

APPENDIX A. PROTECTED SPECIES DATA RELATED TO THE ATLANTIC PELAGIC LONGLINE FISHERY

The following tables identify the quantity, location, and nature of interactions of protected species with pelagic longlines in the Atlantic Ocean, Gulf of Mexico, and the Caribbean Sea.

Figure A1. Map of 1995-1997 marine mammal interactions with the Atlantic Pelagic Longline Fishery.
Source: Observer data.

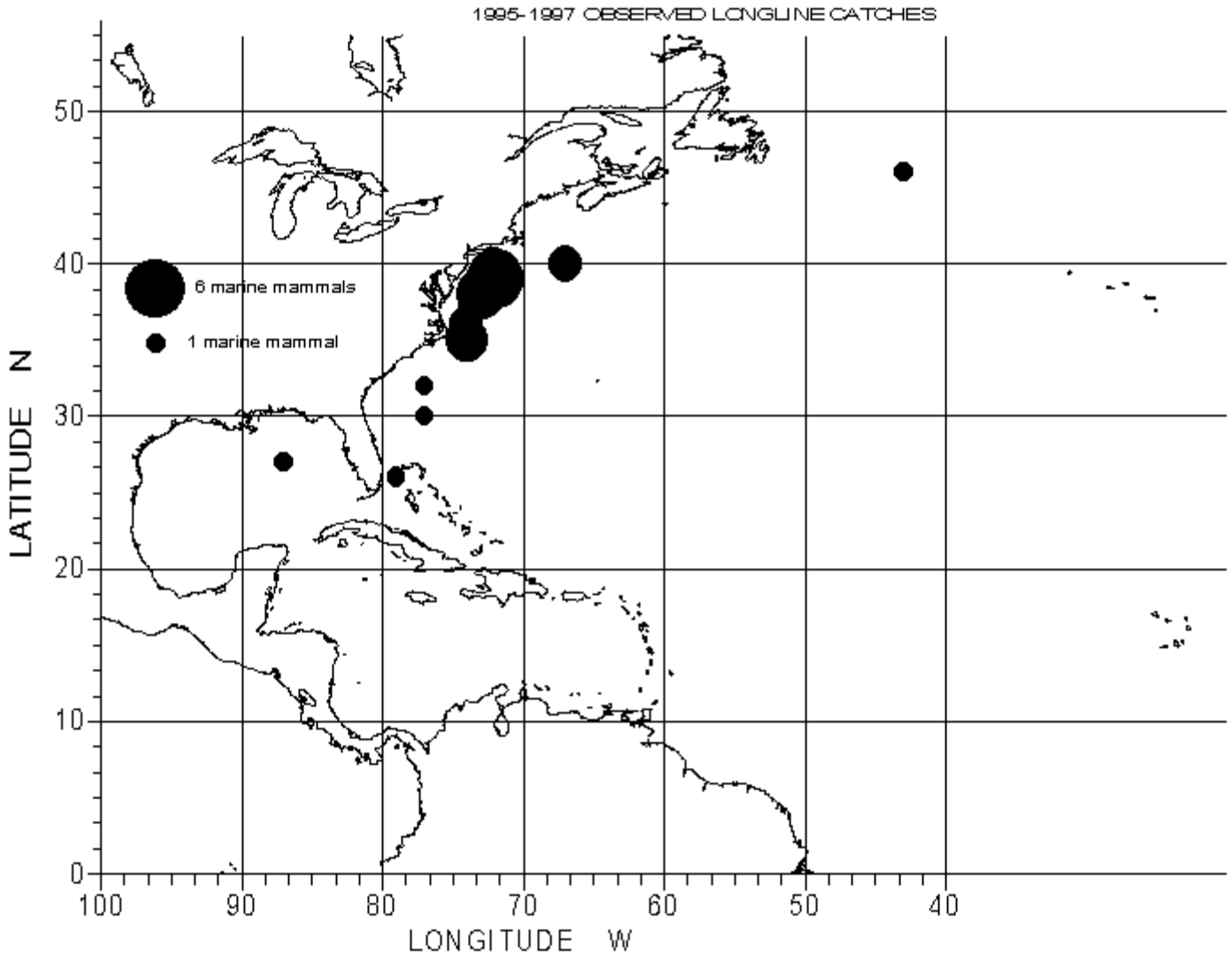


Table A1. Observer's comments on takes of marine mammals by pelagic longline fishing operations. Source: Observer data.

common name	yr	qtr	area	lat	lon	alive	dead	observer's comments
pilot whale	95	3	NEC	40 15	67 53	1	0	Could not tell whether hooked (gangion cut at snap) or just wrapped in line.
pilot whale	95	3	NEC	40 20	67 55	1	0	Mouth hooked and line parted as captain attempted to get leader and cut it.
Risso's dolphin	95	3	NEC	40 25	67 30	1	0	Surfaced 50 m from boat with hook in mouth. As he swam towards boat, captain grabbed gangion and cut it. Swam away apparently unharmed.
pilot whale	95	3	NEC	38 04	73 46	1	0	Foul hooked, cut from gear. Alive, condition unknown.
pilot whale	95	3	NEC	37 33	74 10	1	0	Hooked in flipper. Cut from gangion.
Risso's dolphin	95	3	NEC	39 25	72 02	1	0	Mainline and gangion wrapped around tail. All gear cut from animal before release.
pilot whale	95	3	NEC	39 05	72 30	1	0	Foul hooked in flipper - broke gangion off as it was hauled
Risso's dolphin	95	3	NEC	39 43	71 49	1	0	Mainline cut from around tail flukes and pulled from mouth. Animal swam off quickly upon release.
Risso's dolphin	95	3	NEC	39 05	72 32	1	0	Mainline cut from around tail flukes. Animal swam off slowly after blowing.
Risso's dolphin (misidentified as pilot whale before)	95	3	NED	46 13	40 07	1	0	Removal required cutting of gear/animal. Alive, gear in/around mouth. Animal came in on line. Appeared to be a pilot whale in size and shape. However animal was grey in color and had markings on back like a Risso's dolphin. Did not see indented head and was not able to see lower jaw. Animal was alive and appeared in good condition. Animal moved very quickly away from vessel after being cut free. <i>Photos show Risso's dolphin and not the pilot whale reported in the incidental take log, but cannot discern manner of entanglement or animal condition.</i>
pilot whale	95	3	NEC	37 01	74 31	1	0	The whale jumped enough out of the water to see its upper flank and head. The animal was tethered to the mainline via a gangion, with hook stuck inside the mouth. The animal went under and the captain cut the gangion freeing the animal. This individual was probably a 2nd year sub-adult. It was freed with the hook in its mouth. It took off like an arrow when the gangion was cut. The observer commented that the only concern about this animal is the possibility of infection from the hook wound in the mouth, or hindrance of feeding efficiency due to the gear hanging from its mouth, if it was not dislodged. Also, this was the 4 out of 7 trips in which this observer has seen a marine mammal foul hooked in the mouth. Marine mammals taking the longline bait have been observed to devour everything but the gill plates, with hook stuck in either the lower or upper maxilla.
pilot whale	95	3	NEC	37 09	74 24	1	0	Thoroughly and extensively wrapped. Quite a bit of mainline around its caudal peduncle. No evidence of having been hooked in its mouth or head. It was pulled up to the boat. The tangle of line around its peduncle

was cut at, with little success. It was tight. We cut some outer strands and it severed the line leading to the vessel, and free line from the animal into the depths of the ocean. Young individual. Left side of vessel with deep breath and a powerful flick of the flukes and dove underneath the vessel. Appeared to be in fairly good shape.

shortfin pilot whale	95	3	NEC	38 28	73 30	1	0	Instead of having only the gangion wrapped around the caudal peduncle, the hook was imbedded into the peduncle itself. Only one or two wraps of the gangion along with the imbedded hook were left in the animal. The animal was pulled to the boat where unsuccessful attempts were made to dislodge the hook. The animal slowly moved away from the vessel as opposed to an aggressive kick of the tail and a dive. Lingered at the surface for nearly 1.5 minutes while boat steamed away and continued hauling in the gear. (Observer) feared the animal was exhausted physically and stressed out by the whole ordeal. This individual was full-grown. "This was probably the only time (the observer) actually fear for the health and safety of an incidentally-taken marine mammal."
shortfin pilot whale	95	3	NEC	38 29	73 28	1	0	This young individual was hooked in the mouth. (Observer) could not exactly tell where (upper or lower mandible), however, it was clear this was the case. Obviously, this young individual was after the squid which was the bait the vessel was using. As we were coming upon the animal, it surfaced 3 times upside down. (Observer) had never seen this before in an entanglement situation with a Pilot Whale. The individual was pulled to the vessel with the intention of extracting the hook from its mouth. However, it was too strong. Thus, it was pulled as close to the vessel as possible and the gangion clipped as close to the mouth as possible. This animal shot off like a bullet to the deep as the gangion was cut.
unidentified	95	3	NEC	39 24	72 17	1	0	The mammal was not seen by the observer until it swam off. The crew was pulling in the gangion and then noticed it was, as they identified it, a whale. There were large unidentified dolphins in the area also. The mammal pulled itself free at the same time the crew noticed it was a mammal.
pilot whale	95	4	NEC	37 00	74 36	1	0	As leader came to block, line stretched and snapped. Animal swam away after breaking off.
pilot whale	95	4	NEC	35 43	74 37	1	0	Mouth hooked. Captain cut leader and it disappeared.
pilot whale	95	4	NEC	35 46	74 42	1	0	Freed by cutting leader.
pilot whale	95	4	NEC	35 46	74 42	1	0	Freed by cutting leader. When freed, it swam directly to join three other waiting animals and swam away together.
pilot whale	95	4	NEC	37 45	73 25	1	0	Animal cut from line, hooked in mouth. Swam off trailing gangion and 100 ft of mainline.
pilot whale	95	4	SEC	26 42	79 40	1	0	Entangled in mainline; monofilament cut away; whale swam away.
Risso's dolphin	96	3	GOM	29 01	87 47	0	1	Muscle tissue sample was taken from the head, and the lower jaw was also saved. The animal was entangled in the mainline and brought aboard dead.

Risso's dolphin	96	3	NEC	39 24	72 17	1	0	Mainline wrapped around flukes. Unwrapped flukes. Swam away uninjured.
Risso's dolphin	96	3	NEC	39 24	72 17	1	0	Mainline wrapped around flukes. Unwrapped flukes. Swam away uninjured.
Risso's dolphin	96	3	NEC	38 15	73 18	1	0	Hooked in mouth. Line cut - 914 cm of line left attached (animal pulling very lively). Swam away uninjured.
unidentified	96	4	SEC	30 26	76 55	1	0	Unidentified mammal was tangled in line. Black tail section seen just before dive; animal was free with no line attached.
short-beaked spinner dolphin	97	1	SEC	32 10	78 03	1	0	Tail wrapped in mainline. Mainline cut free. Animal swam away healthy.
pilot whale	97	3	NEC	39 12	72 25	1	0	Small pilot whale brought up; animal sluggish but swimming at side of vessel. Gear was tangled and wrapped around flukes only. Mainline and gangions were cut and all gear was removed. Animal then swam slowly away. Only injury suffered were small lacerations around flukes from gear, no knives used to free animal.

Table A2. Observed takes of sea turtles in the 1995 - 1998 pelagic longline fishery by year, calendar quarter, and fishing area. Blank areas indicate no effort for that year, quarter, and area. Source: Observer data. Note: Areas indicate statistical sampling areas for pelagic logbook data.

Year	Qtr	CAR	FEC	GOM	MAB	NCA	NEC	NED	SAB	SAR	TUN	TUS	Total
1995	1	0	3	0	1	6		0	0				10
1995	2	0	2	4	7	3			5				21
1995	3	0	1	0	7		5	57	0				70
1995	4		0	1	3		2	84					90
1996	1	0	0	0		3			1	1	1		6
1996	2		0	0					5				5
1996	3		0	3	3		2		0		0		8
1996	4	1	1	1	0				1				4
1997	1	3	0	2		2			2	1	1	2	13
1997	2			0	0			0	1			0	1
1997	3		1	0	1		3	6	0	1			12
1997	4		0	0	0		2		0				2
1998	1	7	2	1	0	0	0	0	0	0	00	0	10
1998	2	0	1	0	0		23		7				31
1998	3		0	0	4		0	54	1				59

Figure A2. Takes of Sea Birds in the Atlantic Pelagic Longline Fishery: 1997-1998. Source: Observer Data.
Note: Symbols represent the number of birds caught in that area with the frequency of that category in parentheses.

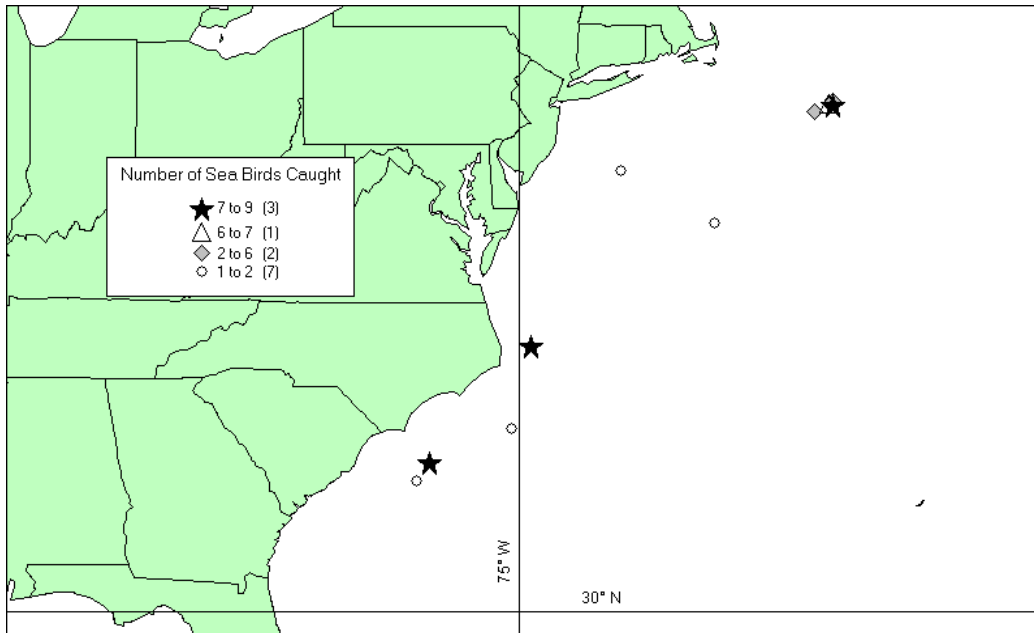


Table A3. Observed Incidental Takes of Sea Birds, By Species By Pelagic Longlines: July 1990-June 1997.

Note: A-alive, D-dead; observer coverage: 1992-2.1%, 1993-5.3%, 1994-4.6%

	Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
South Atlantic Bight													
Gannett, Northern	1993		4-A										
Gull, Great Black-back	1993		1-A 3-D										
Mid-Atlantic Bight													
Gull, Herring	1994												7-D
Gull, Unknown sp.	1992										4-D		
	1993											1-A	
	1994											4-D	
Shearwater, Greater	1992										2-D		
	1994						3-D		1-D				
Storm Petrel, Wilson	1995										1-D		
Northeast Coastal													
Gannett, Northern	1995											2-A	
Gull, Unknown sp.	1995											1-A	

APPENDIX B. COMMENTS AND RESPONSES

NMFS received several hundred comments and several thousand form letters during the two comment periods, 13 public hearings, and two joint AP meetings held during this rulemaking. Comments are summarized here together with NMFS' responses. NMFS would like to thank all the people who took the time to comment. NMFS would also like to emphasize that comments are not a "vote."

General

Comment 1: There is no conservation benefit from proposed closures except for small swordfish, therefore the proposed time/area closures will probably have an imperceptible effect on rebuilding of overfished HMS.

Response: NMFS disagrees. Depending on the amount of redistribution of effort under the proposed closed areas, other species such as sailfish and large coastal sharks may benefit from these closures. Under the no effort redistribution model, billfish discards are reduced by 19 to 43 percent, although as discussed in the FSEIS, the actual benefits of these time/area closures is likely somewhere between the extremes predicted by the effort models. Further, prohibiting the use of live bait will provide a 10 to 46 percent reduction in billfish discards in the Gulf of Mexico. NMFS is compelled by the Magnuson-Stevens Act to reduce bycatch (NS9) as outlined in the HMS FMP and Billfish FMP Amendment. Although it was not a stated objective of the final rule to rebuild overfished stocks through time/area closures or gear modifications, some benefit to rebuilding *may* be experienced to the degree that mortality rates will be reduced for juveniles, pre-adults and reproductive fish. Also, to the extent that the United States can use the domestic bycatch reduction program, including time/area closures and gear modifications, to convince other International Commission for the Conservation of Atlantic Tunas (ICCAT) member nations that bycatch could be minimized, these actions may have a significant impact on Atlantic-wide rebuilding of overfished HMS stocks.

Comment 2: NMFS is already past the deadline for a rebuilding program for overfished HMS that includes bycatch reduction measures.

Response: NMFS disagrees. The HMS FMP and Billfish FMP Amendment include rebuilding plans that meet Magnuson-Stevens guidelines. The swordfish rebuilding program recently adopted by ICCAT was based in large part on the rebuilding plan outlined in the HMS FMP. Similarly, the rebuilding plans for blue and white marlin emphasize the importance of international efforts to reduce bycatch and bycatch mortality. NMFS implemented bycatch reduction measures in the HMS FMP, including: limited access for swordfish and shark fisheries; time/area closure for pelagic longline gear to reduce bluefin tuna dead discards; limiting the length of mainline for longline fishermen; and other measures summarized in the HMS FMP. The Billfish FMP Amendment also outlined a bycatch reduction strategy. NMFS expects that a suite of additional measures will continue to be implemented for all HMS fisheries, including educational workshops that share results of recent research on gear modifications. Finally, as a

result of the jeopardy finding in the early June draft BO, NMFS will initiate implementation of the measures in the final BO via rulemaking and other measures.

Comment 3: NMFS should extend the VMS implementation deadline past June 1, 2000.

Response: NMFS agrees. On April 19, 2000 (65 FR 20918), NMFS extended the effective date until September 1, 2000. This will provide adequate time (2 months) to ensure that all systems are fully functional prior to the implementation of the time/area closures. Also, implementation of the measures in the early June draft BO may require a time/area closure and/or gear setting restrictions to be enforced by VMS.

Comment 4: As the swordfish stocks continue to rebuild, the United States may need more U.S. boats to harvest the swordfish quota.

Response: NMFS disagrees. As a result of the final regulations implementing the HMS FMP (May 28, 1999; 64 FR 29090), NMFS implemented a limited access program for Atlantic swordfish, Atlantic shark, and the pelagic longline sector of the Atlantic tuna fisheries. A description of the qualifying requirements for a directed or incidental limited access permit is contained in Chapter 4 of the HMS FMP. Using a multi-tiered process based on participation, approximately 450 limited access swordfish permits (directed and incidental) were awarded. Subsequent examination of fishing activity by these vessels in preparation of the proposed and final rule indicates that a significant portion did not report any HMS landings in either 1997 (331 vessels reported HMS landings) or 1998 (208 vessels reported HMS landings). When MSY levels are attained (currently the North Atlantic swordfish stock is estimated to be at 65 percent of MSY), it is likely that the number of U.S.-flagged vessels with directed or incidental swordfish permits will be sufficient to adequately handle any potential increase in the U.S. swordfish quota.

