2005 and 2006 Summer Flounder and 2005 Scup and Black Sea Bass Specifications Environmental Assessment Regulatory Impact Review Initial Regulatory Flexibility Analysis and Essential Fish Habitat Assessment

October 2004

Mid-Atlantic Fishery Management Council

in cooperation with the

National Marine Fisheries Service

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1.0 EXECUTIVE SUMMARY

The purpose of this action is to implement 2005 and 2006 commercial management measures for the summer flounder fishery and 2005 commercial management measures for scup and black sea bass fisheries. These measures comply with the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), including the national standards for fishery conservation and management, the Summer Flounder, Scup, and Black Sea Bass Fishery Management Plan (FMP), and the FMP amendments. Management measures include commercial quotas, recreational harvest limits, and other measures to ensure that the annual fishing targets specified in the FMP for these species are attained. The economic analyses presented for the various alternatives are principally for the commercial fisheries. While general statements regarding potential changes in the recreational fisheries due to changes in recreational harvest limits for summer flounder, scup, and black sea bass are made in this document, the effects of specific recreational management measures (i.e., bag limits, size limits, seasonal closures) will be analyzed when the Mid-Atlantic Fishery Management Council (Council) and Atlantic States Marine Fisheries Commission's (Commission) Summer Flounder, Scup and Black Sea Bass Board (Board) submit recommendations for 2005 recreational measures. The Council and the Board will meet in December 2004 to adopt 2005 recreational management measures, when more complete data regarding 2004 recreational landings are available. A comprehensive document for the recreational specifications for summer flounder, scup, and black sea bass will be prepared after the December Council meeting.

The management alternatives analyzed in this document include the total allowable landings (commercial quotas and recreational harvest limits), which are necessary to achieve the annual target exploitation rates established under the individual species' rebuilding schedules. In addition, the Council and Board recommended changes to specific scup management measures e.g., mesh size, exemption program, southern gear restrictive area (GRA).

Under the current management system, the TALs for these species are specified every year and apply only to the following year. However, Framework Adjustment 5, approved by the Council May 5, 2004 and submitted to NMFS May 12, 2004, allows for the specification of TALs for summer flounder, scup, and/or black sea bass fisheries in any given year for up to three years. The ASMFC Board approved similar measures in August 2004. This modification to the FMP should relieve administrative demands on Council and NOAA Fisheries imposed by the annual specification process. Additionally, longer term specifications should provide greater regulatory consistency and predictability to the commercial and recreational fishing sectors. If Framework Adjustment 5 is not approved by January 1, 2005 the current management system of annual TALs will remain in effect.

This specifications package details all management alternatives for summer flounder evaluated for a two year period (2005 and 2006), and all management measures for the scup and black sea bass fisheries were evaluated for a one year period (2005). The two year summer flounder specifications will apply if the following takes place: a) Framework Adjustment 5 is approved by January 1, 2005; and 2) NMFS accepts the 2-year management specifications proposed by the Council and Commission. However, if the NMFS decides that the 2-year management alternatives are unacceptable or Framework Adjustment 5 is not approved by January 1, 2005, then only the first year of the proposed specifications (2005) will apply.

In the final deliberations, the Council and Commission considered all the alternatives and comments and chose the total allowable landing limits under the preferred alternative (alternative 1) for summer flounder, scup, and black sea bass.

Summer Flounder Alternatives

The preferred summer flounder alternative 1 establishes a total allowable landings limit of 30.30 million lb for 2005 (a 17.97 million lb adjusted commercial quota; a 11.98 million lb adjusted recreational harvest limit) and 33.00 million lb for 2006 (a 19.21 million lb adjusted commercial quota; a 12.80 million lb adjusted recreational harvest limit). The preliminary adjusted quotas and recreational harvest limits for all summer flounder, scup, and black sea bass TAL alternatives were calculated by deducting overages and/or research set-asides from the total allowable landings. This alternative as well as the other two summer flounder alternatives specify multi-year management measures (2005 and 2006) for the summer flounder fishery. The TALs associated with alternative 1 have a 75 percent probability of achieving the F target in 2005 and 2006. There are no biological, habitat, or protected resources impacts associated with this alternative relative to the status quo. Positive socioeconomic impacts will likely occur under this alternative due to higher expected ex-vessel revenues compared to the status quo. However, these impacts will be smaller than the positive socioeconomic impacts expected from alternative 3.

Under summer flounder alternative 2 (status quo and most restrictive alternative), the total allowable landings limit is 28.20 million lb for 2005 (a 16.71 million lb adjusted commercial quota; a 11.14 million lb adjusted recreational harvest limit) and 28.20 million lb for 2006 (a 16.41 million lb adjusted commercial quota; a 10.94 million lb adjusted recreational harvest limit). Even though the initial TAL under this alternative is the same for the 2005 and 2006 periods, the preliminary adjusted commercial quotas and recreational harvest limits differ during these two periods due to the fact that the research set-asides used to adjust these allocations are different. This alternative provides commercial and recreational fishermen with about the same fishing opportunities in 2005 and 2006 relative to 2004. The TALs associated with alternative 2 have about 90 percent probability of achieving the F target in 2005 and 2006. Overall, positive impacts on the summer flounder stock (i.e., larger stock size) are expected under this alternative in 2005 and 2006 compared to 2004. However, the TALs under this alternative are substantially more conservative than needed to achieve the target exploitation rate for 2005 and 2006. There are no habitat, protected resources, or socioeconomic impacts associated with this alternative relative to 2004.

Under summer flounder alternative 3 (least restrictive alternative), the total allowable landings limit is 32.60 million lb for 2005 (a 19.35 million lb adjusted commercial quota; a 12.90 million lb adjusted recreational harvest limit) and 35.50 million lb for 2006 (a 20.66 million lb adjusted commercial quota; a 13.77 million lb adjusted recreational harvest limit). This alternative would provide commercial and recreational fishermen with the largest increase in fishing opportunities in 2005 and 2006 compared to alternatives 1 and 2. The TALs associated with alternative 3 have the smallest probability (50 percent) of achieving the F target in 2005 and 2006 compared to the previous 2 alternatives. There are no biological, habitat, or protected resources impacts associated with this alternative relative to the status quo. However, positive socioeconomic impacts will likely occur under this alternative due to higher expected ex-vessel revenues compared to the status quo.

In addition, the Council and Commission recommended that the minimum fish size, mesh size, and other gear regulations for summer flounder remain in place for 2005 and 2006.

Scup Alternatives

The preferred scup alternative 1 (status quo) establishes a total allowable landings limit of 16.50 million lb (a 12.24 million lb adjusted commercial quota; a 3.96 million lb recreational harvest limit). The preferred scup TAL and the associated allocations are expected to achieve the target exploitation rate for 2005. Even though the initial 2005 TAL under this alternative is the same as the TAL implemented in 2004, the 2005 preliminary adjusted commercial quotas and recreational harvest limits are slightly lower than the 2004 quota and recreational limits due to the fact that the research set-aside used to adjust the allocations during these two time periods was different. This alternative will likely present no changes in biological, EFH, protected resources, economic, or social impacts in 2005 compared to 2004.

Under scup alternative 2 (most restrictive alternative), the total allowable landings limit is 11.00 million lb for 2005 (a 7.95 million lb adjusted commercial quota; a 2.74 million lb adjusted recreational harvest limit). The scup TAL under this alternative should have a positive impact on scup stock (i.e., higher stock size) in 2005, relative to the status quo scup measures (alternative 1). However, these measures are probably more conservative than needed to achieve the target exploitation rate for scup for 2005. There are no habitat or protected resources impacts associated with this alternative in 2005 compared to the status quo (alternative 1). However, negative economic impacts may occur as a result of the overall reduction in the TAL and thus expected ex-vessel revenues, relative to the existing scup measures (status quo).

Under scup alternative 3 (least restrictive alternative), the total allowable landings limit is 22.00 million lb for 2005 (a 16.53 million lb adjusted commercial quota; a 5.17 million lb adjusted recreational harvest limit). The TAL associated with this alternative corresponds to the upper end of the landings associated with the long-term potential catch for scup. This alternative allows for the largest landings compared to the previous two alternatives. There are no biological impacts associated with this alternative relative to the status quo (alternative 1). However, if the fishery exceeds the target, stock rebuilding would be hindered depressing the long-term benefits to the fishery relative to the status quo (alternative 1). There are no habitat or protected resources impacts associated with this alternative in 2005 compared to the status quo. Given the potential increase in landings associated with this alternative, positive socioeconomic impacts would likely occur in the short-term relative to the existing scup measures (status quo) due to higher expected ex-vessel revenues.

The Council and Commission recommended a change to the current Winter I possession limits in the scup fishery from a 15,000 lb possession limit (state landings limit for a 1 week period; alternative 4.1, status quo) to a possession limit of 30,000 lb (state landings limit for a 2 week period; alternative 4.2, preferred alternative). Maintaining the current Winter I possession limit in 2005 is expected not to change the biological, habitat, protected resources, economic, or social impacts in 2005 compared to 2004. Alternative 4.2 is expected to potentially reduce scup discards compared to the status quo alternative. There are no habitat or protected resources impacts associated with this alternative in 2005 compared to the status quo. Positive socioeconomic impacts are expected under alternative 4.2 compared to the current status because scup that would be typically discarded can now be landed. Overall, it is expected that the implementation of alternative 4.2 allows for regulatory discards of scup to be converted into landings, thus reducing bycatch and improving the efficiency of the commercial scup fishery.

Alternative 5.1 is the status quo mesh size for the scup fishery (4.5" minimum diamond mesh). Alternative 5.2 (preferred alternative), implements a minimum mesh size for the scup fishery of 5" with a minimum length of 75 meshes from the terminus of the net. For small nets with less than 75 meshes codends the entire net will be 5". Maintaining the current mesh size for the scup fishery in 2005 is not expected to change the biological, habitat, protected resources, economic, or social impacts in 2005 compared to 2004. The preferred mesh size alternative (alternative 5.2) would have positive biological and socioeconomic impacts as it would allow for a reduction in the discard of undersized fish, thus improving the efficiency of the commercial scup fishery compared to the status quo. There are no habitat or protected resources impacts associated with this alternative in 2005 compared to the status quo.

Alternative 6.1 utilizes the status quo threshold level to trigger the mesh requirement. The current threshold to trigger the minimum mesh size is 500 lb of scup from November 1 through April 30, and 100 lb of scup from May 1 through October 31. Alternative 6.2 (preferred alternative) changes the current threshold level used to trigger the mesh requirement from 100 lb (alternative 6.1) to 200 lb from May 1 through October 31. The Winter threshold would remain unchanged. Maintaining the current threshold level to trigger the mesh requirement for the scup fishery in 2005 is not expected to change the biological, habitat, protected resources, economic, or social impacts in 2005 compared to 2004. The preferred summer threshold level alternative (alternative 6.2) will have positive biological and socioeconomic impacts as it allows for a reduction in the discard of undersized fish, thus improving the efficiency of the commercial scup fishery compared to the status quo. There are no habitat or protected resources impacts associated with this alternative in 2005 compared to the status quo.

Alternative 7.1 is the status quo southern GRA. Alternative 7.2 (preferred alternative) moves the southern GRA three minutes westward. Alternative 7.3 redefines seaward boundary of the southern GRA. Alternative 7.1 would continue to have positive biological, habitat, and protected resources impacts in 2005 as the GRA area is closed to small mesh fisheries. Socioeconomic impacts are expected to be similar to those in previous years. The biological, habitat, and protected resources impacts of alternative 7.2 are expected to be similar to those under the status quo alternative. However, positive impacts associated with habitat and protected resources under alternative 7.2 are expected to be more greatly positive relative to the status quo. Positive socioeconomic impacts are expected to result from alternative 7.2, and they are expected to exceed those under the status quo. The biological and EFH impacts of implementing alternative 7.3 are negative compared to the status quo. Impacts on protected resources under alternative 7.3 are positive but less than those under alternatives 7.1 and 7.2. Socioeconomic impacts under alternative 7.3 are likely to be substantially higher than those under the status quo alternative as well as those under alternative 7.2.

Alternative 8.1 (status quo) continues the current scup exemption program. Alternative 8.2 (preferred alternative) terminates the current scup exemption program. The continuation of the exemption program poses no biological, habitat, protected resources, or socioeconomic impacts in 2005 compared to

2004. Furthermore, no fishing vessels have participated in the exemption program since its implementation. Therefore, termination of the exemption program (alternative 8.2) is not expected to have any biological, habitat, protected resources, or socioeconomic impacts in 2005 compared to 2004.

In addition, the Council and Commission recommended that the minimum vent size and fish size regulations for scup remain in place for 2005.

Black Sea Bass Alternatives

The preferred black sea bass alternative 1 establishes a total allowable landings limit of 8.20 million lb (a 3.96 million lb adjusted commercial quota; a 4.13 million lb recreational harvest limit) for 2005. The preferred black sea bass TAL and the associated allocations are expected to achieve the target exploitation rate for 2005. The implementation of this alternative is not expected to change the biological, habitat, or protected resources impacts in 2005 compared to the status quo (alternative 2). However, positive socioeconomic impacts will likely occur under this alternative due to higher expected ex-vessel revenues compared to the status quo.

Under black sea bass alternative 2 (status quo and most restrictive alternative) the total allowable landings limit maintains 8.00 million lb for 2005 (a 3.87 million lb adjusted commercial quota; a 4.02 million lb adjusted recreational harvest limit). Even though the initial 2005 TAL under this alternative is the same as the TAL implemented in 2004, the 2005 preliminary adjusted commercial quotas and recreational harvest limits are slightly lower than the 2004 quota and recreational limits due to the fact that the research set-aside used to adjust the allocations during these two time periods differs. It is expected that this alternative will not change the biological, habitat, or protected resources, economic, or social impacts in 2005 compared to 2004.

Under scup alternative 3 (least restrictive alternative) the total allowable landings limit specifies 8.70 million lb for 2005 (a 4.21 million lb adjusted commercial quota; a 4.38 million lb adjusted recreational harvest limit). The higher TAL under this alternative is based on a biomass value that may be unrealistic for 2005. As such, it results in an exploitation rate that would likely exceed the target for 2005. If the target is exceeded, stock rebuilding would be slowed. The implementation of this alternative may potentially result in lower black sea bass stock size compared to the status quo alternative. No changes to habitat or protected resources impacts in 2005 compared to 2004 are expected under this alternative. Finally, short-term positive socioeconomic impacts compared to the status quo alternative are expected due to potential larger landings. However, longer-term negative socioeconomic impacts are also possible as sustainable future landings levels may be compromised.

In addition, the Council and Commission recommended that the minimum vent size, mesh size, and other gear regulations for black sea bass remain in place for 2005.

Research Set Aside-Alternatives

Alternative 1 does not implement a research set-aside for summer flounder, scup, or black sea bass. Alternative 2 (preferred alternative and status quo) implements a research set-aside for these species. Alternative 1 poses no biological, habitat, or protected resources impacts compared to 2004. However, under this alternative the collaborative efforts between the public, research institutions, and government in broadening the scientific base upon which management decisions are made will cease. The Nation would not receive the benefit derived when data or other information about these fisheries are obtained for management or stock assessment purposes. Alternative 2 specifies a maximum summer flounder, scup, and black sea bass research set-aside of 353,917 lb, 303,675 lb, and 109,500 lb for 2005, respectively. In addition, research set-aside amount of up to 3-percent of the TALs were assessed for summer flounder for year 2006. No changes to biological, habitat, protected resources, or socioeconomic impacts compared to 2004 are expected under alternative 2.

A detailed description and discussion of the expected environmental impacts resulting from the alternatives considered in this specifications document are given in section 7.0. Boxes ES-1 through ES-4 present a qualitative summary of the impacts of the various alternatives. The environmental impacts of the proposed measures were analyzed and the anticipated level of significance of these impacts is discussed in accordance with the NEPA and NAO 216-6 formatting requirements for an EA. None of the preferred action alternatives are associated with significant impacts to the biological, social or economic, or physical environment; therefore, a "Finding of No Significant Impact" is determined.

Box ES-1. Overall qualitative summary of the expected impacts of various summer flounder alternatives considered in this document (2005 and 2006). A minus sign signifies an expected negative impact, a plus sign signifies a positive impact, and a zero is used for null impact.

		Environmental Dimensions									
		Biological		EFH		Protected Resources		Economic		Social	
		2005	2006	2005	2006	2005	2006	2005	2006	2005	2006
Summer Flounder	Alternative 1 (Preferred TAL)	0	0	0	0	0	0	+	+	+	+
	Alternative 2 (Status Quo/Most Restrictive TAL)	+	+	0	0	0	0	0/ (-?)	0/ (-?)	0/ (-?)	0/ (-?)
	Alternative 3 (Least Restrictive TAL)	0	0	0	0	0	0	+	+	+	+

Box ES-2. Overall qualitative summary of the expected impacts of various scup alternatives considered in this document (2005). A minus sign signifies an expected negative impact, a plus sign signifies a positive impact, and a zero is used for null impact. (S=short-term; L=long-term).

		Environmental Dimensions				
		Biological	EFH	Protected Resources	Economic	Social
Scup	Alternative 1 (Preferred/Status Quo TAL)	0	0	0	0/-(?)	0/-(?)
	Alternative 2 (Most Restrictive TAL)	+	0	0	-	-
	Alternative 3 (Least Restrictive TAL)	0/-(?)	0	0	+(S)/ -(L?)	+(S)/ -(L?)
	Alternative 4.1 (Status Quo Winter I Possession Limit/No Action)	0	0	0	0	0
	Alternative 4.2 (Winter I Landings Limit of 30,000 lb; Preferred Alternative)	+	0	0	+	+
	Alternative 5.1 (Status Quo Mesh Size/No Action)	-	0	0	0/ -(L?)	0/ -(L?)
	Alternative 5.2 (5" Mesh Size; Preferred Alternative)	+	0	0	+	+
	Alternative 6.1 (Status Quo Mesh Threshold/No Action)	0	0	0	0	0
	Alternative 6.2 (200 lb Threshold from May 1 through October 31; Preferred Alternative)	+	0	0	+	+
	Alternative 7.1 (Status Quo Southern GRA/No Action)	+	+	+	0	0
	Alternative 7.2 (3 Minute Shift Westward of Southern GRA; Preferred Alternative)	+	+	+	+	+
	Alternative 7.3 (Redefine Seaward Boundary of Southern GRA)	-	0	+	+	+
	Alternative 8.1 (Status Quo Exemption Program/No Action)	0	0	0	0	0
	Alternative 8.2 (End Exemption Program; Preferred Alternative)	0	0	0	0	0

Box ES-3. Overall qualitative summary of the expected impacts of various black sea bass alternatives considered in this document (2005). A minus sign signifies an expected negative impact, a plus sign signifies a positive impact, and a zero is used for null impact. (S=short-term; L=long-term).						
		Environmental Dimensions				
		Biological	EFH	Protected Resources	Economic	Social
Black Sea Bass	Alternative 1 (Preferred TAL)	0	0	0	+	+
	Alternative 2 (Status Quo/Most Restrictive TAL)	0	0	0	0/-(?)	0/-(?)
	Alternative 3 (Least Restrictive TAL)	-	0	0	+(S)/ -(L?)	+(S)/ -(L?)

Box ES-4. Overall qualitative summary of the expected impacts of summer flounder, scup, and black sea bass research set-aside measures considered in this document. A minus sign signifies an expected negative impact, a plus sign signifies a positive impact, and a zero is used for null impact.					
	Environmental Dimensions				
	Biological	EFH	Protected Resources	Economic	Social
Alternative 1 (No Research Set-Aside/No Action)	0	0	0	0	0
Alternative 2 (Specify Research Set-Asides; Preferred/Status Quo)	0	0	0	0	0

2.0 LIST OF ACRONYMS

ACFCMA	Atlantic Coastal Fisheries Cooperative Management Act
ASMFC	Atlantic States Marine Fisheries Commission or Commission
AO	Administrative Order
B	Biomass
CEQ	Council on Environmental Quality
CPUE	Catch Per Unit Effort
CZMA	Coastal Zone Management Act
DPS	Distinct Population Segment
EA	Environmental Assessment
EEZ	Exclusive Economic Zone
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
EO	Executive Order
ESA	Endangered Species Act of 1973
F	Fishing Mortality Rate
FR	Federal Register
FMP	Fishery Management Plan
GRA	Gear Restricted Area
HPTRP	Harbor Porpoise Take Reduction Plan
IRFA	Initial Regulatory Flexibility Analysis
LTPC	Long-term Potential Catch
LWTRP	Large Whale Take Reduction Plan
M	Natural Mortality Rate
MAFMC	Mid-Atlantic Fishery Management Council
MMPA	Marine Mammal Protection Act
MRFSS	Marine Recreational Fisheries Statistical Survey
MSFCMA	Magnuson-Stevens Fishery Conservation and Management Act
MSY	Maximum Sustainable Yield
mt	metric tons
NAO	National Oceanic and Atmospheric Administration Order
NE	New England
NEFMC	New England Fishery Management Council
NEFSC	Northeast Fisheries Science Center
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
OY	Optimal Yield
PBR	Potential Biological Removal
PRA	Paperwork Reduction Act
PREE	Preliminary Regulatory Economic Evaluation
RIR	Regulatory Impact Review
RSA	Research Set-Aside
SAFMC	South Atlantic Fishery Management Council
SARC	Stock Assessment Review Committee
SAV	Submerged Aquatic Vegetation
SAW	Stock Assessment Workshop
SMA	Small Business Administration
SSB	Spawning Stock Biomass
SFA	Sustainable Fisheries Act
TAL	Total Allowable Landings
TL	Total Length
VECs	Valuable Environmental Components
VMS	Vessel Monitoring System
VPA	Virtual Population Analysis
VTR	Vessel Trip Report

3.0 TABLE OF CONTENTS

ENVIRONMENTAL ASSESSMENT

4.0 INTRODUCTION AND BACKGROUND OF SPECIFICATION PROCESS

4.1 PURPOSE AND NEED OF THE ACTION

The purpose of this action is to implement 2005 and 2006 commercial management measures for the summer flounder fishery and 2005 commercial management measures for scup and black sea bass fisheries. These measures comply with the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), including the national standards for fishery conservation and management, the Summer Flounder, Scup, and Black Sea Bass Fishery Management Plan (FMP), and the FMP amendments. Management measures include commercial quotas, recreational harvest limits, and other measures to ensure that the annual fishing targets specified in the FMP for these species are attained.

The management regime is detailed in the Summer Flounder, Scup, and Black Sea Bass Fishery Management Plan (FMP) and subsequent Amendments to the FMP. Comprehensive measures enacted by Amendment 2 and modified in Amendments 3 through 7 and 10 were designed to rebuild the severely depleted summer flounder stock. Amendments 8 and 9 to the Summer Flounder, Scup and Black Sea Bass FMP implemented recovery strategies to rebuild the scup and black sea bass stocks, respectively. The FMP specifies for summer flounder a target F for 2005 and 2006 of F_{MAX} (the level of fishing that produces maximum yield per recruit). Best available data indicate that F_{MAX} is currently equal to 0.26. The target is attained by specification of the total allowable landings (TALs) allocated to the commercial (60 percent) and the recreational (40 percent) sectors. The commercial sector's quota is allocated to the coastal states based on percentage shares specified in the FMP.

The FMP established a target exploitation rate for scup based on F_{MAX} beginning in 2002. Based on the current estimate of F_{MAX}, that rate is 21 percent. The total allowable catch (TAC) associated with that rate allocates 78 percent to the commercial sector and 22 percent to the recreational sector. Discard estimates are deducted from both TACs to establish total allowable landings for both sectors. The commercial TAC, discards, and TAL are allocated to three different periods.

The FMP specifies a target exploitation rate of 25 percent for black sea bass in 2005. This target is to be attained through specification of a TAL level that is allocated to the commercial (49 percent) and recreational (51 percent) fisheries. Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP, which became effective March 31, 2003, establishes an annual (calendar year) coastwide quota to complement a state-by-state quota system adopted by the Atlantic States Marine Fisheries Commission (Commission) for the commercial black sea bass fishery. This system replaces the quarterly quota allocation system previously in place (i.e., implemented in Amendment 9).

The FMP established Monitoring Committees which meet annually to review the best available scientific data and make recommendations regarding the TALs and other management measures in the plan. The Committee's recommendations are designed to achieve the target fishing mortality or exploitation rates established in the amendments to reduce overfishing. The Committee bases its recommendations on the following information: (1) commercial and recreational catch data; (2) current estimates of fishing mortality; (3) stock status; (4) recent estimates of recruitment; (5) virtual population analysis (VPA); (6) target mortality levels; (7) levels of regulatory noncompliance by fishers or individual states; (8) impact of fish size and net mesh regulations; (9) sea sampling data; (10) impact of gear other than otter trawls on the mortality of each species; and (11) other relevant information.

