodating an observer. Under this alternative, waivers would still be granted for vessels not meeting certain safety standards, and thus the cost of accommodating observers more frequently would fall on those vessels currently capable of carrying observers. However, this cost is minimal, and since some observer coverage is already mandated, the effects are essentially no different than they would be under past, present, and reasonably foreseeable future actions.

5.4.5.3 Alternative 3. Preferred Alternative: Implement the regulatory and non-regulatory take reduction measures recommended in the Draft PLTRP

Alternative 3 is expected to have positive cumulative effects on pilot whales, Risso's dolphins, and protected species. The anticipated benefits for pilot whales and Risso's dolphins of limiting the mainline length, posting handling and release guidelines, establishing the CHSRA, and implementing the non-regulatory measures, in combination with the past, present, and reasonably foreseeable future actions addressing bycatch of these species in commercial fisheries, would likely improve the status of these stocks and allow them to reach their optimum sustainable population levels. These measures may also provide ancillary benefits to protected species interacting with the fishery, and provide a positive cumulative effect.

Under this alternative, slightly positive cumulative effects to target and non-target fish stocks would be expected. As described in Section 5.4.5.2, the non-regulatory components would be expected to have a slightly positive cumulative effect. As for regulatory measures, mainline length would be limited in the MAB, but there would be no limit to the number of lines set, so the total number of hooks in the water and total catch may not be affected. Participation in occasional research projects in the CHSRA may temporarily lead to decreased catch, depending on the research project, but this would not affect the fishery resources, since the resource management is quota-based. Past, present, and reasonably foreseeable future actions are designed to maintain the sustainability of the fishery and allow for the optimum yield of fishery resources and minimization of non-target bycatch.

Cumulative effects on fishing-dependent communities resulting from measures in Alternative 3 would be slightly negative. Vessels that used to receive waivers from the observer coverage requirements will no longer be able to fish in the CHSRA since waivers will no longer be granted. These vessels would either upgrade their vessels to accommodate an observer (and incur the cost of the upgrade), or fish elsewhere, but may be economically impacted by fishing in less productive areas. In the context of past, present, and reasonably foreseeable future fishery management actions affecting the fishery and its dependent communities, the cumulative impact of this alternative is slightly negative.

5.4.5.4 Alternative 4. Implement a year-round mainline length reduction (20 nm or less in length) throughout the Mid-Atlantic Bight and a 6-month closure of the southern Mid-Atlantic Bight sub-regional area

This alternative would be expected to have positive cumulative effects on pilot whales, Risso's dolphins, and other marine mammals and protected species. The combination of a time/area closure, mainline length reduction in this hot spot area, and non-regulatory measures would allow for the largest reduction in the rate of interactions of any of the alternatives. Other protected species would also benefit from these measures, and bycatch rates would also decrease, depending on where and how much effort is displaced. Furthermore, considering possible additional reductions in bycatch resulting from the ATGTRT's Take Reduction Strategy and additional reductions in interactions between these stocks and commercial fisheries, positive cumulative effects would be expected.

Slightly positive cumulative effects on the target and non-target fish stocks would be expected under this alternative. As described in Section 5.4.5.2, the non-regulatory components would be expected to have slightly positive cumulative impacts. As for the regulatory measures, fishing effort would likely be displaced to areas outside of the closed area, and thus there would be little, if any, impact to overall target or non-target catch.

Alternative 4 would be expected to have negative cumulative effects on fishing-dependent communities. A six-month closure of the sub-regional area would likely result in reduced landings for pelagic longline vessels that have historically fished in the area from July through December. However, some of the effort that would have occurred in this area would potentially redistribute into adjacent areas. Regardless, it is likely that some vessels would have reduced landings and/or increased operating costs associated with

traveling to more distant fishing areas or unfamiliar waters as a result of not being able to fish in the sub-regional area if they normally fished there during the closure period. This incremental impact, in the context of past, present, and reasonably foreseeable future actions affecting this fishery and dependent communities, results in negative cumulative effects.

5.4.6 Summary of Cumulative Effects

The cumulative effects of Alternatives 2, 3, and 4 on pilot whales and Risso's dolphins are likely to be positive. Past and present actions (e.g., take reduction plans, changes in the fishery, and bycatch reduction measures) have contributed towards reduced serious injury and mortality of these small cetacean species. The actions considered in this EA would reduce the risk of serious injury or mortality of marine mammals due to entanglement without exacerbating the risk associated with any of the remaining stressors (e.g., bycatch in other fisheries, pollutants and contaminants). Therefore, all of the alternatives, excluding the no action alternative, are expected to have an overall positive cumulative effect on these stocks' survival.

The actions considered in this EA would complement existing and forthcoming actions to reduce takes of other protected species. Hence, the cumulative effect of all of the alternatives, excluding the no action alternative, is expected to be slightly positive to positive.

The final PLTRP is likely to have no significant, long-term impact on affected target and non-target fishery resources, but data collected with increased observer coverage in the fishery may improve management of these resources. Therefore, neutral cumulative effects would be expected for the no action alternative, and slightly positive effects would be expected for Alternatives 2-4.

The cumulative impacts for fishing dependent communities are a function of current and forthcoming management actions, as well as the incremental impacts of the final PLTRP. Alternatives may have some short-term negative social or economic impacts, with Alternative 4 presenting the largest potential negative impact, but none of these impacts are expected to be significant, particularly in the context of past, present, and reasonably foreseeable future management actions affecting the fishery and dependent communities. Therefore, the cumulative effects on fishing dependent communities for each of the alternatives range from neutral to slightly negative.

5.5 Comparison of Alternatives

This section provides a summary of the impacts of implementing each alternative. Information in Table 5.5.1 is focused on activities and impacts where different levels of effects or outputs can be distinguished quantitatively or qualitatively among alternatives.

Table 5.5.1. Summary of the action and three alternatives.