Comment 5: NMFS should be concerned about small sources of mortality which may exacerbate overfishing and slow rebuilding.

Response: NMFS agrees and is concerned about all sources of mortality on HMS stocks. NMFS is committed to work through available international fora to rebuild overfished HMS stocks, even when U.S. fishing is responsible for only a small source of the total Atlantic-wide mortality. The rebuilding plans provided in Billfish FMP Amendment are indicative of this commitment. Further, the agency is required by the Magnuson-Stevens Act to take appropriate conservation actions, while considering the social and economic impacts on fishermen and fishing communities, and as such must consider management actions that meet the national standard guidelines.

Comment 6: NMFS should increase outreach efforts to inform the public of the need for management of HMS resources.

Response: NMFS agrees but is currently restricted from increasing outreach efforts by

competing demands for funding (e.g., funds for observers, science). Note that the NMFS Highly Migratory Species Management Division posts current events and useful documents on the website www.nmfs.gov/sfa/hmspg.html. NMFS also produces informational brochures on current fishing regulations, mailouts, and utilizes a fax network for distribution of information. NMFS scientists are also participating in periodic outreach programs to share information on life history of billfish, sharks and tunas, as well as sharing information on methods that will enhance survival of released fish. An information hotline has also been established that summarizes current fisheries regulations as they apply to HMS. The hotline can be accessed by calling toll-free at 1-800-894-5528. Additional outreach efforts will be implemented as funding becomes available.

Comment 7: The proposed closed areas will result in an increase in swordfish imports into the United States; this would deny U.S. seafood consumers access to fresh and HACCP-quality controlled fish.

Response: NMFS did not propose to reduce the swordfish quota in this fishery in this rulemaking, nor does NMFS anticipate that the U.S. fleet will be unable to meet its quota as a result of the implementation of this final rule. Therefore, it is unlikely that imports will increase as a result of closed areas, although imports may increase for other unrelated reasons. NMFS does not control the swordfish market other than to prohibit the import of undersized Atlantic swordfish in this country, which is monitored through the Certificate of Eligibility program. It is expected that the high-quality, HACCP-inspected seafood products provided to citizens of the United States by U.S. commercial fishermen will remain available following implementation of this final rule. Imports of fishery products into the United States are also subject to HACCP guidelines.

Comment 8: The proposed closed areas are not equitable between constituents in different states.

Response: As required by NS2 of the Magnuson-Stevens Act, NMFS utilized the best available scientific information to develop proposed and final action. NMFS used logbooks, observer programs, and various scientific studies to identify distributional patterns of seasonal abundance, by species, and areas of overlap between various HMS species, protected and endangered species as defined by concentrations of bycatch and incidental catch (“hot spots”) from pelagic longline gear in the U.S. EEZ. Therefore, in large part, the biology of the species dictated the locations of the closures. The issue of equity was considered, as required by NS4, as were the other national standards, as well as international obligations, in the selection of the final actions. While the final areas may have larger impacts on fishermen who fish in those areas, such impacts are not inconsistent with NS4.

Comment 9: NMFS is ignoring sea bird bycatch by the recreational fishermen who troll for HMS.

Response: NMFS disagrees that it is ignoring sea bird bycatch. NMFS does not currently have any data indicating that sea birds are caught and discarded in the recreational fishery for HMS.

NMFS is currently implementing a logbook and voluntary observer program for charter/headboats involved with HMS fisheries. This program will provide additional information on recreational fishing including any possible interactions with seabirds or other protected or endangered species. Further, NMFS is committed to a National Plan of Action for the Reduction of Incidental Catch of Seabirds in Longline Fisheries (see www.nmfs.gov for a draft of this plan). NMFS would therefore be concerned if these animals are discarded and unreported in other HMS fisheries.

Comment 10: NMFS should quantify bycatch and bycatch mortality in the recreational fishery.

Response: NMFS agrees that quantifying bycatch and bycatch mortality in recreational fisheries is important, and has collected data used to quantify bycatch of large pelagics in the recreational fishery. Such data are reported in the U.S. National Report prepared each year by NMFS for submission to ICCAT. Billfish FMP Amendment established a catch-and-release fishery management program for the recreational Atlantic billfish fishery; therefore all billfish released alive, regardless of size, by recreational anglers are not considered as bycatch. However, the mortality associated with the capture and release event is an important component to quantify for population assessment. NMFS currently collects data on the number of billfish retained and released at selected tournaments. NMFS has funded studies to quantify the bycatch mortality in bluefin tuna and billfish recreational fisheries HMS fisheries, and NMFS scientists have recently reported on the use of circle hooks to reduce release mortality for the recreational billfish fishery. NMFS encourages fishermen to release HMS in a manner that maximizes their survival.

Comment 11: NMFS should re-establish the Second Harvest Program for swordfish whereby undersized swordfish are fed to the hungry instead of being discarded as bycatch.

Response: The specific regulations for the second harvest program for swordfish were eliminated when the HMS regulations were consolidated following the final HMS FMP and Billfish FMP Amendment (May 29, 1999; 64 FR 29090). No volunteers were received for this program, although the constraints of the observer requirement, and subsequent establishment of a minimum swordfish size with no tolerance limits probably limited the success of this program. However, under the current regulations, a fishermen could apply for an Exempted Fishing Permit (EFP) to donate regulatory discards, including fish below the minimum size, or fish in excess of the bycatch limits in effect for the particular vessel (e.g., 2 per trip for an incidental permit vessel, or 15 per trip for a directed permit vessel during a closure of the directed fishery, or any fish by any vessel if the incidental fishery is also closed).

Comment 12: NMFS regulations force pelagic longline fishermen to discard swordfish, thus increasing bycatch in this fishery. NMFS should have a higher minimum size with a tolerance for undersized fish to reduce bycatch.

Response: Swordfish caught below the minimum size are regulatory discards, and as such are considered bycatch. The minimum size limit was established to create an incentive for fishermen to avoid areas of undersized swordfish. NMFS discontinued the use of a higher minimum size

with a set percent tolerance for smaller fish because of concerns about the difficulty in enforcing such a measure. Industry participants largely supported this decrease in minimum size, stating that most of the fish landed under the tolerance provisions were just under the previous minimum size. In the Spring of 1999, the ICCAT Advisory Committee recommended that NMFS evaluate the efficacy of the swordfish minimum size limit and reconsider eliminating that size limit if warranted. Under the 1999 ICCAT recommendation, total North Atlantic discards of undersized swordfish are subject to an allowance of 400 mt Atlantic-wide for the 2000 fishing season; the U.S. receives 80 percent of this dead discard allowance (320 mt). The United States is obligated by international agreement to address swordfish discards. The time/area closures defined in the final rule will significantly reduce swordfish discards by U.S. pelagic longline vessels. Although some small swordfish will still be encountered under time/area management, the overall proportion of the catch that is discarded will be reduced, and in fact may provide an opportunity to consider alternatives to minimum sizes in the international management of Atlantic swordfish.

Comment 13. The proposed closed areas are expected to increase the catch of mako, thresher, and blue sharks. The pelagic shark stocks will not be able to withstand the possible increase in pelagic shark mortality (landings and discards) associated with pelagic longline effort redistribution.

Response: Although the status of pelagic shark stocks are currently designated as unknown, NMFS disagrees that the final rule will have a significant impact on pelagic shark mortality. However, this does not mean that NMFS is not concerned about the status of these stocks. In fact, the HMS FMP established a blue shark quota, including dead discards from pelagic longline gear, that effectively sets an upper limit to the magnitude of impacts from displaced effort. The proposed rule predicted over an 8 percent increase in pelagic shark landings over the 1995 through 1998 levels; however, changes in the temporal and spatial components of the final actions predict a 4 percent increase under the effort redistribution model, which may overestimate impacts on bycatch and target catch. Discard rates are similarly reduced in the final action. NMFS will closely monitor all pelagic shark landings through logbook and observer programs to follow changes in landing patterns resulting from effort redistribution.

Comment 14: The proposed time/area closures will reduce gear conflicts between the growing recreational HMS fisheries and commercial fishing communities, but in some areas, particularly the eastern Gulf of Mexico and Mid-Atlantic Bight, conflicts could potentially increase.

Response: NMFS previously identified gear conflicts between recreational and commercial entities in the 1988 Atlantic Billfish FMP and in the 1999 Amendment to that FMP. NMFS agrees that conflicts between recreational and commercial fishing groups could escalate in areas that remain open as a result of pelagic longline effort redistribution. Mitigating possible user conflicts was one of several reasons that temporal and spatial components of the proposed action were refined in the final action, and in the case of the western Gulf of Mexico, replaced by a live bait prohibition. Any management measure leading to a reduction in bycatch of billfish from commercial fishing gear may lead to localized increases in angler success and resultant economic benefits to associated U.S. recreational industries.

Comment 15: NMFS should consider implementing Individual Transferable Quotas (ITQs) in the future as a bycatch reduction measure, particularly for bluefin tuna in the longline fishery.

Response: Implementation of an ITQ scheme, with the sole or even partial purpose of reducing discards could be considered and would require extensive detailed analysis before proceeding. However, NMFS is constrained from consideration of ITQ systems at this time, as directed by the Magnuson-Stevens Act. The HMS FMP specifically addressed the bycatch of bluefin tuna by the pelagic longline fishery through implementation of a time/area closure during June off the Mid-Atlantic Bight. Initial results of the efficacy of the first closure (June 1999) are preliminary. NMFS is currently reviewing whether the results are due to a limited time frame for outreach (the final rule was published on May 28, 1999, with an effective date of May 24, 1999, for the interim measures of Section 635.25, including the June bluefin tuna pelagic longline closure), enforcement (VMS implementation was delayed until September 1, 2000), or due to expected inter-annual variation in effectiveness.

Comment 16: Large closed areas will pose significant enforcement challenges to U.S. Coast Guard (USCG) since the areas identified for closure in the proposed rule are not routinely patrolled by cutters. (This comment received from the USCG was followed up by a comment that supports the use of VMS to enforce closed areas.)

Response: NMFS recognizes the need for effective enforcement of these closed areas and as such supports the use of VMS which will become effective for all pelagic longline vessels on September 1, 2000 (April 19, 2000; 65 FR 20918). USCG resources will continue to be utilized as that agency is capable of confirming a vessel's location and whether or not it is fishing in the closed area. NMFS has entered into a cooperative agreement with the USCG to assist in the monitoring of fishing vessels at USCG locations.

Comment 17: NMFS should define the closed area by latitude and longitude in the regulatory text, including the designation for the U.S. EEZ.

Response: NMFS agrees and provides latitude and longitude coordinates for all boundaries to the closed areas in the regulatory text of this final rule.

Comment 18: NMFS should take these proposed closed areas to ICCAT and encourage international closed areas.

Response: NMFS supports consideration of closed areas and gear modifications to reduce undersized swordfish catch and fishing mortality, and to protect spawning and/or nursery areas for swordfish and billfish on an Atlantic-wide basis as discussed in the HMS FMP and Billfish FMP Amendment. In 1999, ICCAT adopted a U.S.-sponsored resolution for the development of possible international time/area closures (and gear modifications) and the Standing Committee for Research and Statistics (SCRS) is scheduled to provide a report on this topic at the ICCAT meeting in 2002. The final rule will be included in the U.S. National Report that will be submitted to ICCAT in the October 2000.

Comment 19: NMFS should ban pelagic longline gear, or at least ban use of this gear inside the U.S. EEZ.

Response: NMFS disagrees. Banning pelagic longline gear in the U.S. EEZ is not necessary to protect highly migratory species. Bycatch can be addressed through time/area closures, education, and/or gear modifications as implemented in this final rule. Requiring all vessels using pelagic longline gear to fish only outside the 200 mile limit may also be inconsistent with consideration of safety issues as required under NS10.

Comment 20: Closures are not necessary; swordfish are rebuilding.

Response: NMFS agrees that the North Atlantic swordfish stock may have stabilized and that an international rebuilding program is in place. To the extent that the time/area closures will reduce bycatch and bycatch mortality of undersized swordfish, pre-adults and spawning fish, the closures will enhance stock rebuilding. Furthermore, NMFS is required by an ICCAT recommendation and under NS9 of the Magnuson-Stevens Act to minimize bycatch, to the extent practicable. Providing protection of small swordfish and reproducing fish through time/area closures is particularly critical as stocks begin to rebuild. The United States is responsible for 29 percent of the north Atlantic swordfish quota (1997 through 1999), and approximately 80 percent of the reported dead discards. Under the 1999 ICCAT recommendation, the total North Atlantic dead discard allowance for the 2000 fishing season is 400 mt; the U.S. receives 80 percent of the North Atlantic dead discard allowance (320 mt). The dead discard allowance for the United States is reduced to 240 mt in 2001, 160 mt in 2002, and will be reduced to zero by 2004, with any overage of the discard allowance coming off the following year's quota for that country. A total of 443 mt of swordfish were reported discarded by U.S. fishermen in the North Atlantic during 1998. Under the time/area strategy of the final rule, the no effort redistribution model predicts a 41.5 percent reduction in discards; under the effort redistribution model, discards are reduced by 31.4 percent. The closures could potentially reduce 1998 discard levels to 259 mt under the no effort redistribution model and 304 mt under the effort redistribution model, thereby meeting at least 2000 discard allocation levels without impacting the subsequent year's quota.

Comment 21: NMFS should increase observer coverage of all components of HMS fisheries, including pelagic longline fishery.

Response: NMFS agrees that it would be beneficial to increase observer coverage to document bycatch in all HMS fishing sectors. Observer coverage of the pelagic longline averaged between 4 and 5 percent between 1992 through 1998; a total of 2.9 percent of pelagic longline sets were covered by observers during 1998. However, given current fiscal constraints, NMFS is not able to increase observer coverage in the pelagic longline fishery. NMFS will be implementing an initial phase of the HMS charter/headboat and voluntary observer program in the summer of 2000 that will provide additional bycatch information from recreational fisheries.

Comment 22: NMFS should develop a comprehensive bycatch strategy, including specific targets for bycatch reduction.

Response: NMFS disagrees that setting fixed bycatch targets is necessary, and in fact such targets may be counterproductive. The multi-species approach followed in the development of the proposed and final action to reduce bycatch, bycatch mortality, and incidental catch precludes setting target reduction for specific species without considering the impact on the remaining portion of the catch composition. For example, if the time/area closures were simply based on reducing swordfish discards by a set percentage, a concomitant increase in bycatch of other species could occur, or target catches could be reduced more than necessary to achieve NS9 mandates. NMFS agrees that a comprehensive bycatch strategy is necessary, and has outlined a plan that incorporates data collection, analysis and measures that minimize bycatch, to the extent practicable. This strategy is outlined in the HMS FMP and Billfish FMP Amendment.

Comment 23: NMFS should conduct educational workshops.

Response: NMFS supports the use of educational workshops to disseminate information on current research regarding bycatch reduction and to provide a forum through which fishermen can share bycatch reduction techniques with each other. Depending upon available funding and staff, NMFS will initiate educational workshops to highlight bycatch reduction in HMS fisheries, both for recreational and commercial fishermen. NMFS scientists periodically hold seminars for fishermen to discuss the benefits of circle hooks and other handling techniques in the recreational billfish fishery.

Comment 24: NMFS needs to be able to respond quickly to results of monitoring and evaluation of closed areas. NMFS should develop a framework process for adjusting closed areas, if necessary, in a timely manner.

Response: NMFS agrees that a quick response to shifting fishing effort patterns is necessary. NMFS is currently able to adjust or develop new closed areas through the framework process (proposed and final rules, including public comment period) without amending the HMS FMP in the event that closed areas need to be altered to maximize the benefits to the nation. However, it will take time to collect and analyze the appropriate information, including data from the mandatory logbooks, observer program, and VMS.

Comment 25: NMFS should reduce effort in the longline fishery, not just reduce bycatch.

Response: NMFS disagrees. The intent of this rulemaking is not to reduce effort in the fishery, but to reduce bycatch while minimizing the reduction of target catch by shifting effort away from areas with high bycatch and incidental catch. NMFS agrees that under a quota system, a time/area closure scheme will not necessarily reduce effort, although some vessel operators may choose to discontinue fishing due to economic or social factors. The use of time/area closures and gear restrictions (prohibition of live bait) was deemed by NMFS to be the best available management tool to reduce current levels of bycatch by the pelagic longline fishery, as required by NS9.

Comment 26: NMFS should consider additional actions to address the impact of the increase in

sea turtle interactions resulting from pelagic longline effort redistribution.

Response: NMFS agrees that sea turtle interactions with pelagic longline gear must be minimized to the extent practicable. On November 19, 1999, NMFS reinitiated consultation with NMFS' Office of Protected Resources based on preliminary information on the 1999 take levels by the pelagic longline fishery. In early June 2000, a draft BO concluded that the continuation of the pelagic longline fishery could jeopardize the continued existence of loggerhead sea turtles. Pending further analyses, the final BO, expected in late June 2000, could also have a jeopardy finding for leatherback sea turtles. The final time/area closures along the southeastern U.S. Atlantic coast were temporally and spatially reconfigured to mitigate, to the extent practicable, the impact of effort redistribution on sea turtle interactions. Bycatch rates, particularly for sea turtles, may be over-estimated by the effort redistribution model because the model estimated bycatch rates by assuming random or constant catch-per-unit-effort in all remaining open areas. This estimation procedure could skew results for certain species if those species are concentrated in certain areas (such as sea turtles in the Grand Banks), instead of being randomly distributed over the entire open area. Fishing activities will be monitored using VMS, as well as through logbooks and on-board observers to determine impacts of actual effort redistribution, which may require further agency action to address changes in turtle interactions. NMFS is initiating efforts to address concerns raised in the draft BO, including possible regulatory and non-regulatory actions.

Comment 27: NMFS is proceeding with use of time/area management strategies only because of litigation filed against NMFS by various environmental groups following publication of the final rules implementing the HMS FMP.

Response: NMFS disagrees. During public hearings held during the Fall of 1998 as part of the scoping process used to develop management alternatives for the draft HMS FMP and Billfish FMP Amendment, NMFS received many comments regarding the utility of time/area closures to reduce bycatch in various HMS fisheries, including pelagic longline gear, and their use in protecting essential fish habitat (e.g., spawning and nursery grounds). The draft HMS FMP included a closure of a portion of the Florida Straits to reduce swordfish discards. Comments on the proposed action indicated that the area was spatially and temporally too limited to accomplish any significant reduction in bycatch and the area was not included as part of the final actions. However, the HMS FMP was very clear in stating that following publication of a final rule (May 28, 1999; 64 FR 29090) an evaluation of wide-ranging time/area closures would be completed and implemented, if warranted. NMFS honored that commitment through the preparation of the Draft Technical Memorandum, and the proposed and final rules, establishing both time/area and gear modifications to reduce bycatch by the U.S. Atlantic HMS pelagic longline fishery.

Comment 28: The comment period for the DeSoto Canyon area closure alternative is too short. Additional time must be provided to allow those in the affected area to adequately respond to this potentially devastating closure.