Based on the recommendations of the Monitoring Committee, the Mid-Atlantic Fisheries Management Council's Demersal Species Committee makes a recommendation to the Council which in turn makes a recommendation to the Regional Administrator. The Regional Administrator reviews the recommendation and may revise it if necessary to achieve FMP objectives. In addition, because the FMP is a joint plan with the Commission, the Commission's Summer Flounder, Scup and Black Sea Bass Board (Board) adopts complementary measures. The Council met jointly with the Board and adopted recommended measures at the August 2004 meeting.

The management measures contained in the Summer Flounder, Scup, and Black Sea Bass FMP are intended to address the overfished condition and/or avoid overfishing relative to the biological reference points detailed in Amendment 12 for these species. The summer flounder measures are based on a management plan originally drafted by the State/Federal Summer Flounder Management Program pursuant to a contract between the New Jersey Division of Fish, Game, and Wildlife, and the National Marine Fisheries Service (NMFS). The State/Federal draft was adopted by the Commission in 1982. The Council adopted the FMP in April 1988, and NMFS approved it in September 1988. The FMP has been amended several times since its initial implementation. Amendment 2 enacted management measures for the summer flounder fishery through final regulations implemented on December 4, 1992 (57 FR 57358). Amendment 8 enacted management measures for the scup fishery north of Cape Hatteras Light through final regulations implemented on September 23, 1996 (61 FR 43420). Amendment 9 enacted management measures for the black sea bass fishery north of Cape Hatteras Light through final regulations implemented on December 16, 1996 (61 FR 58461). Each of these amendments enacted comprehensive management measures to attain annual fishing targets and address overfishing. Each of the amendments were adopted jointly by the Council and the Commission, so state regulatory actions complement federal management actions. Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP, implemented on March 31, 2003 (68 FR 10181), establishes an annual (calendar year) coastwide quota to complement a state-by-state quota system adopted by the Commission. This system replaced the quarterly quota allocation system previously in place (i.e., implemented in Amendment 9); removed permit restrictions for fishermen that have both a Northeast Region Black Sea Bass (NER BSB) permit and a Southeast Region Snapper/Grouper (SER S/G) permit and fish for black sea bass north and south of Cape Hatteras, North Carolina; and brought the FMP into compliance with the Essential Fish Habitat (EFH) provisions of the Sustainable Fisheries Act(SFA)[section 303(a)(7)].

Framework 1 to the Summer Flounder, Scup, and Black Sea Bass FMP, which was approved by NMFS on August 10, 2001 (66 FR 42156), establishes a procedure through which research set-aside amounts up to 3-percent are set annually as part of Council's quota-setting process. The intent of the program is to support the collection of new information that benefits both the commercial and recreational fisheries for these species. Collaborative efforts between the public, research institutions, and the government are subsidized by a percentage set-aside from the total allowable landings (TAL) of selected species, including summer flounder, scup, and black sea bass, under management by the Mid-Atlantic Council.

On February 14, 2002 (67 FR 6877) NMFS implemented new quota counting procedures for summer flounder, scup, and black sea bass. During November of a given year, all available landings data for January 1 - October 31 of that year are compiled and compared to that year's quota. Any overages are determined and deducted appropriately from the upcoming fishing year's quota, e.g., by state for summer flounder, period for scup, or costwide for black sea bass. If any overage deductions are necessary as a result of landings made during November - December, or as a result of late data submitted for January 1 - October 31, those overages will be applied to the quota allocations for the next fishing year. Because the black sea bass commercial quota is now allocated on a coastwide basis, a counting procedure similar to that developed for the summer flounder fishery was used to assess overages for the black sea bass fishery in this document.

Under the current management system, the TALs for each species are specified every year and apply only to the following year. However, Framework Adjustment 5, approved by the Council May 5, 2004 and submitted to NMFS May 12, 2004, allows for the specification of TALs for summer flounder, scup, and/or black sea bass fisheries in any given year for up to three years. The ASMFC Board approved similar measures in August 2004. This modification to the FMP should relieve administrative demands on Council and NOAA Fisheries imposed by the annual specification process. Additionally, longer term specifications should provide greater regulatory consistency and predictability to the commercial and recreational fishing sectors. If Framework Adjustment 5 is not approved by January 1, 2005, the current management system of annual TALs will remain in effect.

In this specifications package all management alternatives for summer flounder were evaluated for a two year period (2005 and 2006) while all management measures for the scup and black sea bass fisheries were evaluated for a one year period (2005). The two year specifications apply only if the following takes place: a) Framework Adjustment 5 is approved by January 1, 2005; and 2) NMFS accepts the 2-year management specifications proposed by the Council and Commission. However, if the NMFS decides that the 2-year management alternatives are unacceptable or Framework Adjustment 5 is not approved by January 1, 2005, then only the first year of the proposed specifications (2005) apply.

4.2 MANAGEMENT OBJECTIVE OF THE FMP

The management objectives of the FMP are as follows:

1) reduce fishing mortality in the summer flounder, scup and black sea bass fisheries to ensure that overfishing does not occur;
2) reduce fishing mortality on immature summer flounder, scup, and black sea bass to increase spawning stock biomass;
3) improve the yield from the fishery;
4) promote compatible management regulations between state and federal jurisdictions;
5) promote uniform and effective enforcement of regulations;
6) minimize regulations to achieve the management objectives stated above.

To attain these management objectives, the FMP states that the following measures may be specified annually:

* commercial quotas;
* minimum sizes;
* gear regulations;
* recreational harvest limit;
* recreational possession limit, season, and no-sale provision.

4.3 METHODS OF ANALYSIS

The basic approach adopted in this analysis is an assessment of the impact of the various management measures on the environment. In order to conduct a more complete analysis, a preliminary adjusted quota was calculated by deducting the research set-aside from the TAL. Preliminary commercial quota overages for the 2004 fishing year are also deducted from the initial quota alternatives when necessary (Boxes 4.1 and 4.2). The current quota overages were calculated according to the quota counting procedures outlined in section 4.1, using the best available data. The preliminary adjusted commercial quota impacts were examined for three alternatives. These recommendations, and their impacts relative to 2003 landings are shown in Boxes 4.3 and 4.4. Three TAL alternatives were examined for each species. These alternatives included a preferred alternative and a status quo alternative. In all cases the preferred alternative examines the measures adopted by the Council and Board for 2005 and 2006 for summer flounder and 2005 for scup and black sea bass. Finally, the set of individual alternatives evaluated under each species also examines the impacts of the lowest (most restrictive) and highest (least restrictive) quotas considered in this specifications package. In some instances the status quo alternative may also be the preferred alternative or the most/least restrictive alternative.

In assessing the multi-year TALs for the summer flounder fishery, various assumptions were taken. Specifically, it was assumed that the research set-aside for year two (2006) was equal to the maximum allowable under Framework 1 to the Summer Flounder, Scup, and Black Sea Bass FMP. That is, research set-aside amounts of up to 3-percent of the TALs were assessed for summer flounder for year 2006. This was done because the information pertaining the potential amounts of research set-aside needed to conduct research in 2006 is not known. Therefore, the maximum research set-aside allowable was considered in order to conduct a more complete analysis of impacts. In addition, the summer flounder quotas under the various alternatives account for preliminary overages (as of July 31, 2004). The summer flounder quotas presented in Box 4.3 account for preliminary overages of 0.05 million lb (0.02 million kg) in Delaware. Overages for 2005 in the summer flounder fishery were assumed to continue in 2006 and that no additional overages would occur in 2005. Lastly, there were no overages in the scup and black sea bass fisheries as of as of July 31, 2004. Therefore, it was not necessary to adjust the scup or black sea bass commercial quotas in 2005.

A full description of these alternatives, including a discussion of a no action alternative, is given in section 5.0.

5.0 MANAGEMENT ALTERNATIVES

5.1 Summer Flounder

5.1.1 Alternative 1 (Preferred TAL)

Alternative 1 includes the harvest levels recommended by the Council and Board (adjusted as detailed in section 4.3) on vessels that are permitted to catch any of the three species. The Council and Board recommended a TAL of 30.30 million lb (13.74 million kg) for 2005 and 33.00 million lb (14.96 million kg) for 2006 summer flounder. The summer flounder TALs selected by the Council and Commission are identical to the multi-year TALs recommended by the monitoring committee for this species. The recommended coastwide TAL for 2005 and 2006 both have a 75 percent probability of

Box 4.1. Comparison (in million lb) of the summer flounder alternatives of quota combinations reviewed (2005 and 2006).											
		Initial TAL		Research Set-Aside		Commercial Quota Overage		Preliminary Adjusted Commercial Quota*		Preliminary Recreational Harvest Limit	
		2005	2006	2005	2006	2005	2006	2005	2006	2005	2006
Summer Flounder	Alternative 1 (Preferred)	30.30	33.00	0.35	0.99	0.05	0.05	17.97	19.21	11.98	12.80
	Alternative 2 (Status Quo/Most Restrictive)	28.20	28.20	0.35	0.85	0.05	0.05	16.71	16.41	11.14	10.94
	Alternative 3 (Least Restrictive)	32.60	35.50	0.35	1.07	0.05	0.05	19.35	20.66	12.90	13.77
*Note that preliminary quotas are provisional and may change to account for overages according to the quota counting procedures outlined in section 4.1.											

Box 4.2. Comparison (in million lb) of the scup and black sea bass alternatives of quota combinations reviewed (2005).						
		Initial TAL	Research Set-Aside	Commercial Quota Overage	Preliminary Adjusted Commercial Quota*	Preliminary Recreational Harvest Limit
Scup	Alternative 1 (Preferred/Status Quo)	16.50	0.30	0	12.24	3.96
	Alternative 2 (Most Restrictive)	11.00	0.30	0	7.95	2.74
	Alternative 3 (Least Restrictive)	22.00	0.30	0	16.53	5.17
Black Sea Bass	Alternative 1 (Preferred)	8.20	0.11	0	3.96	4.13
	Alternative 2 (Status Quo/Most Restrictive)	8.00	0.11	0	3.87	4.02
	Alternative 3 (Least Restrictive)	8.70	0.11	0	4.21	4.38
*Note that preliminary quotas are provisional and may change to account for overages according to the quota counting procedures outlined in section 4.1.						

Box 4.3. Comparison (in million lb) of the summer flounder alternatives of quota combinations reviewed (2005 and 2006).						
	Preliminary Adjusted Commercial Quota*		Percent of 2003 Landings		Percent Change	
	2005	2006	2005	2006	2005	2006
Alternative 1 (Preferred)	17.97	19.21	126.19	134.90	26.19	34.90
Alternative 2 (Status Quo/Most Restrictive)	16.71	16.41	117.34	115.23	17.34	15.23
Alternative 3 (Least Restrictive)	19.35	20.66	135.88	145.08	35.88	45.08
*Note that preliminary quotas are provisional and may change to account for overages according to the quota counting procedures outlined in section 4.1.						

Box 4.4. Comparison (in million lb) of the scup and black sea bass alternatives of quota combinations reviewed (2005).				
		Preliminary Adjusted Commercial Quota*	Percent of 2003 Landings	Percent Change
Scup	Alternative 1 (Preferred/Status Quo)	12.24	125.53	25.53
	Alternative 2 (Most Restrictive)	7.95	81.53	-18.46
	Alternative 3 (Least Restrictive)	16.53	169.53	69.53
Black Sea Bass	Alternative 1 (Preferred)	3.96	132.88	32.88
	Alternative 2 (Status Quo/Most Restrictive)	3.87	129.86	29.86
	Alternative 3 (Least Restrictive)	4.21	141.27	41.27
*Note that preliminary quotas are provisional and may change to account for overages according to the quota counting procedures outlined in section 4.1.				

achieving the target F of 0.26 in 2005 and 2006, given the results of the latest stock assessment. The Council approved a 2005 research set-aside for summer flounder of 353,917 lb (160,534 kg), which would be deducted from the TAL. A research set-aside for year two (2006) equal to the maximum allowable under Framework 1 to the Summer Flounder, Scup, and Black Sea Bass FMP was assumed. That is, a research set-aside amount of up to 3-percent of the TAL was assessed for summer flounder for year 2006. This was done because the information pertaining to the potential amounts of research set-aside needed to conduct research in 2006 are not yet known. Therefore, the summer flounder research set-aside for 2006 is estimated at 990,000 lb (449,056 kg). After the research set-aside is deducted from the TAL, the TAL is divided between the commercial and recreational components of the fishery in the same proportion as it was each year from 1993 to 2004, 60 percent to the commercial fishery and 40 percent to the recreational fishery. In 2005, the commercial fishery would receive 17.97 million lb (8.15 million kg) as a quota, and the recreational fishery would receive 11.98 million lb (5.43 million kg) as a harvest limit. In 2006, the commercial fishery would receive 19.21 million lb (8.71 million kg) as a quota, and the recreational fishery would receive 12.80 million lb (5.80 million kg) as a harvest limit.

The summer flounder commercial quota is allocated to each state based on 1980-1989 adjusted landings as detailed in Amendment 4 of the FMP. State commercial shares would range from negative quotas to 4.93 million lb (2.23 million kg) in 2005 and 5.27 million lb (2.39 million kg) in 2006.

The quotas presented in Box 5.1 account for preliminary overages (as of July 31, 2004) of 0.05 million lb (0.02 million kg) in Delaware. The commercial quota and state shares are provisional and would be adjusted in early 2005 to reflect noncompliance by the states, i.e., additional 2004 quota excesses would be deducted from the 2005 quota allocation. In addition, summer flounder quotas in 2006 would be adjusted if additional overages are identified in 2005.

Box 5.1. The amount of summer flounder allocated to commercial fishery in each state based on coastwide quota alternatives and research set-asides in 2005 and 2006*. Allocations account for overages as of July 31, 2004. Negative numbers are in parenthesis().

State	Percent	Quota Allocation (lb)**					
		Alt. 1		Alt. 2		Alt. 3	
		2005	2006	2005	2006	2005	2006
ME	0.04756	8,545	9,134	7,946	7,806	9,202	9,826
NH	0.00046	83	88	77	75	89	95
MA	6.82046	1,225,476	1,309,938	1,139,539	1,119,401	1,319,599	1,409,175
RI	15.68298	2,817,863	3,012,073	2,620,257	2,573,953	3,034,288	3,240,260
CT	2.25708	405,544	433,495	377,105	370,441	436,692	466,335
NY	7.64699	1,373,984	1,468,681	1,277,632	1,255,055	1,479,513	1,579,945
NJ	16.72499	3,005,088	3,212,202	2,794,353	2,744,972	3,235,892	3,455,550
DE	0.01789	(45,891)	(45,670)	(46,115)	(46,167)	(45,645)	(45,411)
MD	2.03910	366,378	391,630	340,686	334,665	394,518	421,298
VA	21.31676	3,830,121	4,094,097	3,561,530	3,498,592	4,124,292	4,404,256
NC	27.44584	4,931,372	5,271,248	4,585,555	4,504,521	5,310,125	5,670,585
Total	100.0000	17,964,455	19,202,585	16,704,679	16,409,482	19,344,210	20,657,326

*Note that a research set-aside of 0.35 million lb (0.15 million kg) was assumed for 2005 under each alternative. For 2006, a research set-aside of up to three percent of the TAL was assessed under each alternative. Therefore, a 2006 research set-aside of 0.990, 0.845, and 1.065 million lb (0.449, 0.383, and 0.483 million kg) was assumed for alternatives 1, 2 and 3, respectively, in 2006. **Total quota is the summation of all states having allocation. A state with a negative number has an allocation of zero (0).

In 1998, the Council and Board established a system whereby 15 percent of each state's quota for summer flounder would be set-aside to reduce discards after the closure of the directed commercial fishery and allow for summer flounder landings to continue throughout the fishing season. This program would continue in 2005 and 2006. In order for fishermen to land the incidental catch allowance in a state, the Commission recommended that a state implement possession limits such that summer flounder on board cannot exceed 10 percent of other species on board for any trip set under the incidental catch allocation. Possession limits must be sufficiently restrictive to allow the incidental catch fishery to remain open for the entire year without exceeding the state's overall quota. In addition, the Commission recommended that states implement programs to collect additional data on discards in the commercial fishery.

The current minimum fish size, minimum mesh regulations, and minimum mesh threshold will remain unchanged in 2005 and 2006. The minimum fish size is 14"; the mesh size is a minimum of 5.5" diamond mesh or 6" square mesh applied throughout the body, extension(s), and codend portion of the net.

5.1.2 Alternative 2 (Status Quo/Most Restrictive TAL)

The most restrictive alternative for summer flounder is a TAL of 28.20 million lb (12.79 million kg) for 2005 and 2006, the status quo TAL for summer flounder. These TALs have about 90 percent probability of achieving the target F for summer flounder in 2005 and 2006. The initial commercial quota under this system is 16.92 million lb (7.67 million kg) and the initial recreational harvest limit would be 11.28 million lb (5.11 million kg) for summer flounder in 2005 and 2006. After deducting the research set-aside for summer flounder of 353,917 lb (160,534 kg) in 2005 and 846,000 lb (383,739 kg) in 2006, the commercial quota is 16.71 million lb (7.57 million kg) in 2005 and 16.41 million lb (7.44 million kg) in 2006. The adjusted recreational harvest limit is 11.14 million lb (5.05 million kg) in 2005 and 10.94 million lb (4.96 million kg) in 2006. State commercial shares range from negative quotas to 4.58 million lb (2.07 million kg) in 2005 to 4.50 million lb (2.04 million kg) in 2006 (Box 5.1). The quotas presented in Box 5.1 account for a preliminary overage (as of July 31, 2004) of 0.05 million lb (0.02 million kg) in Delaware.

Note that while the overall TAL is identical for 2005 and 2006, the adjusted commercial quotas and recreational harvest limits are different during those two time periods because the research set-aside used to adjust these allocations is different under both time periods (i.e., 2005 and 2006).

The proposed summer flounder minimum fish size, minimum mesh, and minimum mesh threshold regulations described under the preferred alternative 1 for summer flounder also apply here as well.

5.1.3 Alternative 3 (Least Restrictive TAL)

The least restrictive alternative for summer flounder is a TAL of 32.60 million lb (14.78 million kg) for 2005 and 35.50 million lb (16.10 million kg) for 2006. These TALs have approximately a 50 percent probability of achieving the target F for summer flounder in 2005 and 2006. Under this alternative, the initial commercial quota is 19.56 million lb (8.87 million kg) in 2005 and 21.30 million lb (9.66 million kg) in 2006. The initial recreational harvest limit is 13.04 million lb (5.91 million kg) in 2005 and 14.20 million lb (6.44 million kg) in 2006. After deducting the research set-aside for summer flounder of 353,917 lb (160,534 kg) in 2005 and 1,065,000 lb (483,076 kg) in

2006, the commercial quota is 19.35 million lb (8.77 million kg) in 2005 and 20.66 million lb (9.37 million kg) in 2006. The adjusted recreational harvest limit is 12.90 million lb (5.85 million kg) in 2005 and 13.77 million lb (6.24 million kg) in 2006. State commercial shares range from negative quotas to 5.31 million lb (2.40 million kg) in 2005 to 5.67 million lb (2.57 million kg) in 2006 (Box 5.1). The quotas presented in Box 5.1 account for a preliminary overage (as of July 31, 2004) of 0.05 million lb (0.02 million kg) in Delaware.

The proposed summer flounder minimum fish size, minimum mesh, and minimum mesh threshold regulations described under the preferred alternative 1 for summer flounder also apply here as well.

5.1.4 Alternative 4 (No Action Alternative)

Section 5.03(b) of NOAA Administrative Order (AO) 216-6, "Environmental review procedures for implementing the National Environmental Policy Act," states that "an Environmental Assessment (EA) must consider all reasonable alternatives, including the preferred action and the no action alternative." Consideration of the "no action" alternative is important because it shows what would happen if the proposed action is not taken. Defining exactly what is meant by the "no action" alternative is often difficult. The President's Council on Environmental Quality (CEQ) has explained that there are two distinct interpretations of the "no action": One interpretation is essentially the status quo, i.e., no change from the current management. The other interpretation is when a proposed project, such as building a railroad facility, does not take place. In the case of the proposed 2005 and 2006 specifications for summer flounder, determining the no action alternative is slightly more complicated than either of these interpretations suggest.

The status quo management for the summer flounder fishery involves a set of indefinite (i.e., in force until otherwise changed) management measures such as minimum allowable sizes, bag limits, and reporting requirements. These measures will continue as they are even if the proposed specifications are not implemented. However, the current management program includes the specification of a TAL that is specific to the 2004 fishing year. There are no "roll-over" provisions currently provided for in the FMP. Thus, if the proposed 2005/2006 summer flounder specifications are not implemented by January 1, 2005, the fishery will operate without an identified cap on allowable landings. Because of this subtlety in the management program for summer flounder, the no action alternative is not equivalent to the status quo (which would include the current TAL). If the action that results in setting the proposed specifications for this fishery is not taken, some current measures will remain in place, but the overall management program will not be identical to that of 2004.

For the purposes of this EA, the no action alternative is defined as follows: (1) no proposed specifications for the 2005/2006 summer flounder fishery will be published; (2) the indefinite management measures (minimum sizes, bag limits, possession limits, permit and reporting requirements, etc.) remain unchanged; (3) there will be no quota set-aside allocated to research in 2005/2006; and (4) there is no specific cap on the allowable annual landings in this fishery (i.e., there would be no quota). Under the no action alternative, the only regulatory controls on fishing effort and harvests would be the indefinite measures. A commercial quota, which determines the maximum amount of summer flounder landings allowable before the commercial fishery is shut down, would not be implemented for 2005/2006.

The implications of the no action alternative are substantial. The no action alternative does not allow NMFS to specify and implement a TAL for this fishery, as required in the regulations at 50 CFR part 648, for the upcoming fishing year. Monitoring the landings, and taking action as necessary to prevent the state and federal TAL from being exceeded, as applicable, is essential for management of this fishery and forms the backbone of the current management system under the FMP. Implementation of the no action alternative is inconsistent with the goals and objectives of the FMP and its implementing regulations. The no action alternative, which is likely to result in overfishing of summer flounder (due to NMFS' inability to monitor and enforce the quota), is also inconsistent with National Standard 1 of the Magnuson-Stevens Act. The no action alternative is not a reasonable alternative to the preferred action because it is inconsistent with the goals and objectives of the FMP, the implementing regulations and the Magnuson-Stevens Act. Additionally, the no action alternative would complicate the approved management program for this fishery and likely result in overfishing. Therefore, the no action alternative is not analyzed further in the Environmental Assessment.

5.2 Scup

5.2.1 Alternative 1 (Preferred/Status Quo TAL)

The preferred alternative for scup sets the scup TAL at 16.50 million lb (7.48 million kg) for 2005 (status quo). The Council considered the advice of the Monitoring Committee to adopt the same TAL implemented in 2004. This TAL recommendation is based on the condition of the stock relative to the biological reference point. Specifically, given that the stock is no longer overfished (i.e., the biomass is in excess of the biomass threshold[1]) the biomass may be at or larger than ½ B_{MSY}. Although MSY has not been calculated for scup, the average long-term landings can be used as a surrogate. Based on landings data, the Northeast Fisheries Science Center (NEFSC) derived a long-term potential catch (LTPC) for scup that ranged from 22-33 million lb (9.98 to 14.97 million kg). These estimates would represent the landings that could be taken from the stock once it was rebuilt to B_{MSY} levels. As such, yields at ½ B_{MSY} could range from 11.00 to 16.50 million lb (4.99 to 7.48 million kg).

Estimated discards were added to the TAL to derive a TAC of 18.65 million lb (8.46 million kg). The TAC is allocated to the commercial and recreational fisheries based on the proportions of commercial and recreational catch (landings plus discards) for the years 1988-1992. Based on this data, 78 percent of the TAC is allocated to the commercial fishery and 22 percent to the recreational fishery. The commercial TAC for 2005 is 14.55 million lb (6.60 million kg), and the recreational TAC is 4.10 million lb (1.86 million kg). Discard estimates are deducted from these TACs to set a TAL for the commercial and recreational sectors. The commercial TAL is a quota; and the recreational TAL is a harvest limit. Both are shown in Box 5.2.