	Physical Environment	Biological Environment	Socioeconomic Environment
Alternative 1 ***No Action***	Status quo.	Continued serious injury and mortality of pilot whales and Risso's dolphins.	Potential economic losses due to increased depredation behavior by marine mammals.
Alternative 2 ***Non-regulatory measures recommended in Draft PLTRP***	Status quo.	Beneficial effects to pilot whales, Risso's dolphins, and other protected species due to: • Potential reductions in interactions from captains' communications and avoidance of areas with recent interactions; • More representative data collection through increased observer coverage; and • Facilitating adaptive management.	Minimal costs associated with increased frequency of carrying observers.
Alternative 3 (Preferred Alternative) ***Regulatory and non-regulatory measures recommended in Draft PLTRP***	Status quo.	Same benefits as Alternative 2 plus: • Greater expected reductions in marine mammal interactions; • Facilitate data collection in CHSRA that may reduce interactions; and • Increased post-interaction survival of entangled or hooked marine mammals due to posting of handling and release guidelines.	Same costs as Alternative 2 plus: • Costs associated with mainline length reductions and reduced landings if less than 100% compensation; • Costs associated with participation in research in CHSRA if selected; and • Costs if cannot fish in CHSRA (refuse to participate in research, or unable to accommodate observer), from lost catch and travel to outside areas.
Alternative 4 ***Mainline length reduction in MAB, 6-month closure of southern sub-regional MAB area, and non-regulatory measures recommended in Draft PLTRP***	Status quo.	Same benefits as Alternative 2 and mainline length restriction in Alternative 3 plus greater beneficial effects on pillot whales, Risso's dolphins, and other protected species from: • Further reduction in interactions than Preferred Alternative due to sub-regional closure.	Same costs as Alternative 2 plus: • Greatest economic costs from 6 months lost landings inside the closed area each year and travel to fishing grounds outside the closed area; and • Costs associated with mainline length reductions and reduced landings if less than 100% compensation.

6.0 RATIONALE FOR SELECTING THE PREFERRED ALTERNATIVE (ALTERNATIVE 3)

NMFS believes that the combination of regulatory and non-regulatory measures in the Preferred Alternative (Alternative 3) will significantly decrease serious injuries and moralities to pilot whales and Risso's dolphins. The Preferred Alternative is expected to provide less of a conservation benefit to pilot whales and Risso's dolphins than Alternative 4 because it does not include a lengthy time-area closure in a "hot spot" of pilot whale interactions. However, the Preferred Alternative does provide protections for these marine mammals, including the limit on mainline length, which by itself is predicted to reduce pilot whale interactions by 26%, assuming 50% compensation in fishing effort.

The Preferred Alternative will also have a lower socioeconomic impact on the pelagic longline fishery and associated communities than a complete closure of a sub-regional area of the MAB, as in Alternative 4. Long- and short-finned pilot whales and Risso's dolphins are currently non-strategic. Once stocks are below PBR (essentially non-strategic), the long-term goal of Take Reduction Plans, as mandated in the MMPA, is to reduce, within 5 years of their implementation, the incidental mortality or serious injury of marine mammals to insignificant levels approaching ZMRG, taking into account the economics of the fishery, the availability of existing technology, and existing State or regional fishery management plans. NMFS believes the actions contained in the Preferred Alternative are enough to reduce interactions of pilot whales and Risso's dolphins without causing significant economic impacts to the pelagic longline fishery.

Alternative 1 was not selected because it would not provide the required reduction in serious injury and mortality of pilot whales and Risso's dolphins. Serious injury and mortality rates of pilot whales and Risso's dolphins in the Atlantic pelagic longline fishery would remain above insignificant levels and therefore would not meet the goals of the PLTRP and mandates of the MMPA.

NMFS believes that all of the non-regulatory actions included in Alternative 2 are important for marine mammal conservation and should be implemented. However, NMFS believes these actions will not significantly reduce marine mammal interactions. Therefore, NMFS selected the Preferred Alternative, which includes all of the components in Alternative 2 as well as four additional regulatory components.

7.0 REGULATORY IMPACT REVIEW

7.1 Introduction

The RIR is conducted to comply with Executive Order 12866 (E.O. 12866) and provides analyses of the economic benefits and costs of each alternative to the nation and the fishery as a whole. Certain elements required in an RIR are also required as part of an EA. Thus, this section should be considered only part of the RIR; the rest of the RIR can be found throughout this document.

NMFS requires an RIR for all regulatory actions that are of public interest. The RIR does three things: (1) it provides a comprehensive review of the level and incidence of impact associated with a regulatory action; (2) it provides a review of the problems and policy objectives prompting the regulatory proposals and an evaluation of the major alternatives which could be used to solve the problem; and (3) it ensures that NMFS systematically and comprehensively considers all available alternatives so that the public welfare can be enhanced in the most efficient and cost effective way.

The RIR also serves as the basis for determining whether any proposed regulations are a "significant regulatory action" under certain criteria provided in E.O 12866 and whether the approved regulations will have a "significant economic impact on a substantial number of small business entities" in compliance with the Regulatory Flexibility Act of 1980 (RFA).

7.2 Problems and Objectives

A description of the problem and objectives of the action are presented in Sections 1.0 and 2.0 and are herein incorporated by reference. The overall objective of the action is to reduce incidental takes of pilot whales and Risso's dolphins in the pelagic longline fishery to a zero mortality rate.

In addition to the problems and objectives presented in Section 1.0 and 2.0, the action also addresses a market failure. Bycatch of pilot whales and Risso's dolphins is an example of an externality of fishing effort. In situ, marine mammals have numerous benefits, and their survival is considered a public good, since the preservation benefits are enjoyed by the general population. These benefits include the value of knowing these species continue to exist, now and for future generations, as well as recreation benefits from being able to view marine mammals in the wild. The removal of each individual pilot whale and Risso's dolphin reduces the likelihood of reaching the MMPA ZMRG, generating a loss for society in terms of reductions in those benefits associated with their protection. When individual fishing firms are not required to account for the social costs in their profit-maximization decision-making, this leads to a market failure, which then leads to an outcome that is not socially optimal. In other words, the lack of government regulation designed to reduce incidental take of pilot whales and Risso's dolphins from fisheries would result in elevated bycatch.

7.3 Methodology and Framework for Analysis

This RIR assesses management measures from the standpoint of determining the resulting changes in costs and benefits to society. The following sections will provide a description and discussion of the adverse and beneficial impacts associated with all of the alternatives presented.

7.4 Description of Fishery

A description of the Atlantic pelagic longline fishery is presented in Section 5 of the Draft PLTRP. This section provides a historical management overview as well as outlines the specific characteristics of the domestic and international pelagic longline fisheries. This section is hereby incorporated by reference, and may be obtained through NMFS Southeast Regional Office, or online at http://www.nmfs.noaa.gov/pr/interactions/trt/pl-trt.htm. Additional information on this fishery is also provided in the HMS FMP (NMFS 2006b).

7.5 Economic Impacts of Alternatives

Alternative 1. No Action

Alternative 1 is the no action alternative. This is the least restrictive of the alternatives considered and analyzed. Under this alternative, no gear restrictions or effort reductions would be implemented. Therefore, there would be no direct cost or benefit beyond the status quo associated with this alternative.

This alternative is not expected meet the objectives of this action. It would not reduce serious injuries and mortalities of pilot whales and Risso's dolphins resulting from interactions with pelagic longline gear, so this alternative is not consistent with requirements of section 118 of the MMPA. The risk of serious injury or mortality to these marine mammals might also increase as depredation behavior spreads among individuals in these stocks or among other marine mammal stocks. Increased depredation and subsequent

economic losses due to damage to gear and loss of bait and catch may be potential indirect costs of this alternative.