Response: NMFS disagrees that additional time was warranted for public comment on the

DeSoto Canyon closure alternative. During the public hearing period for the proposed rule (December 15, 1999 to March 1, 2000), NMFS received many comments indicating that an additional closure was needed in the northeastern Gulf of Mexico because of the historically high swordfish discard rate in the area. In response to this comment, NMFS conducted additional analysis and identified an area generally around the DeSoto Canyon that in fact did have high incidence of discards of swordfish relative to swordfish kept. Although the DeSoto Canyon is included within areas analyzed in the DSEIS and draft Technical Memorandum (available November 1999), NMFS decided that an additional comment period was needed specifically on the potential utility of this closure because pelagic longline effort has declined by greater than 50 percent in this area over the past five years. NMFS notified the public of its intentions to consider a sub-area of previously analyzed areas in the Gulf of Mexico (i.e., DeSoto Canyon) through the HMS fax network, which is sent to thousands of permit holders, seafood dealers and fish houses throughout the eastern United States. In addition, NMFS mailed the Federal Register notice, supplementary information summarizing the biological, economic and social analysis of the DeSoto Canyon closure, and VMS materials to all HMS pelagic longline permittees. As a result of the April 26, 2000, Federal Register notice (65 FR 24440) soliciting comment on this alternative, NMFS has received many hundreds of responses, indicating that adequate time has been provided for comment.

Comment 29: Fish farming is the only answer to providing fish as a food for our population.

Response: NMFS agrees that aquaculture and mariculture play an important role in providing fishery products, but NMFS disagrees that this is the only mechanism to provide seafood.

Use of Time/Area Closures to Reduce Bycatch

Comment 1: NMFS should use time/area closures to reduce bycatch.

Response: NMFS agrees that closed areas can be an effective way to reduce bycatch, both in the U.S. and international pelagic longline fisheries, and this final rule implements time/area closures for the pelagic longline fisheries in the Gulf of Mexico and along the southeastern U.S. Atlantic coast. ICCAT has asked its scientific committee to explore the use of closed areas throughout the management unit. Swordfish, marlin, sailfish, and other HMS are considered overfished and are currently experiencing overfishing Atlantic-wide. The rebuilding plans established in the HMS FMP and Billfish FMP Amendment will be enhanced to the extent that reduction of bycatch will decrease mortality of juveniles and reproductive fish. Further, a reduction in swordfish discards is now critical for the U.S. pelagic longline fishery as a result of the 1999 ICCAT recommendation setting a North Atlantic discard allowance that is incrementally reduced to a zero tolerance level by 2004.

Comment 2: NMFS should change the size and/or shape of the proposed western Gulf of Mexico closed area.

Response: NMFS agrees and is closing the DeSoto Canyon area year-round to pelagic longline

fishing (see map) to address undersized swordfish discards, and to prevent further increases in swordfish discards as a result of possible effort displacement to this area as a result of the southeastern U.S. Atlantic coastal closures. Further, NMFS is minimizing the economic effects of the proposed western Gulf of Mexico closure that was specifically established to reduce billfish bycatch, by eliminating the western Gulf closure and instead prohibiting use of live bait by pelagic longline vessels. Application of this gear modification is as effective in reducing sailfish discards as the western Gulf closure, and is approximately half as effective in reducing marlin discards. However, in consideration of the magnitude of U.S. billfish discards relative to Atlantic-wide levels and the extent of the economic impacts associated with the proposed western Gulf closure, modifying fishing practices is a viable alternative that effectively accomplishes the objectives of the agency actions by reducing billfish bycatch, to the extent practicable, while allowing fishing to continue in the western Gulf of Mexico.

Comment 3: NMFS should close the Charleston Bump area. Conversely, the level of fishing activity in the Charleston Bump area does not warrant closure of this area.

Response: Although pelagic longline activity in the Charleston Bump area results in bycatch of small swordfish throughout the year, over 70 percent of the swordfish bycatch takes place during February through April. Therefore, NMFS is closing the Charleston Bump area for this 3-month time frame of highest discard rates. This partial year closure addresses the bulk of swordfish discards while minimizing social and economic impacts of the rule by allowing fishing for nine months, rather than the year-round closure included in the proposed agency action. Minimizing the temporal component of the Charleston Bump closure also reduces the magnitude of potential increase of sea turtles interactions and white marlin discards predicted by the displaced effort model for the proposed rule. Nevertheless, NMFS is aware of the overall concerns regarding this area relative to potential increases in effort and concomitant effects on bycatch and incidental catch, and will monitor fishing activity to determine whether a larger/longer closure is necessary in the Charleston Bump area. NMFS would pursue this action through the FMP framework process.

Comment 4: NMFS should consider additional pelagic longline closed areas in a future rulemaking.

Response: NMFS agrees that additional closed areas may be necessary to address bycatch, bycatch mortality, and incidental catch, particularly to address sea turtle takes as discussed in Section 5.8 of the FSEIS. Shifts in fishing effort patterns may also warrant future rulemaking to close affected areas. NMFS will continue to monitor the pelagic longline fleet throughout its range.

Comment 5: NMFS should change the shape, size, and/or timing of the South Atlantic proposed closed area.

Response: NMFS agrees. NMFS is closing the southern part of the proposed Southeast area below 31° N latitude (East Florida Coast) year-round in order to maximize the bycatch reduction

benefits. The northern portion of the proposed closed area (Charleston Bump) is closed for the period of highest swordfish discards during February through April. NMFS may consider a larger closure in the Charleston Bump area if effort increases significantly in this area, resulting in increased incidental catches or discards of overfished HMS or protected species. NMFS would pursue this action through the FMP framework process.

Comment 6: NMFS should include a closure of the Mid-Atlantic Bight and/or a Northeast area to pelagic longline gear.

Response: NMFS disagrees that this current final rule should include closures in the mid-Atlantic Bight or northeast area. The areas closed in this final rule are considered temporal and spatial “hot spots” for HMS bycatch from U.S. pelagic longline effort within the U.S. EEZ as evaluated by frequency occurrence, and the relationship between total catch and discard rates. NMFS has included a closure in the mid-Atlantic Bight as part of the final HMS FMP to reduce bluefin tuna discards from pelagic longline gear. Nevertheless, NMFS recognizes that effort will likely increase in areas that remain open (as analyzed in the redistribution of effort model in FSEIS). By minimizing the size of the closure in the Gulf of Mexico and shortening the closed season for the Charleston Bump area, NMFS expects that the effects of effort redistribution would be lessened from those predicted in the proposed rule. In addition, NMFS will continue to consider measures to reduce interactions with sea turtles, particularly in the pelagic longline fishing grounds in the Grand Banks. NMFS does not feel that additional closures of the Mid-Atlantic Bight, beyond the June pelagic longline closure for bluefin tuna discards, or in the offshore waters in the Atlantic Ocean off the northeastern United States are warranted at this time. NMFS will continue to monitor the pelagic longline fleet throughout its range, and will take appropriate action if necessary through the proposed and final rule process to reconfigure closures. As a result of reinitiating a Section 7 consultation, a draft BO was received indicating that the continued operation of the Atlantic longline fishery is likely to jeopardize the continued existence of loggerhead sea turtles. Pending further analyses, the final BO may include a jeopardy finding for leatherback sea turtles. Although the final BO will not be completed until late June 2000, the reasonable and prudent alternatives suggested in the draft BO indicate that additional regulations may include further modifications to fishing methods, gear modifications, closed or limited fishing areas, and expanded monitoring (see Section 5.8 of the FSEIS).

Comment 7: NMFS should close areas to both commercial and recreational pelagic fishing. NMFS should consider closing areas to recreational rod and reel fishermen, particularly to protect small bluefin tuna.

Response: NMFS disagrees. The closures included in the final rule address the requirements of NS9, while minimizing, to the extent practicable, the significant economic impacts that will be experienced by this fishery, as required by NS8. Monitoring programs in place do not identify the recreational fishery as a source of excessive bycatch. In fact, NMFS established a catch-and-release fishery management program in Billfish FMP Amendment in recognition of the operational patterns of the recreational fishery to encourage further catch and release of Atlantic billfish. However, NMFS continues to address both monitoring of the recreational fishery and

any bycatch mortality that does occur. At this time, NMFS encourages recreational fishermen to increase survival of released fish through the use of dehooking devices, circle hooks, and other gear modifications that may reduce stress on the hooked fish. Further, depending upon available funding, NMFS will offer educational workshops in order to reduce bycatch in the recreational fishery.

Comment 8: NMFS should consider rolling closures to spread the impacts throughout the region.

Response: NMFS disagrees. NMFS received advice from the HMS and Billfish APs that rolling closures may not be effective and they complicate the management process. NMFS conducted analyses to consider closures with varying spatial limitations on a seasonal basis along the southeastern U.S. Atlantic coast; however, none were as effective as the final action (see Section 7 of the FSEIS). Economic impacts of the closures were minimized, to the extent practicable, in light of the objectives of the conservation measures.

Comment 9: NMFS should use oceanographic conditions to define the size, shape and timing of time/area closures.

Response: NMFS agrees that many life history characteristics of HMS are driven by oceanographic conditions, including the strength of the Gulf Stream and the loop current and the eddies that spin off these structures. By following long-term distributional patterns in establishing the temporal and spatial components of the closures, oceanographic conditions were indirectly utilized in defining and evaluating the effectiveness of the time/area closures. The sizes of the closures around the Charleston Bump and DeSoto Canyon are examples of how NMFS accounted for variations in the current patterns to establish closure boundaries.

Comment 10: NMFS should alter the closed areas to be consistent with Congressional proposals.

Response: NMFS disagrees. The objectives of the legislative proposals are different than those of this action. This final rule reflects the four objectives stated in the proposed rule: 1) maximize the reduction of finfish bycatch; 2) minimize the reduction in target catch of swordfish and other species; 3) consider impacts on the incidental catch of other species to minimize or reduce incidental catch levels; and 4) optimize survival of bycatch and incidental catch species. NMFS has reviewed the various proposed legislative actions and provided (in testimony before Congress) an analysis of the relative effectiveness of the closures following the methods outlined in the FSEIS. In addition to bycatch reduction, the legislative actions also consider gear interactions and economic mitigation through a buyout program, which is beyond the scope of this rulemaking.

Comment 11. The closures proposed by NMFS ignore an historically high area of swordfish discards and nursery grounds in the DeSoto Canyon in the northeastern Gulf of Mexico.

Response: NMFS agrees and is closing an area in the northeastern Gulf of Mexico that includes the DeSoto Canyon. NMFS had evaluated the closure of a larger area in the Gulf of Mexico that

included the DeSoto Canyon in the draft Technical Memorandum (area BillD). However, the primary objective for closures in the Gulf of Mexico in the proposed rule was to reduce differentially high billfish discards in the western Gulf of Mexico. In responding to comments on the use of live bait, NMFS noted in the FSEIS (see Section 7.2) that the higher discards in the western Gulf were a likely result of fishing practices rather than an actual reflection of relatively higher abundance. Historically, catches of small swordfish were high in the DeSoto Canyon area; however there has been considerably less effort this area in recent years, which is likely a reflection of the enforcement of stricter minimum size limits. Further rationale for the northeastern Gulf of Mexico closure is to prevent additional effort in this area by pelagic longline fishermen displaced from the southeastern U.S. Atlantic coast closures, which would negate the effectiveness of final rule closures.

Comment 12: NMFS should reconsider the proposed closed areas because the increase in the bycatch of blue marlin, white marlin and large coastal sharks is not “worth” the decrease in swordfish bycatch expected to result from the proposed closed areas.

Response: The effort redistribution model used in the DSEIS and FSEIS is based on the assumption that all effort in the closed areas is randomly distributed throughout the remaining open areas, and as such, offers an estimation of the “worst-case scenario” from a biological perspective. This model estimates that discards of blue marlin could increase by 6.6 percent, and white marlin by 10.8 percent. Blue marlin bycatch rates may be over-estimated by the effort redistribution model because the model estimated bycatch rates by assuming random or constant catch-per-unit-effort in all remaining open areas. This estimation procedure could skew results for certain species if those species are concentrated in certain areas, instead of being randomly distributed over the entire open area (see Section 7 and Appendix C of the FSEIS for full description of analytical procedures). Pelagic longline effort in the Caribbean (fishing areas below 22°N latitude) represents approximately 14 percent of the total U.S. Atlantic-wide fishing effort, but accounts for over half of the total blue marlin discards by U.S. pelagic longline vessels. These areas were not considered for closure since they are generally located outside U.S. EEZ waters. Therefore, it is likely that the no effort redistribution model would be more applicable for blue marlin (12 percent reduction in discards). White marlin discards were less concentrated in the Caribbean (32 percent of total Atlantic-wide levels), and did not show any identifiable patterns, particularly after the live bait effects were removed from the catch patterns. Therefore the effort redistribution model (11 percent increase in white marlin discards) is probably more applicable in this case, indicating that white marlin discards are problematic and will need to be closely monitored. The prohibition of live bait will potentially further reduce Atlantic-wide discard levels of blue marlin and white marlin by approximately 3 percent, and sailfish by 15 percent. Because large coastal sharks are overfished, management efforts that reduce discards (33.3 percent under the effort redistribution model) are likely to be beneficial to stock recovery, and in that regard, meet the objectives of the final rule.

Comment 13: The closures included in the proposed rule will not be effective in rebuilding overfished HMS stocks unless huge areas of the Atlantic Ocean outside the U.S. EEZ are also closed.

Response: NMFS is obliged by NS9 to take actions to minimize bycatch to the extent practicable. The management actions included in the final rule are taken to achieve the NS9 directive, consistent with the other National Standards. To the extent that reducing bycatch and bycatch mortality impacts juvenile and reproductive HMS populations, the final actions may augment rebuilding programs for the overfished HMS stocks. While NMFS agrees that unilateral management action by the United States alone cannot rebuild overfished HMS stocks, the United States has been a leader in conservation of HMS resources and has taken many management actions (e.g., the time/area closures) to show the international forum our willingness to take the critical steps necessary to conserve these stocks. This fact has been used as a primary negotiation tool at ICCAT. The swordfish rebuilding program adopted by ICCAT in 1999 was based in large part on the rebuilding plan outlined in the HMS FMP. To the extent that the United States can use time/area closures and other bycatch reduction management strategies to convince other ICCAT member entities that bycatch can be minimized, the actions contained in the final rule may have a significant impact on Atlantic-wide rebuilding of overfished HMS stocks.

Comment 14: The entire Gulf of Mexico should be closed to pelagic longline fishing.

Response: NMFS disagrees that closure of the entire Gulf of Mexico to pelagic longline fishing is warranted. The proposed closure of the western Gulf of Mexico was predicated on the relatively higher billfish discards associated with the pelagic longline fishery operating in that area. Additional information and analyses obtained by NMFS subsequent to the publication of the DSEIS and proposed rule on December 15, 1999, indicate that prohibition of live bait could reduce blue and white marlin discards in the Gulf of Mexico by approximately 10 to 20 percent, and sailfish discards by 45 percent, depending upon the analytical procedure used. Closure of the DeSoto Canyon area in the northeastern Gulf of Mexico, although only a third the size of the western Gulf of Mexico closure (32,800 square miles vs. 96,500 square miles), will provide a greater benefit in the reduction of swordfish discards (4 percent *reduction* Atlantic-wide vs a 3.1 percent *increase* under the effort redistribution model) and will prevent vessels displaced from the southeastern U.S. Atlantic coastal closures from fishing in an area with an historically high rate of swordfish discards. The cumulative benefits of the northeastern Gulf closure and live bait prohibition meet the objectives of the final rule by providing a reasonable alternative to reduce bycatch rates, while minimizing economic and social impacts throughout the Gulf of Mexico.

Comment 15: NMFS has already closed too many areas to commercial fishing. The proposed closures will eventually lead to total closure of the entire region to commercial fishing.

Response: NMFS disagrees that the final rule closures will lead to elimination of the commercial pelagic longline fishery. However, NMFS agrees that use of time/area closures as a fishery management tool must involve careful consideration of the impact of agency action on all components of both commercial and recreational fisheries. However, implementation of reasonable conservation measures that meet Magnuson-Stevens Act directives is the overarching objective of the agency. To that end, NMFS has reduced the spatial and temporal constraints of the proposed closures and included a gear modification (prohibition of live bait) to address the

economic and social concerns stemming from the proposed rule.

Comment 16: Closure of the DeSoto Canyon area, in addition to the western Gulf closure, will cause vessels to displace into the Atlantic and/or Caribbean which will negate the conservation measures associated with the closures.

Response: NMFS disagrees because the effort redistribution model assumes that effort is displaced randomly throughout the remaining open areas. Therefore, the conservation benefits associated with the final action closures account for movement of effort into the Caribbean, Mid-Atlantic Bight, or any other open area. Further, since the final rule does not close the western Gulf of Mexico, it is likely that the limited fishing effort currently expended within the DeSoto Canyon closure area (approximately one-third the size of the proposed Gulf closure) will be displaced within the Gulf of Mexico.

Comment 17: The proposed time/area closures are unjust, unnecessary, and inequitable, and as such will result in further lawsuits against NMFS.

Response: NMFS is obliged by NS9 of the Magnuson-Stevens Act to reduce bycatch, as thoroughly discussed in the HMS FMP and the proposed rule to reduce bycatch and incidental catch from the pelagic longline fishery. The use of time/area management is reasonable for the conservation and management of HMS resources and careful consideration of the participants in the pelagic longline fishery who target these over-fished, international fishery resources. The IRFA, RIR and other components of the DSEIS clearly identified the significant economic, social and community impacts associated with the proposed time/area closures. NMFS selected conservation measures in the final rule that meet the directives of the Magnuson-Stevens Act, while being mindful of the requirements of NS8 to minimize negative economic, social and community impacts, to the extent practicable. The agency must take appropriate actions to conserve resources as required by various national and international laws and agreements, whether or not these actions lead to litigation.

Comment 18: The DeSoto Canyon closure is needed to protect a swordfish nursery area, but it needs to be larger to be more effective.

Response: NMFS agrees that the DeSoto Canyon area is an area with an historically high ratio of swordfish discarded to swordfish kept. Although effort has been declining around DeSoto Canyon, NMFS has selected this area to be closed in the final rule to prevent further effort from being expended in this area, either by displaced effort from the Atlantic or by other vessels from other areas of the Gulf of Mexico. However, NMFS does not agree that additional areas are warranted at this time. The analysis that identified the constraints of the final rule closure included an investigation of catch history from the entire northeastern Gulf of Mexico, east of the Mississippi River and north of 26°N latitude (general location of the U.S. EEZ).

Comment 19: NMFS should have considered closures in the Caribbean, including the EEZ around Puerto Rico and the U.S. Virgin Islands, to protect spawning populations of swordfish

and billfish.

Response: Closures in the Caribbean were considered; however, as discussed in the DSEIS and FSEIS, closures were generally limited to U.S. EEZ waters where they would have maximum impact on all pelagic longline fishing effort. NMFS agrees that the Caribbean waters support important HMS spawning and nursery areas as identified in the essential fish habitat components of the HMS FMP and Billfish FMP Amendment. Pelagic longline effort in the Caribbean (fishing areas below 22°N latitude) by U.S. flagged vessels is very effective in targeting swordfish with relatively low discard rates (approximately 6.7 fish kept to 1 discarded, as compared to an average 0.9 swordfish kept to 1 discarded in the DeSoto Canyon area). Conversely, the U.S. pelagic longline effort in the Caribbean represents approximately 14 percent of the total U.S. Atlantic-wide fishing effort, but accounts for over half of the total blue marlin discards by U.S. pelagic longline vessels. NMFS did not select a closure in the Caribbean area because of the extensive range of the fishing effort in the Caribbean, which occurs mainly in international waters. In addition, the configuration of the EEZ around both Puerto Rico and the U.S. Virgin Islands would make closures relatively ineffective.