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[1]Biomass threshold is a term used to define when a fishery is considered overfished. When the stock biomass is below the threshold biomass, then the fishery is considered overfished. According to the biological reference points established for summer flounder, scup, and black sea bass, the biomass threshold for these species are: 53,222 mt; 2.77 kg/tow (3-year moving average, NEFSC spring survey SSB index); and 0.9 kg/tow (3-year moving average, NEFSC spring survey SSB index), respectively.

Box 5.2. Derivation of the initial TALs for the commercial and recreational scup fisheries.		
	Commercial (million lb)	Recreational (million lb)
TAC:	14.55 (6.60 million kg)	4.10 (1.86 million kg)
Less Discard Estimate:	2.08 (0.94 million kg)	0.07 (0.03 million kg)
Initial TAL:	12.47 (5.66 million kg)	4.03 (1.83 million kg)

Under the preferred alternative/Alternative 1, the initial commercial TAL is 12.47 million lb (5.66 million kg), and the initial recreational harvest limit is 4.03 million lb (1.83 million kg) for 2005. Additionally, the Council approved a research set-aside for scup of 303,675 lb (137,744 kg), which would be deducted from the TAL. This results in a preliminary adjusted commercial quota of 12.24 million lb (5.55 million kg), and an adjusted recreational harvest limit of 3.96 million lb (1.79 million kg). The commercial quota also adjusted for overages by period, according to the quota counting procedures outlined in section 4.3. However, as of July 31, 2004 there were no overages by the 2004 commercial scup fishery. The allocation of the commercial quota for each period is presented in Box 5.3.

Box 5.3. Comparison (in million lb) of the scup alternatives of quota combinations reviewed (2005).				
Period	Percent Allocation	Adjusted Quota (million lb)		
		Alt. 1	Alt. 2	Alt. 3
Annual	100.00	12.24	7.95	16.53
Winter I Jan-April	45.11	5.52	3.59	7.45
Summer May-Oct	38.95	4.77	3.10	6.44
Winter II Nov-Dec	15.94	1.95	1.27	2.63

The Summer Flounder, Scup, and Black Sea Bass Framework Adjustment 3 (2003) allows for the transfer of unused scup quota from the Winter I to the Winter II period. As such, if the fishery does not land their quota in Winter I due to poor weather conditions, changes in the distribution of scup, or market conditions (i.e., low price), the opportunity to land those scup is not lost.

The current scup allocation formula remains unchanged with Alternative 1, i.e., commercial quota is allocated as follows: Winter I - 45.11 percent, Summer - 38.95 percent, and Winter II - 15.94 percent. The Winter I period ends on April 30 for Federal permit holders. Any unused quota from Winter I would then be added to the Winter II period. Each year, during the specification setting process, the Council will recommend possession limits that account for the transfer. Specifically, the Council recommends possession limits for the Winter I and Winter II periods prior to the start of the fishing year. The Council specified the formula that will be used each year to derive the Winter II possession limits in the event of a rollover from Winter I to Winter II, i.e., the possession limit in Winter II is contingent on the amount of transferred quota. The potential increase in Winter II possession limits given various hypothetical amounts of scup rolled over from Winter I to Winter II are presented in Appendix A. A complete description and impact analyses of the proposed provision allowing the rollover of unused quota from Winter I to Winter II period are found in Framework Adjustment 3 to the Summer Flounder, Scup, and Black Sea Bass FMP.

The current minimum fish size and minimum vent size regulations will remain unchanged in 2005. The minimum fish size is 9". The minimum vent sizes for scup pots/traps are 3 1/10" in diameter for circular vents, 2 1/3" square vent for each side, or an equivalent rectangular escape vent. The Winter II scup possession limit and the transfer of unused scup quota from Winter I to Winter II will also remain unchanged in 2005. Proposed changes to the Winter I possession limit, minimum mesh size, and GRA management regulations for this fishery are discussed below (alternatives 4.2, 5.2, and 7.2, respectively). Finally, the threshold to trigger the minimum mesh size will remain at 500 lb from November 1 through April 30. Proposed changes to the May 1 through October 31 threshold to trigger the minimum mesh size are discussed below (alternative 6.2).

5.2.2 Alternative 2 (Most Restrictive TAL)

The most restrictive alternative considered for scup in 2005 is a TAL of 11.00 million lb (4.99 million kg). Based on this TAL, the initial commercial TAL is 10.26 million lb (4.65 million kg) and the initial recreational harvest limit is 2.89 million lb (1.31 million kg) for 2005. After deducting the research set-aside for scup of 303,675 lb (137,744 kg), the preliminary adjusted commercial quota is 7.95 million lb (3.60 million kg), and the preliminary recreational harvest is 2.74 million lb (1.24 million kg). The commercial quota will also be adjusted for overages by period, according to the quota counting procedures outlined in section 4.3. However, as of July 31, 2004 there were no overages by the 2004 commercial scup fishery. The allocation of the commercial quota for each period is presented in Box 5.3.

The other proposed scup management measures described in the last paragraph of section 5.2.1 (preferred alternative) also apply here as well.

5.2.3 Alternative 3 (Least Restrictive TAL)

The least restrictive alternative considered for scup in 2005 includes a TAL of 22.00 million lb (9.98 million kg). Based on this TAL, the initial commercial TAL is 18.84 million lb (8.54 million kg) and the initial recreational harvest limit is 5.31 million lb (2.41 million kg) for 2005. After the research set-aside for scup of 303,675 lb (137,744 kg), the commercial scup quota is 16.53 million lb (7.49 million kg) and the recreational harvest limit is 5.17 million lb (2.34 million kg) based on this TAL. The commercial quota will also be adjusted for overages by period, according to the quota counting procedures outlined in section 4.3. However, as of July 31, 2004 there were no overages by the 2004 commercial scup fishery. The allocation of the commercial quota for each period is presented in Box 5.3.

The other proposed scup management measures described in the last paragraph of section 5.2.1 (preferred alternative) also apply here as well.

5.2.4 Alternative 4.1 (Status Quo Winter I Possession Limit/No Action)

This alternative maintains status quo Winter I possession limit for scup in 2005 i.e., 15,000 lb possession limit (state landings limit for a 1 week period). The Winter II landings limit will remain unchanged i.e., 1,500 lb possession limit.

5.2.5 Alternative 4.2 (Winter I Landings Limit of 30,000 Pounds; Preferred Alternative)

This alternative implements a Federal possession limit of 30,000 lb (in the Winter I fishery) to allow states to implement biweekly limits. The Winter II landings limit will remain unchanged i.e., 1,500 lb possession limit.

5.2.6 Alternative 5.1 (Status Quo Mesh Size/No Action)

This alternative maintains scup status quo mesh size in 2005. The current mesh size is a minimum of 100 meshes of 5.0" mesh forward of the 4.5" mesh. Trawl nets must have a minimum mesh size of 4.5" diamond mesh for no more than 25 continuous meshes forward of the terminus of the codend, and with at least 100 continuous meshes of 5.0" mesh forward of the 4.5" mesh. For trawl nets with codends (including an extension) less than 125 meshes, the entire trawl net must have a minimum mesh size of 4.5" throughout the net.

5.2.7 Alternative 5.2 (5" Mesh Size; Preferred Alternative)

Under this alternative the minimum mesh size for the scup fishery is 5.0" mesh with a minimum length of 75 meshes from the terminus of the net. For small nets with less than 75 mesh codends the entire net is 5".

5.2.8 Alternative 6.1 (Status Quo Mesh Threshold From May 1 Through October 31/No Action)

This alternative maintains scup mesh threshold from May 1 through October 31 i.e., 100 lb. The November 1 through April 30 threshold to trigger the minimum mesh size remains unchanged i.e., 500 lb.

5.2.9 Alternative 6.2 (200 Pounds Threshold From May 1 Through October 31; Preferred Alternative)

Under this alternative the threshold to trigger the minimum mesh size from May 1 through October 31 is 200 lb. The current November 1 through April 30 threshold (500 lb) remains unchanged under this alternative.

5.2.10 Alternative 7.1 (Status Quo Southern GRA/No Action)

This alternative would continue the current scup southern GRA in 2005. More specifically, the existing boundaries for the southern GRA remain in place for 2005 as identified in 66 FR 12902.

5.2.11 Alternative 7.2 (3 Minute Shift Westward of Southern GRA; Preferred Alternative)

Under this alternative the entire area encompassed by the southern GRA is shifted westward by 3 longitudinal minutes while no changes in the northern or southern latitudinal limits of the GRA would occur. The total area encompassed by the GRA under alternative 7.2 is equivalent to the area encompassed by the GRA under alternative 7.1. By moving the entire area covered by the current southern GRA 3 longitudinal minutes to the west, a strip of approximately 500 nm^2, is made available to small mesh gear east of the current GRA, while an area of equal size, is closed to small mesh gear to the west of the current GRA.

5.2.12 Alternative 7.3 (Redefine Seaward Boundary of Southern GRA)

Under the southern GRA alternative 7.3, the eastern boundary of the current southern GRA is adjusted such that it approximates the 50 fathom bathymetric contour, while no change to the northern, southern or western boundaries occur. By adjusting the eastern boundary of the current southern GRA in accordance with alternative 7.3, an area of approximately 1,455 nm^2 is available to small mesh gear east of the current southern GRA, while no new areas are closed to small mesh gear.

5.2.13 Alternative 8.1 (Status Quo Exemption Program/No Action)

This alternative preserves the current exemption program in the scup fishery in 2005.

More specifically, the existing GRA regulations prohibit fishing for *Loligo* squid, black sea bass, and silver hake in the GRAs using mesh smaller than 4.5" during the effective times. However, under the exemption program vessels fishing with small mesh and an escapement extension of 45 meshes of 5.5" square mesh behind the body of the net and ahead of the codend can fish in the GRAs while carrying an observer onboard. The details of this program can be found at (68 FR 60). As in 2004, fishermen must obtain a Letter of Authorization from NMFS to participate in this exemption program.

5.2.14 Alternative 8.2 (End Exemption Program; Preferred Alternative)

This alternative eliminates the current exemption program in the scup fishery.

5.2.15 Alternative 9 (No Action Alternative)

Section 5.03(b) of NOAA AO 216-6, "Environmental review procedures for implementing the National Environmental Policy Act," states that "an Environmental Assessment (EA) must consider all reasonable alternatives, including the preferred action and the no action alternative." Consideration of the "no action" alternative is important because it shows what would happen if the proposed action is not taken. Defining exactly what is meant by the "no action" alternative is often difficult. The President's CEQ has explained that there are two distinct interpretations of the "no action": One interpretation is essentially the status quo, i.e., no change from the current management. The other interpretation is when a proposed project, such as building a railroad facility, does not take place. In the case of the proposed 2005 specifications for scup, determining the no action alternative is slightly more complicated than either of these interpretations suggest.

The status quo management for the scup fishery involves a set of indefinite (i.e., in force until otherwise changed) management measures such as minimum allowable sizes, bag limits, and reporting requirements. These measures will continue as they are even if the proposed specifications are not implemented. However, the current management program includes specifications of a TAC and TAL that are specific to the 2004 fishing year. There are no "roll-over" provisions currently provided for in the FMP. Thus, if the proposed 2005 scup specifications are not implemented by January 1, 2005, the fisheries will operate without an identified cap on allowable landings. Because of this subtlety in the management program for scup, the no action alternative is not equivalent to the status quo (which would include the current TAC and TAL).

If the action that results in setting the proposed specifications for this fishery is not taken, some current measures will remain in place, but the overall management program will not be identical to that of 2004.

For the purposes of this EA, the no action alternative is defined as follows: (1) no proposed specifications for the 2005 scup fishery will be published; (2) the indefinite management measures (minimum sizes, bag limits, possession limits, permit and reporting requirements, etc.) remain unchanged; (3) there will be no quota set-aside allocated to research in 2005; (4) the existing gear restrictive areas (GRAs) as identified in 66 FR 12902 will remain in place for 2005. Specifically, the areas and times would remain unchanged, i.e., the southern GRA will be in effect from January 1 to March 15 and the northern GRA will be in effect from November 1 to December 31. Current regulations prohibit fishing for *Loligo* squid, black sea bass, and silver hake in the GRAs using mesh smaller than 4.5" during the effective times; and (5) there is no specific cap on the allowable annual landings in this fishery (i.e., there would be no quota). Under the no action alternative, the only regulatory controls on fishing effort and harvests would be the indefinite measures. A commercial quota, which determines the maximum amount of scup landings allowable before the commercial fishery is shut down, would not be implemented for 2005.

The implications of the no action alternative are substantial. The no action alternative does not allow NMFS to specify and implement a TAC or TAL for this fishery, as required in the regulations at 50 CFR part 648, for the upcoming fishing year. Monitoring the landings, and taking action as necessary to prevent the state and federal TAC or TAL from being exceeded, as applicable, is essential for management of this fishery and forms the backbone of the current management system under the FMP. Implementation of the no action alternative is inconsistent with the goals and objectives of the FMP and its implementing regulations. The no action alternative, which is likely to result in overfishing of scup (due to NMFS' inability to monitor and enforce the quota), is also inconsistent with National Standard 1 of the Magnuson-Stevens Act. The no action alternative is not a reasonable alternative to the preferred action because it is inconsistent with the goals and objectives of the FMP, the implementing regulations and the Magnuson-Stevens Act. Additionally, the no action alternative would complicate the approved management program for these fisheries and likely result in overfishing. Therefore, the no action alternative is not analyzed further in the Environmental Assessment.

5.3 Black Sea Bass

5.3.1 Alternative 1 (Preferred TAL)

The Council and Board recommended a coastwide TAL of 8.20 million lb (3.71 million kg) for 2005 for black sea bass. The black sea bass TAL selected by the Council and Commission is identical to the TAL recommended by the monitoring committee for this species. This TAL equates to an exploitation rate of 25 percent in 2005 assuming the 2005 spring survey average is equal to 0.51, a value lower than the 3 year average value for 2003 (0.537). Based on landings data from 1983 to 1992, 49 percent of the TAL is allocated to the commercial fishery as quota and 51 percent is allocated to the recreational fishery as a harvest limit. The Council approved a research set-aside for black sea bass of 109,500 lb (49,668 kg), which is deducted from the TAL. As such, the preliminary adjusted commercial quota alternative is 3.96 million lb (1.79 million kg), and the preliminary recreational harvest is 4.13 million lb (1.87 million kg). The commercial quota is also adjusted for overages by period, according to the quota counting procedures outlined in section 4.3. However, as of July 31, 2004 there were no overages by the 2004 commercial black sea bass fishery.

The Commission adopted state-specific allocations for 2003 and 2004 and recently adopted an addendum to extend the state-by-state allocations through 2007. Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP established a federal coastwide quota to facilitate the implementation of the state-by-state quotas by the Commission.

The current minimum fish size, minimum mesh regulations, minimum mesh threshold, and minimum vent size regulations will remain unchanged in 2005. The minimum fish size is 11"; the mesh size is a minimum of 75 meshes of 4.5" diamond mesh in the codend in large nets or at least 4.5" diamond mesh throughout in a small net. The threshold to trigger the minimum mesh size is 500 lb of black sea bass from January through March and 100 lb of black sea bass from April through December. The minimum vent sizes for black sea bass pots/traps are 1 3/8" x 5 3/4" for rectangular vents, 2 3/8" in diameter for circular vents, and 2" for square vents.

5.3.2 Alternative 2 (Most Restrictive TAL; Status Quo)

The most restrictive alternative considered for black sea bass in 2005 is the status quo, which is a TAL of 8.00 million lb (3.62 million kg). This TAL equates to an exploitation rate of 25 percent in 2005 assuming the 2005 spring survey average is equal to 0.498, the point estimate for 2003. However, this is a conservative estimate considering that the 2003 value is the third highest in the time series, and there is an increase trend in biomass since 1997. After the research set-aside for black sea bass of 109,500 lb (49,668 kg) is accounted for, the preliminary commercial quota is 3.87 million lb (1.75 million kg) and the preliminary recreational harvest is 4.02 million lb (1.82 million kg) based on this TAL. The commercial quota is adjusted for overages by period, according to the quota counting procedures outlined in section 4.3. However, as of July 31, 2004 there were no overages by the 2004 commercial black sea bass fishery.

The proposed black sea bass minimum fish size, minimum mesh, minimum mesh threshold, and minimum vent size regulations described under the preferred alternative 1 for black sea bass also apply here as well.

5.3.3 Alternative 3 (Least Restrictive TAL)

The least restrictive coastwide TAL for black sea bass is 8.70 million lb (3.94 million kg). Because the exploitable biomass is based on a three-year average, the actual estimate for 2005 can not be derived until the spring 2006 survey results are available. If the spring survey for 2005 is 0.542, a value slightly higher than the 3 year average value for 2003 (0.537), then the TAL associated with a rate of 25 percent would be 8.70 million lb (3.94 million kg).

After the research set-aside for black sea bass of 109,500 lb (49,668 kg), the preliminary adjusted commercial quota is 4.21 million lb (1.90 million kg) and the preliminary recreational harvest is 4.38 million lb (1.98 million kg) based on this TAL. The commercial quota is also adjusted for overages by period, according to the quota counting procedures outlined in section 4.3. However, as of July 31, 2004 there were no overages by the 2004 commercial black sea bass fishery.

The proposed black sea bass minimum fish size, minimum mesh, minimum mesh threshold, and minimum vent size regulations described under the preferred alternative 1 for black sea bass also apply here as well.

5.3.4 Alternative 4 (No Action Alternative)

Section 5.03(b) of NOAA AO 216-6, "Environmental review procedures for implementing the National Environmental Policy Act," states that "an Environmental Assessment (EA) must consider all reasonable alternatives, including the preferred action and the no action alternative." Consideration of the "no action" alternative is important because it shows what would happen if the proposed action is not taken. Defining exactly what is meant by the "no action" alternative is often difficult. The President's CEQ has explained that there are two distinct interpretations of the "no action": One interpretation is essentially the status quo, i.e., no change from the current management. The other interpretation is when a proposed project, such as building a railroad facility, does not take place. In the case of the proposed 2005 specifications for black sea bass, determining the no action alternative is slightly more complicated than either of these interpretations suggest.

The status quo management for the black sea bass fishery involves a set of indefinite (i.e., in force until otherwise changed) management measures such as minimum allowable sizes, bag limits, and reporting requirements. These measures will continue as they are even if the proposed specifications are not implemented. However, the current management program includes the specification of a TAL that is specific to the 2004 fishing year. There are no "roll-over" provisions currently provided for in the FMP. Thus, if the proposed 2005 black sea bass specifications are not implemented by January 1, 2005, the fisheries will operate without an identified cap on allowable landings. Because of this subtlety in the management program for black sea bass, the no action alternative is not equivalent to the status quo (which would include the current TAL). If the action that results in setting the proposed specifications for this fishery is not taken, some current measures will remain in place, but the overall management program will not be identical to that of 2004.

For the purposes of this EA, the no action alternative is defined as follows: (1) no proposed specifications for the 2005 black sea bass fishery will be published; (2) the indefinite management measures (minimum sizes, bag limits, possession limits, permit and reporting requirements, etc.) remain unchanged; (3) there will be no quota set-aside allocated to research in 2005; and (4) there is no specific cap on the allowable annual landings in this fishery (i.e., there would be no quota). Under the no action alternative, the only regulatory controls on fishing effort and harvests would be the indefinite measures. A commercial quota, which determines the maximum amount of black sea bass landings allowable before the commercial fishery is shut down, would not be implemented for 2005.

The implications of the no action alternative are substantial. The no action alternative does not allow NMFS to specify and implement a TAL for this fishery, as required in the regulations at 50 CFR part 648, for the upcoming fishing year. Monitoring the landings, and taking action as necessary to prevent the state and federal TAL from being exceeded, as applicable, is essential for management of this fishery and forms the backbone of the current management system under the FMP. Implementation of the no action alternative is inconsistent with the goals and objectives of the FMP and its implementing regulations. The no action alternative, which is likely to result in overfishing of black sea bass (due to NMFS' inability to monitor and enforce the quota), is also inconsistent with National Standard 1 of the Magnuson-Stevens Act. The no action alternative is not a reasonable alternative to the preferred action because it is inconsistent with the goals and objectives of the FMP, the implementing regulations and the Magnuson-Stevens Act. Additionally, the no action alternative would complicate the approved management program for these fisheries and likely result in overfishing. Therefore, the no action alternative is not analyzed further in the Environmental Assessment.

5.4 Research Set-Aside Measures

5.4.1 Alternative 1 (No Research Set Aside/No-Action)

Under this alternative no research set-aside will be implemented for summer flounder, scup, or black sea bass in 2005. Thus, the quotas would not be adjusted downward for the RSAs.

5.4.2 Alternative 2 (Specify Research Set-Asides; Preferred/Status Quo)

As part of the research set-aside program, several research projects were submitted to NMFS that could potentially require exemptions from some of the current summer flounder, scup, and black sea bass regulations. Under the research set-aside program, the Council, in consultation with the NMFS Northeast Regional Administrator, and the Commission have recommended a summer flounder, scup, and black sea bass research project for 2005 (June 28, 2004 letter from Mears to Furlong). In order to expedite the approval and implementation of the research project, Council staff agreed to analyze the impacts of the exemptions on the environment for inclusion in the specification package for these species. The impacts of the research set-asides for squid, mackerel, and butter fish were discussed in detail in the 2005 Atlantic Mackerel, *Loligo*, *Illex*, and Butterfish Specifications (section 7.4). The impacts of the research set-asides for bluefish were discussed in detail in the 2005 Bluefish Specifications (section 7.4).

The proposed summer flounder set-aside is for a maximum of 353,917 lb (160,534 kg) for 2005. A research set-aside for year two (2006) equal to the maximum allowable under Framework 1 to the Summer Flounder, Scup, and Black Sea Bass FMP was assumed under this specification package. That is, a research set-aside amount of up to 3-percent of the TAL was assessed for summer flounder for year 2006. This was done because the information pertaining to the potential amounts of research set-aside needed to conduct research in 2006 is not yet known. Therefore the summer flounder research set-aside for 2006 was estimated at 990,000 lb (449,056 kg) under TAL alternative 1 (preferred alternative); 846,000 lb (387,739 kg) for the second TAL alternative (status quo/most restrictive); and 1,065,000 lb (483,076 kg) for the third TAL alternative (least restrictive). This assumption allows for a more complete analysis of the potential impacts of the multi-year management measures proposed for summer flounder. The scup and black sea bass set-asides are for a maximum of 303,675 lb (137,744 kg) and 109,500 lb (49,668 kg) for 2005, respectively. These research set-aside amounts are deducted from the summer flounder, scup, and black sea bass TALs (Boxes 4.1 through 4.3).

A summary of the conditionally approved research set-aside projects requesting summer flounder, scup, and black sea bass for 2005 is presented in Appendix B. This description includes project name, description and duration, amount of research set-aside requested, and gear to be used to conduct the project.

6.0 DESCRIPTION OF THE AFFECTED ENVIRONMENT AND FISHERIES

6.1 Description of the Managed Resource

6.1.1 Description of the Fisheries

6.1.1.1 Summer Flounder

The commercial and recreational fisheries for summer flounder, scup, and black sea bass are fully described in section 3.3.2, of Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP and are outlined by principal port in section 3.4.2 of that document.

In 1993, the first year that a coastwide quota was implemented, commercial landings were 12.60 million lb (5.71 million kg), slightly in excess of the quota for that year. Commercial landings increased to 15.42 million lb (6.99 million kg) in 1995 and then dropped to 8.81 million lb (3.99 million kg) in 1997. Commercial landings ranged from 10.69 to 11.26 million lb (4.84 to 5.10 million kg) from 1998 to 2001 and then increased to 14.24 million lb (6.45 million kg) in 2003. Recreational landings in 1997 were 11.87 million lb (5.38 million kg), more than double the landings estimate for 1995 of 5.42 million lb (2.45 million kg). Recreational landings increased to 16.47 million lb (7.47 million kg) in 2000, dropped to 8.01 million lb (3.63 million kg) in 2002 and then increased to 11.61 million lb (5.26 million kg) in 2003. Combined commercial and recreational landings were 25.85 million lb (11.72 million kg) in 2003.

6.1.1.2 Scup

Commercial scup landings, declined from 1988 to 1989 by over 33 percent (13.10 million lb or 5.94 million kg to 8.76 million lb or 3.97 million kg), increased to 15.61 million lb (7.08 million kg) in 1991 and then dropped to the lowest value in the time series, 2.66 million lb (1.20 million kg), in 2000. Commercial landings substantially increased to over 9.73 million lb (4.41 million kg) in 2003. The recreational landings declined steadily from a 1986 value of 11.60 million lb (5.26 million kg) to 0.87 million lb (0.39 million kg) in 1998, the lowest value in the time series, and increased substantially to 9.33 million lb (4.23 million kg) in 2003.