Alternative 2. Implement the non-regulatory take reduction measures recommended in the Draft PLTRP

The non-regulatory actions associated with this alternative would be expected to have very little economic impact on the fishery. Increasing observer coverage would likely increase the number of times a vessel might have to accommodate an observer, which might result in slightly increased annual operating costs. None of the other measures would be expected to have an economic impact.

The benefits of this alternative include gaining observer data and information crucial for successful management of marine mammal stocks and the fishery, with little economic impact. However, the non-regulatory measures by themselves are unlikely to sufficiently reduce the level of serious injuries and mortalities of pilot whales and Risso's dolphins resulting from interactions with pelagic longline gear. Therefore, this alternative is not consistent with requirements pursuant to section 118 of the MMPA.

Alternative 3. Preferred Alternative: Implement the regulatory and non-regulatory take reduction measures recommended in the Draft PLTRP

As discussed in Alternative 2, the non-regulatory actions associated with this alternative would be expected to have very little economic impact on the fishery.

Based on the predictive model of the alternative scenarios in the Draft PLTRP, the limit on mainline length in the MAB, with an assumed compensation of 50% by fishermen setting more than one mainline, would result in an annual tuna catch of approximately 36,495 lbs. The average annual tuna catch under status quo conditions is 36,127 lbs. Therefore, no decrease in target catch of tuna is predicted with the implementation of the mainline length restriction. Annual swordfish catch in the fishery under status quo conditions is 49,390 lbs. According to the same predictive model, if the mainline length was to be implemented and fishermen compensated by the estimated 50%, annual swordfish catch would be 46,180 lbs. This is an approximate decrease of 3,210 lbs. per year in the target swordfish catch. The total estimated reduction in revenue associated with this scenario is $239,383. This reduction in revenues would impact 41 or fewer vessels per year based on current trends in the number of active pelagic longline vessels and the number of vessels that operated in the MAB in 2006. If one assumes that 41 vessels are affected by this restriction, then per vessel impacts would be $5,839 per vessel.

The 50% level of compensation in fishing effort was assumed to be the most likely scenario. However, the actual level of compensation may range from full (100%) to no (0%) compensation. In these scenarios, the predicted changes in revenue are estimated to range from an increase of $777,747 (full compensation in the number of hooks fished) to a loss of $819,523 (no compensation in the number of hooks fished). If one assumes that 41 vessels are affected by this restriction, then per vessel impacts range from a benefit of $18,969 per vessel to a cost of $19,988 per vessel. It is important to note that these values are based solely on an analysis of revenue under existing operations and do not account for potential changes in operations and associated costs under this alternative.

For those fishermen who are not willing or able to carry an observer or participate in scientific research in the CHSRA, their loss may be substantially higher since they would not be permitted to fish within the proposed special research area. However, it would be possible for some fishermen to compensate for those losses by fishing around the perimeter of the special research area or upgrading their vessels to accommodate observers.

Fishermen who are selected to participate in scientific research may also experience impacts, but insufficient information is available to estimate the cost of these impacts, and these impacts would vary depending on the nature of the research project. The impacts of participating in research are not likely to be significant and would be short-term relative to the longer-term access to a productive area for fishing. By being willing and able to participate in research if selected, fishermen would continue to have access to the CHSRA. However, if a vessel refuses to participate in a research project once selected, the vessel is prohibited from fishing in the CHSRA. These vessels would lose any potential landings from the area, but may compensate by fishing in other areas or around the perimeter of the CHSRA.

The benefits under this alternative include an expected significant reduction of incidental serious injuries and mortalities of pilot whales and Risso's dolphins, and the facilitation of research needed to provide crucial data to the PLTRT for successful management of this fishery. The full range of associated economic benefits to society from protecting Risso's dolphins and pilot whales includes use values and nonuse values. Use values include those values associated with viewing the animals during rare encounters in the wild. Nonuse values include those values placed on knowing that these two species remain for future generations (bequest value), and values placed on knowing that these species will continue to survive (existence value).

Alternative 4: Implement a year-round mainline length reduction (20 nm or less in length) throughout the Mid-Atlantic Bight, a 6-month closure of the southern Mid-Atlantic Bight sub-regional area, and the non-regulatory take reduction measures recommended in the Draft PLTRP

Alternative 4 includes economic costs associated with the year-round mainline length restriction throughout the MAB plus the costs associated with a six-month closure of the southern MAB sub-regional area. It also includes the costs of the non-regulatory measures described under Alternative 2. As discussed in Alternative 2, the non-regulatory actions associated with this alternative would be expected to have very little economic impact on the fishery.

This alternative would likely result in larger economic impacts to small entities than the preferred alternative. The economic impact of the closure, assuming all catch is lost during the closed period with no effort redistribution, is estimated to be $770,000. This is likely an underestimate of the actual costs since it reflects only lost catch. However, there is a high likelihood of effort redistribution to areas with similar fishing potential by the highly mobile fishing fleet, and therefore, these estimates may represent the high end of potential lost catch.

The closure plus the mainline restriction would be expected to result in a reduction in the total number of hooks fished. The combination of different (though not necessarily lower) catch rates and reduced effort result in an estimated costs of $1.64 million for this Alternative. Again, this reflects only lost catch and no compensation or redistribution of effort. This reduction in revenues would impact 41 or fewer vessels per year based on current trends in the number of active pelagic longline vessels and the number of vessels that operated in the MAB in 2006. If one assumes that 41 vessels are affected by this restriction, then per vessel impacts are estimated to be $40,000.

Because this Alternative would be expected to have the greatest economic impact on the fishery, the greatest negative social impacts would also be expected. The predicted reductions in catch would lead to a loss of income, which might make it more difficult for fishermen to stay in business. Associated impacts include potential reduction in the number of crew hired, reductions in landings that could affect the processing sector, and possible loss of jobs in businesses dependent on this fishery. While the actual social impacts cannot be estimated, this Alternative would likely have the greatest negative social impacts relative to the other Alternatives.

As with Alternative 3, the benefits under this alternative include an expected significant reduction of incidental serious injuries and mortalities of pilot whales and Risso's dolphins. The full range of associated economic benefits to society from protecting Risso's dolphins and pilot whales includes use values and nonuse values. Use values include those values associated with viewing the animals during rare encounters in the wild. Nonuse values include those values placed on knowing that these two species remain for future generations (bequest value), and values placed on knowing that these species will continue to survive (existence value).

7.6 Comparison of Costs and Benefits of Alternatives

Table 7.6.1 compares the economic costs and benefits to the fishery of the final PLTRP and the three considered but rejected alternatives.

Table 7.6.1. Comparison of the cost and benefits of the alternatives.

