2.0 ALTERNATIVES

The following alternatives represent the range of options NMFS considered to reduce bycatch, bycatch mortality, and incidental catch of undersize swordfish, billfish, and other overfished and protected species from pelagic longline gear utilized by U.S.-flagged vessels operating in the Atlantic Ocean. By focusing on pelagic longline fishing effort within the U.S. EEZ, the final actions will have maximal effect with respect to areas of the Atlantic Ocean where all fishing effort, whether by a U.S.-flagged or foreign-flagged vessel, is regulated by the United States. Further, a significant portion of the U.S. pelagic longline effort occurs within these waters. Each alternative identifies potential regulatory mechanisms for implementation. Alternatives are evaluated in Section 7.0 with respect to existing data[1] on target and incidentally caught species, as well as ecological, social, and economic impacts. Economic and social impacts are more fully discussed in Sections 8.0 and 9.0, respectively.

NMFS considered the following fourteen alternatives before selecting the final actions.

Use of Time/Area Closures to Reduce Bycatch, Bycatch Mortality, and Incidental Catch from Pelagic Longline Gear in the Atlantic Ocean

Alternative 1.	Closure of DeSoto Canyon, Charleston Bump and East Florida Coast
Alternative 2.	Closure of GulfB and SAtlE
Alternative 3.	Closure of GulfB and SAtlC
Alternative 4.	Closure of GulfB and SAtlB
Alternative 5.	Closure of GulfC and SAtlB
Alternative 6.	Prohibit Use of Pelagic Longline Gear
Alternative 7.	No Action (Status Quo)

Use of Gear Restrictions and Modifications to Reduce Bycatch, Bycatch Mortality, and Incidental Catch from Pelagic Longline Gear in the Atlantic Ocean

Alternative 8.	Prohibit the Use of Live Bait on Pelagic Longline Gear used in the Gulf of Mexico
Alternative 9.	Measures to rig longlines so hooks are fished deeper in the water column
Alternative 10.	Prohibit the setting of a pelagic longline in water temperatures greater than 68 degrees F in the Grand Banks Region
Alternative 11.	Prohibit setting the pelagic longline from 3 p.m. until 9 p.m.
Alternative 12.	Require Use of Circle Hooks

[1]In the DSEIS, NMFS used data that were available at that time (through 1997). Since the publication date of the proposed rule, 1998 logbook data have been made available to fishery managers. Therefore, this FSEIS document considers the impacts of the alternatives based on data through the 1998 calendar year.

Alternative 13. Reduce pelagic longline soak time

Reduction of Fishing Capacity

Alternative 14. Reduce fishing capacity in the Atlantic pelagic longline fishery

A brief description of each altemative follows.

2.1 Use of Time/Area Closures to Reduce Bycatch, Bycatch Mortality, and Incidental Catch from Pelagic Longline Gear in the Atlantic Ocean

Final Action: Use pelagic longline time/area closures to reduce bycatch, bycatch mortality, and incidental catch

This action will spatially and temporally limit the use of pelagic longline gear by U.S.-flagged vessels in areas along the southeastern Atlantic coast of the United States and Gulf of Mexico. NMFS evaluated five alternatives (Section 7.1), including the final action, that identify specific spatial and temporal constraints to the closure in this area to maximize the effectiveness of this management strategy relative to the stated objectives, while considering economic and social impacts to fishermen and their communities within the closed areas. The final action selected is the combined closures of an area in the northeastern Gulf of Mexico and a closure of two areas along the southeastern U.S. Atlantic coast. The DeSoto Canyon alternative was published in a notice on April 26, 2000, (65 FR 24440) and NMFS received public comments until May 12, 2000.

Rejected Option: Prohibit use of pelagic longline gear

This alternative would have banned the use of pelagic longline gear by all U.S.-flagged vessels targeting HMS in the Atlantic Ocean. This alternative was rejected because bycatch can be addressed through time/area closures and gear restrictions as implemented in this final rule. Furthermore, banning longlining is inconsistent with provisions of ATCA and the Magnuson-Stevens Act.

Rejected Option: No Action (Status Quo)

This rejected alternative would have maintained the existing regulations for the pelagic longline fishery along the Atlantic, Gulf of Mexico and Caribbean coasts of the United States. These regulations prohibit commercial fishermen utilizing pelagic longline gear from retaining, possessing or selling: swordfish under 33 pounds dw; Atlantic marlins from the Atlantic Ocean; and all west Atlantic sailfish and longbill spearfish from or in the U.S. EEZ. These fishermen are also subject to target catch limits in order to land a bluefin tuna. Use of pelagic longline gear is currently prohibited during the month of June in the Mid-Atlantic Bight closed area from 39° to 40° N and 68° to 74° W to reduce the bycatch of bluefin tuna. Fishermen must release all large

coastal sharks if the directed fishery is closed and are subject to bycatch limits on swordfish if that directed fishery is closed. In addition, a 1999 ICCAT recommendation established a discard allowance of 400 mt of swordfish from the North Atlantic for the 2000 fishing season; the discard allowance is reduced to zero by the 2003 fishing season. Although the United States received 80 percent of the discard allowance, total U.S. North Atlantic swordfish discards for 1998 were 443 mt. Further, overage in discards from one year will come off the following year's quota for that country.