6.1.1.3 Black Sea Bass

Commercial black sea bass landings have varied without trend for the 1981 to 2003 time frame, ranging from a low of 2.03 million lb (0.92 million kg) in 1994 to a high of 4.33 million lb (1.96 million kg) in 1984. Commercial landings in 2002 increased to 3.43 million lb (1.55 million kg) and then dropped to 2.98 million lb (1.35 million kg) in 2003. For the same time frame, recreational landings ranged from a low of 1.15 million lb (0.52 million kg) in 1998 to a high of 12.39 million lb (5.62 million kg) in 1986. Recreational landings in 2003 were about 4.26 million lb (1.93 million kg) or about 0.34 million lb (0.15 million kg) above the average for 1981-2003.

Commercial landings by state have varied over the years. New Jersey landings were the highest every year from 1993 to 1997 and again in 2001. Virginia had the highest landings in 1998, 1999, and 2000. Although Massachusetts requires a 12" TL size limit for black sea bass, landings in that state almost doubled from 1998 to 1999, increased again in 2000 to 0.62 million lb (0.28 million kg), and then increased again in 2002 to 0.96 million lb (0.43 million kg). In 2003, New Jersey and Virginia had the highest landings by state.

6.1.2 Status of the Stock

6.1.2.1 Summer Flounder

The status of the summer flounder stock is evaluated annually. The summer flounder stock assessment was completed by the NEFSC Southern Demersal Working Group in June 2004. The latest assessment indicates that the stock is not overfished and overfishing is occurring relative to the biological reference points detailed in Amendment 12. The fishing mortality rate estimated for 2002 is 0.29, a significant decline from the 1.32 estimated for 1994 and slightly above the threshold F of 0.26. In addition, total stock biomass has increased substantially since 1991 to 149 million lb in 2003, 27 percent above the biomass threshold (117 million lb or 53 million kg). Spawning stock biomass has increased each year since 1993 to 109 million lb (49.44 million kg) in 2003, the highest value in the time series (1981-2003).

Year-class estimates indicate that the 1995 to 1999 year classes ranged from 30 to 38 million fish; the average for 1982 to 2003 is about 40 million. The 2002 year class is estimated to be above average at 51 million fish. The 2003 year class was below average.

6.1.2.2 Scup

The most recent assessment on scup was completed in June 2002 (35th SARC or Stock Assessment Review Committee). That assessment indicated that scup are no longer overfished "but stock status with respect to overfishing cannot currently be evaluated." The SARC also concluded that although "the relative exploitation rates have declined in recent years the absolute value of F cannot be determined." However, the assessment states that "survey data indicate strong recruitment and some rebuilding of age structure" in recent years.

State and federal survey indices for scup indicate an increase in stock abundance in recent years. The NEFSC spring survey results indicate that spawning stock biomass has increased each year since 1998. Biomass estimates are based on three year averages, and the estimate for 2003 (3 yr average of 2002-2004) is 3.74 kg/tow, or about 35 percent above the biomass threshold of 2.77 kg/tow that defines an overfished stock. Given that the index is above the biomass threshold, the stock is no longer considered overfished.

The spring survey index increased significantly in 2004 relative to the low value derived in 2003; the index jumped from 0.15 to 1.82 kg/tow. In fact, if the 2002 value is excluded from the survey series, the 2004 index is the highest value in the spring survey since 1978. The winter trawl survey exhibited a similar trend increasing from 0.49 kg/tow in 2003 to 3.82 kg/tow in 2004. In fact, the 2004 winter index is the second highest in the time series (1992 to 2004) by weight and the highest by number. In 2002 and 2003, the Council and Commission discussed the uncertainty associated with the spring survey estimate for 2002 and decided not to use it in setting the TAC. In fact, the 35th SARC noted the "high degree of inter-annual variation in individual survey indices." They also noted that the "abundance of all age groups in the survey increased substantially as compared with the 2001 results" suggesting that increased availability of scup to the survey gear was an important determinant in the 2002 survey results.

Year class strength is evident in the NEFSC autumn trawl survey results. The survey indicates that strong year classes resulted from 1999-2002. The SARC also noted the predominance of the 2000 year class in several of the state surveys. The most recent information indicates a below average year class was produced in 2004.

Estimates of fishing mortality rates for scup are uncertain. The 31st SARC conducted several analyses that indicated that F was at least 1.0 for ages 0-3 scup for the 1984 to 2000 time series. SARC 31 could not estimate Fs on older fish because they are not well represented in the surveys. Although the magnitude of the current mortality rates is unknown, relative exploitation rates have changed over the period. Relative exploitation rates based on total landings and the spring survey suggest a general increase in exploitation from 1981 to 1995. Since then, relative exploitation rates have declined; the 2003 value is about 5 percent of the 1997 value.

6.1.2.3 Black Sea Bass

The most recent assessment on black sea bass, completed in June 2004, indicates that black sea bass are no longer overfished and overfishing is not occurring.

Amendment 12 to the Summer Flounder, Scup and Black Sea Bass FMP, which was partially approved by NMFS in 1999, established a biomass threshold based on the spring survey. Specifically, the biomass threshold is defined as the maximum value of a three-year moving average of the NEFSC spring survey catch-per-tow (1977-1979 average of 0.9 kg/tow). The 2003 biomass index is 1.4 kg/tow (the three-year average for 2001-2003), approximately 55 percent above the threshold. Based on this value, the stock is no longer overfished.

Potential influence of a single extreme tow may be eliminated by log transforming the survey indices. This gives a more accurate indication of stock status, Gary Shepherd, NEFSC (pers. comm.) The transformed series indicates a general increase in the exploitable biomass since 1996. The index for 2002 of 0.799 kg/tow is the highest value in the time series (1968-2002). Although the biomass index declined to 0.493 kg/tow in 2003 and again in 2004 to 0.32 kg/tow, both the 2003 and 2004 index were above average. The three point moving average based on these survey results for the recent time period has steadily increased from a low of 0.093 kg/tow in 1997 to 0.537 kg/tow in 2003.

The spring survey also serves as an index of recruitment. The survey indicates that good year classes were produced in 1988, 1990 through 1992, and 1995 and poor year classes in 1993, 1994, and 1996 through 1998. Results for 2000 indicate a strong year class; the index is 0.661 kg/tow, the highest in the time series. The 2002 year class was good; the index was about four times the average for the period and the third largest value since 1968. Preliminary results indicate that a below average year class was produced in 2004.

Relative exploitation based on the total commercial and recreational landings and the moving average of the transformed spring survey index indicates a significant reduction in mortality from 1998 to 2003 relative to 1996 and 1997 levels. Based on tag recapture models, the F estimated for 2003 is less than 0.26; exploitation rates for 2003 ranged from 15-20 percent. However, preliminary F estimates for June 2003 to March 2004 ranged from 0.24 to 0.3, and the SARC working group indicated that "uncertainty remains in the tag reporting rates and may result in under estimated exploitation rates. Also, discard losses in the commercial fisheries were not estimated and remain an uncertain component of the fishery."

6.1.3 Stock Characteristics and Ecological Relationships

6.1.3.1 Summer Flounder

A full description of stock characteristics and ecological relationships of summer flounder is presented in section 3.1.1 of Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP. Additional information can be found in the 35th Stock Assessment Workshop (SAW 35) documents. The following is taken from the "SAW Southern Demersal Working Group 2004 Advisory Report: Summer Flounder."

"An analytical assessment(VPA) of commercial and recreational total catch at age (landings plus discards) was conducted. The natural mortality rate(M)was assumed to be 0.2. Indices of recruitment and stock abundance from NEFSC winter, spring, and autumn; Massachusetts spring and autumn; Rhode Island, Connecticut spring and autumn; Delaware, and New Jersey trawl surveys were used in VPA tuning in an ADAPT framework. Recruitment indices from surveys conducted by the states of North Carolina, Virginia, and Maryland were also used in the VPA tuning. The current VPA tuning configuration is the same as that in the 2002 SAW 35 (NEFSC 2002) and 2003 SAW Southern Demersal Working Group assessments (Terceiro 2003). The uncertainty associated with the estimates of fishing mortality and stock biomass in 2003 was evaluated only with respect to research survey variability."

"Fishing mortality calculated from the average of the currently fully recruited ages (3-5) has been high, varying between 0.9 and 2.1 during 1982-1997 (55%-82% exploitation), far in excess of the revised FMP Amendment 12 overfishing definition, $F_{threshold} = F_{target} = F_{max} = 0.26$ (21% exploitation). The fishing mortality rate has declined substantially since 1997 and was estimated to be 0.29 (23% exploitation) in 2003, the lowest observed in the current 22-year VPA time series. There is an 80% probability that the fishing mortality rate in 2003 was between 0.25 and 0.35. The estimate of F for 2003 may understate the actual fishing mortality; retrospective analysis shows that the current assessment method tends to underestimate recent fishing mortality rates (e.g., by an average of 40% during 2000-2002)."

"Total stock biomass has increased substantially since 1989, and in 2004 total stock biomass was estimated to be 67,500 mt, 27% above the current biomass threshold. There is an 80% chance that total stock biomass in 2004 was between 61,000 and 77,000 mt. The current biomass target (B_{MSY}) required to produce maximum sustainable yield (MSY=20,900 mt) is estimated to be B_{MSY} = 106,400 mt, and the current biomass threshold of one-half B_{MSY} = 53,200 mt."

"The arithmetic average recruitment from 1982 to 2003 is 40 million fish at age 0, with a median of 37 million fish. The 1982 and 1983 year classes are the largest in the VPA time series, at 74 and 80 million fish. Recruitment declined from 1983 to 1988, with the 1988 year class the weakest at only 13 million fish. Recruitment since 1988 has generally improved. The 2002 year class is currently estimated to be the largest since 1986, at about 51 million fish. The 2003 year class is currently estimated to be below average at 27 million fish. There is no consistent retrospective pattern in the estimation of the abundance of age 0 fish over the last three years."

"Spawning stock biomass (SSB; Age 0+) declined 72% from 1983 to 1989 (18,800 mt to 5,200 mt), but has increased nine-fold, with improved recruitment and decreased fishing mortality, to 49,400 mt in 2003. Comparison with previous assessments shows a tendency to slightly overestimate the SSB in recent years. The age structure of the spawning stock has expanded, with 72% at ages 2 and older, and 20% at ages 5 and older. Under equilibrium conditions at F_{max}, about 85% of the spawning stock biomass would be expected to be ages 2 and older, with 50% at ages 5 and older."

6.1.3.2 Scup

The stock characteristics and ecological relationships of scup are fully described in section 3.1.2 of Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP. Scup was last fully assessed at SAW-35 in 2002. As in previous assessment reviews, the SARC concluded that estimates of commercial fishery discards are unreliable due to limited sample size and uncertainty as to their representative nature of the sea sampling data for scup. The uncertainties associated with the catch data led the SARC to conclude that an analytical assessment would be inappropriate as the basis for management decisions for scup at this time. An analytical formulation for scup is not feasible until the quality and quantity of the input data (biological sampling and estimates of all components of catches) are significantly improved and an adequate time series developed.

Although the 31st SARC concluded that the F on age 0-3 scup was at least 1.0, the 35th SARC determined that "absolute estimates of fishing mortality for scup could not be calculated." However, the relative exploitation index may offer some clue as to current levels of mortality for older fish. Because the index is based primarily on landings of scup larger than 9" TL (the commercial minimum fish size) and SSB, the index may indicate fishing mortality rates for the larger fish have declined in recent years.

The SARC-35 draft Advisory Report stated that, "Indices of recruitment from the NEFSC fall survey suggest improved recruitment in 1999-2001, with estimated age-0 abundance exceeding the 1984-2001 average of 69.03 fish/tow. NEFSC spring and winter indices of stock biomass and abundance for 2002 were the highest within each respective time series. Other survey indices have increased since the mid-1990s."

The spring survey estimate for 2002 is highly uncertain. The 35th SARC noted the "high degree of inter-annual variation in individual survey indices." They noted that the "abundance of all age groups in the survey increased substantially as compared with the 2001 results" suggesting that increased availability of scup to the survey gear was an important determinant in the 2002 survey results. Additional, detailed information is available in the SAW-35 documents.

6.1.3.3 Black Sea Bass

A full description of stock characteristics and ecological relationships is presented in section 3.1.1 of Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP. Additional information can be found in the 39th Stock Assessment Workshop (SAW 39) documents. The following is taken from the "SAW Southern Demersal Working Group 2004 Advisory Report: Black Sea Bass."

"The Coastal/Pelagic Working Group concluded that data were adequate to conduct an assessment of the stock. The status of the resource was evaluated from NEFSC spring survey indices. Exploitation rates were estimated with tag recapture models for two periods, October 2002 to September 2003 and May 2003 to April 2004."

"Fishing mortality (F) for 2003 estimated from tag recapture models was less than 0.26. Exploitation rates from tagging data indicate that exploitation was between 15 and 20%. Relative F based on survey indices was well below the value necessary for stock replacement (replacement ratio=0)."

"The NEFSC spring survey recruitment index (mean number per tow) in 2004 (0.08 per tow) was below the average for the last decade (0.187 per tow)."

"SSB was not estimated in the current assessment. However, preliminary mean weight per tow of black sea bass > 22 cm (approximately age 2) in the 2004 NEFSC spring survey decreased to 0.94 kg/tow, yet remained above average for the 1986-2003 period."

"Uncertainty in the tag reporting rates may potentially result in under-estimated exploitation rates. Also, discard losses in the commercial fisheries were not estimated and remain an uncertain component of the fishery. In light of decreasing biomass indices since the peak in 2002, the Working Group recommends caution in exploitation of the resource."

6.2 Habitat (Including Essential Fish Habitat)

A description of the habitat associated with the summer flounder, scup, and black sea bass fisheries is presented in section 3.2 of Amendment 13, and a brief summary of that information is given here. The impact of fishing on summer flounder, scup, and black sea bass EFH and the impact of the summer flounder, scup, and black sea bass fisheries on other species' EFH can be found in Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP (section 3.2). Potential impacts associated with the proposed measures under this specifications package are discussed in section 7.0.

6.2.1 Summer Flounder

Summer flounder spawn during the fall and winter over the open ocean areas of the shelf. Planktonic larvae are often found in the northern part of the Middle Atlantic Bight from September to February, and in the southern part from November to May. From October to May, larvae and postlarvae migrate inshore, entering coastal and estuarine nursery areas. Juveniles are distributed inshore and in many estuaries throughout the range of the species during spring, summer, and fall. Summer flounder exhibit strong seasonal inshore-offshore movements. Adult flounder normally inhabit shallow coastal and estuarine waters during the warmer months of the year and remain offshore during the colder months.

EFH includes pelagic waters, demersal waters, saltmarsh creeks, seagrass beds, mudflats, and open bay areas, from the Gulf of Maine to North Carolina. Any actions implemented in the FMP that affect species with overlapping EFH were considered in the EFH assessment for Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP. Summer flounder are primarily landed with otter trawls. As stated in section 3.2.8 of Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP, the Council determined that both mobile bottom tending and stationary gear have a potential to adversely impact EFH. The same conclusion was drawn for other species with overlapping EFH. The best scientific information available indicates that ecosystem impacts from fishing gears on fishery productivity in this region are mostly unpredictable and unquantifiable. Thus, mobile and stationary gear are characterized as having a potential impact on EFH because: 1) the specific habitat types along the Atlantic coast have not been mapped or quantified and 2) fishing effort and intensity of the gear are also not recorded. Since the potential exists that mobile bottom gear and stationary gear are having adverse effects on EFH, the Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP includes alternatives that minimize the adverse effects on EFH as required pursuant to section 303(a)(7) of the SFA.

6.2.2 Scup

Scup spawn once annually, over weedy or sand-covered areas in the spring. Scup eggs and newly hatched larvae are found in open water in bays and sounds of Southern New England during the spring-summer. Juvenile and adult scup are demersal using inshore waters in the spring and moving offshore in the winter.

EFH is demersal waters, sands, mud, mussel, and seagrass beds, from the Gulf of Maine to Cape Hatteras, North Carolina. Any actions implemented in the FMP that affect species with overlapping EFH were considered in the EFH assessment for Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP. Scup are primarily landed by fish pots/traps, bottom and midwater trawls, and lines. As stated in section 3.2.8 of Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP, the Council determined that both mobile bottom tending and stationary gear have a potential to adversely impact EFH. The same conclusion was drawn for other species with overlapping EFH. The best scientific information available indicates that ecosystem impacts from fishing gears on fishery productivity in this region are mostly unpredictable and unquantifiable. Thus, mobile and stationary gear are characterized as having a potential impact on EFH because: 1) the specific habitat types along the Atlantic coast have not been mapped or quantified and 2) fishing effort and intensity of the gear are also not recorded. Since the potential exists that mobile bottom gear and stationary gear are having adverse effects on EFH, the Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP includes alternatives that minimize the adverse effects on EFH as required pursuant to section 303(a)(7) of the SFA.

6.2.3 Black Sea Bass

The northern population spawns on the Middle Atlantic Bight continental shelf during the spring through fall, and their eggs are pelagic. Spawning begins in the spring in the southern portion of the range of this population, i.e., off North Carolina and Virginia, and progresses north into southern New England waters in the summer-fall; eggs are naturally closely associated with spawning. Based on collections of ripe fish and egg distributions, the species spawns primarily on the inner continental shelf between Chesapeake Bay and Montauk Pt., Long Island. The duration of larval stage and habitat-related settlement cues are unknown; therefore, distribution and habitat use of this pelagic stage may only partially overlap with that of the egg stage. Adult black sea bass are also very structure oriented, especially during their summer coastal residency. Unlike juveniles, they tend to enter only larger estuaries and are most abundant along the coast. Larger fish tend to be found in deeper water than smaller fish. A variety of coastal structures are known to be attractive, and these include shipwrecks, rocky and artificial reefs, mussel beds and any other object or source of shelter on the bottom. In the warmer months, inshore, resident adult black sea bass are usually found associated with structured habitats.

EFH is pelagic waters, structured habitat (e.g., sponge beds), rough bottom shellfish, sand and shell, from the Gulf of Maine to Cape Hatteras, North Carolina. Black sea bass are primarily landed by fish pots/traps, bottom and midwater trawls, and lines. As stated in section 3.2.8 of Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP, the Council determined that both mobile bottom tending and stationary gear have a potential to adversely impact EFH. The same conclusion was drawn for other species with overlapping

EFH. The best scientific information available indicates that ecosystem impacts from fishing gears on fishery productivity in this region are mostly unpredictable and unquantifiable. Thus, mobile and stationary gear are characterized as having a potential impact on EFH because: 1) the specific habitat types along the Atlantic coast have not been mapped or quantified and 2) fishing effort and intensity of the gear are also not recorded. Since the potential exists that mobile bottom gear and stationary gear are having adverse effects on EFH, the Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP includes alternatives that minimize the adverse effects on EFH as required pursuant to section 303(a)(7) of the SFA.

6.3 Endangered and Protected Species

There are numerous species which inhabit the environment within the management unit of the Summer Flounder, Scup, and Black Sea Bass FMP that are afforded protection under the Endangered Species Act of 1973 (ESA; i.e., for those designated as threatened or endangered) and/or the Marine Mammal Protection Act of 1972 (MMPA). Fifteen are classified as endangered or threatened under the ESA, while the remainder are protected by the provisions of the MMPA. The Council has determined that the following list of species protected either by the ESA, the MMPA, or the Migratory Bird Act of 1918 may be found in the environment utilized by bluefish:

Cetaceans

Species	Status
Northern right whale (*Eubalaena glacialis*)	Endangered
Humpback whale (*Megaptera novaeangliae*)	Endangered
Fin whale (*Balaenoptera physalus*)	Endangered
Blue whale (*Balaenoptera musculus*)	Endangered
Sei whale (*Balaenoptera borealis*)	Endangered
Sperm whale (*Physeter macrocephalus*	Endangered
Minke whale (*Balaenoptera acutorostrata*)	Protected
Beaked whales (*Ziphius and Mesoplodon spp.*)	Protected
Risso's dolphin (*Grampus griseus*)	Protected
Pilot whale (*Globicephala spp.*)	Protected
White-sided dolphin (*Lagenorhynchus acutus*)	Protected
Common dolphin (*Delphinus delphis*)	Protected
Spotted and striped dolphins (*Stenella spp.*)	Protected
Bottlenose dolphin (*Tursiops truncatus*)	Protected

Sea Turtles

Species	Status
Leatherback sea turtle (*Dermochelys coriacea*)	Endangered
Kemp's ridley sea turtle (*Lepidochelys kempii*)	Endangered
Green sea turtle (*Chelonia mydas*)	Endangered
Hawksbill sea turtle (*Eretmochelys imbricata*)	Endangered
Loggerhead sea turtle (*Caretta caretta*)	Threatened

Fish

Species	Status
Shortnose sturgeon (*Acipenser brevirostrum*)	Endangered
Atlantic salmon (*Salmo salar*)	Endangered
Smalltooth sawfish (*Pristis pectinata*)	Endangered

Birds

Species		Status
Roseate tern	(*Sterna dougallii dougallii*)	Endangered
Piping plover	(*Charadrius melodus*)	Endangered

Critical Habitat Designations

Species	Area
Right whale	Cape Cod Bay

The status of these and other marine mammal populations inhabiting the Northwest Atlantic has been discussed in detail in the U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments. Initial assessments were presented in Blaylock *et al.* (1995) and are updated in Waring *et al.* (1999). The most recent information on the stock assessment of various mammals can be found at: *http://www.nmfs.noaa.gov/pr/PR2/Stock_Assessment_Program/sars.html* and in Appendix C.

Three other useful websites on marine mammals are: *www.nmfs.noaa.gov/prot_res/PR3/recovery. html* , *http://spo.nwr.noaa.gov/mfr611/mfr611.htm* , and http://www.nmfs.noaa.gov/pr/species/Cetaceans/cetaceans.html.

A description of the species listed as endangered which inhabit the management unit of the FMP is presented in Appendix C. A description of loggerhead sea turtles is presented below because of the potential interaction between this species and gear used to commercially harvest summer flounder.

Description of species of concern which inhabit the management unit of the FMP

Loggerhead Sea Turtle

Loggerhead sea turtles have been listed as "threatened" under the ESA since July 28, 1978. However, both the World Conservation Union (IUCN) and the Convention on International Trade in Endangered Species of Flora and Fauna (CITES)consider loggerhead sea turtles "endangered." Commercial landing data indicate that loggerhead sea turtles were more abundant historically than current population estimates(TEWG 1998). Unfortunately, reliable population estimates are not available until the period from 1989 to 1995 corresponding to a nest index survey along the U.S. Atlantic and Gulf coasts. According to the results of this survey, the total number of nests laid range from 53,016-85,306 per year, corresponding to a mature female population estimate of 43,060 turtles (TEWG 1998). Subsequent data collected through nest indices, strandings, tagging, and aerial surveys suggest that the mean post-pelagic loggerhead population size ranges between 224,321-234,355 turtles (TEWG 1998). However, these data do not account for turtles in offshore waters and therefore, represent a minimum population estimate. The most recent status report for loggerhead sea turtle populations lists the species as threatened and stable or slightly increasing with the exception of the northern nesting aggregation which is either stable or slightly declining (SEIS 2004).

Juvenile and mature loggerheads are primarily benthic feeders, opportunistically foraging on crustaceans and mollusks (NMFS & FWS 1995). Under certain conditions they also feed on finfish, particularly if they are easy to catch *(e.g.,* caught in gillnets or inside pound nets where the fish are accessible to turtles).

Loggerhead sea turtles are found in a wide variety of habitats throughout the temperate and tropical regions of the Atlantic. These include open ocean, continental shelves, bays, lagoons, and estuaries (NMFS& FWS 1995). The species is also found in entrances to bays and sounds and within bays and estuaries, particularly in the Mid-Atlantic. Loggerhead sea turtles range from Newfoundland to as far south as Argentina and Brazil within the Western North Atlantic. However, within the management unit of this FMP, they are most common on the open ocean in the northern Gulf of Maine, particularly where associated with warmer water fronts formed from the Gulf Stream.

Since loggerhead sea turtles are limited by water temperatures, they do not usually appear on the summer foraging grounds in the Gulf of Maine until June, but are found in Virginia as early as April. Loggerheads remain in these areas until as late as November and December in some cases, but the large majority of loggerheads leave the Gulf of Maine by mid-September.