Alternative	Costs	Benefits
Alternative 1: No Action	Expected continued losses from increased marine mammal depredation	
Alternative 2: Non-regulatory measures recommended in Draft PLTRT	Costs associated with accommodating observers more frequently	Potential reductions in costs associated with marine mammal interactions and depredation
Alternative 3 (Preferred): Non-regulatory and regulatory measures recommended in Draft PLTRT	Same costs of implementing Alternative 2 plus potential costs of participating in research in CHSRA; costs (lost catch, must travel to and fish outside the area) for fishermen not allowed to fish in the CHSRA; and cost of implementing mainline length reduction (and associated reduction in effort)	Potential reductions in costs associated with marine mammal interactions and depredation Use and non-use values associated with protecting pilot whales and Risso's dolphins
Alternative 4: Mainline length limit in MAB, 6-month closure of sub-regional area, and non-regulatory measures recommended in Draft PLTRP	Same costs of implementing Alternative 2 plus loss of potential catch in closed area; costs associated with traveling to and fishing outside the closed area; and cost of implementing mainline length reduction (and associated reduction in effort)	Potential reductions in costs associated with marine mammal interactions and depredation Use and non-use values associated with protecting pilot whales and Risso's dolphins

Alternative 1 would have the least direct economic impact to the fishery of all of the alternatives, but it would not reduce the levels of serious injuries and mortalities of pilot whales and Risso's dolphins resulting from interactions with pelagic longline gear, and thus would not meet the requirements of the MMPA. For all of the other alternatives, the fishery may benefit from potential decreases in marine mammal depredation and entanglements, and damage to and loss of gear, bait, and catch would decrease. Alternative 2 would have small conservation benefits to marine mammals with little cost to the fishery, but is not enough to sufficiently reduce the serious injuries and mortalities of the affected marine mammals. Alternative 4 would be expected to have the greatest economic impact on the fishery. While there would likely be some compensation in fishing effort, fishermen would lose all income from the sub-regional area for half of the year, resulting in large economic costs, particularly for fishermen local to North Carolina. Both Alternatives 3 and 4 would have the same cost of implementing a mainline length limit, but Alternative 3 would be expected to have a lower economic impact on fishermen than

Alternative 4, since there would be no fishery closures. Alternative 3 might have additional short-term costs for fishermen, depending on the cost associated with participating in research, or whether fishermen are able to meet the observer requirements (and thus have access to the CHSRA).

7.7 Public and Private Costs of Regulations

The preparation, implementation, enforcement, and monitoring of this or any federal action involves the expenditure of public and private resources that can be expressed as costs associated with the regulation. Costs associated with this specific action include:

Placard design, publication and distribution	$10,000 one time
Law enforcement costs	$ 0
Increase in observer coverage costs	$1,000,000 annually above the current funding level of $1,300,000 per year
Other Outreach	$20,000 annually
Research Recommendations	$100,000 annually
Total	$1,130,000

Enforcement of the measures contained in this action will occur as part of routine and customary enforcement activities. Further, enforcement budgets are not developed per fishery enforcement measure. Therefore, specific funds will not be dedicated to the enforcement of the measures in this action.

7.8 Determination of Significant Regulatory Action

Pursuant to Executive Order (E.O) 12866, a regulation is considered a "significant regulatory action" if it: (1) has an annual effect on the economy of $100 million or more or adversely affects in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or state, local or tribal governments or communities; (2) creates a serious inconsistency or other wise interferes with an action taken or planned by another agency; (3) materially alters the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or (4) raises novel legal or policy issues arising out f legal mandates, the President's priorities, or the principles set forth in E.O. 12866.

The action will not meet the $100 million threshold, nor are there expected to be any significant adverse effects on prices, employment, or competition. Measures in this action do not adversely affect the environment, public health or safety, or state, local, or tribal governments or communities, nor do they interfere or create inconsistency with any action of another agency, including state fishing agencies. No effects on budgetary impact of entitlements, grants user fees, or loan programs or the rights and obligations of recipients thereof have been identified. The action represents normal management options or practices and, therefore, does not raise novel legal or policy issues.

Since the action will not meet any of the conditions listed above, it is determined that the final rule will not constitute a "significant regulatory action" under E.O. 12866.

8.0 FINAL REGULATORY FLEXIBILITY ANALYSIS

The FRFA is conducted to comply with the Regulatory Flexibility Act (5 USC 601 et. seq.) and provides a description of the economic impacts of the various alternatives on small entities. Certain elements required in a FRFA are also required as part of an EA. Therefore, the FRFA incorporates the economic impacts identified in the EA.

8.1 Reasons Why Action by the Agency is Being Considered

The purpose and need, issues, problems, and objectives of the final PLTRP are discussed in Sections 1 and 2.

8.2 Objectives of, and Legal Basis for, the Final Rule___

Please see Sections 1 and 2 for a description of the objectives of and legal basis for the final PLTRP.

8.3 Description and Estimate of the Number of Small Entities to Which the Final Rule Would Apply

NMFS considers all HMS permit holders to be small entities because they either had average annual receipts less than $4.0 million for fish-harvesting, average annual receipts less than $6.5 million for charter/party boats, 100 or fewer employees for wholesale dealers, or 500 or fewer employees for seafood processors. These are the Small Business Administration (SBA) size standards for defining a small versus large business entity in this industry.

The alternative measures of the PLTRP would directly impact businesses that own vessels that are authorized for HMS pelagic longline fishing. Vessel owners are required to possess a valid tuna longline permit and the appropriate limited access permits for swordfish and sharks in order to be authorized to fish with longline gear. Table 8.3.1 lists the numbers of valid permits for each of these permit types.

Table 8.3.1. Number of Atlantic HMS commercial permits holders. The actual numbers of permits are subject to change due to variable renewal cycles.

Category	2003	2004	2005	2006
Tuna Longline	235	222	200	236
Swordfish Directed	206	195	190	191
Swordfish Incidental	110	99	91	86
Shark Directed	251	241	235	240
Shark Incidental	359	348	320	312

As of September 26, 2006, there were 176 vessels that were authorized to fish with longline gear for swordfish and tunas (i.e., the vessel possessed a tuna longline permit and the appropriate limited access permits for swordfish and sharks). However the number of “active” pelagic longline vessels in 2006 was 103. An “active” pelagic longline vessel is considered to be a vessel that reported pelagic longline activity in the HMS logbook. The number of active HMS pelagic longline vessels has been precipitously decreasing since 1994. Table 8.3.2 lists the number of active pelagic longline vessels from 1990 to 2006.

Table 8.3.2. Number of vessels that reported fishing with pelagic longline gear in the HMS Logbook., by year.