2.2 Use of Gear Restrictions and Modifications to Reduce Bycatch, Bycatch Mortality, and Incidental Catch from Pelagic Longline Gear in the Atlantic Ocean

Final Action: Prohibit the use of live bait on pelagic longline gear in the Gulf of Mexico

This final action will prohibit the use of live bait on pelagic longline gear year-round in the Gulf of Mexico to reduce the catch-per-unit-effort of non-target HMS, primarily Atlantic billfish. There is evidence from analysis of logbook and at-sea observer data that hooks rigged with live bait are more attractive to billfish (see Section 7.2 Appendix D). A live bait prohibition in the Gulf of Mexico is expected to reduce interactions with billfish.

Not Selected at this Time: Measures to rig longlines so hooks are fished deeper in the water column

This alternative would have prohibited the setting of hooks closer than 240 feet from the nearest float in order to reduce interactions with sea turtles. There is some evidence from logbook and at-sea observer data collections that hooks rigged closer to floats attached to the mainline are more likely to interact with sea turtles. This is most likely due to the fact that hooks rigged closer to floats will remain at a shallower depth than those farther away from floats, as the weight of the mainline will draw it deeper between floats. As turtles tend to forage closer to the surface due to the need for air, it is less likely that they will encounter the deeper hooks. Further research is needed to provide sufficient cause and effect relations between water depth of pelagic longline gear and sea turtle takes.

Not Selected at this Time: Prohibit the setting of a pelagic longline in water temperatures greater than 68 degrees F in the Grand Banks region

This alternative would have prohibited setting of pelagic longline gear in "warm" waters (greater than 68°F) that may have high concentrations of sea turtles. There is some evidence from logbook and at-sea observer data that longline sets made in local areas of warm surface waters of the Grand Banks are more likely to interact with sea turtles. This is most likely due to the fact that turtles prefer warmer waters and once transported to the Grand Banks in the Gulf Stream, will tend to remain in local eddies and currents that are warmer than the prevailing surface waters

in the areas of mixing on the Grand Banks. If longline fishermen on the Grand Banks avoid surface waters warmer than 68° F, it is less likely that they would encounter sea turtles. Further research is needed in defining turtle distributional patterns and physical oceanographic features in the Grand Banks area. Additionally, a mechanism would need to be identified and tested to enforce such a management action.

Not Selected at this Time: Prohibit the setting of a pelagic longline from 3 p.m. until 9 p.m.

This rejected alternative would have prohibited setting pelagic longline gear between 3 p.m. and 9 p.m. in order to reduce interactions with sea turtles. There is some evidence from logbook and at-sea observer data that longline sets made in the late afternoon and early evening are more likely to interact with sea turtles. This is most likely due to the fact that turtles are visual predators and may feed more actively in surface waters in late afternoon and early evening. As the longline gear is set at the surface and descends to fishing depths as the distance from the vessel increases, it is more likely that turtles will interact with the gear if it is descending through surface waters during a time of feeding activity. Setting the gear earlier in the day or later at night may decrease the chances that the gear will encounter sea turtles. Again, as with other rejected options, further research is needed on the effectiveness of this rejected alternative in reducing sea turtle takes.

Not Selected at this Time: Require the use of circle hooks on pelagic longline gear

This rejected alternative would have required that all pelagic longlines be rigged with circle hooks. Conventional "J-hooks" could not be possessed on board any pelagic longline vessel. Circle hooks are more difficult to swallow and tend to catch fish by hooking the lips rather than the gut. Fish that are not to be retained are more likely to be released with less injury. Some species of sea turtles would also likely benefit from reduced injuries, as circle hooks are less likely to be swallowed. This alternative was rejected until current studies are completed to determine if sufficient scientific evidence is provided to support a regulatory requirement mandating their use by pelagic longline fishermen.

Not Selected at this Time: Reduce pelagic longline soak times

This rejected management alternative would have established a maximum soak time for pelagic longline sets. A shorter soak time would mean that incidental catch and bycatch could be released sooner and with less injury. This could lead to increased survivability of released finfish and turtles. This alternative was rejected until current studies are completed to determine if sufficient scientific evidence is provided to support a regulatory requirement mandating their use by pelagic longline fishermen.

2.3 Reduce fishing capacity in the Atlantic pelagic longline fishery

This rejected alternative would have further limited the capacity in the Atlantic pelagic longline fishery in order to mitigate the effects of redistributed effort under a time/area closure alternative. Conceivably, all longline sets that would otherwise have been made in a closed area would be redistributed to open areas. The incidental catch and bycatch of this redistributed effort must be balanced against the reductions anticipated in the closed areas. Reducing the production capacity of the fleet through retirement of permits, consolidation or a vessel buyback could reduce overall effort and thus incidental catch. NMFS is currently undertaking a analysis of overcapacity in all federally-managed fisheries and will report to the public the findings of that study.