Loggerhead sea turtles preferentially nest on warm temperate beaches between the latitudes of 18° and 35° North. A vast majority of the loggerhead nests in the coastal United States occur on the beaches of North Carolina south through Florida (TEWG 1998). Nesting females return to the same beach where they hatched and remain fidel to nesting beaches over seasons and nest sites within a season (TEWG 1998). A Turtle Expert Working Group (TEWG 2000), conducting an assessment of the status of the loggerhead sea turtle population in the Western North Atlantic (WNA), concluded that there are at least four loggerhead subpopulations separated on the nesting beaches in the WNA (TEWG 1998). However, the group also concluded that additional research is necessary to fully address the stock definition question. The four nesting subpopulations include the following areas: northern North Carolina to northeast Florida, south Florida, the Florida Panhandle, and the Yucatan Peninsula. Genetic evidence indicates that loggerheads from Chesapeake Bay southward to Georgia seem nearly equally divided in origin between South Florida and northern subpopulations. Additional research is needed to determine the origin of turtles found north of the Chesapeake Bay.

The TEWG (1998) analysis also indicated that the northern subpopulation of loggerheads may be experiencing a significant decline (2.5 - 3.2 percent for various beaches). A recovery goal of 12,800 nests has been assumed for the Northern Subpopulation, but TEWG (1998) reported nest numbers at around 6,200 (TEWG 1998). More recently, the addition of nesting data from the years 1996, 1997, and 1998 did not change the assessment of the TEWG that the number of loggerhead nests in the Northern Subpopulation is stable or declining (TEWG 2000). Since the number of nests have declined in the 1980s, the TEWG concluded that it is unlikely that this subpopulation will reach this goal given this apparent decline and the lack of information on the subpopulation from which loggerheads in the WNA originate. Continued efforts to reduce the adverse effects of fishing and other human-induced mortality on this population are necessary.

The most recent 5-year ESA sea turtle status review (NMFS & USFWS 1995) highlights the difficulty of assessing sea turtle population sizes and trends. Most long-term data comes from nesting beaches, many of which occur extensively in areas outside U.S. waters. Because of this lack of information, the TEWG was unable to determine acceptable levels of mortality. This status review supports the conclusion of the TEWG that the northern subpopulation may be experiencing a decline and that inadequate information is available to assess whether its status has changed since the initial listing as threatened in 1978. NMFS & USFWS (1995) concluded that loggerhead turtles should remain designated threatened but noted that additional research will be necessary before the next status review can be conducted.

Interactions with commercial fishing gear pose one of the greatest threats to loggerhead sea turtles. In 1992 NOAA issued a technical memorandum addressing the interactions between sea turtles and the summer flounder trawl fishery between the period of November 1991 to February 1992. The report concluded that a positive correlation between trawling activity in coastal waters and sea turtle strandings exists and that further observer data were required to determine the impact on particular species (NOAA NMFS-SEFSC-307). The NMFS observer data for the period of January 2000 to April 2004 describe nine loggerhead turtle takes within the summer flounder, scup, and black sea bass fishery. All of these takes occurred while summer flounder were the target species. Of the nine takes, five loggerhead turtles were released alive and uninjured, one was alive and resuscitated, one was alive with its condition unknown, and two were dead. (NMFS, pers. comm. 2004)

Fishery Classification under Section 114 of Marine Mammal Protection Act

Under section 114 of the MMPA of 1972, NMFS must publish, and annually update, the List of Fisheries which places all U.S. commercial fisheries in one of three categories based on the level of incidental serious injury and mortality of marine mammals in each fishery (arranging them according to a two tiered classification system). The categorization of a fishery in the LOF determines whether participants in that fishery may be required to comply with certain provisions of the MMPA, such as registration, observer coverage, and take reduction plan requirements. The classification criteria consist of a two tiered, stock-specific approach that first addresses the total impact of all fisheries on each marine mammal stock (Tier 1) and then addresses the impact of the individual fisheries on each stock (Tier 2). If the total annual mortality and serious injury of all fisheries that interact with a stock is less than 10 percent of the PBR for the stock then the stock is designated as Tier 1 and all fisheries interacting with this stock would be placed in Category III. Otherwise, these fisheries are subject to categorization under Tier 2. Under Tier 2, individual fisheries are subject to the following categorization:

I. Annual mortality and serious injury of a stock in a given fishery is greater than or equal to 50 percent of the PBR level;

II. Annual mortality and serious injury of a stock in a given fishery is greater than one percent and less than 50 percent of the PBR level; or

III. Annual mortality and serious injury of a stock in a given fishery is less than one percent of the PBR level.

Under Category I, there is documented information indicating a "frequent" incidental mortality and injury of marine mammals in the fishery. In Category II, there is documented information indicating an "occasional" incidental mortality and injury of marine mammals in the fishery. In Category III, there is information indicating no more than a "remote likelihood" of an incidental taking of a marine mammal in the fishery or, in the absence of information indicating the frequency of incidental taking of marine mammals, other factors such as fishing techniques, gear used, methods used to deter marine mammals, target species, seasons and areas fished, and species and distribution of marine mammals in the area suggest there is no more than a remote likelihood of an incidental take in the fishery. "Remote likelihood" means that it is highly unlikely that any marine mammal will be incidentally taken by a randomly selected vessel in the fishery during a 20-day period.

The 2004 LOF indicates that Mid-Atlantic mixed species trawls, which harvest the majority of summer flounder are listed as a Category III fishery. There are no documented marine mammal species or stocks incidentally killed or injured in the Mid-Atlantic mixed species trawl fishery. Smaller quantities of summer flounder are also caught by the Mid-Atlantic commercial sea scallop dredge fishery, the hook and line fishery, and the pound fishery. All three of these fisheries are also listed as Category III under the 2004 LOF and none of them have documented marine mammal takes.

Otter trawls, pots, and traps are the primary mechanism used in the harvest of scup. All three of these methods are relatively indiscriminate and non-target species including summer flounder, black sea bass, squid, Atlantic mackerel, and silver hake are taken incidentally. The Mid-Atlantic mixed species trawl, as stated above, is a Category III fishery. However, the Atlantic mixed species trap/pot fishery is listed as a Category II fishery with incidental injuries and kills of fin whales occurring in the Western North Atlantic.

Black sea bass are targeted by the Mid-Atlantic mixed trawl fishery, the Mid-Atlantic commercial hook and line fishery, the Mid-Atlantic pot/trap fishery, and the nearshore floating trap fishery. All of these are Category III fisheries with the exception of the pot/trap fishery, which NMFS lists as a Category II fishery. All types of commercial fishing gear are required to meet the gear restrictions detailed in the Large Whale Take Reduction Plan, the Harbor Porpoise Take Reduction Plan, the MMPA, and the ESA.

6.4 Fishery and Socioeconomic Environment

6.4.1 Economic and Social Environment

6.4.1.1 Summer Flounder

The principal ports of commercial and recreational importance to summer flounder, scup, and black sea bass are described in detail in Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP (section 3.4.2). A detailed description of the economic aspects of the commercial and recreational fisheries for summer flounder was presented in section 3.3.1 of Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP. Recent summer flounder, scup, and black sea bass landing patterns among ports are presented in section 6.5.1.

Since 1993 the commercial fishery has been managed under a quota system. The value of commercial landings of summer flounder from 1993 to 2003 has averaged $20.9 million, ranging from $16.5 million in 1997 to $28.3 million in 1995. The ex-vessel value of summer flounder landings in 2003 was $22.9 million with an average ex-vessel price estimated at $1.61 per pound. In general, summer flounder landings for smaller tonnage vessels were higher in the summer months, while landings for larger tonnage vessels were higher in the winter months. Monthly price fluctuations were evident. On average, higher prices tended to occur during the summer months. This price fluctuation is likely associated with supply responses.

Summer flounder continues to be an important component of the recreational fishery. Estimation of primary species sought as reported by anglers in recent intercept surveys indicates that summer flounder has increased in importance in the U.S. North Atlantic and Mid-Atlantic subregions, while decreasing in the South Atlantic subregion. The number of trips for which recreational anglers sought summer flounder in the North Atlantic and Mid-Atlantic subregions in 2001 was 583 thousand and 5.6 million, respectively. This represents a 10.7 percent increase relative to 2000 for both regions combined. In 2002, 509 thousand and 4.1 million trips sought summer flounder in the U.S. North Atlantic and Mid-Atlantic subregions, respectively. The total number of trips that sought summer flounder in 2002 decreased by 25 percent from the previous year.

Japan continues to be the most important export market for summer flounder. Exports of summer flounder are difficult to determine as summer flounder gets lumped under a variety of export codes, and it is impossible to identify in the U.S. export data (B. Ross pers. comm.). However, export of U.S. summer flounder to Japan has been reported to vary from approximately 800 to 1,800 mt (1.76 to 3.97 million lb; 0.80 to 1.80 million kg) in 1993-1997 (Asakawa pers. comm.). Fresh whole U.S. fluke or summer flounder (*Paralichthys dentatus*) is generally exported to Japan for raw (sashimi) consumption. Fresh U.S. summer flounder is used as a substitute for Japanese "hirame" (bastard halibut -- *Paralichthys olivaceus*), and normally imported whole fresh and sold through seafood auction markets to restaurants. They are usually consumed raw for sashimi or sushi toppings in Japan. While U.S. summer flounder is well established in some major action markets, daily prices may fluctuate depending on the total quantity of domestic and imported hirame (including U.S. summer flounder) delivered to auction on a given day. Depending on quality, auction prices for fresh U.S. summer flounder may vary from around 1,000 to 3,000 yen/kilo ($3.13 to $9.40/lb at 145 yen/$ 1.00) depending on size, quality, and market conditions (Asakawa pers. comm.). Frozen summer flounder may not be considered to be of the same quality, and is unlikely to become substitute for unfrozen summer flounder. Nevertheless, properly handled frozen summer flounder may receive wholesale prices of 400-900 yen/kilo ($1.73-$3.90/lb) or higher (Asakawa pers. comm.). The recent economic crisis in Japan could potentially hamper exports of seafood commodities to that country. Furthermore, future devaluation of the yen would result in reduced revenues for exporters of summer flounder to Japan.

Imports of flounders (all species combined) were 5.92 million lb (2.69 million kg; $4.54 million) in 1996, 5.39 million lb (2.44 million kg; $4.44 million) in 1997, 7.23 million lb (3.28 million kg; $4.67 million) in 1998, 7.87 million lb (3.57 million kg; $5.28 million) in 1999, 6.75 million lb (3.06 million kg; $5.81 million) in 2000, and 6.71 million lb (3.04 million kg; $4.74 million) in 2001. In 2002, 5.86 million lb (2.66 million kg) of flounders valued at $4.35 million entered the country for consumption. The amount of flounder imported into the U.S. for consumption in 2002 was the smallest quantity that has entered the country for consumption since 1998. Importers generally tend to import flounders when domestic ex-vessel prices reach $2 per pound. South Atlantic flatfish (e.g., Argentina) are imported to the U.S. when domestic prices are high. However, frozen imports may not make the grade for some restaurants and retail buyers that demand fresh flounder (National Fishermen, 1998). It is possible that as the upward quota trend continues, domestic fishermen will be able to land more summer founder. If domestic producers are able to strengthen summer flounder domestic supply, imports of flounders from other countries may decrease in the short-term.

6.4.1.2 Scup

A detailed description of the economic aspects of the commercial and recreational fisheries for scup was presented in section 3.3.2 of Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP.

Commercial scup landings were approximately 4.06 million lb (1.84 million kg; from ME to Cape Hatteras, NC) and valued at $3.38 million in 2001. In 2002, 7.28 million lb (3.30 million kg) of scup were landed and valued at $4.80

million. The average price per pound was $0.60 in 2003, a 9 percent drop in price per pound from the 2002 value of $0.66/lb. Information on ports and communities of importance to scup are described in detail in section 3.4.2 in Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP. Recent summer flounder, scup, and black sea bass landing patterns among ports are presented in section 6.5.1. Scup ex-vessel values and landings were higher for ports located in the northern part of the coast.

6.4.1.3 Black Sea Bass

A detailed description of the economic aspects of the commercial and recreational fisheries for black sea bass is presented in section 3.3.3 of Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP.

In 2003, black sea bass landings (from ME to Cape Hatteras, NC) were valued at $6.04 million and average ex-vessel price for black sea bass was estimated at $2.02 per pound, a 17 percent increase from the 2002 price per pound ($1.72). Information on ports and communities of importance to black sea bass are described in detail in section 3.4.2 in Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP. Recent summer flounder, scup, and black sea bass landing patterns among ports are presented in section 6.5.1. Black sea bass values and landings were higher for ports located along the southern part of the coast.

6.4.2 Description of the Areas Fished

6.4.2.1 Summer Flounder

The baseline impact of the summer flounder, scup, and black sea bass commercial fisheries on the environment is fully described in section 3.2.8 of Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP.

NMFS 2003 VTR data indicated that 22,704 trips, by five major gear types, caught a total of 13.28 million lb (6.02 million kg) of summer flounder, landing 12.60 million lb (5.71 million kg), and discarding 0.68 million lb (0.30 million kg). The majority of the trips and catch were made by bottom otter and beam trawls (77.4 percent of trips, 96.8 percent of catch), followed by gillnets (8.5 percent of trips, 1.0 percent of catch), handline "other" (8.1 percent of trips, 0.9 percent of catch), pots and traps (3.9 percent of trips, 0.4 percent of catch), and scallop dredges (1.5 percent of trips, 0.9 percent of catch). There were ten statistical areas which, individually, accounted for greater than 5 percent of the summer flounder catch in 2003 (Table 2). Collectively, these ten areas accounted for 83 percent of the summer flounder catch. There were six statistical areas which, individually, accounted for greater than 5 percent of the trips which caught summer flounder in 2003 (Table 3). Collectively, these six areas accounted for 81 percent of the trips that caught summer flounder and 35 percent of the 2003 summer flounder catch.

6.4.2.2 Scup

The baseline impact of the summer flounder, scup, and black sea bass commercial fisheries on the environment is fully described in section 3.2.8 of Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP.

NMFS 2003 VTR data indicated that 13,167 trips, by four major gear types, caught a total of 7.38 million lb (3.34 million kg) of scup. Of these, 6.91 million lb (3.13 million kg) of scup were landed and 0.46 million lb (0.21

million kg) were discarded. The majority of the trips and catch were made by bottom otter and beam trawls (59.0 percent of trips, 88.4 percent of catch), followed pots and traps (17.6 percent of trips, 6.7 percent of catch), hand line "other" (17.5 percent of trips, 2.4 percent of catch), and gillnets (4.4 percent of trips, 0.3 percent of catch). There were seven statistical areas which, individually, accounted for greater than 5 percent of the scup catch in 2003 (Table 2). Collectively, these seven areas accounted for 88 percent of the scup catch. There were five statistical areas which, individually, accounted for greater than 5 percent of the trips which caught scup in 2003 (Table 3). Collectively, these five areas accounted for 93 percent of the trips that caught scup and 43 percent of the 2003 scup catch.

6.4.2.3 Black Sea Bass

The baseline impact of the summer flounder, scup, and black sea bass commercial fisheries on the environment is fully described in section 3.2.8 of Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP.

NMFS 2003 VTR data indicated that 10,584 trips, by four major gear types, caught a total of 2.66 million lb (1.20 million kg) of black sea bass. Of these, 2.45 million lb (1.11 million kg) of black sea bass were landed and 0.21 million lb (0.09 million kg) were discarded. The majority of the trips and catch were made by bottom otter and beam trawls (55.3 percent of trips, 43.3 percent of catch), followed pots and traps (27.0 percent of trips, 46.1 percent of catch), handline "other" (14.1 percent of trips, 9.0 percent of catch), and gillnets (2.5 percent of trips, 0.2 percent of catch). There were six statistical areas which, individually, accounted for greater than 5 percent of the black sea bass catch in 2003 (Table 2). Collectively, these six areas accounted for 68 percent of the black sea bass catch. There were six statistical areas which, individually, accounted for greater than 5 percent of the trips which caught black sea bass in 2003 (Table 3). Collectively, these six areas accounted for 79 percent of the trips that caught black sea bass and 39 percent of the 2003 black sea bass catch.

6.5 Human Environment

6.5.1 Port and Community Description

The ports and communities that are dependent on summer flounder, scup, and black sea bass are fully described in Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP (section 3.4.2).

To examine recent landings patterns among ports, 2003 NMFS dealer data are used. The top commercial landings ports for summer flounder, scup, and black sea bass by pounds landed are shown in Table 1. A "top port" is defined as any port that landed at least 100,000 lb of summer flounder, scup, or black sea bass. Related data for the recreational fisheries are shown in Table 4. However, due to the nature of the recreational database (MRFSS) it is inappropriate to desegregate to less than state levels. Thus port-level recreational data are not shown.

6.5.2 Analysis of Permit Data

Federally Permitted Vessels

This analysis estimates that in 2003, there were 214 vessels with one or more of the following three commercial or recreational Federal Northeast permits: summer flounder, scup, and black sea bass (Table 5). A total of 984, 874, and

932 federal commercial permits for summer flounder, scup, and black sea bass, respectively, had been issued to Northeast region fishing vessels (Table 5). For party/charter operators a total of 717, 617, and 680 federal permits were issued for summer flounder, scup, and black sea bass, respectively (Table 5).

These three fisheries (summer flounder, scup, and black sea bass) have vessels permitted as commercial, recreational, or both. Of the 2,114 vessels with at least one federal permit there were 1,337 that held only commercial permits for summer flounder, scup, or black sea bass while there were 660 vessels that held only a recreational permit. The remaining vessels (117) held some combination of recreational and commercial permits (Table 5). Whether engaged in a commercial or recreational fishing activity, vessels may hold any one of seven combinations of summer flounder, scup, and black sea bass permits. The total number of vessels holding any one of these possible combinations of permits by species and commercial or recreational status are reported in Table 5.

Row sums in Table 5 indicate the total number of vessels that have been issued some unique combination of commercial permits. For example, there were 335 vessels whose only commercial permit was for summer flounder. By contrast, there were 489 vessels that held all three commercial permits. Column totals in Table 5 indicate the total number of vessels that have been issued some unique combination of federal recreational permits. For example, there were 14 vessels whose only recreational permit was for scup while 547 vessels held all three recreational permits. Each cell in Table 5 reports the total number of vessels that have a unique combination of recreational and commercial permits by species. For example, the cell entry of 3 in row 2 column 2 indicates that there were 3 vessels that held the unique combination of single summer flounder commercial permit and a single summer flounder recreational permit. Note that each cell entry in row one corresponds to vessels that held no commercial permit for summer flounder, scup or black sea bass, while each cell entry in column 1 corresponds to vessels that held no such recreational permit.

In addition to summer flounder, scup, and black sea bass, there are a number of alternative commercial or recreational fisheries for which any given vessel might possess a federal permit. The total number of vessels holding any one or more of these other permits is reported in Table 6.

Of the vessels that hold at least one federal permit for summer flounder, scup, or black sea bass, the largest number of commercial permit holders are held by Massachusetts vessels, followed by New Jersey and New York, then Rhode Island, North Carolina, and Virginia (Table 7). The fewest permits are held by Pennsylvania and Florida vessels, followed by Georgia. In terms of average tonnage, the largest commercial vessels are found in Pennsylvania, followed by Virginia, Connecticut, and Massachusetts. In terms of average length, the largest commercial vessels are found in Georgia, followed by Pennsylvania, Virginia, and North Carolina. In terms of average horse power, the largest commercial vessels are found in Pennsylvania, followed by Connecticut, Florida, and Virginia. The smallest vessels are found in New York and Maryland.

For party/charter vessels (Table 8), the largest number of permit holders are found in Massachusetts, followed by New Jersey, and New York. The fewest permits are in Delaware, followed by Florida and Pennsylvania. As might be expected, recreational vessels are smaller on average than commercial vessels. In terms of average length, the largest party/charter vessels operate out of principal ports in the states of Florida, followed by New Jersey, New York and

Connecticut; while the smallest are in Delaware. In terms of average length, the longest recreational vessels are found in Florida, followed by New Jersey, New York, and Maryland.

For vessels that hold a combination of commercial and party/charter permits most vessels operate out of ports in the states of New York followed by New Jersey and Massachusetts (Table 9). Like the vessels that hold only party/charter summer flounder, scup, or black sea bass permits, these vessels are generally smaller than exclusively commercial vessels.

Summer flounder landings are allocated by state, though vessels are not constrained to land in their home state. It can be useful, therefore, to examine the degree to which vessels from different states make it a practice to land in states other than their home state. Except in the states of Florida, Pennsylvania, and Georgia, a high percentage of commercial vessel owners list the same state, as both the vessel owner’s declared principal port of landing and their identified home port (Table 7). Except in the states Florida, Delaware, and Pennsylvania, a high percentage of recreational vessel owners list the same state, as both the vessel owner’s declared principal port of landing and their identified home port (Table 8). Except in the states of Florida and Pennsylvania, a high percentage of recreational/commercial vessel owners list the same state, as both the vessel owner’s declared principal port of landing and their identified home port (Table 9). Those vessels which have generally made it a practice to land in their home state may have less inherent flexibility in altering their landing state to adjust to smaller quotas in their home state.

Dealers

There were 280 dealers who bought summer flounder, scup and/or black sea bass in 2003. They were distributed by state as indicated in Table 10. Employment data for these specific firms are not available. In 2003 these dealers bought $23.0 million worth of summer flounder; $5.9 million worth of scup; and $6.0 million worth of black sea bass.

7.0 ENVIRONMENTAL CONSEQUENCES AND REGULATORY ECONOMIC EVALUATION OF ALTERNATIVES

This EA analyzes the impacts of the alternatives considered for the years 2005 and 2006 for specifications for summer flounder and 2005 for scup and black sea bass, relative to the status quo measures for each species. These alternatives include the TALs (commercial quotas and recreational harvest limits), which are necessary to achieve the annual target exploitation rates established under the individual species’ rebuilding schedules, and other commercial management measures. The Council and Board will meet in December 2004 to adopt specific recreational management measures (i.e., bag limits, size limits, seasonal closures) for 2005, when 2004 recreational landings are more complete. These recreational measures will be analyzed in the 2005 recreational specification package, when the Council and Board submit recommendations for 2005 recreational measures.

The nature of the management programs for the summer flounder, scup, and black sea bass fisheries were examined in detail in the Environmental Impact Statements (EISs) prepared for each of the fisheries in Amendment 2 for summer flounder (1992), Amendment 8 for scup (1996), and Amendment 9 for black sea bass (1996). Those analyses considered the impacts of the overall management measures including rebuilding schedules and annual exploitation rates on stock health and abundance, spawning stock biomass, EFH, and protected species, as well as on the economy and affected fishermen. Those EISs were updated in Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP (2003).

The description of the environment (biological, human - socioeconomic, EFH, and protected resources) in which these fisheries are prosecuted was also updated and described in detail in the EIS for Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP. The FMP regulates the black sea bass and scup fisheries from Maine to Cape Hatteras, North Carolina, while the summer flounder fishery is regulated from Maine to the southern border of North Carolina. The fisheries are prosecuted by vessels throughout the range, though the geographic focus of the fishery varies somewhat from year to year.

7.1 Summer Flounder Alternatives

7.1.1 Alternative 1 (Preferred TAL)

7.1.1.1 Biological Impacts

Alternative 1 is the preferred alternative, the resulting impacts from a TAL of 30.30 million lb (a 17.97 million lb adjusted commercial quota; a 11.98 million lb adjusted recreational harvest limit; a 353,917 lb research set-aside) for 2005 and a TAL of 33.00 million lb (a 19.21 million lb adjusted commercial quota; a 12.80 million lb adjusted recreational harvest limit; a 990,000 lb research set-aside) for 2006 for summer flounder.

The TALs under this alternative as well as the other summer flounder alternatives were allocated to the commercial and recreation sectors as described in section 5.0, and the commercial quotas and the recreational harvest limits were adjusted as described in section 4.3.

The 2005 TAL under this alternative is 2.10 million lb, or 7 percent higher than the summer flounder TAL under the status quo alternative in 2005 (alternative 2). The 2006 TAL under this alternative is 4.80 million lb, or 17 percent higher than summer flounder TAL under the status quo alternative for that year.