Year	Number of Active Vessels
1990	416
1991	333
1992	337
1993	434
1994	501
1995	489
1996	367
1997	350
1998	268
1999	224
2000	199
2001	161
2002	148
2003	126
2004	116
2005	110
2006	103

Lance Garrison (NMFS) reported that 85 unique pelagic longline vessels reported effort in the MAB between 2001 and 2006. The number of vessels fishing in the MAB has declined in recent years, and between 2003 and 2006 the number of vessels reporting effort in the MAB has ranged between 38 and 41.

8.4 Description of the Projected Reporting, Record-keeping, and Other Compliance Requirements of the Final Rule, Including an Estimate of the Classes of Small Entities Which Would Be Subject to the Requirements of the Report or Record

Under the preferred alternative, fishermen would not be allowed to fish within the CHSRA without being able and willing to carry an observer or participate in scientific research. Any vessel fishing within this zone would be recognized via Vessel Monitoring System (VMS). Since all longline vessels are required to have a VMS system onboard, this measure would incur no extra cost or effort on the part of the fishermen. If a vessel is fishing in this area without authorization, the office of law enforcement will be notified. All interactions with marine mammals must be reported via a Serious Injury/Mortality reporting form (OMB control number O648-0292).

NMFS observers on pelagic longline fishing vessels would be required to complete a “Marine Mammal Life History” form. This form contains a comprehensive means of collecting marine mammal interaction data for the observer program, which is used in ongoing research. Observers will be trained, and given detailed instructions on how to complete the form correctly. This requirement affects marine mammal observers; small entities are not affected.

Vessel owners would also be required to display the careful handling and release placard in the pilothouse, and on the working decks of all pelagic longline vessels. Vessel operators would be required to keep their mainline lengths to 20 nm or less. No additional skill would be required in order to comply with these regulations.

8.5 Identification of All Relevant Federal Rules Which May Duplicate, Overlap, or Conflict with the Final Rule

Fishermen, dealers, and managers in these fisheries must comply with a number of international agreements, domestic laws, and other FMPs. These include, but are not limited to, the Magnuson-Stevens Act, the Atlantic Tunas Convention Act, the High Seas Fishing Compliance Act, the MMPA, the ESA, NEPA, the Paperwork Reduction Act, and the Coastal Zone Management Act. NMFS does not believe that the new regulations implemented in the final rule would conflict with any relevant regulations, federal or otherwise.

8.6 Description of Any Significant Alternatives to the Final Rule That Accomplish the Stated Objectives of Applicable Statutes and That Minimize Any Significant Economic Impact of the Final Rule on Small Entities

One of the requirements of a FRFA is to describe any alternatives to the final rule which accomplish the stated objectives and which minimize any significant economic impacts. These impacts are discussed below and in Sections 3 and 5 of this document. Additionally, the Regulatory Flexibility Act (5 U.S.C. § 603 (c) (1)-(4)) lists four general categories of "significant" alternatives that would assist an agency in the development of significant alternatives. These categories of alternatives are:

1. Establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities;
2. Clarification, consolidation, or simplification of compliance and reporting requirements under the rule for such small entities;
3. Use of performance rather than design standards; and,
4. Exemptions from coverage of the rule for small entities.

In order to meet the objectives of this final rule, consistent with Magnuson-Stevens Act, the ESA, and the MMPA, NMFS cannot exempt small entities or change the reporting requirements only for small entities because all the entities affected are considered small entities. Thus, there are no alternatives discussed that fall under the first and fourth categories described above. NMFS does not know of any practicable performance standards that would satisfy the aforementioned objectives of this rulemaking while, concurrently, complying with the Magnuson-Stevens Act. Thus, there are no alternatives considered under the third category. As described below, NMFS analyzed four different alternatives in this rulemaking and provides justification for selection of the preferred alternative to achieve the desired objective.

The alternatives considered and analyzed include four options. Alternative 1 would maintain the status quo with existing regulations for the pelagic longline fishery under the HMS FMP. Alternative 2 would implement only the non-regulatory components recommended in the Draft PLTRP, while allowing time for collection of additional scientific data prior to implementing regulatory measures. Alternative 3, the preferred alternative, would limit the mainline length to 20 nm or less within the MAB, designate a special research area offshore of Cape Hatteras, require all pelagic longline vessels to post an informational placard on careful handling and release of marine mammals, and implement the non-regulatory measures recommended in the Draft PLTRP. Alternative 4 would include a six-month closure (July-December) of the southern MAB sub-regional area, a year-round mainline length reduction throughout the MAB, inclusive of that sub-regional area, and the non-regulatory measures recommended in the Draft PLTRP.

Alternative 1. No Action

Alternative 1 is the no action alternative. This is the least restrictive of the alternatives considered and analyzed. Under this alternative, no gear restrictions or effort reductions would be implemented. Therefore, there should be no impacts on small entities.

This alternative however is not expected meet the objectives of this action. It would not reduce serious injuries and mortalities of pilot whales and Risso's dolphins resulting from interactions with pelagic longline gear. Furthermore, this alternative is not consistent with requirements pursuant to section 118 of the MMPA.

Alternative 2. Implement the non-regulatory take reduction measures recommended in the Draft PLTRP

Alternative 2 implements the non-regulatory take reduction management recommendations in the PLTRP. These measures would include: increasing observer coverage to 12-15% in Atlantic pelagic longline fisheries off the U.S. East Coast that interact with pilot whales or Risso's dolphins, updating guidelines for careful handling and release of entagled or hooked marine mammals, encouraging vessel operators to maintain daily communication with other vessel operators regarding protective species interactions, and having NMFS provide quarterly bycatch report to the TRT for review. These measures would result in less economic impact to small entities than the preferred alternative.

Increasing observer coverage in Atlantic pelagic longline fisheries off the U.S. East Coast that interact with pilot whales or Risso's dolphins would likely increase the number of times a vessel might have to accommodate an observer. This might increase the annual operating costs to some small degree for vessels that would have experienced less observer coverage under Alternative 1.

Encouraging vessel operators to maintain daily communication with other vessel operators would likely have minimal cost to vessel owners or operators. Increased communication may have a small opportunity cost associated with the time used to communicate with other vessels that could have been used for some other purpose. In addition, increased communication could increase the risk of revealing valuable fishing information that could result in increased competition for productive fishing areas. This potential cost however is likely to be minimal since vessel operators will likely learn to more closely monitor their communication with other vessel operators to filter out information that may reveal competitive information when discussing protective species interactions.

The other two provisions do not impact small entities. Overall, Alternative 2 would have a minimal impact on small entities. However, it is unlikely that these measures alone would sufficiently reduce serious injuries and mortalities of pilot whales and Risso's dolphins.