Comment 20: NMFS should close the DeSoto Canyon area in addition to the proposed western Gulf of Mexico closure.

Response: NMFS agrees that the DeSoto Canyon should be closed year-round to reduce swordfish discards and prevent an increase in fishing pressure in this area as a result of displaced effort from the East Florida Coast closure. However, NMFS disagrees that the western Gulf of Mexico closure (March to September) is warranted at this time. The final rule includes a prohibition on the use of live bait on pelagic longline gear in the Gulf of Mexico. Analyses on this alternative indicates prohibiting use of live bait is likely to be as effective in reducing sailfish discards as the western Gulf closure, and about half as proficient in reducing marlin discards. However, in consideration of the magnitude of U.S. billfish discards relative to Atlantic-wide levels and the extent of the economic, social, environmental justice, and community impacts associated with the proposed western Gulf closure, modifying fishing practices is a reasonable alternative that effectively accomplishes the objectives of the agency actions by reducing billfish bycatch, to the extent practicable, while allowing fishing to continue in the western Gulf of Mexico.

Comment 21: There is no reason for NMFS to close the Desoto Canyon area to pelagic longline gear.

Response: NMFS disagrees. The rationale for closing the Desoto Canyon area year-round to pelagic longline fishing is two-fold. The first is to prohibit fishing in an area with an historically low ratio of swordfish kept to number of undersized swordfish discarded, which over the period of 1993 to 1998 has averaged less than one swordfish kept to one swordfish discarded. The other factor considered in closing this area was to prevent further increases in swordfish discards as a result of effort displacement into this area from the Florida East Coast year-round closure.

Comment 22: The closures included in the proposed rule are more effective than measures contained in various bills being considered in Congress.

Response: There are 3 different versions of bills currently before Congress. All are under review as part of the legislative process in developing a Congressional action. Therefore, it is difficult at this time to provide an accurate comparison of the areas that will be included in the final version of a time/area bill, if enacted, relative to the closures included in this interim final rule. The objectives of the legislative proposals are also different from those of the final action. NMFS has reviewed the various proposed legislative actions and provided (in testimony before Congress) an analysis of the relative effectiveness of the closures following the methods outlined in the FSEIS.

Comment 23: Although the original proposed rule and the additional Desoto Canyon closed area may not be contrary to ICCAT recommendations, they are in violation with sections of the Magnuson-Stevens and Atlantic Tunas Convention Acts. The action is not being taken to comply with ICCAT recommendations.

Response: NMFS disagrees that the proposed and final rules violate the Magnuson-Stevens Act and ATCA. In fact, if NMFS failed to address the issues developed in the final action, the agency would be in violation of Magnuson-Stevens Act directives related to NS9. Further, the 1999 ICCAT recommendation established a dead discard allowance that will require the United States to reduce swordfish discards by 25 percent from 1998 levels (i.e., 443 mt to 320 mt) during the 2000 fishing year; any discards in excess of the dead discard allowance will be taken off the following year's quota. The dead discard allowance is subsequently reduced to 240 mt in 2001, 160 mt in 2002 and 0 mt by 2004. The final rule considers all ten national standards in developing and selecting reasonable conservation and management measures toward reducing bycatch, to the extent practicable.

Gear Modifications

Comment 1: NMFS needs to do gear research specifically for the Atlantic pelagic longline HMS fishery. Results from gear modification research on other fisheries may not have the same effectiveness when applied to the Atlantic pelagic longline fishery.

Response: NMFS agrees that research on gear modifications would be most helpful if conducted in the Atlantic pelagic longline fishery. In fact, there have been several historical and on-going gear-based data collection and research programs specifically directed on the Atlantic and Pacific HMS pelagic longline fisheries. One study is looking at whether gear modifications such as circle hooks are effective at reducing bycatch mortality and cost-effective for the fishermen. Results are either inconclusive or too preliminary for application in the final rule. Funding is very limited at this time so research results are often applied to similar fisheries (e.g., western Pacific tuna longline and Gulf of Mexico tuna longline fishery).

Comment 2: NMFS should provide exempted fishing permits (EFPs) to research vessels in closed areas to investigate the effectiveness of gear modifications and fishing practices to reduce

bycatch and incidental catch interaction with pelagic longline gear.

Response: NMFS agrees. Researchers must obtain a Scientific Research Permit (SRP) or EFP from NMFS to conduct research in a closed area with pelagic longline gear. A mechanism exists whereby NMFS can grant an SRP/EFP in order to obtain data (50 CFR 600.745). If a research team submits the required information including a research plan, NMFS would consider granting an SRP/EFP subject to the terms and requirements of the existing regulations.

Comment 3: NMFS received comments both supporting and opposing a regulation requiring the use of circle hooks in HMS fisheries. Comments include the following: require them on commercial and/or recreational HMS vessels; don't require them; they are safer than regular hooks, better, cheaper, and more effective than the DSEIS indicated.

Response: NMFS agrees that circle hooks are a promising tool that can be used in many hook and line fisheries to improve survival of hooked fish and turtles. NMFS has funded a study in the Azores, which has just begun to evaluate the effectiveness of circle hooks on sea turtle interactions and survival. NMFS may require circle hooks in the future if evidence is compelling that its effective use warrants the economic impacts as well as the enforcement costs. NMFS seeks the cooperation of all fishermen to explore the use of circle hooks as a means to reduce bycatch mortality which is less expensive and has less economic impact than other measures (e.g., more extensive time/area closures). Many recreational anglers have already switched to circle hooks, particularly when fishing with dead bait, with several recent articles in sportfishing magazines reporting on the value of using circle hooks to reduce hooking-related mortality levels.

Comment 4: NMFS should prohibit the use of live bait in the pelagic longline fishery. Conversely, if NMFS prohibits live bait, fishermen will switch from tuna to catch more swordfish, since most pelagic longline fishermen have incidental swordfish permits, which would result in increased bycatch of undersized swordfish.

Response: NMFS agrees that live bait should be prohibited. Live bait is used for 13 percent (logbook data) to 21 percent (observer data) of all pelagic longline sets in the Gulf of Mexico. Logbook and observer data indicate that blue and white marlin discards occur approximately twice as frequently on hooks with live bait; sailfish are discarded four to five times more frequently when live bait is utilized. Live bait is generally used to target yellowfin tuna, although dead bait is used on the majority of pelagic longline sets. Prohibiting live bait may lead to additional use of squid or other dead bait, which may be less effective than live bait in catching yellowfin tuna, but is a reasonable alternative to reducing billfish bycatch through an extensive closure of the western Gulf of Mexico. Some fishermen may switch from targeting tuna (daytime fishery) to targeting swordfish with dead bait, thereby increasing swordfish discards. However, fishing for swordfish with pelagic longline gear generally takes place during night-time hours, and has an added expense and complexity with the use of light sticks. In anticipation of fishermen targeting swordfish in the Gulf of Mexico in reaction to this prohibition, NMFS has implemented a time/area closure in a known swordfish nursery area in the eastern Gulf of

Mexico (Desoto Canyon) in an attempt to avoid the increased catch rates of small swordfish there. Further, if longline fishermen “target” swordfish despite holding an Incidental swordfish permit, NMFS may need to reconsider Incidental bycatch limits because swordfish catches and/or bycatch of undersized swordfish could increase. Prohibiting use of live bait could be just as effective in reducing sailfish discards (approximately 15 percent reduction from the Atlantic-wide U.S. totals during 1995 through 1998) as the western Gulf closure. The live bait prohibition would be less effective in reducing marlin bycatch discards than the March to September area closure (e.g., blue marlin: 3.3% vs. a 7.2% reduction under the displaced effort model). The prohibition of live bait in the Gulf of Mexico is a practical alternative to the western Gulf closure.

Comment 5: NMFS should implement other gear modifications (e.g., decreasing length of longline, decreasing soak time, and timing of sets).

Response: NMFS agrees that gear modifications could be effective at reducing bycatch. However, many of these measures are difficult to enforce or could be circumvented by altering fishing patterns (e.g., additional sets made to offset a shortening of gear or soak time), resulting in no bycatch reduction. NMFS continues to support research projects regarding effectiveness of gear modifications, to the extent that funding allows.

Comment 6: NMFS should allow the U.S. Atlantic pelagic longline fishery one year to voluntarily reduce bycatch with the use of self-imposed gear modifications.

Response: NMFS disagrees. In the past, fishermen have been made aware of the economic, conservation, and policy reasons for bycatch reduction. During that time, fishermen generally have not been able to, or have chosen not to, use gear modifications to reduce bycatch to appropriate levels. Further, as a result of a 1999 ICCAT recommendation setting Atlantic-wide discard quotas, the United States must immediately reduce swordfish discards during the 2000 fishing year to 320 mt; in 1998, a total of 443 mt of swordfish discards from the North Atlantic were reported by the United States. The ICCAT recommendation also incrementally reduces the dead discard allowance to zero by the 2004 fishing year. Any dead discards over the annual allowance will be taken off the following year’s quota. Therefore, it is in the best interest of the industry for NMFS to mandate bycatch reduction measures at this time.

Comment 7: NMFS should limit the soak times of pelagic longline gear to reduce the number of dead discards.

Response: NMFS evaluated an alternative in the FSEIS that would reduce pelagic longline soak time to six hours. The strategy would reduce the amount of time that pelagic longline gear could be deployed and thus reduce fishing effort (hours/hook) for each longline set. The current range of soak time for pelagic longline gear is 5 to 13 hours. This alternative was rejected based on the practicality of enforcement and the likelihood that fishermen would make two sets during a day, or otherwise extend a fishing trip to execute a similar level of effort/trip. Since most billfish hit a longline hook during setting or retrieving, requiring a measure that forced a greater frequency of

hooks moving through the water column could increase billfish discards. However, consideration of limiting soak time will likely be considered in developing alternatives to address concerns raised in the draft BO to reduce sea turtle takes.

Environmental Justice

Comment 1: The proposed closed areas would disproportionately affect African-Americans in South Carolina, Vietnamese-Americans in the states bordering the Gulf of Mexico, and low-income crew members.

Response: NMFS considered environmental justice concerns as required by E.O. 12898 in selecting the final actions of the final rule. By minimizing the size of the closure in the Gulf of Mexico through prohibiting the use of live bait, and by shortening the closed season for the Charleston Bump area, NMFS expects that the economic and social effects of the closures on minority groups and all other components of the pelagic longline fishing community will be minimized to the extent practicable from proposed rule levels.

Protected and Endangered Species

Comment 1: NMFS should re-designate the longline fishery from a Category I to a Category II fishery under the MMPA because the fishery bycatch meets the criteria of a Category II designation.

Response: The fishery classification criteria consists of a two-tiered, stock-specific approach that first addresses the total impact of all fisheries on each marine mammal stock, and then addresses the impact of individual fisheries on each stock. The classification of each fishery into Category I, II, or III is established in the annual List of Fisheries. NMFS bases its classification of commercial fisheries on a variety of different types of information. The best source of information concerning the level of fishery-specific marine mammal incidental serious injury and mortality is a fishery observer program. If observer data are not available, NMFS may use fishermen's reports submitted per the requirements of the Marine Mammal Authorization Program since 1996 (or the Marine Mammal Exemption Program from 1989 to 1995), stranding data, data from other monitoring programs, and other sources of information. The Atlantic pelagic longline fishery has been monitored with about 2 to 5 percent observer coverage, in terms of sets observed, since 1992. The 1992-1997 estimated take was based on an analysis of the observed incidental take and self-reported incidental take and effort data. The 1998 stock assessment reports, which were used for the 1999 List of Fisheries, included data which placed the pelagic longline fishery into Category I. NMFS will reevaluate the categorization of fisheries in the 2001 List of Fisheries. However, NMFS anticipates using serious injury data, which would likely cause the pelagic longline fishery to remain in Category I.

Comment 2: NMFS should be more concerned about fishermen than sea turtles.

Response: NMFS is concerned about achieving conservation benefits of the final rule while at

the same time minimizing expected economic impacts on fishermen and related businesses, to the extent practicable. However, NMFS must also be in compliance with the Endangered Species Act, which requires NMFS to take appropriate actions to protect endangered or threatened species (e.g., sea turtles). The final rule includes reasonable actions that balance requirements of the Magnuson-Stevens Act and ATCA (as it applies to swordfish discards) to reduce bycatch and seek long-term rebuilding of overfished HMS stocks, while minimizing economic and social impacts to the extent practicable. It is clear that the final actions will have significant social and economic impacts on various components of the pelagic longline communities. NMFS chose the alternatives that maximize the conservation benefits while minimizing the economic and social impacts. NMFS recognizes those impacts and has noted possible sources of relief (see Section 8.0 of FSEIS).

Comment 3: The projected increase in turtle takes as a result of the proposed closures (under the redistribution of effort model) is not likely because many boats are not capable of redistributing their longline effort to the Grand Banks.

Response: NMFS agrees that turtle bycatch rates may be over-estimated by the effort redistribution model because estimation of catch-per-unit-effort in the remaining open areas could be skewed if species are concentrated in one area (such as sea turtles in the Grand Banks or blue marlin in the Caribbean; see FSEIS for further information), rather than randomly distributed over the entire open area. Although fishing in the Grand Banks area would necessitate the use of a relatively larger vessel, for practical and safety reasons, than currently utilized in some of the closed areas (e.g., east Florida coast), it is possible that some boats will commence fishing on the Grand Banks or increase current effort in this area to avoid closed areas, resulting in potential increases in turtle interactions. It is not known at this time how many vessels are expected to redistribute their effort to areas and times where turtle interactions are highest, but fishing activities will be continually monitored through the VMS program, as well as through logbooks and on-board observers. The anticipated takes for loggerheads and leatherback sea turtles for pelagic longline gear established by the incidental take statement were exceeded during 1999, as discussed in Section 5.8 of the FSEIS. A draft BO from early June 2000 had a jeopardy finding for loggerhead sea turtles. The final BO, expected in late June 2000, might have an additional jeopardy finding pending further analyses. NMFS is initiating efforts to address this issue as raised in the draft BO, including possible regulatory and non-regulatory actions.

Dolphin/Wahoo Issue

Comment 1: Comments were received that the mahi "loophole" undermines the effectiveness of the HMS time/area rule; Vessels using longline gear to target dolphin (mahi) should be prohibited from the HMS pelagic longline closed areas; NMFS should continue to work with the Councils to coordinate closed areas to reduce bycatch; If an exception is made for the closed area, HMS longline fishermen may move into the dolphin fishery.

Response: NMFS has notified the respective fishery management councils of the jurisdictional

issues presented by vessels fishing with longline gear for species that are not directly managed by the Secretary of Commerce (e.g., dolphin). The South Atlantic Fishery Management Council has prepared a proposed Dolphin and Wahoo Fishery Management Plan with a preferred alternative that would prohibit the use of pelagic longline gear for dolphin and wahoo in areas closed for HMS. NMFS cannot predict whether HMS longline fishermen will move into the dolphin fishery but it is unlikely that there would be a major shift in effort. Vessel operators may not fish with pelagic longline gear in closed areas if they hold an HMS permit, therefore they would have to relinquish all HMS permits in order to do so. NMFS does not expect that longline fishermen would sell their swordfish and tuna permits in order to target dolphin for a seasonal fishery of limited size and duration.

Comment 2: NMFS should implement emergency regulations until the respective Councils can close the potential loophole posed by the longline fishery for dolphin:

Response: If the level of fishing effort targeting dolphin increases, it would most likely be due to factors other than the time/area closures implemented for bycatch reduction in the tuna/swordfish longline fisheries. It is unlikely that vessels affected by the HMS closures would give up HMS permits specifically to conduct a dolphin fishery. NMFS and the respective Councils can monitor effort, catch and bycatch of non-HMS permitted longline fishermen targeting dolphin in the HMS closed areas and determine if further action is required. The South Atlantic Fishery Management Council has already undertaken preliminary steps in preparing a proposed Dolphin and Wahoo FMP that includes parallel closures.

Comment 3: No billfish or swordfish are caught in the mahi fishery; NMFS should not shut down the mahi longline fishery; it has virtually no discards and the stock is healthy; NMFS needs to analyze the dolphin fishery more closely in evaluating the impacts of the pelagic longline time/area closure.

Response: Recognizing the jurisdictional issues, NMFS has asked the appropriate Fishery Management Councils to examine management options guiding use of pelagic longline gear to target dolphin. In the FSEIS, NMFS has included a more detailed discussion of the potential bycatch issues in the pelagic longline fishery for dolphin. Logbook reports from 1998 were examined for all sets made in the area from Key West, FL to Wilmington Beach, NC. It was not possible to identify effort in the dolphin fishery with certainty, but sets were separated into those targeting swordfish/tunas/sharks and those listing a target as “other.” It was presumed that sets listing a target as “other” are predominantly targeting dolphin and this was reflected in the nearly 10 fold higher catch per set of dolphin. While swordfish and bluefin tuna discards were generally lower for the presumed dolphin sets, bycatch of billfish, sharks and BAYS tunas seems to be a concern. More specific information on catch occurring when pelagic longlines are set to target dolphin would be needed to confirm or refute the bycatch concerns. In the interim, to facilitate enforcement and to take a precautionary approach, NMFS has decided that HMS-permitted vessels should be prohibited from setting all pelagic longline gear in the closed areas, regardless of target species. It is possible that an operator of an HMS-permitted vessel who wishes to target dolphin could apply for an exempted fishing permit (EFP). If EFPs are issued,

the data collected (e.g., logbook or observer reports) could be used to determine if a dolphin fishery could be undertaken that would be consistent with the bycatch reduction objectives of the HMS FMP. However, such authorization for EFPs would have to be considered in consultation with the Councils having management authority for dolphin.

Redistribution of Effort

Comment 1: More pelagic longline fishermen will relocate to open fishing areas than exit the fishery as a result of the time/area closures.

Response: To estimate the range of potential ecological impacts of the time/area closures, NMFS examined two scenarios for effort reallocation: (1) all effort in the closed area is removed from the system (worst-case alternative from the economic, social and community standpoint); and (2) all effort is randomly moved to available open areas (which may overestimate impact of effort if a species is not relatively uniformly distributed throughout the area - see discussion of sea turtles and blue marlin). NMFS has no available information to estimate the number of vessels that may decide to discontinue fishing, or where the remaining vessel will relocate. However, if total U.S. pelagic longline effort is reduced by vessels leaving this fishery, the estimates of the effectiveness of the time/area closures will be under-estimated.

Comment 2: The NMFS western Gulf of Mexico proposed closure would force displacement of pelagic longline effort into known bycatch areas, particularly the Desoto Canyon area in the eastern Gulf of Mexico, resulting in net losses in conservation effectiveness of the time/area closures.