The TAL under this preferred alternative was recommended by the Monitoring Committee and was based on the condition of the stock relative to the biological reference point. The latest assessment indicates that the stock is not overfished but overfishing is occurring relative to the biological reference points detailed in Amendment 12. The fishing mortality rate estimated for 2002 is 0.29, a substantial decline from the 1.32 estimated for 1994 but slightly above the threshold F of 0.26. In addition, total stock biomass has increased substantially since 1991 to 149 million lb in 2003, 27 percent above the biomass threshold (117 million lb). Spawning stock biomass has increased each year since 1993 to 109 million lb in 2003, the highest value in the time series (1981-2003).

Based on the existing biological reference points, the target F rate for 2005 and 2006 is F_{max} or 0.26. Projections indicate continued rebuilding of the summer flounder stock. The 2005 and 2006 TALs under this alternative have a 75 percent probability of achieving the F target, assuming the TAL and discard level in 2004 and proposed for 2005 are not exceeded. As such, the preferred summer flounder TALs and the associated allocations are not expected to result in biological impacts (positive or negative) to the summer flounder stock in 2005 and 2006, relative to the status quo (alternative 2).

Under this alternative, the 2005 commercial quota of 17.97 million lb and the

2006 commercial quota of 19.21 million lb are approximately 1.26 (8 percent) and 2.80 million lb (17 percent) higher than the TALs under the status quo alternative, which may result in negative impacts on other fisheries. The commercial fishery for summer flounder is primarily prosecuted with otter trawls. This fishery often harvests mixed species, including scup, black sea bass, squid, Atlantic mackerel, and silver hake. Given the mixed species nature of the summer flounder fishery, incidental catch of other species does occur. A larger quota could result in increased effort and greater catches of other species. As such, this summer flounder preliminary adjusted commercial quota could result in negative impacts on other fisheries, relative to the status quo (alternative 2). However, catch-per-unit-effort could correspondingly increase with increased stock abundance, resulting in the same number of tows landing a larger volume of fish. As such, it is unknown if these measures would result in an increase of effort in the summer flounder fishery and thus, the impact on incidental catch rates of other species relative to the status quo alternative is unknown. However, it is most likely that this measure will not increase fishing effort.

Under this alternative, the current minimum fish size, minimum mesh regulations, and minimum mesh threshold regulations remain unchanged in 2005 and 2006. As such, these measures are not expected to result in biological impacts (positive or negative) to the summer flounder stock or other fisheries in 2005 or 2006 relative to 2004.

The purpose of the discard set-aside measures established by the Commission is to decrease discards of sub-legal summer flounder, as well as reduce regulatory discards that could occur as a result of possession limits set by the states. A decrease in the amount of discards would increase the likelihood that the target exploitation rate would be achieved in 2005 and 2006, because true incidental catch would now be landed and applied to the quota. The positive biological impacts of these measures would be identical to the status quo, because these measures were in effect in 2004.

The overall summer flounder TALs include a maximum research set-aside of 353,917 lb for 2005 and 990,000 lb for 2006. The results of the research conducted through the research set-aside program benefits both the summer flounder stock and the summer flounder fishery. The exemptions required under the research projects are analyzed in section 7.4.2. Because landings under research set-aside projects count against the overall quota, the biological/ecological impacts do not change relative to 2004. In addition, potential benefits could occur as new data or other information pertaining to this fishery are obtained for management or stock assessment purposes through the research set-aside program.

The preferred alternative implements an adjusted recreational harvest limit of 11.98 million lb in 2005 and 12.80 million lb in 2006. The 2005 and 2006 recreational limits under this alternative are 8 and 17 percent higher than the recreational harvest limits under the status quo alternative for those years, respectively. If recreational landings are the same in 2005 and 2006 as in 2003 (11.61 million lb), the adjusted recreational harvest limits may constrain recreational landings in 2005 and 2006. Therefore, the adjusted recreational limits under this alternative allow for more recreational landings in 2005 and 2006 compared to the status quo alternative. However, as indicated above, based on the current status of the stock, the overall TALs and associated allocations under this alternative have a 75 percent probability of achieving the fishing target rate in 2005 and 2006, assuming the TAL and discard level in 2004 and proposed for 2005 are not exceeded. As such, these recreational harvest limits are not expected to result in biological impacts (positive or negative) to the summer flounder stock in 2005 and 2006, relative to the status quo alternative.

Overall, the summer flounder measures under the preferred alternative are not expected to have positive or negative impacts on the summer flounder stock, relative to the status quo measures for summer flounder (alternative 2).

7.1.1.2 Habitat Impacts

The principal commercial gear used to harvest summer flounder, scup and black sea bass is the bottom otter trawl with other major gears including scallop dredge (for summer flounder) and fish pots and traps (for scup and black sea bass). The nature of impacts by these gear on the ocean bottom habitat is described in Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP. Data on the extent of impacts by specific gear on various bottom types are not available. Although the specific consequences for habitat are unknown, it can be assumed that the extent of trawling and dredging impacts are related to fishing effort.

The 2005 and 2006 preferred alternative includes an increase in the summer flounder commercial quota by 8 and 17 percent in 2005 and 2006 (1.26 million lb in 2005 and 2.80 million lb in 2006), respectively, compared to the status quo alternative (alternative 2). It is difficult to predict precisely whether these quota increases will result in increased fishing effort on EFH. Several possibilities associated with increased fishing effort exists. Potentially, the larger quota could result in a larger number of fishing trips, or longer fishing trips, with a corresponding potential for greater habitat impacts. Conversely, a larger quota may mean that states establish higher possession limits, which results in an equal number of fishing trips landing a larger volume of fish. Similarly, with increased species abundance, catch-per-unit-effort could increase which results in the same number of tows landing a larger volume of fish. In these latter instances, the proposed quotas result in either the equivalent or reduced gear impacts to bottom habitats. Tables 11-13 represent the range of potential habitat impacts that could occur under each of the various quota alternatives for each of the three species.

Given the range of potential habitat impacts, depending upon whether fishing effort increases or remains constant (due to a higher catch-per-unit-effort because of increased species abundance), the preferred alternative may have adverse effects to EFH that range from increased adverse impacts to impacts that are less than existing impacts.

Under this alternative, the current summer flounder minimum fish size, minimum mesh regulations, and minimum mesh threshold remains unchanged in 2005 and 2006. These actions are not expected to change effort in 2005 and 2006 compared to 2004 and thus, are not expected to increase adverse impacts on EFH.

Since the increase in the quotas for this species meets the FMP objective of increasing yields while ensuring that overfishing does not occur, and due to the lack of evidence to suggest that fishing effort on bottom habitats will actually increase due to this action, this action minimizes the adverse effects of fishing on EFH to the extent practicable, pursuant to section 305 (a)(7) of the MSFCMA.

7.1.1.3 Impacts on Endangered and Other Protected Species

Commercial capture of summer flounder occurs predominately in the Mid-Atlantic mixed trawl fishery. Minor amounts of summer flounder are landed by the Mid-Atlantic commercial sea scallop dredge fishery, the hook and line fishery, and the pound net fishery. All of these are Category III fisheries as defined in the NMFS 2004 List of Fisheries (69 FR 48407, August 10, 2004). Category III fisheries are not associated with any documented serious injuries or mortalities of marine mammals. All fishing gear are required to meet gear restrictions under the Large Whale Take Reduction Plan (LWTRP), Harbor Porpoise Take Reduction Plan (HPTRP), MMPA, and the ESA.

The measures in the preferred alternative of this specifications document do not contain major changes to existing summer flounder management measures. Maintaining the summer flounder minimum fish size, minimum mesh regulations, and minimum mesh threshold in place will not differently impact protected resources in 2005 and 2006 compared to 2004, because these measures are not expected to change fishing effort. Changes in overall fishing effort as a result of the higher summer flounder commercial quotas are unknown. Fishing effort may increase as vessels take more, or longer, trips (Table 11). Conversely, fishing effort may remain constant because vessels may achieve a higher catch-per-unit-effort due to increased species abundance. Since the proposed change in the commercial quotas is not expected to cause increase in fishing effort, this document concludes that the preferred summer flounder alternative will not affect endangered and threatened species in any manner not considered in prior consultations on these fisheries, and will have no adverse impact on marine mammals, relative to the status quo.

7.1.1.4 Socioeconomic Impacts

The proposed 2005 TAL of 30.30 million lb for summer flounder, is approximately 7 percent higher than the TAL under the 2005 status quo alternative (alternative 2). The proposed 2006 TAL of 33.00 million lb is approximately 17 percent higher than the TAL under the status quo alternative for that year.

The preferred summer flounder TALs include preliminary adjusted commercial quotas of 17.97 and 19.21 million lb for 2005 and 2006, respectively; preliminary adjusted recreational harvest limits of 11.98 and 12.80 million lb for 2005 and 2006, respectively; and a maximum research set-aside of 353,917 lb for 2005 and 990,000 lb for 2006. The commercial landings levels under this alternative represent an 7 and a 17 percent increase in landings in 2005 and 2006 relative to the status quo alternative, respectively. As a result of higher adjusted commercial quota for summer flounder, positive economic impacts on the summer flounder fishery are likely to occur, relative to the status quo alternative. Each state’s allocation will increase under this adjusted commercial quotas (Table 3). Overall, landings will increase in 2005 and 2006, resulting in an inflation in revenue, relative to the status quo.

Under this alternative the current summer flounder minimum fish size, minimum mesh regulations, and minimum mesh threshold regulations will remain unchanged in 2005 and 2006. As such, these measures are not expected to result in changes to the economic and social aspects of the fishery in 2005 and 2006 relative to 2004.

The recreational harvest limits under this alternative represent an 8 and a 17 percent increase in landings in 2005 and 2006 relative to the status quo alternative (alternative 2), respectively. If recreational landings are the same in 2005 and 2006 as in 2003 (11.61 million lb), the adjusted recreational harvest limits will constrain recreational landings in 2005 and 2006. As such, it is unlikely that more restrictive limits (i.e., lower possession limits, greater minimum size limits, and/or shorter seasons) be required to prevent anglers from exceeding the recreational harvest limit in 2005 and 2006. Specific recreational management measures will be determined in December when recreational landings for 2004 are more complete. It is expected that this alternative will likely increase recreational satisfaction for the summer flounder recreational fishery, relative to the status quo alternative.

Overall, it is expected that small positive social and economic impacts may occur because of the increase in total landings (in 2005 and 2006), relative to the status quo measures for summer flounder. These measures will achieve the target exploitation rate for 2005 and 2006. As such, positive social and economic impacts will be realized in the long-term, once the stock is rebuilt to sustainable levels.

In order to conduct a more complete socioeconomic analysis, proposed allocations for all three species were combined for analysis. Overall impacts (i.e., combined impacts of summer flounder, scup, and black sea bass) were examined because many of the vessels active in these fisheries participate in more than one or even all three of these fisheries. This analysis is presented under the cumulative impact discussion in section 7.5.6 (overall socioeconomic impact of the preferred alternatives), 7.6 (overall socioeconomic impact of the non-preferred alternatives) and in section 5 of the RIR/IRFA.

7.1.2 Alternative 2 (Status Quo/Most Restrictive TAL)

7.1.2.1 Biological Impacts

The most restrictive measures for summer flounder are the status quo measures. More specifically, alternative 2 implements a TAL of 28.20 million lb (a 16.71 million lb adjusted commercial quota; a 11.14 million lb adjusted recreational harvest limit; a 353,917 lb research set-aside) for 2005 and a TAL of 28.20 million lb (a 16.41 million lb adjusted commercial quota; a 10.94 million lb adjusted recreational harvest limit; a 846,000 lb research set-aside) for 2006. Note that while the overall TAL is identical for 2005 and 2006, the adjusted commercial quotas and recreational harvest limits are different during those two time periods due to the fact that a larger research set-aside was used to derive the 2006 allocations compared to 2005.

Based on the current status of the stock, a TAL of 28.20 million lb has about 90 percent probability of achieving the target F of 0.26 in 2005 and 2006, assuming the TAL and discard level in 2004 and proposed for 2005 are not exceeded. The latest assessment indicates that the stock is not overfished but overfishing is occurring relative to the biological reference points detailed in Amendment 12. The fishing mortality rate estimated for 2002 is 0.29, a significant decline from the 1.32 estimated for 1994 but slightly above the threshold F of 0.26. In addition, total stock biomass has increased substantially since 1991 to 149 million lb in 2003, 27 percent above the biomass threshold (117 million lb). Spawning stock biomass has increased each year since 1993 to 109 million lb in 2003, the highest value in the time series (1981-2003).

These measures (commercial quotas and recreational harvest limits) have the greatest probability of achieving the fishing mortality targets in 2005 and 2006 but result in reduced yields from the fishery when compared to alternatives 1 and 2. As such, while being overly conservative, this alternative and the associated allocations are expected to result in positive biological impacts on the summer flounder stock in 2005 and 2006.

The 2005 and 2006 adjusted commercial quotas under this alternative are approximately 0.05 and 0.35 million lb lower than the adjusted quota in 2004. The commercial fishery for summer flounder is primarily prosecuted with otter trawls. This fishery often harvests other species, including scup, black sea bass, squid, Atlantic mackerel and silver hake. Given the mixed species nature of the summer flounder fishery, incidental catch of other species does occur. Given that this alternative does not substantially increase or decrease total summer flounder landings relative to the quota specified for 2004, impacts on other fisheries will be similar to past years.

Under this alternative the current summer flounder minimum fish size, minimum mesh regulations, and minimum mesh threshold regulations will remain unchanged in 2005 and 2006. As such, these measures are not expected to result in biological impacts (positive or negative) to the summer flounder stock or other fisheries in 2005 or 2006 relative to 2004.

The discussion regarding the discard set-aside measures presented in section 7.1.1.1 (alternative 1) also applies here. The positive biological impacts of these measures are identical to the status quo, because these measures were in effect in 2004.

The most restrictive measure for summer flounder implements an adjusted recreational harvest limit of 11.14 million lb in 2005. This value is slightly lower (70 thousand lb; less than 1 percent) than the recreational harvest limit in 2004. The 2006 recreational harvest limit under this alternative is 10.94 million lb or 270 thousand lb (2.4 percent) less than the 2004 recreational harvest limit. As indicated above, based on the current status of the stock, the overall TALs and associated allocations have about 90 percent probability of achieving the target F of 0.26 in 2005 and 2006, assuming the TAL and discard level in 2004 and proposed for 2005 are not exceeded. As such, these recreational harvest limits are not expected to result in biological impacts (positive or negative) to the summer flounder stock in 2005 and 2006, relative to 2004.

Note that even though the proposed TALs for 2005 and 2006 are the same as the overall TAL implemented in 2004 (a status quo measure), the adjusted commercial quotas and recreational harvest limits vary among those time periods mainly due to differences in the value of the research set-aside used to derived those period allocations.

Overall, the summer flounder measures under the most restrictive alternative will likely have small positive impacts on the summer flounder stock but are more conservative than needed to achieve the target exploitation rate for 2005 and 2006.

7.1.2.2 Habitat Impacts

The discussion regarding the principal commercial gear used to harvest this species presented in section 7.1.1.2 (alternative 1) also applies here.

Alternative 2 (most restrictive) includes a decrease in the summer flounder commercial quota by < 1 percent (50 thousand lb) in 2005 and 2 percent (350 thousand lb) in 2006 compared to 2004. It is difficult to predict precisely whether these quota changes will result in a change in fishing effort on EFH. Several possibilities exist that may influence fishing effort. Potentially, a smaller quota could result in a smaller number of fishing trips, or shorter fishing trips, with a corresponding reduction in habitat impacts. Conversely, a smaller quota could mean that states establish smaller possession limits, which result in an equal number of fishing trips. Similarly, with increased species abundance, catch-per-unit-effort could increase which would result in the same number of tows landing a larger volume of fish. In these latter instances, the proposed quotas result in either the same or reduced gear impacts to bottom habitats. Table 11 represents the range of potential habitat impacts that could occur under each of the various quota alternatives for summer flounder.

Under this alternative, the current summer flounder minimum fish size, minimum mesh regulations, and minimum mesh threshold regulations will remain unchanged in 2005 and 2006. As such, these measures are not expected to change effort in 2005 and 2006 compared to 2004 and thus, are not expected to increase adverse impacts on EFH.

This alternative will likely minimize the adverse effects of fishing on EFH to the extent practicable, pursuant to section 305 (a)(7) of the MSFCMA. However, the restrictive commercial quotas under this alternative are more conservative than necessary to achieve the 2005 and 2006 target exploitation rates for summer flounder.

7.1.2.3 Impacts on Endangered and Other Protected Species

The discussion presented in section 7.1.1.3 regarding the types of gear used to capture summer flounder commercially also applies here.

Maintaining the summer flounder status quo alternatives in place (i.e., quota, minimum fish size, minimum mesh regulations, and minimum mesh threshold) is not expected to change the overall fishing effort. Because the proposed quotas are not expected to cause increases in fishing effort, it is concluded that this summer flounder alternative will not affect endangered and threatened species in any manner not considered in prior consultations on these fisheries, and will have no adverse impact on marine mammals.

7.1.2.4 Socioeconomic Impacts

The most restrictive measures for summer flounder are the status quo measures. The summer flounder TAL under this alternative is 28.20 million lb for 2005 and 2006 as well. Based on the current status of the stock, the overall TALs and associated allocations have about 90 percent probability of achieving the target F of 0.26 in 2005 and 2006, assuming that TAL and discard level in 2004 and proposed for 2005 are not exceeded. At this landings level, it is likely overfishing on the summer flounder stock would not occur. However, these TALs are probably more conservative than necessary to achieve the target F for 2005 and 2006.

This alternative includes a decrease in the summer flounder commercial quota by < 1 percent (50 thousand lb) in 2005 and 2 percent (350 thousand lb) in 2006 compared to 2004. Given the potential reduction in landings in 2005 and 2006 compared to 2004, negative economic impacts due a decrease in revenue may result relative to 2004. However, this negative economic impact is likely to be small due to the relatively small projected decrease in commercial quotas in 2005 and 2006 relative to 2004.

Under this alternative the current summer flounder minimum fish size, minimum mesh regulations, and minimum mesh threshold regulations will remain unchanged in 2005 and 2006. As such, these measures are not expected to result in changes to the economic and social aspects of the fishery relative to 2004.

The most restrictive measures for summer flounder implement an adjusted recreational harvest limit of 11.14 million lb in 2005. This value is slightly lower (70 thousand lb; less than 1 percent) than the recreational harvest limit in 2004. The 2006 recreational harvest limit under this alternative is 10.94 million lb or 270 thousand lb (2.4 percent) less than the 2004 recreational harvest limit. If recreational landings are the same in 2005 and 2006 as in 2003 (11.61 million lb), the adjusted recreational harvest limits will not constrain recreational landings in 2005 and 2006. As such, it is likely that more restrictive limits (i.e., lower possession limits, greater minimum size limits, and/or shorter seasons) be required to prevent anglers from exceeding the recreational harvest limit in 2005 and 2006. However, it is unlikely that these limits will negatively affect the demand for recreational fishing trips. Specific recreational management measures will be determined in December when recreational landings for 2004 are more complete.

Overall, the status quo summer flounder measures under this alternative (most restrictive) will likely result in no or negligible negative social and economic impacts on the summer flounder fishery. Additionally, these measures are more conservative than needed to achieve the target exploitation rate for summer flounder in 2005 and 2006.

7.1.3 Alternative 3 (Least Restrictive TAL)

7.1.3.1 Biological Impacts

The least restrictive measures for summer flounder (alternative 3) would implement a TAL of 32.60 million lb (a 19.35 million lb adjusted commercial quota; a 12.90 million lb adjusted recreational harvest limit; a 353,917 lb research set-aside) for 2005 and a TAL of 35.50 million lb (a 20.66 million lb adjusted commercial quota; a 13.77 million lb adjusted recreational harvest limit; a 1,065,000 lb research set-aside) for 2006. The 2005 TAL under this alternative is 4.40 million lb, or 16 percent higher than the summer flounder TAL under the status quo alternative in 2005 (alternative 2). The 2006 TAL under this alternative is 7.30 million lb, or 26 percent higher than summer flounder TAL under the status quo alternative for that year.

Based on the current status of the stock, the overall TALs and associated allocations under this alternative, there is an approximately 50 percent probability of achieving the fishing target rate in 2005 and 2006, assuming the TALs and discard levels in 2004 and proposed for 2005 are not exceeded. As such, these summer flounder TALs and the associated allocations are not expected to result in biological impacts (positive or negative) to the summer flounder stock in 2005 and 2006, relative to 2004. The probability of achieving the fishing target rate in 2005 and 2006 associated with this alternative is lower than those under alternatives 1 and 2.

Under this alternative, the 2005 and 2006 commercial quotas are approximately 2.64 (16 percent) and 4.25 (26 percent) million lb higher than the TALs under the status quo alternative. Thus, they could result in negative impacts on other fisheries. The commercial fishery for summer flounder is primarily prosecuted with otter trawls. This fishery often harvests mixed species, including scup, black sea bass, squid, Atlantic mackerel, and silver hake. Given the mixed species nature of the summer flounder fishery, incidental catch of other species does occur. A larger quota could result in increased effort and greater catches of other species. As such, these summer flounder preliminary adjusted commercial quotas could result in negative impacts on other fisheries, relative to the status quo alternative 2. However, catch-per-unit-effort could correspondingly increase with increased stock abundance, resulting in the same number of tows landing a larger volume of fish. As such, it is unknown if these measures would result in an increase of effort in the summer flounder fishery and thus, the impact on incidental catch rates of other species relative to the status quo alternative is unknown.

Under this alternative the current summer flounder minimum fish size, minimum mesh regulations, and minimum mesh threshold regulations remain unchanged in 2005 and 2006. As such, these measures are not expected to result in biological impacts (positive or negative) to the summer flounder stock or other fisheries in 2005 or 2006 relative to 2004.

The discussion regarding the discard set-aside measures presented in section 7.1.1.1 (alternative 1) also applies here. The positive biological impacts of these measures are identical to the status quo, because these measures were in effect in 2004.

The least restrictive alternative implements an adjusted recreational harvest limit of 12.90 million lb in 2005 and 13.77 million lb in 2006. The 2005 and 2006 recreational limits under this alternative are 16 and 26 percent higher than the recreational harvest limits under the status quo alternative for those years. If recreational landings are the same in 2005 and 2006 as in 2003 (11.61 million lb), the adjusted recreational harvest limits not only constrain recreational landings in 2005 and 2006 but also increase recreational landings compared to the status quo alternative. However, as indicated above, based on the current status of the stock, the overall TALs and associated allocations under this alternative have approximately 50 percent probability of achieving the fishing target rate in 2005 and 2006, assuming the TALs and discard levels in 2004 and proposed for 2005 are not exceeded. As such, these recreational harvest limits are not expected to result in biological impacts (positive or negative) to the summer flounder stock in 2005 and 2006, relative to the status quo alternative.

Overall, the summer flounder measures under this alternative are not expected to have negative impacts on the summer flounder stock relative to the status quo (alternative 2).

7.1.3.2 Habitat Impacts

Similar impacts as those described under section 7.1.1.2 are expected here.

7.1.3.3 Impacts on Endangered and Other Protected Species

Similar impacts as those described under section 7.1.1.3 are expected here.

7.1.3.4 Socioeconomic Impacts

Similar impacts as those described under section 7.1.1.4 (alternative 1 - preferred alternative) are expected here. However, given that the commercial quotas and recreational harvest levels are higher under this alternative than under alternative 1, it is expected that the overall positive social and economic impacts (due to higher expected ex-vessel revenues) under this alternative compared to the status quo (alternative 2) would be higher than those derived when comparing alternative 1 (preferred) to the status quo alternative.

7.2 Scup Alternatives

7.2.1 Alternative 1 (Preferred TAL/Status Quo)

7.2.1.1 Biological Impacts

The proposed scup TAL of 16.50 million lb under alternative 1 is based on the Monitoring Committee recommendation to keep the status quo TAL for 2005. Estimated discards were added to the TAL to derive a TAC of 18.65 million lb. Based on current information, scup abundance is likely to increase in 2005. The SARC-35 concluded that although "the relative exploitation rates have declined in recent years the absolute value of F cannot be determined." However, they did indicate that "survey data indicate strong recruitment and some rebuilding of age structure" in recent years. The 35^{th} SARC commented that "the stock can likely sustain modest increases in catches, but managers should do so with consideration of high uncertainty in stock status determination."

The TAL recommendation is based on the condition of the stock relative to the biological reference point. Specifically, given that the stock is no longer overfished (i.e., the biomass is in excess of the biomass threshold) indicates that the biomass may be at or larger than ½ B_{MSY}. Although MSY has not been calculated for scup, the average long-term landings can be used as a surrogate. Based on landings data, the NEFSC derived a LTPC for scup that ranged from 22-33 million lb. These estimates represent the landings that could be taken from the stock once it is rebuilt to B_{MSY} levels. As such, yields at ½ B_{MSY} could range from 11.00 to 16.50 million lb.