Alternative 3. Preferred Alternative: Implement the regulatory and non-regulatory take reduction measures recommended in the Draft PLTRP

Alternative 3 is the preferred alternative. It incorporates the non-regulatory actions in Alternative 2 and regulatory measures including a mainline length restriction through the MAB, designation of the CHSRA, and posting of careful handling and release guidelines (placard). There would be no costs to the fishery associated with the placard posting requirement.

The mainline length restriction of less than 20 nm for pelagic longline vessels would result in reduced landings of swordfish, sharks, bigeye tuna, and other tuna landings according to model predictions. These model predictions are based on a logistic regression developed by Lance Garrison (NMFS) and detailed in the Draft PLTRP (2006). Several scenarios were developed for that model.

Under the status quo alternative, it is estimated that the Atlantic pelagic longline fleet generates an estimated $24.6 million in revenues. Applying average species weights reported to dealers in 2004 and the average 2006 ex-vessel prices reported by dealers in the MAB region, we estimated the potential changes in fishery revenues from the mainline length restriction, depending on the level of compensation in fishing effort, would range from an increase of $777,747 (full compensation in the number of hooks fished) to a loss of $819,523 (no compensation in the number of hooks fished), with an estimated loss of $239,383 with 50% compensation in the number of hooks fished. This change in revenues would impact 41 or fewer vessels per year based on current trends in the number of active pelagic longline vessels and the number of vessels that operated in the MAB in 2006. If one assumes that 41 vessels are affected by this restriction, then per vessel impacts range from an increase of $18,969 per vessel to a decrease of $19,988 per vessel, with an estimated decrease of $5,838 from the most likely scenario (50% compensation in fishing effort).

The designation of the CHSRA and its observer and research participation requirements would be expected to impact small entities. Fishermen who are not willing or able to carry an observer or participate in scientific research in the CHSRA would be expected to experience losses since they would not be permitted to fish within the area. However, it would be possible for some fishermen to compensate for those losses by fishing around the perimeter of the CHSRA.

Fishermen who are selected to participate in scientific research may also experience economic impacts, but these cannot be estimated and would vary depending on the nature of the research project. The impacts of participating in research are not likely to be substantial and would be short-term (for the duration of the research project). By participating in research if selected, fishermen would avoid being prohibited from fishing in the CHSRA (as would happen if fishermen refuse to participate once selected), and thus would minimize their potential losses.

Alternative 4. Implement a year-round mainline length reduction (20 nm or less in length) throughout the Mid-Atlantic Bight, a 6-month closure of the southern Mid-Atlantic Bight sub-regional area, and the non-regulatory take reduction measures recommended in the Draft PLTRP

Alternative 4 includes economic costs associated with the year-round mainline length restriction throughout the MAB plus the costs associated with a six-month closure of the southern MAB sub-regional area. It also includes the costs of the non-regulatory measures described under Alternative 2.

The economic costs of Alternative 4 were evaluated based upon historical observed catch rates and reported effort in the MAB fishing area only for the period from 2002 to 2004. For each target catch species or group, the mean catch rate (number per 1000 hooks) was calculated using the delta-lognormal estimator by sub-area ("area 1" = southern MAB, which includes zones 1-3 as defined in Section 3.2.4; "area 2" = northern MAB, which includes all other fishing zones in the MAB), six-month season (January to June; July to December), and mainline length category (mainline ≤ 20 nm; mainline > 20 nm). This catch rate was multiplied by the mean annual reported effort (number of hooks) to estimate the average annual catch in numbers of fish. This catch was then multiplied by an average weight per fish and dollar amount per pound to estimate average annual catch value for each taxon and category. The values reported here are ONLY for the MAB fishing area and do not include other regions. Using this approach, the status quo total estimated revenue was $6.6 million.

We first explored the impact of the closure of the southern region of the MAB during the July-December time period. The financial impact of the closure was estimated by assuming no catch in area 1 during that period. There is no assumption that effort would be redistributed and no estimate of the secondary costs due to lost income such as the closure of businesses, etc. due to the loss of a significant portion of their

revenue. The total value of the catch during that area and season, and hence the total cost of the closure alone, is estimated as $770,000. This is likely an underestimate of the actual costs since it reflects only lost catch. However, there is a high likelihood of effort redistribution to areas with similar fishing potential by the highly mobile fishing fleet, and therefore, these estimates may represent the high end of potential lost catch.

The estimated impact of Alternative 4's regulatory measures combined was then explored. The effect on catch involved two components. First, the effect of lost catch during the closure period was calculated in the same way as described above. Second, there was a change in catch due to both the change in the catch rate associated with shorter mainlines and a reduction in total effort (number of hooks). During each season and area, the catch rate observed for mainlines ≤ 20 nm was applied to the sets reporting mainlines greater than 20 nm. In addition, the number of hooks fished was changed to reflect the average number of hooks used per set in the shorter mainlines. It is assumed that there is no compensation by the fishermen in this simple scenario and that the reduction in mainline length effectively results in a reduction in the total number of hooks fished. The combination of different (though not necessarily lower) catch rates and reduced effort result in an estimated costs of $1.64 million for this Alternative. Again, this reflects only lost catch and no compensation or redistribution of effort.

This reduction in revenues would impact 41 or fewer vessels per year based on current trends in the number of active pelagic longline vessels and the number of vessels that operated in the MAB in 2006. If one assumes that 41 vessels are affected by this restriction, then per vessel impacts are estimated to be $40,000.

9.0 OTHER APPLICABLE LAW

In accordance with legal mandates, NMFS must consider the effect of the action on small businesses, marine mammals, endangered species, essential fish habitat, and the human environment.

9.1 Atlantic Tunas Convention Act (ATCA)

The ATCA of 1975 (16 U.S.C. 971-971i; Pub. L.94-70, as amended) authorizes NMFS to administer and enforce all provisions of the International Convention for the Conservation of Atlantic Tunas. Pursuant to this goal, NMFS cooperates with the duly authorized officials of the government of any party to the Convention as well as any other Federal department or agency or any State.

NMFS is authorized to issue regulations deemed necessary to implement the Convention. The Act authorizes NMFS to use the personnel, services, and facilities of any agency of any party to the Convention, any other Federal department or agency, or any agency of any State. This Act also charges NMFS with issuing regulations for the advancement of any recommendation from the International Commission for the Conservation of Atlantic Tunas. However, regulations promulgated under this Act are, to the extent practicable, to be consistent with fishery management plans prepared and implemented under the Magnuson-Stevens Act.

9.2 Coastal Zone Management Act (CZMA)

NMFS determined that this action is consistent to the maximum extent practicable with the enforceable policies of the approved coastal management programs of North Carolina, Virginia, Maryland, Delaware, New Jersey, New York, Connecticut, Rhode Island, and Massachusetts. This determination was submitted for review by the responsible state agencies under section 307 of the Coastal Zone

Management Act (CZMA). Letters stating concurrence with NMFS' CZMA consistency determination were received from the approved coastal management programs of North Carolina, Virginia, Delaware, Connecticut, and Rhode Island. No responses were received from Maryland, New Jersey, New York, or Massachusetts; CZMA consistency in these states was inferred.