Response: NMFS agrees that this is a possibility. The areas selected in the proposed rule were based on areas and times where discards were relatively higher than other temporal/spatial alternatives (“hot spots”). The over-riding objective for closures in the Gulf of Mexico in the proposed rule was to reduce billfish discards. A relatively higher discard-per-unit-effort was noted for marlin and sailfish in the western Gulf of Mexico. In conducting the analyses for the proposed rule, NMFS also recognized that there were discards of swordfish in the eastern Gulf; however, there was a relatively lower occurrence of billfish discards, particularly blue and white marlin, in this area. Therefore, in consideration of the fact that the western Gulf area also had discards of undersized swordfish, NMFS selected this area for closure in the proposed rule. Information that became available subsequent to the preparation of the proposed rule has provided additional insight into the differential bycatch of billfish from pelagic longline sets using live bait which are utilized mainly in the western Gulf of Mexico. It is likely that this fishing technique would be moved to the eastern Gulf of Mexico following the proposed closure resulting in an increase in billfish bycatch in this area. The final rule incorporates a prohibition on the use of live bait on pelagic longline gear which will reduce billfish bycatch without the need for a closure in the western Gulf of Mexico. As a result, NMFS re-examined other areas in the Gulf of Mexico and is closing the Desoto Canyon and a portion of the west Florida shelf based on the historically high ratio of swordfish discards to swordfish kept in these areas to prevent an expansion of displaced fishing effort in this area following closures along the

southeastern U.S. Atlantic coast.

Comment 3: Displaced boats will re-flag to another country or sell their vessel and gear to ICCAT non-member countries in the Caribbean, or other areas, which will mitigate any gain in the reduction of billfish and undersized swordfish discards by U.S. commercial pelagic longline effort.

Response: It is possible that U.S. owners will decide to sell their vessel(s) to a citizen of one of the Caribbean countries. NMFS has information that indicates that many Caribbean nations (some which may not be members of ICCAT) are interested in expanding their fishing fleets for HMS. NMFS is involved with many United States initiatives regarding issues of illegal, unregulated and unreported (IUU) fishing, including those developed through ICCAT and FAO. The recent ICCAT restrictions on swordfish imports from Honduras and Belize are evidence of this international effort. ICCAT also continues to work with Caribbean nations to discuss allocation criteria for these nations, as well as adherence to ICCAT recommendations, which has been a source of concern.

Comment 4: The time/area closures will increase competition in the shark fishery by pelagic longline vessels re-rigging to bottom longline fishing.

Response: NMFS disagrees. The shark fishery operates under a limited access permit system. Most pelagic longline vessels have either incidental or directed shark permits. The level of retention allowable under an incidental permit is not sufficient to support profitable fishing focusing on shark resources. It is possible that some fishermen will purchase a directed shark permit, but the total number of directed permits is capped, and the shark fishery operates under a quota system; therefore total effort and relative competition between vessels should remain unchanged.

Comment 5: NMFS will force pelagic longline fishermen with small vessels to fish farther from shore which could be unsafe during inclement weather. NMFS should consider safety-at-sea implications of the proposed closed areas.

Response: NMFS agrees that vessel safety is an important component to be considered in development reasonable managements, as required by NS10 of the Magnuson-Stevens Act. Some pelagic longline vessels historically operating in the areas being closed are not capable of safely fishing farther out to sea in the open areas due to their size. However, the vast majority of pelagic longline effort targeting swordfish and tuna occurs in deep waters, generally in waters with depths in excess of 500 fathoms (3000 feet), necessitating use of a vessel of sufficient size to safely handle open ocean conditions. The final rule closures should not adversely impact most of these vessels in regard to sea-worthiness, particularly with the removal of the western Gulf of Mexico closure and reducing the temporal restrictions of the Charleston Bump closure. However, there is a fleet of small pelagic longline vessels that fish the deep waters found relatively close to shore along the east Florida coast. This area will be closed year-round because of the magnitude of reported swordfish and billfish discards. If these vessels are moved to open

areas that require fishing at a greater distance from shore, NMFS encourages vessel operators to follow U.S. Coast Guard-approved operating procedures, and to exercise caution in determining the safe operating range for their sizes and types of vessels.

Comment 6: Shark fishermen should be allowed to catch more sharks since bycatch of large coastal sharks in the pelagic longline fishery would be reduced with the time/area closures.

Response: NMFS disagrees. Shark resources in the United States are either overfished (large coastal sharks), fully-fished (small coastal) or unknown (pelagic sharks). Each shark category has a set harvest level that encompasses catch from all fishing sources. Time/area closures may result in an increase in pelagic shark discards and landings of approximately 8 percent and 4 percent, respectively, under complete effort redistribution. Conversely, the number of large coastal sharks discarded and landed from pelagic longline gear will likely decrease by 33 percent and 18 percent, respectively, which may increase the duration of the large coastal shark fishing season. However, further increases in shark quotas are not warranted at this time.

Comment 7: The effort redistribution model included in the DSEIS predicts an increase in BAYS tunas landings, but the United States has agreed to limit effort in the yellowfin tuna fishery under an ICCAT agreement.

Response: While NMFS agrees that under the effort redistribution model, BAYS tunas landings may increase (mainly as a result of increased yellowfin tuna catches), the ICCAT agreement limits U.S. yellowfin *effort* to 1993 levels. The catch levels predicted by the effort redistribution model are based on total effort redistribution, and as such, are likely an over-estimation of actual effort and catches under the final rule time/area closures. As a result of the HMS FMP, a limited access system is now in place for the tuna pelagic longline fishery; a recreational bag limit of 3 yellowfin tuna per person per trip was also implemented. Commercial yellowfin tuna landings in 1993 were 4,386 mt, while more recently (1996 to 1998), landings have averaged approximately 3,525 mt. The nearly 10 percent increase in BAYS tunas landings predicted by the displaced effort model would increase average annual landings to only 3,700 to 3,800 mt, without an overall increase in effort.

Comment 8: Fishermen can and will fish in closed areas with other types of fishing gear.

Response: NMFS analyzed the impact of changing target species in the FSEIS, through redistributing effort to other fisheries for which the vessel may already be permitted and landing fish, or pursuing new fisheries by purchasing permits, as necessary. The South Atlantic Fishery Management Council is currently holding public hearings on a proposed dolphin/wahoo FMP that includes a preferred alternative that would prohibit pelagic longline fishing for dolphin and wahoo within the spatial and temporal constraints of closures for the HMS pelagic longline fishery. This could reduce the effort redistribution effect from HMS to the dolphin and wahoo fisheries.

Comment 9: If agency actions force fishermen to fish in areas with high turtle interactions, then

the agency is responsible for any increase in take, not fishermen.

Response: NMFS disagrees. The final time/area closures along the southeastern U.S. Atlantic coast were temporally and spatially reconfigured to mitigate to the extent practicable the impact of effort redistribution on sea turtle interactions. Turtle bycatch rates may be over-estimated by the effort redistribution model because estimation of catch-per-unit-effort in the remaining open areas could be skewed if species are concentrated more in one area (like sea turtles in the Grand Banks), rather than randomly distributed over the entire open area. NMFS will continue to monitor the fishery after implementation of the final rule. As a result of reinitiating a Section 7 consultation, a draft BO was received, indicating that the continued operation of the Atlantic longline fishery is likely to jeopardize the continued existence of loggerhead sea turtles. It is possible, pending additional analysis, that the final BO will also include a jeopardy finding for leatherback sea turtles. Although the final BO will not be completed until late June 2000, the reasonable and prudent alternatives provided in the draft BO indicate that additional regulations may include further modifications to fishing methods, gear modifications, closed or limited fishing areas, and expanded monitoring (see Section 5.8 of the FSEIS).

Comment 10: The majority of directed swordfish and tuna pelagic longline fishermen are not active in other commercial fisheries.

Response: NMFS disagrees. Of the 329 fishermen with swordfish limited access permits who held non-expired permits as of May 9, 2000, approximately half held only HMS limited access permits. The other fishermen held a range of permits including king mackerel, Spanish mackerel, golden crab, reef fish, red snapper (both Class 1 and Class 2 licences), rock shrimp, snapper-grouper, and spiny lobster. In addition, some of the vessel permit holders held permits that are managed by the Northeast Regional Office.

Comment 11: The closure will have unknown benefits because reallocation of effort will change the catch composition.

Response: NMFS examined a range of impacts of effort reallocation, including removal of all effort from closed areas to redistributing all effort to available open areas. While the models used by NMFS provide estimates of potential increases or decreases in catch and discards, NMFS agrees that a full quantitative assessment of effort reallocation cannot be made until the closures are implemented and fishermen develop new fishing patterns. However, the closures implemented through the final rule will likely provide significant impacts on the level of discards from the U.S. pelagic longline fishery in the U.S. EEZ, which was the goal of the agency action. NMFS will monitor vessel activity through the use of VMS, observers, logbooks and dealer reports.

Comment 12: The time/area closures will force vessels to increase effort and/or move into other South Atlantic fisheries for which they hold permits. Boats will move into the bottom longline fishery and catch grouper, snapper, and tilefish, or shift to other pelagic longline fisheries, like dolphin and wahoo, in either the impacted closed areas or other locations along the Atlantic

coast.

Response: NMFS agrees that some vessels will likely move some portion of their effort into other fisheries. Although some pelagic longline fishermen who homeport their vessels in the closed areas have other permits (e.g., coastal migratory pelagics, snapper-grouper, charter vessels), many have only directed or incidental swordfish, shark and tuna permits. Most of the southeastern fisheries require federal permits, some of which are limited. Displaced pelagic longline fishermen may be required to purchase limited access permits, if available, which may limit their ability to target other species. Other vessels may move into other activities where their fishing experience may be utilized (e.g., recreational charter fishing). The dolphin and wahoo fishery resources are not under the direct management jurisdiction of the HMS Division. However, the agency agrees that some pelagic longline effort may be directed toward dolphin and wahoo. The South Atlantic Fishery Management Council has prepared a proposed dolphin/wahoo FMP that includes a preferred alternative prohibiting pelagic longline fishing for dolphin and wahoo within the spatial and temporal constraints of closures for the HMS pelagic longline fishery. The FSEIS provides an analysis of potential impacts of alternative fishing activity by displaced HMS pelagic longline vessels.

Analysis of Ecological Benefits of Closures

Comment 1: The DSEIS indicated that the proposed time/area closures would have a huge reduction in bluefin tuna discards, but reducing bluefin tuna bycatch is not listed as an objective of the agency action.

Response: NMFS disagrees that reduction of bluefin tuna discards was not included as an objective of the proposed agency action, which had four clear objectives: maximize the reduction of finfish bycatch (which includes bluefin tuna); minimize the reduction in the target catch of swordfish and other species; ensure the incidental catch of other species remains unchanged or is reduced; and optimize the survival of released animals. Analysis of time/area closure effectiveness used for the proposed rule encompassed all closures for HMS, including the annual northeastern U.S. pelagic longline closure during June developed specifically to reduce bluefin tuna discards that was part of the final rule implementing the HMS FMP. Closures included in the final rule are listed by species and area to clarify the cumulative impacts for each spatial component. Bluefin tuna discards increased by 11% when pelagic longline effort was randomly redistributed throughout the operational range of the U.S. Atlantic pelagic longline fishery as a result of the East Florida Coast and Charleston Bump closures; however when combined with the June closure, the *net effect* on bluefin tuna is a 39% *reduction* in discards.

Comment 2: The agency should have considered a more expansive scientific information baseline for evaluation of potential closures, including scientifically peer-reviewed literature prior to the 1995 to 1997 information included in the DSEIS, as well as more updated and/or near real-time data sources (e.g., satellite data).

Response: The FSEIS expanded data analyses to include logbook information from 1993 to 1998

in establishing final agency action. These data provide further support for the temporal and spatial components of the time/area closures of the final rule. Historical scientific studies describing movement behavior of HMS, as well as oceanographic studies of current and water mass patterns were also reviewed in preparing the FSEIS. Setting closures or other fishing activities based on near real-time satellite information on water or current patterns may be considered in future management actions, particularly in conjunction with the communication capabilities of the required VMS systems for all pelagic longline fishing vessels following the September 1, 2000, implementation date. Recent scientific studies on the relationship between billfish discard rates relative to use of live and dead bait on pelagic longline gear were also utilized in formulating final agency action.

Comment 3: The evaluation of closed areas should be based on the ratio of catch to bycatch instead of absolute numbers of bycatch.

Response: NMFS agrees that the ratio of catch to bycatch should be included in the evaluation process of closed area, but disagrees that the absolute numbers of bycatch should not be considered. In developing the final area closures, NMFS examined, where appropriate, the temporal and spatial variations of the ratio of bycatch to target catch, the absolute numbers of bycatch and target catch, and relative fishing effort. For example, an area that has a high discard to number kept ratio may be indicative of a problem area, depending upon the relative volume of fishing effort that is currently or historically conducted in the area. Conversely, an area that has a relatively high absolute number of discards but a low ratio of discards to number of fish kept would be evaluated based on the relative fishing effort in the area. The analytical methods are fully described in the DSEIS, and clarified, where appropriate, in the FSEIS.

Comment 4: A target bycatch threshold should be developed to allow for a tracking of the success of agency actions.

Response: NMFS disagrees. The development of the proposed and final rules clearly follows a multispecies management approach, and as such, it is inappropriate to set target reductions for specific species without considering the impact on the remaining portion of the catch composition. For example, if the time/area closures were simply based on reducing swordfish discards by a set percentage, this could disproportionately increase the level of bycatch, bycatch mortality and/or incidental catch of other species. The four overarching objectives discussed in the DSEIS and FSEIS unambiguously guided the agency throughout the development of the proposed and final actions.

Comment 5: NMFS should investigate the effectiveness of the pelagic longline closure in the Pacific Ocean to evaluate potential impacts of closures along the U.S. Atlantic coast.

Response: NMFS agrees that all similar closures should be evaluated to determine potential biological, social and economic impacts of final agency actions. The closure of nearly 1 million square miles of Pacific Ocean near Hawaii to pelagic longline fishing vessels has been in effect since 12/23/99, therefore, information on the impacts is limited at this time.

Comment 6: Observer data should be used to evaluate accuracy of the logbook reports used in the NMFS time/area analyses.

Response: NMFS agrees that observer coverage is needed to ground-truth information provided in the mandatory logbook program. The Draft Technical Memorandum, included as part of the DSEIS, provides a discussion of the limitations of logbook data and explains the rationale for using these data. The Atlantic pelagic longline fishery has been monitored with about 2 to 5 percent observer coverage, in terms of sets observed, since 1992, and is used to ground-truth the mandatory logbook data, provide specific biological information (e.g., tagging, obtaining tissue samples for genetic work). The observer information was used in developing the prohibition of live bait final action.

Comment 7: The analyses of the time/area closures are flawed because of the dependence upon mis-reported information in the mandatory logbooks.

Response: NMFS disagrees that the analyses are flawed. While NMFS recognizes that there are limitations and constraints in the use of logbook information as discussed in the Draft Technical Memorandum and HMS FMP, these data undergo thorough review by NMFS scientists, and can be used to identify catch trends and patterns over time. Also, if logbooks under-report bycatch as indicated in public comment, then the benefits of the time/area closures are even greater than predicted in the FSEIS.

Comment 8: Use of percentages in the analyses make it difficult to assess benefits of the time/area closures.

Response: To allow for valid analysis of temporal and spatial variations in closure effectiveness on a suite of target species and bycatch, it was necessary to have a common denominator for all comparisons. The total U.S. Atlantic catch, by year and species, was used for this purpose, and was provided in tabular form in the DSEIS. The percentages provided in the analyses can easily be converted to number by multiplying the percentage value by the appropriate annual total (landings and discards were considered as separate groups). The FSEIS further clarifies the use of percentages, numerical values, and ratios of numbers caught to numbers discarded.

Comment 9: NMFS should not lump all BAYS tunas together in the analysis of the time/area closures. Each tuna species should be separately analyzed, particularly for yellowfin tuna.

Response: NMFS agrees that it is important to separate out the impact of the time/area closures on the various species of the BAYS tunas complex. Atlantic-wide, yellowfin tuna and bigeye tuna represent over 91 percent of the U.S. pelagic longline fleet catch of BAYS tunas (YFT - 70.4 percent and bigeye tuna - 20.8 percent). In the Gulf of Mexico, the 99.1 percent of the BAYS tunas in proposed western Gulf closure consisted of yellowfin tuna; in the final interim rule closure of Desoto Canyon, yellowfin make up 98.4 percent of the BAYS tunas complex. The BAYS tunas in the closure of the southeastern U.S. Atlantic coast consist of 89.5 percent yellowfin tuna and 7.5 percent bigeye tuna. The potential changes in landings of yellowfin tuna,

bigeye tuna, BAYS tunas and bluefin tuna are summarized for each final action under the effort redistribution and no effort redistribution models described in the FSEIS.

Comment 10: NMFS should summarize the impacts of the time/area closures separately for the Gulf of Mexico and southeastern U.S. Atlantic coastal closures.

Response: NMFS agrees. Ecological and economic impacts may be better understood if summarized both separately and in combination, and to that end, this approach is used in the FSEIS. Although the DSEIS combined the ecological impacts for the Gulf of Mexico and southeastern U.S. Atlantic coastal closures under the discussion of each alternative, the draft Technical Memorandum provided results of the no effort redistribution and effort redistribution models separately for each closure area.

Comment 11: NMFS should consider incorporating tagging data into the time/area analysis procedures.

Response: NMFS agrees that information from tagging studies of billfish, tunas, sharks and other species released by recreational and commercial fishermen provides valuable data on the range and movement patterns of these species, and as such were included in the qualitative procedures utilized to identify general areas for potential closure.

Comment 12: The proposed agency action is focused only on reducing swordfish discards, and does not consider the impacts on vessels.

Response: NMFS disagrees. The evaluation of the utility of time/area closure fishery management strategy in the DSEIS and FSEIS followed a multi-species approach. The objectives clearly indicate that patterns in the discards, bycatch and incidental catches of billfish, sea turtles, bluefin tuna, pelagic and large coastal sharks and other overfished HMS were used to define time/area closures. The areas selected in the final rule also seek to minimize the target catch of swordfish, tuna, dolphin, and other species, and thus minimize the economic impacts on vessel owners. The evaluation of the impacts of the closures included all components of the pelagic longline catch, as well as those of dealers within the time/area closure locations.

Mitigation of Economic Impacts

Comment 1: NMFS should provide economic compensation for the displaced vessels and dealers who are negatively impacted from the closed areas (various vessel buyout schemes were suggested ranging from recreational permit fees to having the remaining commercial fishermen compensate those who go out of business; other schemes included employing all displaced longline fishermen in fish hatcheries). While vessel owners can sell their permits and receive some compensation, dealers cannot. NMFS should provide resources for retraining or education of displaced longline fishermen.

Response: NMFS recognizes that this time/area rule will have a significant economic impact on

a substantial number of participants, and that the ripple effects of the rule will go beyond the immediate community of fishermen, and affect fishing families, associated businesses, and the larger coastal economy. NMFS also recognizes that the Magnuson-Stevens Act requirements to rebuild overfished fisheries and reduce bycatch is going to cause economic hardships - even loss of business - to many individuals. Even once the stocks are rebuilt, it will not be possible for all the affected individuals to make a viable living because many fisheries are overcapitalized. At this time, NMFS does not have the money necessary to provide compensation to commercial fishermen and related businesses. However, NMFS has made a concerted effort to identify possible sources of economic relief for individuals and businesses affected by the regulatory measures in this rule. Some government agencies such as the Small Business Administration, the Economic Development Administration, the Farm Credit System, the U.S. Department of Labor's Economic Dislocation and Worker Adjustment Assistance Act, and the Fishing Vessel Obligation Guarantee Program may provide fishing industry participants with loans, training for new jobs, and/or grants for economically stressed communities. A summary of the types of buyback programs, loans, and government agencies that may be able to help are listed in Section 3 of the FSEIS.