The Council chose the upper end of the landing range based on survey results that indicated current biomass was about 35 percent above the threshold. They also noted that survey results indicated strong year classes had been produced from 1999 to 2002 and, as such, management measures in place to protect these year classes would allow for significant stock increases in 2005.

The preferred 2005 scup TAL of 16.50 million lb includes a preliminary adjusted commercial quota of 12.24 million lb, a preliminary adjusted recreational harvest limit of 3.96 million lb, and a research set-aside of 303,675 lb. Limited information on scup fishing mortality, past performance of the scup stock and scup fishery, and the advice given by the 35^{th} SARC, indicate that if the scup stock can be fished at this level, then fishing will not exceed the target exploitation rate of 21 percent for 2005. The preferred scup TAL and the associated allocations are not expected to result in biological impacts (positive or negative) to the scup stock in 2005.

The TALs under this as well as the other scup alternatives were allocated to the commercial and recreational sectors as described in section 5.0 and the commercial quotas and the recreational harvest limits were adjusted as described in section 4.3.

The commercial fishery for scup is primarily prosecuted with otter trawls and pots/traps. This fishery often harvests other species, including summer flounder, black sea bass, squid, Atlantic mackerel, and silver hake. Given the mixed species nature of the scup fishery, incidental catch of other species does occur. The commercial quota under this alternative is approximately 0.10 million lb lower than the adjusted quota in 2004. Note that even though this is a status quo measure, the 2005 adjusted commercial quota and recreational harvest limit are slightly lower than the 2004 allocations due to the fact that a greater research set-aside was used to derive the 2005 allocations compared to 2004. However, since the adjusted commercial quota is nearly identical to the adjusted commercial quota in 2004 (i.e., 0.10 million lb lower), the proposed measure is not expected to result in an increase of effort in the scup fishery, and the incidental catch rates of other species should not increase.

Under this alternative, the current minimum fish size, minimum vent size, Winter II possession limit, the transfer of unused scup quota from Winter I to Winter II period, and winter period mesh threshold regulations will remain unchanged in 2005. As such, these measures are not expected to result in biological impacts (positive or negative) to the scup stock or other fisheries in 2005.

Alternative measures addressing preferred changes in the minimum mesh regulation (alternative 5.2) and summer period minimum mesh threshold (alternative 6.2) are discussed below. In addition, measures addressing preferred changes in the GRA management measures (alternative 7.2) and Winter I possession limit (alternative 4.2) are also discussed below. These preferred alternatives are expected to result in positive biological impacts to the scup stock or other fisheries in 2005.

The proposed scup TAL includes a research set-aside of 303,675 lb. The results of the research conducted through the research set-aside program benefit both the scup stock and the scup fishery. The exemptions required by the proposed research projects are analyzed under section 7.4.2. Because landings under research set-aside projects count against the overall quota, the biological/ecological impacts will not change relative to 2004. In addition, potential benefits could occur as new data or other information pertaining to this fishery are obtained for management or stock assessment purposes from the research set-aside program.

The preferred alternative would implement an adjusted recreational harvest limit of 3.96 million lb, approximately 30 thousand lb (less than 1 percent) lower than the adjusted recreational harvest limit implemented in 2004. This recreational harvest limit is not expected to result in biological impacts (positive or negative) to the scup stock in 2005, relative to 2004.

Overall, the scup measures under the preferred alternative should have no impacts (positive or negative) on the scup stock in 2005 compared to 2004.

7.2.1.2 Habitat Impacts

The discussion presented in section 7.1.1.2 regarding the types of gear used in the scup fishery, potential gear impacts on habitat, and impacts of quota changes on effort also applies here.

Alternative 1 (preferred/status quo alternative) includes a decrease in the scup commercial quota by < 1 percent (100 thousand lb) in 2005 compared to 2004. It is difficult to predict precisely whether these quota changes will result in a change in fishing effort on EFH. Several possibilities exist that influence fishing effort. Potentially, a smaller quota could result in fewer fishing trips, or shorter fishing trips, with a corresponding reduction in habitat impacts. Conversely, a smaller quota may mean that states establish smaller possession limits, which result in an equal number of fishing trips. Similarly, with increased species abundance, catch-per-unit-effort could increase which results in the same number of tows landing a larger volume of fish. In these instances, the proposed quotas result in either the same or reduced gear impacts to bottom habitats. However, given that the proposed 2005 commercial quota under this alternative is nearly identical to the quota implemented in 2004, it is not expected that changes in fishing effort will occur as a consequence of the proposed 2005 quota. Table 12 represents the range of potential habitat impacts that could occur under each of the various quota alternatives for scup.

The measures in the preferred alternative of this specifications document do not contain substantial changes to existing scup management measures. The scup commercial quota, current minimum fish size, minimum vent size, Winter II possession limit, the transfer of unused scup quota from Winter I to Winter II period, and winter period mesh threshold regulations will remain unchanged in 2005. These actions are not expected to change effort in 2005 compared to 2004 and thus, are not expected to increase adverse impacts on EFH.

Alternative measures addressing preferred changes in the minimum mesh regulation (alternative 5.2) and summer period minimum mesh threshold (alternative 6.2) are discussed below. In addition, measures addressing preferred changes in the GRA management measures (alternative 7.2) and Winter I possession limits (alternative 4.2) are also discussed below. These alternatives are not expected to change effort in 2005 compared to 2004 and thus, are not expected to increase adverse impacts on EFH.

This alternative would likely minimize the adverse effects of fishing on EFH to the extent practicable, pursuant to section 305 (a)(7) of the MSFCMA.

7.2.1.3 Impacts on Endangered and Other Protected Species

Commercial capture of scup occurs predominately in the Mid-Atlantic mixed trawl fishery, the Mid-Atlantic commercial hook and line fishery, the Mid-Atlantic pot/trap fishery, and the nearshore floating trap fishery, the latter being a type of pound net. All of these are Category III fisheries as defined in the NMFS 2003 List of Fisheries (69 FR 48407, August 10, 2004) with the exception of the pot/trap fishery. Category III fisheries are not associated with any documented serious injuries or mortalities of marine mammals.

Scup landings recorded in dealer weighout data as coming from pots/traps may be harvested through the Atlantic mixed species trap/pot fishery. This fishery has been reclassified as Category II (69 FR 48407, August 10, 2004) because the gear used has similarities (buoy lines) to lobster and blue crab traps which are category I and II fisheries, respectively. Marine mammal species injured or killed by Mid-Atlantic mixed species traps/pots include fin whale, humpback whale, Minke whale, and harbor porpoise. It is not known whether any of these incidents directly involved the scup fishery. The scup fishery has never been implicated in take reduction efforts for bottlenose dolphin. All fishing gear are required to meet gear restrictions under the LWTRP, HPTRP, MMPA, and the ESA.

The measures in the preferred alternative of this specifications document do not contain substantial changes to existing scup management measures. Maintaining the scup commercial quota, current minimum fish size, minimum vent size, winter period mesh threshold, and the transfer of unused scup quota from Winter I to Winter II period regulations in place will not have a different impact to protected resources in 2005 compared to 2004 because these measures are not expected to change fishing effort.

Alternative measures addressing preferred changes in the minimum mesh regulation (alternative 5.2) and summer period minimum mesh threshold (alternative 6.2) are discussed below. In addition, measures addressing preferred changes in the GRA management measures (alternative 7.2) and Winter I possession limits (alternative 4.2) are also discussed below. These alternatives are not expected to yield differential impacts to protected resources in 2005 compared to 2004 because these measures are not expected to change fishing effort.

Because the proposed measures are not expected to increase fishing effort, it is concluded that the preferred scup alternative will not affect endangered and threatened species in any manner not considered in prior consultations on these fisheries, and will have no adverse impact on marine mammals.

7.2.1.4 Socioeconomic Impacts

The proposed TAL of 16.50 million lb for scup is equivalent to the scup TAL implemented in 2004. Best available information indicates that the scup stock can be fished at this level without exceeding the target exploitation rate of 21 percent for 2005.

The adjusted commercial quota and recreational harvest limit for 2005 are 12.24 and 3.96 million lb, respectively. The commercial quota under this alternative is approximately 0.10 million lb lower than the adjusted quota in 2004. The recreational limit under this alternative is approximately 0.03 million lb lower than the adjusted limit in 2004.

As a result of a slightly lower adjusted commercial quota for scup, small negative economic impacts on the scup fishery will probably occur, relative to 2004. These quota landings allow for slightly lower landings, resulting in a decrease in revenue, relative to 2004. However, this negative economic impact may be small due to the relatively minor projected decrease in commercial quotas in 2005 relative to 2004.

The adjusted recreational harvest limit for scup under this alternative (3.96 million lb) is approximately 1 percent lower than the adjusted recreational harvest limit in 2004. If 2004 landings are the same as the 2003 landings (9.33 million lb), more restrictive limits (i.e., lower possession limits, greater minimum size limits, and/or shorter seasons) are necessary to prevent anglers from exceeding this recreational harvest limit in 2005. Specific recreational management measures will be determined in December when recreational landings for 2004 are complete. Such measures may result in a decrease in recreational satisfaction relative to 2004. At the present time, there is neither behavioral nor demand data available to estimate how sensitive party/charter boat anglers might be to proposed fishing regulations. In the summer flounder, scup, and black sea bass fisheries, there is no mechanism to deduct overages directly from the recreational harvest limit. Any overages must be addressed by way of adjustments to the management measures. While it is likely that proposed management measures may restrict the recreational fishery for 2005, and these measures may cause some decrease in recreational satisfaction (i.e., low bag limit, larger fish size or closed season), there is no indication that any of these measures may lead to a decline in the demand for party/charter boat trips. Currently, the market demand for this sector is relatively stable. It is unlikely that these measures will result in any substantive decreases in the demand for party/charter boat trips. It is likely that party/charter anglers will target other species when faced with potential reductions in the amount of scup that they are allowed to catch (sections 7.5 and 5.1.2 of the RIR/IRFA).

Under this alternative, the current minimum fish size, minimum vent size, Winter II possession limit, the transfer of unused scup quota from Winter I to Winter II period, and winter period mesh threshold regulations will remain unchanged in 2005. As such, these measures are not expected to result in socioeconomic impacts (positive or negative) in 2005 compared to 2004.

Alternative measures addressing preferred changes in the minimum mesh regulation (alternative 5.2) and summer period minimum mesh threshold (alternative 6.2) are discussed below. In addition, measures addressing preferred changes in the GRA management measures (alternative 7.2) and Winter I possession limit (alternative 4.2) are also discussed below. These alternatives are expected to have a positive socioeconomic impact in 2005 compared to 2004.

Overall, no social and economic impacts are expected to occur as a result of the preferred scup measures for 2005 relative to the measures for scup in 2004. Additionally, these measures are expected to achieve the target exploitation rate. However, positive social and economic impacts will be realized in the long-term, once the stock is rebuilt.

In order to conduct a more thorough socioeconomic analysis, proposed allocations for all three species were combined for analysis. Overall impacts (i.e., combined impacts of summer flounder, scup, and black sea bass) were examined because many of the vessels active in these fisheries participate in more than one or even all three of these fisheries. This analysis is presented under the cumulative impact discussion in section 7.5.6 (overall socioeconomic impact of the preferred alternatives), 7.6 (overall socioeconomic impact of the non-preferred alternatives) and in section 5 of the RIR/IRFA.

7.2.2 Alternative 2 (Most Restrictive TAL)

7.2.2.1 Biological Impacts

The most restrictive TAL for scup is 11.00 million lb. Based on this overall TAL, the preliminary adjusted commercial quota is 7.95 million lb, the preliminary adjusted recreational harvest limit is 2.74 million lb, and the research set-aside is 303,675 lb.

Based on current information, scup abundance is likely to increase in 2005. The SARC-35 concluded that although "the relative exploitation rates have declined in recent years the absolute value of F cannot be determined." However, they did indicate that "survey data indicate strong recruitment and some rebuilding of age structure" in recent years. The 35th SARC commented that "the stock can likely sustain modest increases in catches, but managers should do so with consideration of high uncertainty in stock status determination."

The scup stock is no longer overfished (i.e., the biomass is in excess of the biomass threshold) indicating that the biomass may be at or larger than ½ B_{MSY}. Although MSY has not been calculated for scup, the average long-term landings can be used as a surrogate. Based on landings data, the NEFSC derived a LTPC for scup that ranged from 22-33 million lb. These estimates represent the landings that could be taken from the stock once it is rebuilt to B_{MSY} levels. As such, yields at ½ B_{MSY} could range from 11.00 to 16.50 million lb. Therefore, this alternative represents the lower end of the landings range. These measures are likely to result in small positive biological impacts to the stock, relative to the status quo alternative.

Under this alternative, the current minimum fish size, minimum vent size, Winter II possession limit, and the transfer of unused scup quota from Winter I to Winter II period regulations will remain unchanged in 2005. As such, these measures are not expected to result in biological impacts (positive or negative) to the scup stock or other fisheries in 2005 relative to 2004.

Alternative measures addressing preferred changes in the minimum mesh regulation (alternative 5.2) and summer period minimum mesh threshold (alternative 6.2) are discussed below. In addition, measures addressing preferred changes in the GRA management measures (alternative 7.2) and Winter I possession limit (alternative 4.2) are also discussed below. These alternatives are expected to result in small positive biological impacts to the scup stock or other fisheries in 2005.

The preliminary adjusted commercial quota for scup under alternative 2 (most restrictive) is approximately 35 percent lower (4.29 million lb) than the preliminary adjusted quota under the status quo alternative. The commercial fishery for scup is primarily prosecuted with otter trawls and pots/traps. This fishery often harvests other species, including summer flounder, black sea bass, squid, Atlantic mackerel, and silver hake. Given the mixed species nature of the scup fishery, incidental catch of other species does occur. Given that this alternative decreases total scup landings relative to the quota specified under the status quo alternative, small positive impacts on other fisheries could occur.

This TAL includes an adjusted recreational harvest limit for scup 2.74 million lb, approximately 31 percent lower than the adjusted recreational harvest limit under the status quo alternative. If landings in 2004 equal landings from 2003 (9.33 million lb), the adjusted recreational harvest limit decreases recreational landings by approximately 71 percent. This reduction, relative to 2003 landings, may be greater than necessary to achieve the target exploitation rate for 2005. In fact, the recreational limit associated with this alternative will likely result in fewer recreational landings compared to the status quo alternative. However, this recreational harvest limit should have small positive biological impacts on the stock relative to status quo alternative 1.

Overall, the scup measures under this alternative should have a small positive impact on scup stock and the stocks of other species in 2005, relative to the status quo scup alternative 1. However, these measures are probably more conservative than needed to achieve the target exploitation rate for scup for 2005.

7.2.2.2 Habitat Impacts

The discussion presented in section 7.1.1.2 regarding the types of gear used in the scup fishery, potential gear impacts on habitat, and impacts of quota changes on effort also applies here. Alternative 2 (most restrictive alternative) includes a decrease in the scup commercial quota by 36 percent (4.29 million lb) in 2005 compared to the status quo alternative.

Under this alternative, the current minimum fish size, minimum vent size, Winter II possession limit, and the transfer of unused scup quota from Winter I to Winter II period will remain unchanged in 2005. As such, these actions are not expected to change effort in 2005 compared to 2004 and thus, are not expected to increase adverse impacts on EFH.

Alternative measures addressing preferred changes in the minimum mesh regulation (alternative 5.2) and minimum mesh threshold (alternative 6.2) are discussed below. In addition, measures addressing preferred changes in the GRA management measures (alternative 7.2) and Winter I possession limits (alternative 4.2) are also discussed below. These alternatives are not expected to change effort in 2005 compared to 2004 and thus, are not expected to increase adverse impacts on EFH.

This alternative would likely minimize the adverse effects of fishing on EFH to the extent practicable, pursuant to section 305 (a)(7) of the MSFCMA. However, the restrictive commercial quotas under this alternative are more conservative than necessary to achieve the 2005 target exploitation rates for scup.

7.2.2.3 Impacts on Endangered and Other Protected Species

The discussion presented in section 7.2.1.3 regarding the types of gear used to capture scup commercially also applies here. Alternative 2 (most restrictive alternative) includes a decrease in the scup commercial quota by 36 percent (4.29 million lb) in 2005 compared to the status quo alternative.

Under this alternative, the current minimum fish size, minimum vent size, Winter II possession limit, and the transfer of unused scup quota from Winter I to Winter II period regulations will remain unchanged in 2005. As such, these measures are not expected to change effort in 2005 compared to 2004 and thus, are not expected to increase adverse impacts on EFH.

Alternative measures addressing preferred changes in the minimum mesh regulation (alternative 5.2) and minimum mesh threshold (alternative 6.2) are discussed below. In addition, measures addressing preferred changes in the GRA management measures (alternative 7.2) and Winter I possession limit (alternative 4.2) are also discussed below. These alternatives are not expected to have a different impact to protected resources in 2005 compared to 2004 because the measures are not expected to change fishing effort.

This alternative is not expected to negatively affect endangered and threatened species in any manner not considered in prior consultations on these fisheries, and will have no adverse impact on marine mammals, relative to the status quo.

7.2.2.4 Socioeconomic Impacts

The most restrictive TAL for scup is 11.00 million lb for 2005. However, based on current information, scup abundance is likely to increase in 2005. The SARC-35 concluded that although "the relative exploitation rates have declined in recent years the absolute value of F cannot be determined." However, they did indicate that "survey data indicate strong recruitment and some rebuilding of age structure" in recent years. The 35th SARC commented that "the stock can likely sustain modest increases in catches, but managers should do so with consideration of high uncertainty in stock status determination."

This TAL includes a preliminary adjusted commercial quota of 7.95 million lb, a preliminary adjusted recreational harvest limit of 2.74 million lb, and a research set-aside of 303,675 lb for 2005.

A preliminary adjusted commercial quota of 7.95 million lb is approximately 36 percent lower than the existing adjusted commercial quota for scup. A more restrictive TAL would result in a loss of revenue for the commercial fishery. As such, a commercial quota of 7.95 is expected to result in negative social and economic impacts, relative to the status quo alternative.

This alternative includes status quo commercial Winter II possession limits in 2005. These possession limits were chosen last year (i.e., 2004) as an appropriate balance between the economic concerns of the industry (e.g., landing enough scup to make the trip economically viable) and the need to ensure the equitable distribution of the quota over the period. Maintaining these limits in 2005 while substantially reducing the overall commercial quota in 2005 compared to 2004 may result in early closure of the fishery because these possession limits may not be sufficiently low to ensure the equitable distribution of the quota over the period and thus, have negative economic and social consequences.

Under this alternative, the current minimum fish size, minimum vent size, and the transfer of unused scup quota from Winter I to Winter II period regulations will also remain unchanged in 2005. As such, these measures are not expected to result in economic impacts (positive or negative) to the scup fishery in 2005 relative to 2004.

Alternative measures addressing preferred changes in the minimum mesh regulation (alternative 5.2) and summer period minimum mesh threshold (alternative 6.2) are discussed below. In addition, measures addressing preferred changes in the GRA management measures (alternative 7.2) and Winter I possession limits (alternative 4.2) are also discussed below. These alternatives are expected to result in small positive economic impacts to the scup fishery in 2005 relative to 2004.

An adjusted recreational harvest limit of 2.74 million lb is approximately 31 percent lower than the recreational harvest limit under the status quo alternative. If 2004 landings are the same as the 2003 landings (9.33 million lb), more restrictive limits (i.e., lower possession limits, greater minimum size limits, and/or shorter seasons) are necessary to prevent anglers from exceeding this recreational harvest limit in 2005. Specific recreational management measures will be determined in December when recreational landings for 2004 are more complete. Such measures may result in a decrease in recreational satisfaction relative to the status quo alternative. The discussion regarding the impacts of fishing regulations on the demand for recreational fishing trips presented in section 7.2.1.4 (alternative 1) also applies here.

Overall, small negative economic impacts will probably occur as a result of the overall reduction in the TAL, relative to the existing scup measures (alternative 1-status quo). Additionally, these measure are more conservative than necessary to achieve the target exploitation rate for scup in 2005.

7.2.3 Alternative 3 (Least Restrictive TAL)

7.2.3.1 Biological Impacts

The least restrictive alternative sets the scup TAL at 22.00 million lb for 2005, which is 33 percent higher (5.50 million lb) than the TAL implemented in 2004 (alternative 1 - status quo). Based on current information, scup abundance will probably increase in 2005. The SARC-35 concluded that although "the relative exploitation rates have declined in recent years the absolute value of F cannot be determined." However, they did note that "survey data indicate strong recruitment and some rebuilding of age structure" in recent years. The 35th SARC commented that "the stock can likely sustain modest increases in catches, but managers should do so with consideration of high uncertainty in stock status determination."

The scup stock is no longer overfished (i.e., the biomass is in excess of the biomass threshold) indicating that the biomass may be at or larger than ½ B_{MSY}. Although MSY has not been calculated for scup, the average long-term landings can be used as a surrogate. Based on landings data, the NEFSC derived a LTPC for scup that ranged from 22-33 million lb. These estimates represent the landings that could be taken from the stock once it is rebuilt to B_{MSY} levels. As such, yields at ½ B_{MSY} could range from 11.00 to 16.50 million lb. Therefore, this alternative provides a TAL of 22.00 million lb, which is in excess of the upper end of the landings range.

Under this alternative, the current minimum fish size, minimum vent size, Winter II possession limit, the transfer of unused scup quota from Winter I to Winter II period, and the Winter period mesh threshold regulations will remain unchanged in 2005. As such, these measures are not expected to result in biological impacts (positive or negative) to the scup stock or other fisheries in 2005 relative to 2004.

Alternative measures addressing preferred changes in the minimum mesh regulation (alternative 5.2) and summer period minimum mesh threshold (alternative 6.2) are discussed below. In addition, measures addressing preferred changes in the GRA management measures (alternative 7.2) and Winter I possession limit (alternative 4.2) are also discussed below. These preferred alternatives are expected to result in positive biological impacts to the scup stock or other fisheries in 2005.

The scup TAL under the least restrictive alternative includes a preliminary adjusted commercial quota of 16.53 million lb, a preliminary adjusted recreational harvest limit of 5.17 million lb, and a research set-aside of 303,675 lb in 2005. A TAL of 22.00 million lb will probably exceed the target exploitation rate for 2005. If the target is exceeded, stock rebuilding would be slowed and the long-term benefits to the fishery will be depressed, relative to the status quo alternative.

The preliminary adjusted commercial quota under this alternative increases scup landings relative to the quota specified under the status quo alternative. The commercial fishery for scup is primarily prosecuted with otter trawls and pots/traps. This fishery often harvests other species, including summer flounder, black sea bass, squid, Atlantic mackerel and silver hake. Given the mixed species nature of the scup fishery, incidental catch of other species does occur. An increase in quota could result in an increase in fishing effort. As such, this scup preliminary adjusted commercial quota could result in negative impacts on other fisheries, relative to the status quo alternative. However, catch-per-unit-effort could correspondingly increase with increased stock abundance, resulting in the same number of tows landing a larger volume of fish. As such, it is unknown if these measures will result in an increase of effort in the scup fishery and thus, the impact on incidental catch rates of other species relative to the status quo is unknown.

The least restrictive alternative implements an adjusted recreational harvest limit of 5.17 million lb, approximately 35 percent higher (4.29 million lb) than the recreational harvest limit specified under the status quo alternative. If 2004 recreational landings equal the 2003 landings (9.33 million lb), more restrictive limits (i.e., lower possession limits, greater minimum size limits, and/or shorter seasons) are be necessary to prevent anglers from exceeding this recreational harvest limit in 2005. However, these restrictions may likely be less severe than those under the status quo alternative.

The scup TAL under this alternative is unrealistic. As such, it results in an exploitation rate that may exceed the target for 2005. If the target is exceeded, stock rebuilding would be slowed. As such, these measures could result in smaller scup stock size relative to the status quo alternative 1.

7.2.3.2 Habitat Impacts

The discussion presented in section 7.1.1.2 regarding the types of gear used in the scup fishery, potential gear impacts on habitat, and impacts of quota changes on effort also applies here.