9.3 Endangered Species Act (ESA)

The ESA imposes on all federal agencies a duty to ensure their actions do not jeopardize the continued existence of any threatened or endangered species or result in the destruction or adverse modification of the critical habitat of such species. To effectuate the ESA's requirement to avoid jeopardy and adverse modification, the ESA requires the "action" agency to consult with an "expert" agency to evaluate the effects a proposed agency action may have on a listed species. If the action agency determines through preparation of a biological assessment or informal consultation the preferred alternative is "not likely to adversely affect" listed species or critical habitat, formal consultation is not required so long as the expert agency concurs.

A section 7 consultation was not necessary for this action. On June 1, 2004, NMFS completed a biological opinion on the continued operation of the Atlantic HMS pelagic longline fishery in the Atlantic, Gulf of Mexico, and Caribbean under the HMS FMP. NMFS analyzed the need for reinitiation of this section 7 consultation. It was determined that reinitiation of formal consultation on the action (i.e., the continued prosecution of the Atlantic pelagic longline fishery under the HMS Consolidated FMP and the final rule to implement the PLTRP) is not necessary; none of the criteria 50 CFR 402.16 have been met.

9.4 Essential Fish Habitat (EFH)

Pursuant to the Magnuson-Stevens Act, federal agencies must undergo a consultation process regarding any of their actions authorized, funded, or undertaken, or proposed to be authorized, funded, or undertaken that may adversely affect EFH. Although the area affected by the preferred alternative (i.e., the Mid Atlantic Bight) was identified as EFH through several FMPs, NMFS determined that the management measures would not adversely affect the EFH of any species managed under an FMP. Further coordination on this matter was not deemed necessary and no modifications were made between the proposed and final rules which may adversely impact EFH.

9.5 Executive Order 13132 (Federalism)

Executive Order 13132 requires that federal actions ensure for the division of governmental responsibilities between the national government and the states that was intended by the Framers of the Constitution, to ensure that the principles of Federalism established by the Framers guide the executive departments and agencies in the formulation and implementation of policies, and to further the policies of the Unfunded Mandates Reform Act. This Executive Order, to the extent practicable and permitted by law, ensures that no agency will promulgate any regulation that has Federalism implications, that imposes substantial direct compliance costs on state and local governments, and that is not required by statute.

NMFS believes this action does not contain policies with federalism implications under E.O. 13132.

9.6 Environmental Justice

Executive Order 12898 requires that federal actions address environmental justice in decision-making process. In particular, the human health or environmental effects of the actions should not have a disproportionately high and adverse effect on minority and low-income communities. The preferred alternative is not expected to have a disproportionate effect on minority or low-income communities.

9.7 Congressional Review Act

The Small Business Regulatory Enforcement Fairness Act of 1996 added Chapter 8 to Title 5, United States Code, to provide for congressional review, and potential disapproval, of agency rulemaking. Agencies are required to certify to OMB whether actions are "major" for purposes of these provisions, which may delay publication of rules. This action was determined as "not major" for purposes of 5 U.S.C. 801 et seq.

9.8 Information Quality Act

The rulemaking package has undergone a pre-dissemination review by the Protected Resources Division of the Southeast Regional Office, completed on April 2, 2008, which determined this information product complies with applicable information quality guidelines implementing the Information Quality Act (Section 515 of Public Law 106-554).

9.9 Magnuson-Stevens Act (MSA)

The purpose of the MSA is to facilitate actions that conserve and manage fishery resources found off the coasts of the U.S. by exercising sovereign rights for the purposes of exploring, exploiting, conserving, and managing all fish within the Exclusive Economic Zone. In order for this mission to be fulfilled, the MSA makes provisions for the collection of reliable data, which is essential to the effective conservation, management, and scientific understanding of the fishery resources. Under the MSA, irreversible or long-term adverse effects on fishery resources and the marine environment must be avoided. Section 303 of the MSA discusses the required provisions of fishery management plans. These provisions include establishing a standardized reporting methodology to assess the amount and type of bycatch occurring in the fishery, minimize bycatch, minimize mortality of bycatch, and prohibit, limit, condition or require the use of specified types and quantities of fishing gear to facilitate enforcement of the MSA.

9.10 Marine Mammal Protection Act (MMPA)

The action will not adversely affect marine mammals. Instead, the action will reduce serious injury and mortality of pilot whales and Risso's dolphins due to interactions with pelagic longline commercial fishing gear. The additional protection provided by the action will further NMFS' actions to meet the mandates of Section 118 of the MMPA, specifically to reduce mortality and serious injury of marine mammals incidental to commercial fishing operations.

9.11 Paperwork Reduction Act (PRA)

The purpose of the PRA is to minimize the paperwork burden for individuals, small businesses, educational and nonprofit institutions, and other persons resulting from the collection of information by or for the Federal government. The action does not contain a collection-of-information requirement for the purposes of the PRA.

10.0 FINDING OF NO SIGNIFICANT IMPACT (FONSI)

The findings detailed in this FONSI are based on the analysis of the preferred alternatives considered in the Environmental Assessment for the Final Pelagic Longline Take Reduction Plan, dated January 2009.

National Oceanic and Atmospheric Administration Administrative Order 216-6 (May 20, 1999) and NMFS Policy Directive 30-124-1 (July 22, 2005) contain criteria for determining the significance of the

impacts of an action. In addition, the Council on Environmental Quality regulations at 40 CFR 1508.27 state that the significance of an action should by analyzed both in terms of "context" and "intensity." The applicable context for the action consists of the pelagic longline fishery that operates in waters off the U.S. east coast, in the Mid-Atlantic Bight. Each criterion below is relevant to evaluating the intensity of the action, or the magnitude and severity of impacts of the action of the affected resources or area.

1) Can the proposed action reasonably be expected to jeopardize the sustainability of any target species that may be affected by the action?
The action is not expected to jeopardize the sustainability of any target species that may be affected by the action. The action would not affect the fishery resources, since the resource management is quota-based. The fishery will continue to be managed under the Magnuson-Stevens Act so as to maintain the sustainability of the fishery and allow for the optimum yield of fishery resources.

2) Can the proposed action reasonably by expected to jeopardize the sustainability of any non-target species?
The action is not expected to jeopardize the sustainability of any non-target species. The action is expected to result in a decrease in interactions with protected marine mammal stocks. An Endangered Species Act section 7 consultation was prepared for this action and determined the action is unlikely to change overall sea turtle take estimates in the Atlantic pelagic longline fishery as analyzed in a June 1, 2004, biological opinion.