Comment 2: NMFS needs to consider other alternatives that might have less of an economic impact.

Response: NMFS agrees, and considered and adopted a variety of options during final rulemaking that minimize bycatch and bycatch mortality, achieve the same conservation goals, and have less economic impact, such as smaller areas and times and gear modifications. The analyses of some of these options indicate similar conservation benefits with fewer negative economic impacts. Therefore, these regulations prohibit the use of live bait and use smaller areas and shorter times for closures than the preferred alternatives in the proposed rule. These alternatives are likely to have less of an economic impact on fishermen and communities than the alternatives in the proposed rule.

Comment 3: NMFS received a number of comments regarding permit buyouts including: NMFS should buy out displaced longline vessels; NMFS should not buy out displaced longline vessels; thousands of businesses fail every day and those businesses do not ask tax payers to buy them out; NMFS should destroy any longline vessels that are bought out; and without a buyout, many companies will go out of business.

Response: This rule does not include a fishing capacity reduction program (buyback program), however, NMFS may implement a buyback program for this fishery in the future if circumstances warrant. Any buyback program will be implemented in accordance with the Magnuson-Stevens Act, NMFS fishing capacity reduction regulations, and any other applicable law. Under Section 312 of the Magnuson-Stevens Act, NMFS may implement buyback programs that purchase fishing permits from permit holders; or alternatively, it may implement buyback programs that prevent participating vessels from fishing in other fisheries by requiring that they be scrapped or be subject to title restrictions. The buyback method selected will depend on particular circumstances present when such buyback program, if any, is implemented.

Furthermore, NMFS has concluded that it does have the authority to initiate and implement buyback programs for fisheries under the direct management authority of the Secretary of Commerce. Regulations implementing Section 312, published May 18, 2000 (65 FR 31444) provide that “for a fishery under the direct management authority of the Secretary, NMFS may conduct a program on NMFS’ own motion by fulfilling the requirements...that reasonably apply to a program not initiated by a request.” Because of the significant negative economic impacts expected with this rule, NMFS has made a concerted effort to identify possible sources of economic relief for individuals and businesses affected by regulatory measures in fishery management. A summary of the types of buyback programs, loans, and government agencies that may be able to help are listed in Section 3 of the FSEIS.

Comment 4: This proposed rule may cause the legislative buyout not to happen.

Response: By all accounts, Congress is still considering the various legislative bills that include a buyout for some commercial fishermen. In addition, NMFS announced in the 1999 HMS FMP that the agency was committed to reducing bycatch and bycatch mortality, as required in the Magnuson-Stevens Act, and would proceed with rulemaking to address bycatch concerns.

Comment 5: NMFS should recognize that there are economic and competitive disadvantages to businesses geographically close to the proposed closed areas.

Response: NMFS agrees and is aware of the potentially significant economic impacts to related businesses, not just fishermen. However, these areas were not chosen to impact a specific region but rather to target “hot spots” for pelagic longline bycatch. Because of the potentially significant economic impacts, NMFS has chosen alternatives that minimize economic impacts while still maintaining conservation benefits similar to those in the proposed rule. In the Gulf of Mexico, NMFS chose to prohibit live bait in lieu of the large Western Gulf closure and has also implemented a smaller closed area that focuses on swordfish bycatch reduction. Although this area has a year-round closure, it is also located offshore so smaller fishing vessels may still be able to fish. Thus, businesses near this closure may not be as significantly impacted as they would be if the area extended to the coast. In the Southeast, NMFS has implemented a seasonal closure for the Charleston Bump area and a closure year round off the coast of Florida. NMFS may consider other closed areas in the future, if necessary, including any closures addressing the jeopardy finding in the early June draft BO regarding sea turtles and pelagic longline interactions. In addition, NMFS has made a concerted effort to identify possible sources of economic relief for individuals and businesses affected by regulatory measures in fishery management. A summary of the types of buyback programs, loans, and government agencies that may be able to help are listed in Section 3 of the FSEIS.

Comment 6: NMFS should reconsider limiting the capacity of the Atlantic pelagic longline fleet. NMFS should not implement further regulations and instead should monitor the fishery while giving the limited access program a chance to “settle.” Limited access was an important first step that has not been given a chance to provide benefits to the management efforts since its implementation.

Response: NMFS agrees that limiting access to the fishery is an important step. In July 1999, NMFS implemented limited access in the pelagic longline fleet. While it is true that limiting access to this fishery could provide an incentive for fishermen to reduce bycatch because they have an investment in the future of the fishery, NMFS nevertheless has a mandate under the Magnuson-Stevens Act to minimize bycatch, to the extent practicable. In addition, the limited access program in place now was designed to reduce latent effort, not to reduce fishing effort. As a result, there is still excess capacity in this fishery. For example, of the 450 permit holders who qualified for a directed or incidental swordfish limited access permit, only 208 reported landings in the pelagic logbook in 1998. While other permit holders may be reporting landings in other logbooks, NMFS believes that many permit holders who do not fish regularly can still be bought out by fishermen who may be more active. Therefore, as announced in the HMS FMP and the 2000 SAFE report, and in addition to this rule to reduce bycatch and bycatch mortality in the pelagic longline fishery, NMFS continues to monitor the status of this fishery and, if necessary, will work with the APs to consider additional steps to reduce fishing effort.

Comment 7: NMFS should make fishermen pay for an observer instead of VMS.

Response: NMFS agrees that a “user-pays” system for observer coverage could be beneficial. However, NMFS feels that VMS is a preferable requirement that costs less, is less intrusive, and has some safety benefits.

Comment 8: Minimizing bycatch through large area closures will result in greater overall economic benefits for all fishing industry sectors.

Response: NMFS agrees that minimizing bycatch enhances rebuilding of overfished stocks, and, over the long term should increase the economic benefits for all fishing sectors. However, in the short term large area closures will force many small entities, such as fishermen and dealers, out of business. NMFS has chosen to close the areas that will provide the greatest conservation and economic benefits in both the short and long terms. Because the early June 2000 draft BO for the pelagic longline fishery declared a jeopardy finding for loggerhead sea turtles, NMFS may need to propose measures to reduce the level of turtle takes. This could include a closure of the Grand Banks for the months of September through December, modifications in fishing methods, gear modifications, and monitoring.

Comment 9: Every effort should be made to mitigate the economic loss to commercial fishermen; however, given the current economy, there is ample opportunity for those disadvantaged to recover.

Response: NMFS agrees that the economic loss to the commercial fishermen must be minimized as long as the conservation goals can still be achieved. Fishermen and others who lose their job or go out of business as a result of this rule may be able to relocate to either a different job altogether, or to a different job within fisheries. To aid displaced individuals, NMFS identified possible sources of economic relief for individuals and businesses affected by regulatory measures in fishery management. A summary of the types of loans and government agencies that

may be able to help are listed in Section 3 of the FSEIS.

Comment 10: NMFS needs to consider actions to minimize economic impacts associated with moving families to areas that are open to pelagic longline fishing.

Response: NMFS is aware that some families will need to move as a result of these regulations and that the cost of moving may be high. To examine more fully these impacts, NMFS published a Federal Register Notice (65 FR 24440) on April 26, 2000, asking specifically for comments on the impact of delaying the effective date to provide sufficient time to relocate. The comments received are discussed below. Also, as a result of these concerns, NMFS is delaying implementation of some of these regulations for different lengths of time.

Comment 11: The Desoto Canyon closure is keyed to reducing swordfish discards and focuses on the social and economic impacts on the swordfish longline fishermen and their associated fishing communities. Other fisheries and fishing communities should be considered.

Response: NMFS agrees that a variety of fisheries and fishing communities should be considered to minimize bycatch and bycatch mortality. This final rule directly affects only pelagic longline fishermen and the analyses focus on the impacts to the pelagic longline fishery and communities. As NMFS collects additional information on other fisheries (e.g. recreational, bottom longline, etc.), NMFS may determine that additional rulemakings are needed to reduce bycatch and bycatch mortality in those fisheries.

Comment 12: Many comments were received about the effective date. These comments included the following: NMFS should do the right thing and insist that the closures not be reduced and that they be implemented no later than 30 days after publication of the final rule on August 1; The closures must be enacted immediately without any delay; Fishermen and related businesses would need at least one full year prior to implementation to move and resettle into other regions; If NMFS is not going to provide compensation, NMFS needs to delay implementation by at least 6 months to relocate entire businesses, find a new docking facility, relocate staff, find a new church, find new schools for children, and find a new house; The swordfish rebuilding measures implemented last November at ICCAT are risk-prone and have less than a 50 percent chance of rebuilding in 10 years. Given this, NMFS needs to implement these closures immediately to reduce pressure on the stock and increase the chance of sticking to the rebuilding schedule.

Response: NMFS agrees that with the closures in these regulations, fishermen and related businesses will need time to relocate. NMFS disagrees that a short delay of these regulations would hinder rebuilding or cause irreparable harm to the resource. Any dead swordfish discards that happen between the publication of the final rule and implementation will be taken off the U.S. swordfish dead discard allowance allowed for in the rebuilding program. Thus, NMFS has decided to delay the implementation of the closures; 90 days for the Desoto Canyon area (November 1, 2000) and 180 days (February 1, 2001) for the Charleston Bump and East Florida Coast closures. Thus, the closures in the Southeast Atlantic would begin at the same time,

making the regulations less confusing and allow fishermen and related businesses approximately six months to relocate if they so decide. The implementation of the Desoto Canyon area closure is not delayed for as long because this closure is not as large as the one in the Atlantic and is not immediately off the coast of any state. Thus, fishermen may choose not to relocate.

Comment 13: Unless NMFS undertook a detailed analysis of the behavior of longline fishermen and processing industry to investigate the impacts of delaying the effective date (costs, vessel's choice, etc.), any decision to delay implementation would be essentially arbitrary.

Response: NMFS disagrees. NMFS believes that commercial fishermen, dealers, and processors provided enough information in their comments on how long and why delayed implementation is needed for NMFS to make an informed decision.

Comment 14: NMFS asked the wrong question in regard to delayed implementation. The correct question is what approach would produce the highest net economic benefits, not what are the short-term gains.

Response: NMFS disagrees that the agency asked the wrong question. NMFS believes that asking the commercial fishing industry why they need delayed implementation and how long it should be provides information needed for NMFS to decide the optimal approach. NMFS does not believe the highest net economic benefit would be achieved if all of the commercial fishermen were asked to move within 30 days. Instead, NMFS believes it could be more beneficial to the fishermen and the consumer if commercial industries were given time to relocate while still giving them time to fish during this season.

Comment 15: NMFS' entire approach on this rulemaking is fundamentally flawed because the agency does not have the ability nor the authority to initiate an effort buyout program for Atlantic HMS.

Response: NMFS disagrees. NMFS announced in the HMS FMP that it was committed to reducing bycatch and bycatch mortality and would initiate rulemaking for time/area closures based on comments received during that rulemaking. While NMFS recognizes that a buyout program may provide some compensation for vessel owners, a buyout program would not provide any compensation for other business owners. Instead, NMFS has explored other ways of minimizing economic impacts including smaller time/area closures, a prohibition on live bait, and delayed implementation. On May 18, 2000, NMFS concluded that Section 312 of the Magnuson-Stevens Act provides authorization for the Atlantic HMS buyout "...on NMFS' own motion by fulfilling the requirements... that reasonably apply to a program not initiated by a request."(65 FR 31444)

Comment 16: Closing the Desoto Canyon in addition to the western Gulf of Mexico would only increase any negative economic effects while creating more drastic social and economic impacts to vessels and their support and supplier community-based infrastructures.

Response: NMFS agrees that closing both the proposed Gulf B area and the Desoto Canyon would have even greater economic impacts than closing either one alone. In addition, preliminary analyses indicate that prohibiting live bait may have similar conservation benefits for billfish as closing the western Gulf of Mexico. For this reason, NMFS decided to close the Desoto Canyon to minimize bycatch, particularly small swordfish, and prohibit live bait to minimize billfish bycatch.

Comment 17: The Vietnamese Americans who have settled in the Gulf of Mexico are especially vulnerable to social and cultural disruption since they are dependent upon commercial fishing as a traditional livelihood that provides community stability.

Response: NMFS agrees that the Vietnamese American community may be affected by the social and economic impacts of these regulations. However, NMFS minimized any impacts to this minority community in the final regulations by deciding against closing the Western Gulf of Mexico and choosing to prohibit live bait. Thus, although this community may need to alter the current method of fishing, this community should not need to move.

Comment 18: NMFS failed to factor in the economic benefits from decreased swordfish discards which would be added to the United States' total allowable landings under the ICCAT swordfish rebuilding program if swordfish discards are reduced below ICCAT targets.

Response: NMFS disagrees that the agency failed to factor in the economic benefits from decreased swordfish discards in relation to the 1999 ICCAT swordfish rebuilding program. NMFS recognizes and mentioned in Section 7 that reducing dead discards is crucial in order for U.S. fishermen to continue to land the full swordfish quota allocated to the United States. For a full analysis of the social, economic, and conservation benefits of the 1999 swordfish rebuilding program, please see the proposed rule and supplementary information (65 FR 33519).

Comment 19: Adding the Desoto Canyon area closure to the Western Gulf of Mexico closure still would not save that many blue and white marlins. NMFS must weigh that against the economic devastation these closures will cause.

Response: NMFS agrees that economic impacts must be considered. However, NMFS does not believe that agency needs to “balance” the economic impacts against the conservation benefits. The Magnuson-Stevens Act mandates NMFS to rebuild overfished stocks, prevent overfishing, and minimize bycatch and bycatch mortality for all stocks, not just billfish. Recently, the U.S. Court of Appeals for the District of Columbia ruled that the Magnuson-Stevens Act requires the agencies to give priority to conservation benefits and to consider adverse economic impacts if two alternatives achieve the same conservation benefits. NMFS recognizes that some regulations which meet this mandate will cause economic harm and has provided a summary of alternatives that may help affected fishermen and communities in Section 3 of the FSEIS. In addition, NMFS has analyzed many different areas and seasons in order to determine if time/area closures will be effective at meeting the goals of this FSEIS, which time/area closures are the most effective, and which time/area closures are effective but have the least economic impacts. NMFS believes that

the management measures chosen will meet all of the goals of this action and minimize the economic impacts, to the extent practicable.

Social and Economic Analyses

Comment 1: NMFS received comments on the extent of the impacts of the proposed closed areas on the fishing fleet including: one third of the fleet would go out of business, hundreds of coastal communities would be negatively impacted, many fishermen would need to relocate, and that the closures fall disproportionately on minority and low-income communities.

Response: This information received during the comment period was used in the final rule as support for NMFS' conclusion that there would be a range of impacts but that the impacts would likely be significant. In addition, these comments helped NMFS to finalize regulations that would minimize the impacts of the potential closed areas while yielding similar (or better) conservation benefits. For example, many comments suggested NMFS consider the Desoto Canyon area both instead of and in addition to the proposed Gulf B closure. NMFS found that the proposed Gulf B closure could reduce the total gross revenues from the entire pelagic longline fleet by 6.4 percent while the Desoto Canyon closure might reduce the total gross revenues from the entire fleet by 2.2 percent. In addition, while analyses indicate the Gulf B closure could increase swordfish discards by 3.9 percent, the Desoto Canyon closure could decrease swordfish discards by 4.1 percent. In the South Atlantic, the proposed closure could reduce swordfish discards by 27.7 percent and reduce total gross revenues to the fleet by 19.2 percent while the final closure could reduce swordfish discards by 27.3 percent and reduce total gross revenues for the fleet by only 9.0 percent. However, even though NMFS has reduced the overall negative economic impacts of the rule, the final rule will still have a significant economic impact on a substantial number of small entities.

Comment 2: The closures will have almost no adverse impact on any group including commercial longline fishermen as shown by NMFS' analyses. The economic and biological benefits of these zone closures far outstrip any commercial interests.

Response: NMFS disagrees that this rule will not have any adverse impacts. NMFS analyses, as supported by numerous comments received, indicate that many fishermen, dealers, and related industries could go out of business as a result of this rule. In addition, this rule will have ripple effects throughout the entire fishing community, commercial and recreational, and into other jobs and industries such as mechanics, engineers, and grocery markets. The analyses conducted for this rule indicate that the closed areas and times will have positive biological impacts and significant negative economic impacts. NMFS has tried to achieve the conservation goal of minimizing bycatch while minimizing the economic impacts.

Comment 3: Restrictions on commercial fishermen have economic impact not just on dealers and wholesalers but also local grocery stores, welders, truckers, electrical technicians, mechanics, food banks, and other people in all communities.

Response: NMFS agrees that this rule will have impacts beyond the immediate fishing industry. Although there may be indirect impacts that NMFS has not considered, NMFS does not believe that non-fishing industries will be significantly impacted by this rule because they are already dependent on a range of businesses and industries.

Comment 4: The economics of the pelagic longline fishery are integrated with other fisheries from a dealer's perspective.

Response: NMFS agrees. In both the initial and final regulatory flexibility analyses and the regulatory impact review, NMFS analyzed the impact of this rule on dealers. NMFS stated that as a result of this rule some dealers may lose a substantial amount of fish from fishermen who qualify for a directed or incidental swordfish permit. However, the actual amount of gross revenues dealers lose will depend on the type of fish and the amount of fish dealers can obtain from other fishermen and other fisheries. Although NMFS believes this regulation will have a significant economic impact on dealers, NMFS does not believe this regulation will be as significant on as many dealers as it is on fishermen because most dealers are not as specialized as fishermen.

Comment 5: Closing the Desoto canyon area will force some businesses to close.

Response: NMFS agrees; assuming no effort redistribution, the economic analyses for the Desoto canyon indicate that approximately eight vessels (4 percent) would lose half of their gross revenues and seven dealers, who received fish from limited access permit holders, (5.6 percent) would lose half of the fish handled. However, the economic impacts of the Desoto Canyon are smaller than the economic impacts of the proposed Gulf B closure (12 vessels and 3 dealers losing half of their business). In addition, the Desoto Canyon area has greater biological benefits for undersized swordfish than the proposed area. Thus, although some vessels may still go out of business as a result of this closure, the Desoto Canyon area minimizes the economic impacts for most individuals. Also, the Desoto Canyon area is located offshore so smaller fishing vessels may still be able to fish without relocating. This is not true of the Gulf B closure, which would have forced small vessels owners who wished to continue to fish to relocate.

Comment 6: With the closures, pelagic longline fishermen are likely to move into other areas. Many existing fishermen and countless others working in those areas will be devastated by the concentration of boats. NMFS has failed to analyze the impact of displaced fishermen on communities in the open areas.