3) Can the proposed action reasonably be expected to cause substantial damage to the ocean and coastal habitats and/or essential fish habitat as defined under the Magnuson-Stevens Act and identified in FMPs?
The action is not expected to cause any damage to the ocean and coastal habitats and/or essential fish habitat as defined under the Magnuson-Stevens Act and identified in FMPs, given that the action restricts the length of mainlines in a specific area to avoid incidental serious injuries and mortalities of pilot whales and Risso's dolphins. To the extent that longline activity in the MAB adversely affects such habitats, this action has the potential to reduce those impacts as a result of the decrease in fishing effort associated with this action.

4) Can the proposed action be reasonably expected to have a substantial adverse impact on public health or safety?
Public health and safety is not expected to be adversely affected by implementing management measures included under the action. NMFS always considers safety factors when implementing management measures in the pelagic longline fishery. Pelagic longline fishing is inherently a dangerous activity. This action will not substantially change the way pelagic longlining is conducted, but by not allowing exemptions from observer coverage for vessels in the Cape Hatteras Special Research Area, this action may reduce fishing by vessels not meeting U.S. Coast Guard safety requirements and have a positive impact on public health and safety.

5) Can the proposed action reasonably be expected to adversely affect endangered or threatened species, marine mammals, or critical habitat of these species?
The action is not expected to adversely affect endangered or threatened species, their critical habitat, marine mammals or other non-target species. The basis for this final rule is to offer additional protection to pilot whales and Risso's dolphins. It is expected that other protected marine mammals, to the extent their distribution and abundance coincides with the geographic scope of the action, will also benefit from the management measures.

6) Can the proposed action be expected to have a substantial impact on biodiversity and/or ecosystem function within the affected area (e.g., benthic productivity, predator-prey relationships, etc.)?

The action is not expected to have a substantial impact on biodiversity and/or ecosystem function within the affected area (e.g., benthic productivity, predator-prey relationships, etc.), given its limited geographic scope and because the action merely restricts the length of mainlines, and vessels not willing or able to carry an observer. However, the action is expected to be beneficial for pilot whales and Risso's dolphin stocks that are being adversely affected currently by the Atlantic pelagic longline fishery in the Mid-Atlantic Bight.

7) Are significant social or economic impacts interrelated with natural or physical environmental effects?
No significant social or economic impacts interrelated with natural or physical environmental effects are expected from this action. This action affects only a small percentage of overall pelagic longline fishermen. The natural and physical environmental effects of the action consist of reducing the number of incidental serious injuries and mortalities of pilot whales and Risso's dolphins by shortening mainline length, and conducting critical research on the fishery's interactions with these species. There are no known significant social or economic impacts associated with these effects, other than societal benefits attributable to preventing injuries and mortalities to marine mammals.

8) Are the effects on the quality of the human environment likely to be highly controversial?
The effects of the management measures on the human environment are not likely to be highly controversial. The impacts of the designation of the Cape Hatteras Special Research Area may be politically controversial to a small segment of the fishing community, namely those vessels that are unable or unwilling to carry an observer or participate in scientific research, but the controversy does not relate to the potential impacts. These measures are limited in geographic area and would be implemented in an effort to facilitate the coexistence of pelagic longline fishing activity and pilot whales and Risso's dolphins. In contrast, the potential effects of a failure to act, which could include further injury or mortality of these species, would be highly politically controversial with the environmental community and a sizeable segment of the public.

9) Can the proposed action reasonably be expected to result in substantial impacts to unique areas, such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas?
The management measures would not impact park land, farmlands, wild and scenic rivers, or wetlands, as these areas are not in the vicinity of the Mid-Atlantic Bight. As determined during the consultation process, this action will not impact essential fish habitat. Compliance with these management measures is not likely to result in the permanent loss or destruction of, or impact to, any historic or cultural resources or ecologically critical areas.

10) Are the effects on the human environment likely to be highly uncertain or involve unique or unknown risks?
Effects on the human environment from the action are not expected to be highly uncertain or involve unique or unknown risk. The management measures are clearly detailed and were derived through discussion with the fishing community.

11) Is the proposed action related to other actions with individually insignificant, but cumulatively significant impacts?
The EA examines the cumulative effects of the action and existing restrictions on the pelagic longline fishery. Based on the information presented, it does not appear that the action would have cumulative significant impacts on the human environment.

12) Is the proposed action likely to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historic resources?

There is no evidence that implementing the management measures would adversely affect entities listed, or eligible for listing, in the National Register of Historic Places or cause loss or destruction of significant scientific, cultural, or historic resources. Compliance with these measures is not expected to result in the permanent loss or destruction of any resources.

13) Can the proposed action reasonably be expected to result in the introduction or spread of a non-indigenous species?
This action mainly relates to the implementation of gear restrictions in the pelagic longline fishery and, therefore, will not result in the introduction or spread of non-indigenous species.

14) Is the proposed action likely to establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration?
These measures do not set a precedent for future actions with significant effects and are not a decision in principal about future considerations. The limiting of mainline length and creation of a special scientific research area as management tools have been determined to be important in order for the agency to meet objectives under the MMPA. These restrictions address the unique issue of interaction of pilot whales and Risso's dolphins with pelagic longline fishing gear, in a very concentrated area. Thus it would be implemented to achieve a specific objective and is, therefore, not expected to establish a precedent for future actions.

15) Can the proposed action reasonably be expected to threaten a violation of Federal, State, or local law or requirements imposed for the protection of the environment?
Implementation of the management measures will not result in a violation of Federal, state or local law for environmental protection. In fact, these measures would be expected to support Federal, state, and local laws for environmental protection because it is expected that their goals and objectives would be similar to those of the MMPA and ESA.

16) Can the proposed action reasonably be expected to result in cumulative adverse effects that could have a substantial effect on the target species or non-target species?
The action is not reasonably expected to result in cumulative adverse effects on a target species or non-target species since the action is to reduce mainline lengths to 20 nm or less, and designate a special research area, with other regulatory and non-regulatory measures for the conservation of pilot whales and Risso's dolphins. If anything, the potential restrictions in effort associated with this action would be expected to have beneficial impacts on all species caught in the fishery.

In view of the information presented above, and the analyses contained in the attached Environmental Assessment, Regulatory Impact Review, and Final Regulatory Flexibility Analysis prepared for the Final Pelagic Longline Take Reduction Plan, it is hereby determined that the action, Alternative 3, will not significantly impact the quality of the human environment as described above and in the supporting Environmental Assessment. In addition, all beneficial and adverse impacts of the proposed action have been addressed to reach the conclusion of no significant impacts. Accordingly, preparation of an EIS for this action is not necessary.

4/8/09

Roy Crabtree, Ph.D.
Regional Administrator

Date

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