Response: NMFS agrees that with this rule, many pelagic longline fishermen are likely to move into other areas. While this rule may increase user conflicts in some areas, NMFS feels that this relocation will increase the social and economic benefits in many communities by increasing the level of economic activity in the area, including employment. It is likely that some dealers and marinas in the open areas or along the edges of the closed areas will see an increase in business as fishermen move. Other businesses near the open areas will likely be similarly influenced. Also, communities in the closed areas may have some economic relief if they transfer effort from

commercial fishing to recreational fishing. This may have the added benefits of lessening user conflicts in other areas and enhancing the recreational experience. In addition, due to the shorter Charleston Bump closure and the smaller Desoto Canyon closure off the coast, some fishermen in that area may decide not to relocate.

Comment 7: Even though the quantity of swordfish available to consumers may not decrease due to imports, the quality of fresh swordfish will. Fresh fish should be available to everyone, not just to those who have the economic means to get it themselves or live across a line on a map. Even with a buyout, the level of economic activity will be diminished and consumers will lose access to the freshest product.

Response: NMFS agrees that it is advantageous when fresh fish is available to everyone including future generations. For that reason, NMFS is working to rebuild overfished fisheries and reduce bycatch and bycatch mortality while minimizing the economic impacts with methods such as time/area closures and gear modifications, without banning pelagic longline gear. These methods will allow the fishery to continue to provide as much fresh fish as possible.

Comment 8: This proposed rule should be considered as significant under Executive Order (E.O.) 12866.

Response: NMFS disagrees. Under E.O. 12866, NMFS must consider whether the action will cause a major increase in costs or prices for consumers, individual industries, or geographic regions, whether the action will be inconsistent with another agency's planned actions, whether the action will affect entitlements, grants, user fees, or loan programs, and whether the action raises novel legal or policy issues. While this rule will have economic impacts on individual entities, this rule does not change any commercial quotas. Thus, NMFS does not believe this rule will significantly impact the value of the fishery, related industries, consumers, ex-vessel or wholesale prices, or the amount of fish landed as a whole. In addition, NMFS submitted a listing document to the Office of Management and Budget (OMB) indicating that this rule would not be significant under E.O. 12866. OMB did not respond with comments to the contrary and therefore, this rule is being considered not significant with respect to this E.O. Constituents should keep in mind that criteria for significance under E.O. 12866 are different from the use of the term when referring to the Regulatory Flexibility Act. NMFS has determined that this rule will have significant economic impacts on a substantial number of small entities under the Regulatory Flexibility Act and has prepared an initial and final regulatory flexibility analysis as required under that Act.

Comment 9: The costs of the time/area closures have been overestimated while the benefits have underestimated. NMFS has overestimated the man-hour cost of circle hooks. Many economic benefits have been underestimated or omitted from the analysis of the economic impact of the proposed closures.

Response: NMFS agrees that some of the costs have been overestimated and some of the benefits have been underestimated. In both the initial and final regulatory flexibility analyses and

the regulatory impact review, NMFS estimated the maximum economic impact of each alternative and understated many of the benefits. This is different than the analyses NMFS conducted to analyze the conservation impacts. Those analyses estimated the conservation impacts under no effort redistribution and effort redistribution models. The no effort redistribution model allowed NMFS to estimate the maximum biological benefits. The effort redistribution model allowed NMFS to estimate the minimum biological benefits. For the economic analyses, NMFS assumed no effort redistribution. This model allowed NMFS to estimate the maximum economic impact of the final regulations. If NMFS had assumed effort redistribution, the economic analyses would have indicated no change from the status quo or, perhaps, an increase in gross revenues (see Section 7). While NMFS believes that the actual costs and benefits of the regulations will be somewhere between status quo and the costs described in the analyses, NMFS used the estimates from the most conservative models to make its decisions. This means that for the biological estimates, NMFS used the effort redistribution model, and for the economic estimates, NMFS used the no effort redistribution model. However, NMFS believes that many fishermen and related industries will adapt to the regulations and will continue to work in either this fishery or in others. However, because NMFS cannot predict the behavior of individuals, NMFS cannot estimate the exact cost or benefit any regulation will have. In addition, NMFS recognizes that the ripple effect of the closures will impact other business that provide goods and services to the pelagic longline fishery (e.g., tackle manufactures and suppliers; dock-side services, including ice, bait, fuel, dockage, labor; vessel manufacture and repair). Although the final regulatory flexibility analysis and regulatory impact review provide a more thorough discussion of economic factors associated with final agency actions, NMFS does not have the necessary detailed economic information to make a quantitative assessment of the impacts on these support businesses.

Comment 10: The use of gross revenues to quantify impacts does not provide an accurate assessment of the economic impacts of the proposed rule, approximating loss changes using average vessel costs would be a more appropriate technique.

Response: NMFS agrees that using net revenues instead of gross revenues would provide a more accurate assessment of the economic impacts. However, as described in the HMS FMP, NMFS only has one estimate of the average variable costs for vessels in the pelagic longline fishery. Removing this estimate from every estimate of gross revenues would be the same as removing a constant and would result in the same estimates as those from gross revenues in terms of percent change in revenues. Thus, NMFS prefers, at this time, to discuss the impact in regards to gross revenues and variable costs separately. However, NMFS is working on improving social and economic data. NMFS intends to make mandatory for selected vessels the economic add-on to the pelagic logbook. This information could be used in future rulemakings to estimate the net revenues for each vessel.

Comment 11: The documents do not have enough data on people and the lives this rule will affect. Because of this, the rule fails to fully assess the social and economic impacts. NMFS needs to expand the social impact assessment.

Response: NMFS agrees that additional social and economic data would be beneficial. The data used to examine the alternatives in the rule constitute the best available data. NMFS is increasing efforts to collect social and economic data for use in future analyses, such as through the social and economic add-on to the pelagic logbook and charter/headboat logbook, and the social and economic surveys of tournaments.

Comment 12: NMFS needs additional information regarding any social and economic impacts from the proposed rule on the recreational fishing industry.

Response: NMFS agrees that it is important to consider the impact of the rule on the recreational sectors including the effect of status quo. However, the focus of the economic assessment for this rule is on the business that will be directly impacted by the closures, including pelagic longline vessels, seafood dealers, and other associated businesses. This is consistent with the Regulatory Flexibility Act requirements. The proposed rule and FSEIS did include a discussion of the value of recreational HMS fisheries and the potential increases in fishing success as a result of the closure of commercial pelagic longline fishing along the U.S. Atlantic coast. Given the potential benefits of the rule on the recreational fishing industry and the comments received, NMFS increased its qualitative discussion of the impacts on recreational fishermen in the final rule documents.

Comment 13: If the closures aid in recovery of billfish, sharks, tunas, and swordfish, there will be tremendous economic gain in the recreational fishing sector. Healthy fish populations produce more economic benefit when they are used for recreational fishing first. The economic benefits of recreational angling have been demonstrated many times.

Response: NMFS agrees that the recreational fishing industry provides many economic benefits and enjoyment. The 1988 Billfish Fishery Management Plan, which prohibited commercial vessels from possessing billfish, shows this. Although increasing the recreational fishery benefits and decreasing user conflicts are not an objective of the rule, NMFS realizes that such benefits could occur as a result of the regulations.

Comment 14: NMFS needs to evaluate the economic impacts on recreational fishermen in the mid- Atlantic Bight that may result from increased interactions with displaced pelagic longline fishing activity.

Response: NMFS agrees that displacement of pelagic longline effort may have an impact on the remaining open areas in the Atlantic. Accordingly, NMFS includes a discussion of additional management measures specifically for the mid-Atlantic Bight to reduce potential interactions with endangered/threatened species and with recreational anglers. In addition, the reduced time/area closures will not only minimize economic impacts on the commercial fishing industry, but also reduce user conflicts that may have occurred under the proposed rule if effort had been concentrated into smaller remaining open areas. For example, NMFS reduced the closure along the Atlantic coast, particularly the Charleston Bump area. This should help to minimize any user conflicts that may have occurred as a result of the proposed rule because some commercial

fishermen in the Charleston Bump area may decide not to relocate north. However, the goal of this regulation is to reduce bycatch and bycatch mortality in the pelagic longline fishery, consistent with the Magnuson-Stevens Act, not to reduce user conflicts. NMFS will continue to monitor the impacts of this regulation on the environment and fishing interests. If necessary, NMFS will work with the APs and may issue additional regulations in order to reduce user conflicts.

Comment 15: If one compares the 1997 summary economic statistics in the IRFA with the DSEIS and the 1998 summary statistics in the supplemental information about DeSoto Canyon, it appears the fishery is collapsing.

Response: NMFS disagrees. The IRFA for the DSEIS used data from the northeast logbooks while the IRFA for the supplemental information did not. The use of these logbooks would increase the number of vessels that reported landings in 1998; however, most of these vessels reported little, if any, landings near the final time/area closures. In addition, the average gross revenues per permit holder increased by 21 percent between the IRFA based on 1997 data and the IRFA based on 1998 data (\$113,173 versus \$137,126).

Comment 16: While smaller areas would minimize the economic impacts on commercial fishermen, the District of Columbia Circuit Court of Appeals recently held that conservation concerns outweigh concerns about the potential economic impacts of fishery regulations.

Response: NMFS agrees that conservation concerns are important. However, NMFS also recognizes that the proposed rule would have significant economic impacts. For this reason, NMFS re-examined the data to achieve similar, or better, conservation impacts while reducing the economic impacts. NMFS feels that the suite of final actions (the two time/area closures and the live bait prohibition) will have greater conservation benefits than the proposed regulations and minimize the economic impacts.

Comment 17: The proposal violates the Regulatory Flexibility Act (Reg Flex Act) and would create social and economic devastation to fishing families and communities.

Response: NMFS disagrees that the proposed or final regulations violate the Reg Flex Act. NMFS believes that the analyses in the proposed rule and supplemental information meet all the requirements of the Reg Flex Act. NMFS recognizes that the final regulations will have large impacts on many fishing families and communities but notes that the Reg Flex Act does not say that an agency cannot implement regulations that are significant. Indeed, the Reg Flex Act requires agencies to determine the economic impact, explore feasible alternatives for reducing the economic impact, and explain the reason for the regulatory choice. The DSEIS and FSEIS explain the analyses used to determine the areas and the analyses used in estimating the economic impact. In addition, NMFS chose final actions that meet the conservation goals and minimized the economic impacts, to the extent practicable.

Comment 18: Regional market gluts, especially associated with bad weather events and/or quota

closures, should be expected to reduce ex-vessel prices.

Response: NMFS agrees that the time/area closures may have some impact on ex-vessel price particularly if closures or bad weather keep commercial fishermen from fishing in the open areas. However, NMFS does not believe that the time/area closures would change the ex-vessel price significantly or cause significant market gluts.

Comment 19: NMFS should omit dealers who only import foreign fish from the analysis; in reality, domestic dealers who primarily offload and purchase “trip-fish” are few and far between and those in the closed areas will be impacted far greater than NMFS has analyzed.

Response: NMFS agrees that dealers who purchase fish from the closed areas will be impacted by these regulations. However, neither the IRFA nor FRFA considered imported fish. Instead, these analyses only considered fish sold to dealers by swordfish limited access permit holders.

Comment 20: Pelagic longline vessels need to gross at least \$500,000 year to be profitable; NMFS’ estimate for gross ex-vessel revenues is too low.

Response: NMFS disagrees that the estimate for average ex-vessel gross revenues used in the IRFA and FRFA is too low. A number of studies performed on the voluntary economic add-on of the pelagic logbook indicate that many fishermen are operating on the margin and are not profitable. One study found that the average gross revenue per vessel was \$118,804. This is similar to the average of \$113,173 used in the IRFA and \$137,126 used in the FRFA. Thus, while some vessels may gross over \$500,000, the majority of vessels do not.

APPENDIX C. METHODS USED FOR TIME/AREA ANALYSES

The October 1999 Draft Technical Memorandum was circulated to the public on November 2, 1999, and was included *in toto* in the DSEIS. The following is a synopsis of the methods and analytical procedures discussed in the Draft Technical Memorandum, and provides the basis for the no effort redistribution and effort redistribution models used in Section 7.2.2 of the FSEIS.

Pelagic logbook data were used to summarize total monthly U.S. pelagic longline catches (number of each species captured on pelagic longline, whether discarded dead or alive, or retained for sale or personal use) throughout the operational range of the U.S. fleet in the Atlantic Ocean for each of calendar years 1995, 1996 and 1997 and 1998; Quality Assurance procedures were not completed for the 1998 logbook data at this time. The geographic distribution of discarded and/or kept (as appropriate) swordfish, blue marlin, white marlin, sailfish, spearfish, bluefin tuna, BAYS tunas (bigeye, albacore, yellowfin, and skipjack), pelagic sharks, large coastal sharks, mahi mahi, wahoo, sea turtles, marine mammals, and sea birds from pelagic longline sets was determined by plotting the average number caught per set by latitude and longitude for each quarter (January - March; April - June; July - September; and October - December) from 1993 through 1997. For purposes of this analysis, discards are not divided into live or dead discards, since the primary objective of this study is to define a time/area management strategy that minimizes pelagic longline gear interactions with small swordfish, billfish, and other overfished HMS.

These plots were visually examined to identify areas in which most discards of swordfish and billfish occurred. Spatial boundaries around these areas were constructed using as few straight lines as possible to keep their definition as simple as possible. A total of four progressively larger areas were identified for the SE U.S. Atlantic coast (SAtlA, SAtlB, SAtlC, SAtlD; see Table D-1 and figures in Section 7.2.2), and another set of four areas the Gulf of Mexico (GulfA, GulfB, GulfC, GulfD; see Table C-1 and figures in Section 7.2.2).

Physical characteristics of commercial pelagic longline fishing vessels that have reported at least one pelagic longline set in the logbook data set for 1995 to 1997 in any of the time/area blocks considered in these analyses were described to assist in the evaluation of potential displacement behavior of vessels impacted by area closures.

Time/Area Analysis with No Reallocation of Effort (No Effort Redistribution Model)

The effectiveness of time/area closures along the SE U.S. Atlantic coast and Gulf of Mexico under the no effort redistribution model was evaluated by determining the percent reduction in total U.S. Atlantic pelagic longline catch for each month/year block. In some cases, "catch" is kept, in other cases, it is discarded. For swordfish, some are kept, some are discarded. All billfish, sea turtles, and marine mammals are discarded. Because effort is always reduced for the no effort redistribution model, all percent reductions are either negative or zero.

As an example of the calculations, consider the case of area GulfB during January 1995, where

17 blue marlin were reported as discarded (Table C-2). A total of 2,924 blue marlin were discarded during 1995 by the entire U.S. Atlantic pelagic longline fishery. Therefore, if all effort in GulfB during January 1995 was removed (309,000 hooks), there would be a corresponding 0.6 percent reduction ($17/2,924$) in the total annual blue marlin discards by closing GulfB in January.

To determine the effectiveness of the temporal component of the time/area closure strategy for each species and area, cumulative monthly percent changes in catch and discard rates were calculated. Using the same GulfB area as an illustration (Table C-2), closure of this area during January (17 blue marlin discarded) and February (11 blue marlin discarded) 1995, Atlantic-wide discards of blue marlin by U.S. pelagic longline fisheries would be reduced by 1 percent ($28/2,924$). Complete closure of GulfB for 1995 (459 blue marlin were discarded the year from area GulfB) would result in a 16 percent ($459/2,924$) reduction in total Atlantic discards from U.S. commercial pelagic longline gear. To graphically illustrate the temporal impacts of closing an area, the cumulative monthly percentage change for swordfish kept, swordfish discarded, blue marlin discarded, white marlin discarded, sailfish discarded, bluefin tuna kept and BAYS tunas kept are shown in Figure C-1 for GulfB during 1995. Changes in the slope of each line reflect the cumulative effectiveness of the time/area closure. For example, the solid triangle line (blue marlin) is relatively flat during the months of January to April, then shows a steep shift through September, then remains relatively flat for the remainder of the year indicating that the greatest impact on blue marlin pelagic longline discards occurs if effort is restricted during mid-summer months.

Time/area Analysis with Effort Displacement (Effort Redistribution Model)

It is not realistic to assume that when an area is closed to pelagic longline fishing, the sets that would have been made in the closed area will not be reallocated elsewhere. However, predicting the magnitude of the shifting effort is problematic, depending upon on several parameters, some of which are not readily quantifiable, including spatial and temporal constraints of the closure, size characteristics of vessels impacting their ability to move to open locations, and social and economic considerations limiting the ability or willingness of the owner/crew to move to an area closer to where fishing is allowed. The limitations on where that effort would be moved is difficult to accurately assess, therefore, NMFS assumed that fishermen fishing in an area closed in the Gulf of Mexico could potentially move to any open area within the Gulf. A similar assumption was followed for vessels fishing in closed areas along the SE U.S. Atlantic coast, with effort being displaced to other open Atlantic Ocean areas, including the Gulf of Mexico.

The methods used to calculate percent changes in catch rates with effort redistribution are summarized in Table C-3, using the same GulfB area employed in the examples above. The first step in the procedure was to determine the monthly catch or discards, and effort (number of hooks) in Gulf B, the Gulf of Mexico, and Atlantic Ocean by U.S. pelagic longline fisheries. The next step in this analysis was to determine the number of each species that were caught in the remaining open areas (E of Table C-3), calculated by subtracting the number caught in the closed area from the entire Gulf (B - D). The next step was to determine the catch-per-unit-effort (CPUE) for each species in the remaining open area. This was accomplished by dividing the

number of each species caught in the open area (E) by the number of hooks fished in the open area (calculated by subtracting number of hooks in the closed area from those Gulf-wide; A - C). The open-area CPUE was then multiplied by the number of hooks that were used in the closed area to determine the number of additional fish that would be caught in the open fishing areas by the displaced effort ($C * F$), which was then added to the existing open area catch (E +G) to give the new open area total catches (I). The estimated total catch (I) was then subtracted from the original total number caught in the Gulf (B - H) to estimate the change in number of each species that would be caught as a result of the reallocated effort. This number is equivalent to the value used in the no effort redistribution analysis to represent the number of fish that would not be caught as a result of closure, and the remaining calculations follow the same procedures used for the no effort redistribution model. Because effort is not removed from the system, but redistributed to areas open to pelagic longline fishing, the percentage change calculated under the displaced effort model may be negative (indicating that the closure reduces catch or discards) or positive (the closure results in an increase in catch or discards).

The monthly percent change in catch rates for 1995, 1996, 1997, and 1998 are calculated for each of the four closure areas in the SE U.S. Atlantic coast and four areas in the Gulf of Mexico (Appendix C, DSEIS). Because of the volume of information generated by these analyses, several tables are developed to provide a synopsis of each closure area, by year. Two cases are dropped from further consideration because there is very little difference in the total fishing effort as expressed in number of hooks. GulfD is not included in the Gulf of Mexico summaries due to the similarity of results with GulfC (GulfC represented 93.6 to 97.4 percent of the effort in GulfD). Area SAtID is not included in the southeastern Atlantic summaries since results are nearly identical to SAtIC (SAtID represented less than 1 percent additional effort from SAtIC).

Because calculation of percent change uses the total Atlantic-wide catch for every species within each month/closed area block, the percent change calculated for the Gulf of Mexico and SE U.S. Atlantic coastal closures are additive within each month/year block. This allows for an examination of the effectiveness of various time/area combinations between the SE U.S. Atlantic coast and Gulf of Mexico.

There are inherent problems associated with the use of self-reported data in fisheries management. Cramer and Adams (1998) note that significant under-reporting of incidental catch in logbooks is apparent when logbooks are compared to observer data, except in the case of blue sharks. Blue sharks are discarded for economic reasons but are prolific in the catch and are such a nuisance to fishermen that they tend to over-report these encounters in logbook data when compared to observer data. As of July 1, 1999, NMFS requires all fishermen to complete their logbook forms within 48 hours of a set, intending to facilitate enforcement and to increase the accuracy of the report. If the magnitude of under-reporting of incidental catch and bycatch was independent of year, season, or geographic location, then the effects on the analysis would not be a major concern, which is why percentages are used in the analyses provided in this report, rather than actual numbers. Due to time constraints, NMFS cannot, at this time, analyze observer records by species and geographic region to estimate the degree of mis-reporting in logbooks for this evaluation of closed areas. This would, however, be an interesting analysis in the future

which would supplement the Cramer and Adams (1998) analysis, and may be useful for evaluating the efficacy of the closed areas, once implemented.

The time/area analyses included in this report are aimed at addressing incidental catch by U.S. pelagic longlines. However, it was difficult to separate pelagic longline vs. bottom longline sets in the database. This was particularly evident in the results relating to kept and discarded large coastal sharks, under several of the time/area scenarios. NMFS attempted to “clean up” the database by eliminating sets that were clearly bottom longline sets. It is possible that some of the data used (catch, discard, and effort) may have been derived from bottom longline sets. NMFS also notes that defining the way longline gear is set is sometimes difficult as some pelagic longline fishermen may re-rig their gear, even within a trip, to target sharks. Because the bottom longline fishery has lower incidental catch rates than the pelagic longline fishery, the addition of bottom longline sets would likely reduce the average incidental catch rate overall, not increase it. Moreover, this artifact of the data would only have a practical effect on the conclusions of these analyses if the bottom longline sets were predominately in the closed areas, lowering estimates of incidental catch reduction in the effort redistribution scenarios, or in the open areas, thereby overestimating the potential gains. The effects would be negligible if both longline sets are randomly distributed relative to one another.

Areas Included in the Proposed Rule but not in the Draft Technical Memorandum

After dissemination of the Draft Technical Memorandum, NMFS sought alternatives to mitigate increased turtle bycatch which might result from the implementation of one of the closed areas due to redistributed effort. In narrowing the area of SATlC, NMFS could allow fishermen to fish in Florida offshore waters with little effect on finfish bycatch reduction (relative to SATlB) and decreasing the possible takes of turtles by 50 percent.

The methods for analysis of the narrower region, termed “SATlE”, are similar to those already outlined in the draft Technical Memo. However, because this narrower region follows the U.S. EEZ, a proxy for analysis was used. Data are reported in the logbook database to one degree square resolution. Therefore “diagonal” lines through an areas are difficult to examine using logbook data. NMFS used the proxy area outlined in black below in Figure C-2 in order to estimate the impacts on bycatch and target catch from a possible closure of this area. Further, an area was identified in the northeastern Gulf of Mexico, as described under Option 5 of Section 7.2.2. The methods used to determine the impacts of this closure (Figure C-3) under the no effort redistribution model and effort redistribution model follow the same procedures outlined above.

Dolphin-Wahoo Pelagic Longline Fishery Analysis

In the proposed rule on reducing bycatch mortality in the pelagic longline fishery, NMFS indicated a concern that the pelagic longline fishery targeting dolphin may have similar bycatch rates to those sets targeting swordfish and BAYS tunas. Consequently, NMFS proposed that HMS-permitted vessels be prohibited from setting pelagic longline gear in the closed area, regardless of target species. Given the jurisdictional issues, NMFS requested that the respective Fishery Management Councils consider the potential bycatch issues presented by pelagic longlines set in the closed area to target species managed under Council FMPs.

NMFS examined logbook reports from 1998 for all sets made in the area proposed for year round closure (SATLE: Key West, FL to Wilmington Beach, NC). Because logbook reports do not specifically indicate which sets targeted dolphin, NMFS separated all sets into those targeting swordfish/tunas/sharks and those listing a target as “other”. It was presumed that sets listing a target as “other” are predominantly targeting dolphin and this was reflected in the nearly 10 fold higher catch per set of dolphin: 1.7 vs 15.1 dolphin kept per set. Preliminary information from the pelagic logbook database that addresses bycatch by pelagic longline gear set to target dolphin (mahi) off the southeast U.S. is presented in Table C-4.

Note that sets listing “other” as a target represent about 13% of the total effort in the area. All else equal, catch and bycatch rates would be approximately the same share of the totals as that of effort (i.e., 13%). This expectation is generally reflected in the data with respect to swordfish kept (~8/set), BAYS tunas kept (~0.5/set), and billfish discards (~0.2/set). However, swordfish and bluefin tuna discards are lower than would otherwise be expected, while dolphin and wahoo kept and BAYS tunas discards are higher than would be expected. These differences in catch rates may be related to fishing area, time of day/season, and/or gear modifications. Nonetheless, given the pelagic logbook reports, bycatch of billfish, sharks and BAYS tunas seems to be a concern in the dolphin fishery.

Further specific information on catch occurring when pelagic longlines are set to target dolphin would be needed to confirm or refute the bycatch concerns. In the interim, to facilitate enforcement and to take a precautionary approach, NMFS has decided that HMS- permitted vessels should be prohibited from setting all pelagic longline gear in the closed areas, regardless of target species. It is possible that an operator of an HMS-permitted vessel who wishes to target dolphin could apply for an exempted fishing permit (EFP). If EFPs are issued, the data collected (e.g., logbook or observer reports) could be used to determine if a dolphin fishery could be undertaken that would be consistent with the bycatch reduction objectives of the HMS FMP. However, such authorization for EFPs would have to be considered in consultation with the Councils having management authority for dolphin.

Table C-1. Spatial boundaries for the proposed closures within the Gulf of Mexico and along the SE U.S. Atlantic coast.

	Area Closed	North Boundary	East Boundary	South Boundary	West Boundary
Gulf of Mexico	GulfA	Coast line	92° W long.	26° N lat.	Coast line
	GulfB	Coast line	90° W long.	26° N lat.	Coast line
	GulfC	Coast line	86° W long.	26° N lat.	Coast line
	GulfD	Coast line	82° W long.	26° N lat.	Coast line
SE U.S. Atlantic Coast	SAtlA	34° N lat.	74° W long.	24° N lat.	Coast line - 82° W long.
	SAtlB	36° N lat.	74° W long.	24° N lat.	Coast line - 82° W long.
	SAtlC	34° N lat.	76° W long.	24° N lat.	Coast line - 82° W long.
	SAtlD	36° N lat.	76° W long.	24° N lat.	Coast line - 82° W long.

Table C-2. Example of temporal variations in the effectiveness of closing area GulfB during 1995.

Month (1995)	Number Blue Marlin in GulfB	Cumulative Number Caught	Percent Change Atlantic-wide
January	17	17	-0.58
February	11	28	-0.96
March	3	31	-1.06
April	4	35	-1.20
May	33	68	-2.33
June	104	172	-5.88
July	169	341	-11.66
August	72	413	-14.12
September	13	426	-14.57
October	12	438	-14.98
November	7	445	-15.22
December	14	459	-15.70

Table C-3. Calculation procedures for estimating dispersion of effort using 1995 blue marlin in GulfB. A total of 2,924 Blue marlin were discarded (alive + dead) in 1995 from U.S. pelagic longline gear.

	A	B	C	D	E	F	G	H	I	J	K
Month	Number of hooks in GOM ¹	Number of blue marlin caught in GOM	Number of hooks in GulfB	Number of blue marlin caught in GulfB	Number of BUM in open GOM area: (B - D)	BUM CPUE in open GOM area: (E/(A-C))	Number additional BUM caught in open GOM area by displaced effort: (C * F)	BUM catch from open GOM area with displaced effort: (E + G)	Number BUM avoided by area closure: (B - H)	Cumulative catch by month (sum of I)	Percent of total US BUM discards avoided by closure: (J/29.24)
Jan	309,000	20	211,000	17	3	3.06E-05	6.46	9.46	10.54	10.54	-0.36
Feb	234,000	15	143,000	11	4	4.4E-05	6.29	10.29	4.71	15.26	-0.52
Mar	213,000	4	129,000	3	1	1.19E-05	1.54	2.54	1.46	16.72	-0.57
Apr	214,000	5	131,000	4	1	1.2E-05	1.58	2.58	2.42	19.14	-0.65
May	267,000	35	148,000	33	2	1.68E-05	2.49	4.49	30.51	49.65	-1.7
June	264,000	104	177,000	104	0	0	0	0	104	153.65	-5.25
July	318,000	175	151,000	169	6	3.59E-05	5.42	11.42	163.58	317.23	-10.85
Aug	255,000	83	126,000	72	11	8.53E-05	10.74	21.74	61.26	378.48	-12.94
Sep	289,000	21	126,000	13	8	4.91E-05	6.18	14.18	6.82	385.3	-13.18
Oct	124,000	20	73,030	12	8	1.57E-04	11.46	19.46	0.54	385.84	-13.19
Nov	160,000	9	133,000	7	2	7.41E-05	9.85	11.85	-2.85	382.99	-13.1
Dec	171,000	14	142,000	14	0	0	0	0	14	396.99	-13.6
Total	2,818,000	505	1,690,030	459	46	4.08-E-05	68.92	114.92			

¹Gulf of Mexico logbook reports estimated by area bounded by GulfD (Table C-1).

Table C-4. Pelagic logbook reports of effort, catch and bycatch in SAtIE closed area during 1998.

	-----Target-----				Percent	
	Sword/Tunas/Shark		Other Species		Targeting	
	Number	# / set		Number	# / set	Other Species
Sets	2,140			320		13.0%
Hooks	841,981	393.4		153,426	479.5	15.4%
Swordfish kept	18,757	8.8		2,678	8.4	12.5%
Swordfish discarded	9,105	4.3		470	1.5	4.9%
Bluefin tuna kept	5	0.0		0		
Bluefin tuna discarded	3	0.0		0		
BAYS tunas kept	1,132	0.5		182	0.6	13.9%
BAYS tunas discarded	91	0.0		52	0.2	36.4%
Blue marlin discarded	174	0.1		13	0.0	7.0%
Sailfish discarded	207	0.1		28	0.1	11.9%
Spearfish discarded	21	0.0		4	0.0	16.0%
White marlin discarded	90	0.0		15	0.0	14.3%
Pelagic sharks kept	296	0.1		62	0.2	17.3%
Pelagic Sharks discarded	1,038	0.5		288	0.9	21.7%
Lg coastal sharks kept	5,825	2.7		194	0.6	3.2%
Lg coastal sharks discarded	2,649	1.2		614	1.9	18.8%
Turtles caught	9	0.0		0		
Turtles injured	0			0		
Turtles killed	0			0		
Dolphin kept	3,636	1.7		4,834	15.1	57.1%
Dolphin discarded	20	0.0		7	0.0	25.9%
Wahoo kept	124	0.1		109	0.3	46.8%
Wahoo discarded	2	0.0		0		

* Data are preliminary and subject to change. Logbook database queried on January 27, 2000.

Figure C1. Percentage in total bycatch by species and month during 1996 from closures in the Gulf of Mexico.

Figure C-1. Percent change in total bycatch, by species, by month during 1995 from closures in the Gulf of Mexico.

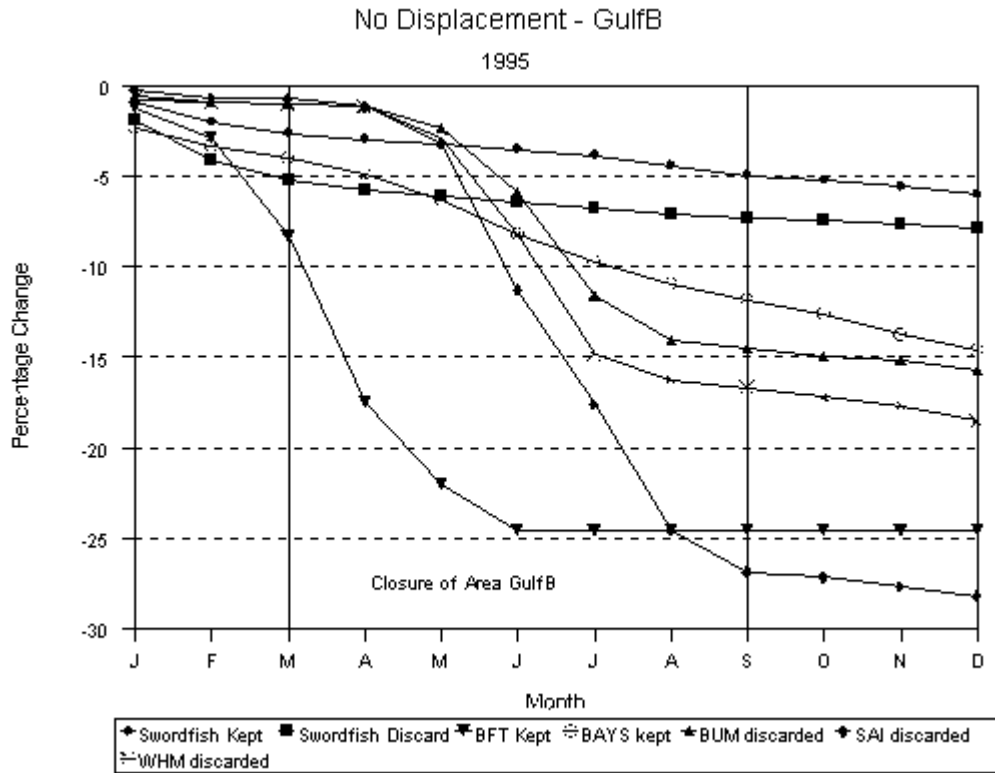


Figure C2. Area SATl E (gray line) and its analytical proxy (black line).

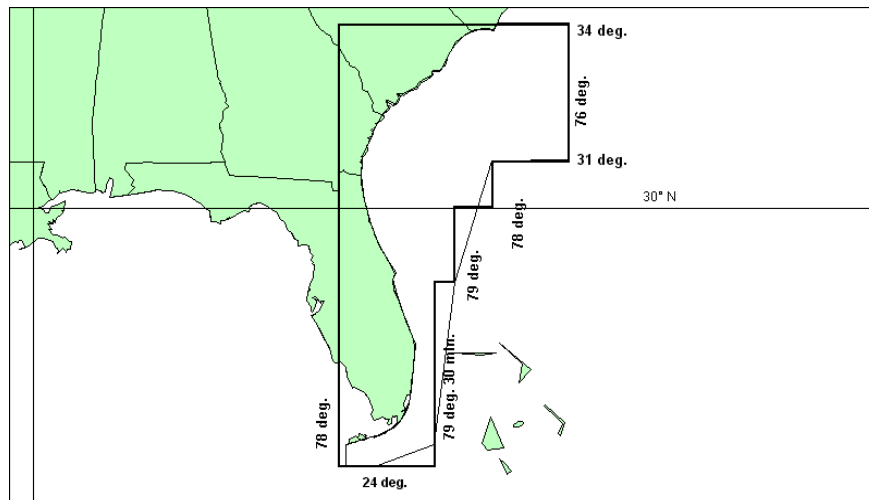
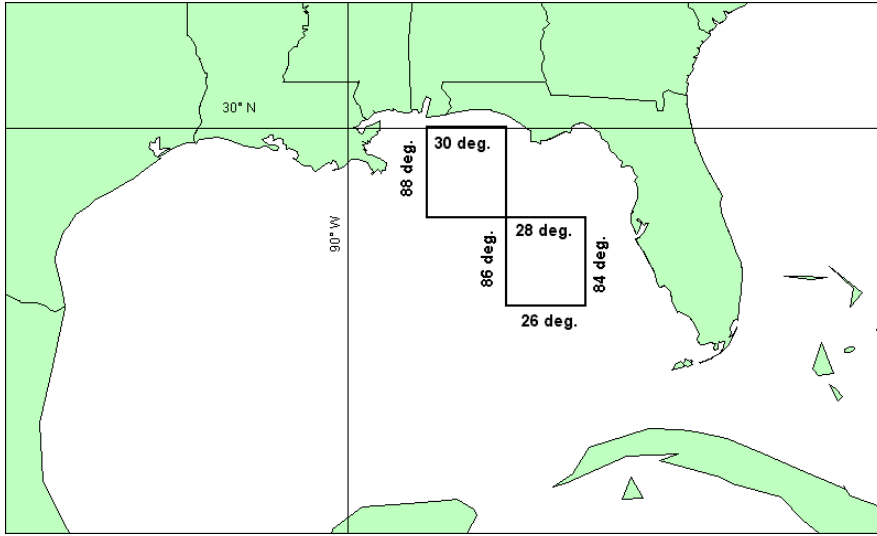


Figure C3. DeSoto Canyon area in the northeastern Gulf of Mexico.



APPENDIX D. LIVE BAIT VS. DEAD BAIT EVALUATIONS OF U.S. PELAGIC LONGLINE FISHING INCIDENTAL CATCH RATES OF BILLFISH IN THE GULF OF MEXICO.

APPENDIX E. COMMONLY USED FISHERIES MANAGEMENT ACRONYMS AND ABBREVIATIONS

AP	Advisory Panel
ATCA	Atlantic Tunas Convention Act
BAYS	Bigeye, albacore, yellowfin, skipjack tunas
B_{MSY}	Biomass expected to yield maximum sustainable yield
BO	Biological Opinion
CFL	Curved fork length
dw	Dressed weight
EEZ	Exclusive economic zone
EO	Executive Order
ESA	Endangered Species Act
FAO	Food and Agriculture Organization
FMP	Fishery Management Plan
F_{MSY}	Instantaneous fishing mortality rate expected to yield maximum sustainable yield
FRFA	Final regulatory flexibility analysis
GMFMC	Gulf of Mexico Fishery Management Council
HMS	Highly migratory species
HMS FMP	Fishery Management Plan for Atlantic Tunas, Swordfish, and Sharks
ICCAT	International Commission for the Conservation of Atlantic Tunas
IRFA	Initial regulatory flexibility analysis
ITQ	Individual transferable quota
ITS	Incidental take statement
LCS	Large coastal sharks
Magnuson-Stevens Act	Magnuson-Stevens Fishery Conservation and Management Act
MMPA	Marine Mammal Protection Act
MSY	Maximum sustainable yield
mt	Metric tons
NMFS	National Marine Fisheries Service

NOAA	National Oceanographic and Atmospheric Administration
OSF	Office of Sustainable Fisheries (NMFS)
PR	Office of Protected Resources (NMFS)
Reg Flex Act	Regulatory Flexibility Act
RIR	Regulatory Impact Review
RPAs	Reasonable and Prudent Alternatives
RPMs	Reasonable and Prudent Measures
SAFMC	South Atlantic Fishery Management Council
SCRS	Standing Committee for Research and Statistics (ICCAT)
SEFSC	Southeast Fisheries Science Center (NMFS)
SEIS	Supplemental environmental impact statement
SERO	Southeast Regional Office (NMFS)
SSB	Spawning stock biomass
TCs	Terms and Conditions
USFWS	United States Fish and Wildlife Service
VMS	Vessel monitoring system
ww	Whole weight

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