Alternative 3 (least restrictive alternative) includes an increase in the scup commercial quota by 35 percent (4.29 million lb) in 2005 compared to the status quo alternative. Changes in overall fishing effort as a result of the higher scup commercial quota are unknown. Fishing effort could increase as vessels take more, or longer, trips (Table 12). Conversely, fishing effort could remain constant because vessels may achieve a higher catch-per-unit-effort due to increased species abundance.

Under this alternative, the current minimum fish size, minimum vent size, Winter II possession limit, and the transfer of unused scup quota from Winter I to Winter II period will remain unchanged in 2005. As such, these actions are not expected to change effort in 2005 compared to 2004 and thus, are not expected to increase adverse impacts on EFH.

Alternative measures addressing preferred changes in the minimum mesh regulation (alternative 5.2) and minimum mesh threshold (alternative 6.2) are discussed below. In addition, measures addressing preferred changes in the GRA management measures (alternative 7.2) and Winter I possession limits (alternative 4.2) are also discussed below. These alternatives are not expected to change effort in 2005 compared to 2004 and thus, are not expected to increase adverse impacts on EFH.

The increase in the commercial quota under alternative 3 may not achieve the rebuilding schedules for scup. Although there is a lack of evidence to suggest that fishing effort on bottom habitats will actually increase due to this action, this action may not comply with section 305(a)(7) of MSFCMA, and may not minimize the adverse effects of fishing on EFH to the extent practicable.

7.2.3.3 Impacts on Endangered and Other Protected Species

The discussion presented in section 7.2.1.3 regarding the types of gear used to capture scup commercially also applies here.

Under this alternative, the current minimum fish size, minimum vent size, Winter II possession limit, and the transfer of unused scup quota from Winter I to Winter II period regulations will remain unchanged in 2005. These measures are not expected to change effort in 2005 compared to 2004 and thus, are not expected to increase adverse impacts on EFH.

Alternative measures addressing preferred changes in the minimum mesh regulation (alternative 5.2) and summer period minimum mesh threshold (alternative 6.2) are discussed below. In addition, measures addressing preferred changes in the GRA management measures (alternative 7.2) and Winter I possession limit (alternative 4.2) are also discussed below. These alternatives are not expected to have a different impact to protected resources in 2005 because these measures are not expected to change fishing effort.

Changes in overall fishing effort as a result of the higher scup commercial quota are unknown. Fishing effort could increase as vessels take more, or longer, trips (Table 12). Conversely, fishing effort could remain constant because vessels may achieve a higher catch-per-unit-effort due to increased species abundance. Since the proposed change in the commercial quota is not expected to cause a large increase in fishing effort, it is concluded that this scup alternative will not affect endangered and threatened species in any manner not considered in prior consultations on these fisheries, and will have no adverse impact on marine mammals, relative to the status quo.

7.2.3.4 Socioeconomic Impacts

The least restrictive scup measure includes a TAL of 22.00 million lb. Under this alternative, the preliminary adjusted commercial quota is 16.53 million lb, the preliminary adjusted recreational harvest limit is 5.17 million lb, and the research set-aside is 303,675 lb.

A preliminary adjusted commercial quota of 16.53 million lb is approximately 34 percent higher than the existing adjusted commercial quota for scup. This TAL could result in an increase in revenue for the commercial fishery relative to the status quo alternative.

Under this alternative, the current minimum fish size, minimum vent size, Winter II possession limit, and the transfer of unused scup quota from Winter I to Winter II period regulations will remain unchanged in 2005. As such, these measures are not expected to result in economic impacts (positive or negative) to the scup fishery in 2005 relative to 2004.

Alternative measures addressing preferred changes in the minimum mesh regulation (alternative 5.2) and summer period minimum mesh threshold (alternative 6.2) are discussed below. In addition, measures addressing preferred changes in the GRA management measures (alternative 7.2) and Winter I possession limits (alternative 4.2) are also discussed below. These alternatives are expected to result in small positive economic impacts to the scup fishery in 2005 relative to 2004.

An adjusted recreational harvest limit of 5.17 million lb is approximately 25 percent higher than the recreational harvest limit for 2004. If 2004 landings equal the 2003 landings (9.33 million lb), more restrictive limits (i.e., lower possession limits, greater minimum size limits, and/or shorter seasons) are necessary to prevent anglers from exceeding this recreational harvest limit in 2005. However, such measures may result in an increase in recreational satisfaction relative to the status quo alternative because the recreational limit associated with this alternative is higher than the limit under the status quo alternative. Specific recreational management measures will be determined in December when recreational landings for 2004 are complete. The discussion regarding the impacts of fishing regulations on the demand for recreational fishing trips presented in section 7.2.1.4 (alternative 1) also applies here.

The scup TAL under this alternative will probably result in short-term, small positive social and economic impacts on the scup fishery, relative to the status quo. However, this TAL is based on a biomass value that may be unrealistic for 2005. This results in an exploitation rate that will likely exceed the target for 2005. If the target is exceeded, stock rebuilding is slowed and the long-term social and economic benefits of a rebuilt stock are reduced, relative to the status quo (alternative 1).

7.2.4 Alternative 4.1 (Status Quo Winter I Possession Limit/No Action)

7.2.4.1 Biological Impacts

The discussion regarding the condition of the scup fishery (i.e., scup abundance; condition of the stock relative to the biological reference point) presented in section 7.2.1.1 also applies here.

The current regulations stipulate a 15,000 lb per week (Sunday through Saturday) possession limit in the Winter I scup fishery. Under this alternative, the current Winter I possession limit will continue in 2005. As such, the possession limits are not expected to result in biological impacts (positive or negative) to the stock in 2005 compared to 2004. As in previous years, this possession limit is expected to constrain commercial landings to the commercial TAL. This measure is not expected to result in biological impacts (positive or negative) to the scup stock or other fisheries in 2005 relative to 2004.

7.2.4.2 Habitat Impacts

The discussion presented in section 7.1.1.2 regarding the types of gear used in the scup fishery and potential gear impacts on habitat due to changes in effort also applies here.

Given that the proposed 2005 Winter I possession limit under this alternative is the same possession limit that was in effect in 2004 (status quo), it is not expected that changes in fishing effort will occur as a consequence of this alternative. For this reason, this alternative is expected to have no additional impacts on EFH relative to 2004.

7.2.4.3 Impacts on Endangered and Other Protected Species

The discussion presented in section 7.2.1.3 regarding the types of gear used to capture scup commercially also applies here.

Given that the proposed 2005 Winter I possession limit under this alternative is the same possession limit that was in effect in 2004 (status quo), it is not expected that changes in fishing effort will occur as a consequence of this alternative. For this reason, interaction between commercial scup gear and endangered species or marine mammals is not expected to increase, and impacts on protected resources are not significant.

7.2.4.4 Socioeconomic Impacts

Maintaining the Winter I possession limit is not expected to result in changes to the economic and social aspects of the fishery in 2005 relative to 2004.

7.2.5 Alternative 4.2 (Winter I Landings Limit of 30,000 Pounds; Preferred Alternative)

7.2.5.1 Biological Impacts

The discussion regarding the condition of the scup fishery (i.e., scup abundance; condition of the stock relative to the biological reference point) presented in section 7.2.1.1 also applies here.

This alternative implements a Federal possession limit of 30,000 lb (in the Winter I fishery) to allow states to implement biweekly limits. The Winter II landings limit will remain unchanged i.e., 1,500 lb possession limit.

Scup are a schooling species; therefore, otter trawl vessels operating where scup occur occasionally make very large hauls that consist almost entirely of scup. Under the current system, when one of these hauls is brought up, the trip limit may be kept by the hauling vessel while the remaining catch must be discarded. Under the proposed action alternative, the contents of a 30,000 lb scup haul could be landed given the proposed Winter I possession limit. This would convert regulatory discards of scup into landings, thus reducing bycatch and improving the efficiency of the commercial scup fishery. However, in practice this alternative allows the same amount of scup to be landed in a two week period in 2005 as in 2004. This measure is likely to result in small positive biological impacts to the stock, relative to the status quo Winter I possession limit (alternative 4.1).

Given the mixed species nature of the scup fishery, incidental catch of other species does occur. Since this alternative allows for more flexibility to land scup within a two week time period, small positive impacts on other fisheries could occur.

7.2.5.2 Habitat Impacts

The discussion presented in section 7.1.1.2 regarding the types of gear used in the scup fishery and potential gear impacts on habitat due to changes in effort also applies here.

This alternative will not change overall fishing effort or redistribute effort by gear type. For this reason, this alternative is expected to have no additional impacts on EFH relative to the status quo Winter I possession limit (alternative 4.1).

7.2.5.3 Impacts on Endangered and Other Protected Species

The discussion presented in section 7.2.1.3 regarding the types of gear used to capture scup commercially also applies here.

This alternative will not change overall fishing effort or redistribute effort by gear type. For this reason, this alternative is expected to have no additional impacts on endangered species or marine mammals relative to the status quo Winter I possession limit alternative (alternative 4.1).

7.2.5.4 Socioeconomic Impacts

The implementation of this alternative allows for regulatory discards of scup to be converted into landings, thus reducing bycatch and improving the efficiency of the commercial scup fishery. It is expected that the proposed Winter I possession limit under this alternative will benefit fishermen as it allows for scup that would normally be discarded to be landed, thereby making scup trips more economically viable. In addition, the proposed limit under this alternative will not affect the equitable distribution of the quota over the period compared to the existing possession limit (i.e., 15,000 lb per week) as the Commission will implement a two week 30,000 lb landings limit. This alternative is expected to result in small positive economic and social changes compared to the status quo Winter I possession limit alternative (alternative 4.1).

7.2.6 Alternative 5.1 (Status Quo Mesh Size/No Action)

7.2.6.1 Biological Impacts

The discussion regarding the condition of the scup fishery (i.e., scup abundance; condition of the stock relative to the biological reference point) presented in section 7.2.1.1 also applies here.

Current scup mesh size is a minimum of 100 meshes of 5.0" mesh forward of the 4.5" mesh. Trawl nets must have a minimum mesh size of 4.5" diamond mesh for no more than 25 continuous meshes forward of the terminus of the codend, and with at least 100 continuous meshes of 5.0" mesh forward of the 4.5" mesh. For trawl nets with codends (including an extension) less than 125 meshes, the entire trawl net must have a minimum mesh size of 4.5" throughout the net. This current gear requirement for the directed fishery became effective February 25th, 2002. The threshold level used to trigger the minimum mesh requirements is 500 lb of scup from November 1 through April 30 and 100 lb or more of scup from May 1 through October 31. Amendment 8 to the Summer Flounder and Scup FMP contains provisions that allow for changes in the minimum net mesh. The increasing abundance of scup and indications that discards may have increased in 2004 suggest that a modification of the current scup net requirement is needed. Therefore, maintaining the current status quo mesh size will result in small negative biological impacts to the scup stock in 2005 relative to 2004.

7.2.6.2 Habitat Impacts

The discussion presented in section 7.1.1.2 regarding the types of gear used in the scup fishery and potential gear impacts on habitat due to changes in effort also applies here.

Given that the proposed 2005 scup mesh requirement under this alternative is the same mesh requirement that was in effect in 2004 (status quo), it is not expected that changes in fishing effort would occur as a consequence of this alternative. For this reason, this alternative is expected to have no additional impacts on EFH relative to 2004.

7.2.6.3 Impacts on Endangered and Other Protected Species

The discussion presented in section 7.2.1.3 regarding the types of gear used to capture scup commercially also applies here.

Given that the proposed 2005 scup mesh requirement under this alternative is the same mesh requirement that was in effect in 2004 (status quo), it is not expected that changes in fishing effort will occur as a consequence of this alternative. For this reason, interaction between commercial scup gear and endangered species or marine mammals is not expected to increase, and impacts on protected resources are not significant.

7.2.6.4 Socioeconomic Impacts

Given that the proposed 2005 scup mesh requirement under this alternative is the same mesh requirement that was in effect in 2004 (status quo), it is not expected to result in significant changes to the economic and social aspects of the fishery in 2005 relative to 2004. However, this alternative does not reduce the discard of undersized fish, thus not improving the efficiency of the commercial scup fishery.

7.2.7 Alternative 5.2 (5" Mesh Size; Preferred Alternative)

7.2.7.1 Biological Impacts

The discussion regarding the condition of the scup fishery (i.e., scup abundance; condition of the stock relative to the biological reference point) presented in section 7.2.1.1 also applies here.

Amendment 8 to the Summer Flounder and Scup FMP contains provisions that allow for changes in the minimum net mesh. The increasing abundance of scup and indications that discards may have increased in 2004 suggest that a modification of the current scup net requirement is needed. Under this alternative, the minimum mesh size for the scup fishery would be a 5.0" mesh with a minimum length of 75 meshes from the terminus of the net. For small nets with less than 75 mesh codends, the entire net will be 5". The threshold level used to trigger the minimum mesh requirements under this alternative is 500 lb of scup from November 1 through April 30 and 200 lb or more of scup from May 1 through October 31 (section 7.2.9, alternative 6.2).

This alternative would provide small positive biological impacts to the scup stock as it would decrease the discard of undersized fish compared to the status quo alternative (alternative 5.1). The commercial fishery for scup is primarily prosecuted with otter trawls and pots/traps. This fishery often harvests other species, including summer flounder, black sea bass, squid, Atlantic mackerel, and silver hake. Given the mixed species nature of the scup fishery, incidental catch of other species does occur. While the proposed mesh modification under this alternative is not expected to result in a change in effort compared to the status quo mesh requirement, it is expected to decrease the incidental catch rates of other species. Therefore, this alternative provides small positive impacts to the scup stock and potential positive impacts on other fisheries compared to the status quo alternative.

7.2.7.2 Habitat Impacts

The discussion presented in section 7.2.1.2 regarding the types of gear used in the scup fishery and potential gear impacts on habitat due to changes in effort also applies here.

The proposed scup mesh requirement under this alternative is not expected to produce changes in fishing effort compare to the status quo alternative (alternative 5.1). For this reason, this alternative is expected to have no additional impacts on EFH relative to the status quo alternative.

7.2.7.3 Impacts on Endangered and Other Protected Species

The discussion presented in section 7.2.1.3 regarding the types of gear used to capture scup commercially also applies here.

The proposed scup mesh requirement under this alternative is not expected to produce changes in fishing effort compare to the status quo alternative (alternative 5.1). For this reason, interaction between commercial scup gear and endangered species or marine mammals is not expected to increase relative to the status quo alternative, and impacts on protected resources are not significant.

7.2.7.4 Socioeconomic Impacts

The implementation of this alternative allows for a reduction in the discard of undersized fish, thus improving the efficiency of the commercial scup fishery. Vessels currently participating in the scup fishery would only be required to make minor modifications to the existing mesh in order to comply with this measure and no additional material (mesh) needs to be purchased. More specifically, in existing scup gear, the 4.5" portion of the net needs to be eliminated and the length of the 5.0" mesh needs to be reduced to comply with the proposed mesh regulations under this alternative. It is likely that these modifications can be made in a few hours depending on the size (length) of the mesh to be modified (James Ruhle Sr., pers. comm.). The cost of making the proposed mesh modifications under this alternative is minimal.

7.2.8 Alternative 6.1 (Status Quo Mesh Threshold/No Action)

7.2.8.1 Biological Impacts

The discussion regarding the condition of the scup fishery (i.e., scup abundance; condition of the stock relative to the biological reference point) presented in section 7.2.1.1 also applies here.

This alternative maintains the scup mesh threshold in 2005. The current threshold to trigger the minimum mesh size is 500 lb of scup from November 1 through April 30, and 100 lb of scup from May 1 through October 31. This measure is not expected to result in biological impacts (positive or negative) to the scup stock or other fisheries in 2005 relative to 2004.

7.2.8.2 Habitat Impacts

The discussion presented in section 7.2.1.2 regarding the types of gear used in the scup fishery and potential gear impacts on habitat due to changes in effort also applies here.

Given that the proposed 2005 mesh thresholds under this alternative are the same thresholds that were in effect in 2004 (status quo), it is not expected that changes in fishing effort will occur as a consequence of this alternative. For this reason, this alternative is expected to have no additional impacts on EFH relative to 2004.

7.2.8.3 Impacts on Endangered and Other Protected Species

The discussion presented in section 7.2.1.3 regarding the types of gear used to capture scup commercially also applies here.

Given that the proposed 2005 mesh thresholds under this alternative are the same thresholds that were in effect in 2004 (status quo), it is not expected that changes in fishing effort will occur as a consequence of this alternative. For this reason, interaction between commercial scup gear and endangered species or marine mammals is not expected to increase, and impacts on protected resources are not significant.

7.2.8.4 Socioeconomic Impacts

Given that the proposed 2005 scup mesh thresholds under this alternative are equivalent thresholds to those in effect in 2004 (status quo), it is not expected to result in changes to the economic and social aspects of the fishery in 2005 relative to 2004.

7.2.9 Alternative 6.2 (200 Pounds Threshold From May 1 Through October 31; Preferred Alternative)

7.2.9.1 Biological Impacts

The discussion regarding the condition of the scup fishery (i.e., scup abundance; condition of the stock relative to the biological reference point) presented in section 7.2.1.1 also applies here.

Under this alternative, the threshold to trigger the minimum mesh size from May 1 through October 31 will be 200 lb. The proposed summer threshold level would allow the bycatch of legal sized fish harvested in small mesh fisheries to be landed, while at the same time discouraging the use of small mesh by directed scup fishermen during that time period. The current November 1 through April 30 threshold would remain unchanged under this alternative. This measure is not expected to result in biological impacts (positive or negative) to the scup stock or other fisheries in 2005 relative to the status quo alternative (alternative 6.1).

7.2.9.2 Habitat Impacts

The discussion presented in section 7.2.1.2 regarding the types of gear used in the scup fishery and potential gear impacts on habitat due to changes in effort also applies here.

The proposed mesh threshold requirements under this alternative are not expected to produce changes in fishing effort compare to the status quo alternative (alternative 6.1). For this reason, this alternative is expected to have no additional impacts on EFH relative to the status quo alternative.

7.2.9.3 Impacts on Endangered and Other Protected Species

The discussion presented in section 7.2.1.3 regarding the types of gear used to capture scup commercially also applies here.

The proposed mesh threshold requirements under this alternative are not expected to produce changes in fishing effort compared to the status quo alternative (alternative 6.1). For this reason, interaction between commercial scup gear and endangered species or marine mammals is not expected to increase, and impacts on protected resources are not significant.

7.2.9.4 Socioeconomic Impacts

This alternative allows fishermen to land more scup before they are required to use the minimum mesh size. The proposed summer threshold level allows the bycatch of legal sized fish harvested in small mesh fisheries to be landed, while at the same time discouraging the use of small mesh by directed scup fishermen during that time period. This alternative is expected to result in small positive changes to the economic and social aspects of the fishery relative to the status quo alternative (alternative 6.1).

7.2.10 GRA Alternatives

<u>Background</u> In 1995, the report of the 19th Northeast Regional Stock Assessment Workshop (NEFSC 1995) indicated that the Atlantic coast population of scup was overfished and at near record-low abundance. The 19th SAW advised managers that restoring the scup population would require reducing fishing mortality as much as possible, particularly on the 0-2 age classes since fish in these early age classes accounted for the bulk of the scup population at that time (max age of scup ~ 20 yr). Scup discards, particularly from the directed scup and *Loligo*-squid trawl fisheries, were identified as a major

source of age 0-2 scup mortality.

A number of management measures adopted in 1996 and the years following were devised to reduce exploitation rates for the scup population as a whole. However, in 1999, GRAs which specifically address the problem of scup discard mortality, came under consideration. MAFMC staff evaluated available discard information (NMFS unpubl. data; Kennelly 1999) in order to identify time/area combinations associated with high discard incidence. Relatively high scup discarding was found to occur in statistical areas 616 and 622 in January through April and statistical areas 537, 539, and 613 in November through December. Rather than restricting harvest in an entire statistical area, the identification of smaller GRAs based on scup movement and depth distribution patterns was considered.

During the development of the scup GRAs from 1999-2000, a number of GRA configurations were proposed by the Council. The current configuration, developed by NMFS, expanded the southern extent of the Council-proposed southern GRA based on the spatial pattern of scup captures in the NEFSC winter trawl survey. The current configuration of the scup GRAs (Figure 2) was adopted March 1, 2001 (66 FR 12902). Under the current rule, there are two scup GRAs: 1) the southern scup GRA which is in effect from January 1 to March 15, and 2) the northern scup GRA which is in effect from November 1 to December 31. During the effective periods for each GRA, trawl vessels fishing for or in possession of *Loligo*-squid, black sea bass or silver hake (whiting) are required to use nets with a minimum 4.5" diamond codend mesh. By prohibiting small mesh gear during the effective time/area combinations for the scup GRAs, the strategy is to decrease the probability of capture for juvenile scup, and correspondingly decrease discarding/discard mortality.

<u>GRA alternatives for the 2005 Fishing Year</u> In addition to the status quo/no action alternative, two action alternatives that would adjust the boundaries of the southern scup GRA (SSGRA) are considered for the 2005 summer flounder, scup, and black sea bass fishing year. No adjustments affecting the boundaries of the northern scup GRA (NSGRA), or the effective time periods or mesh requirements for either scup GRA are proposed at this time.

Evaluation of GRA impacts was based in large part upon extrapolations from capture patterns in the NMFS winter and spring trawl surveys. For example, if under a given alternative, the SSGRA boundaries were expanded such that the new SSGRA covered all of the surveys’ scup capture locations, the new SSGRA would clearly have positive biological impacts on the scup population during its effective period. On the other hand, if the size of the GRA is greatly reduced, positive economic impacts, at least in the short term, would be expected due to increased availability of the resource.

Trawl survey data were emphasized for several additional reasons: 1) in contrast with fishery dependent data sources (i.e., NMFS observer program or vessel trip reports), the distribution of survey tows is spatially randomized, which means that catch patterns from the survey are more likely to reflect the true geographic distribution of the various species of interest, 2) the spatial distribution of survey tows was unaffected by the implementation of the GRAs so that data obtained before and after implementation can be used , 3) the timing of the winter and spring trawl surveys (winter: Feb; spring: March through April) coincides with the effective period of the SSGRA (January 1 through March 15), and 4) this data source was used by NMFS to establish the current SSGRA configuration.

In evaluating the impacts of the various alternatives, alternative 7.1 (status quo/no action) serves as a baseline for the two action alternatives (7.2 and 7.3). The GRAs defined by the various alternative boundaries are referred to as SSGRA1 (alternative 7.1), SSGRA2 (alternative 7.2), and SSGRA3 (alternative 7.3).

Size data from the survey catches were not examined; therefore, an important assumption of the biological impact analysis is that the size distribution in survey catches of a given species is consistent among the alternative SSGRAs.

7.2.10.1 Alternative 7.1 (Status Quo/No Action)

Under this alternative the existing boundaries for SSGRA1 remain in place for 2005 as identified in 66 FR 12902 (Figure 2, Table 14).

7.2.10.1.1 Biological Impacts

When survey catches within SSGRA1 for a given species are compared to overall survey catches for those species, 58.7 percent of scup and 65.3 percent of black sea bass catch (N) occur within SSGRA1 boundaries (Table 15). These results suggest that SSGRA1, when it is in effect, overlaps the majority of the scup and black sea bass populations in the winter and early spring, and therefore should serve as a source of protection from small mesh gear for juvenile scup and black sea bass during that time. The direct positive impacts associated with this alternative will continue to accumulate if adopted for the 2005 fishing year. This alternative also will continue producing positive direct impacts on segments of other fish populations that occur within SSGRA1 during its effective period and are vulnerable to discarding by the small mesh trawl fishery. Tables 15 and 16 allow for comparison of species most frequently encountered by the trawl survey in SSGRA1 with historic (1989-1999) small mesh discards. Besides protecting scup and black sea bass, SSGRA1 appears to have some noteworthy protective value for the northern sea robin (*Prionotus carolinus*) and rosette skate (*Raja garmani*).

Further characterization of the protective function of SSGRA1 was accomplished by comparing the catch per unit effort (CPUE) for a given species inside and outside the SSGRA boundaries. Effort, in this case, is defined as a single survey tow. Tables 17 and 18 provide combined winter/spring catch information for scup, black sea bass, and *Loligo* squid from 1996-2004. Survey encounters are expressed in terms of numbers of tows in Table 17, and in terms of numbers of fish (or squid) in Table 18. Survey effort from 1996 to 2004 through the winter/spring trawl survey consisted of a total of 4,240 tows (Table 17). Of this total, 353 tows (8 percent) occurred within SSGRA1 boundaries, and 3,887 tows (92 percent) occurred outside the boundaries. Scup CPUE was 320/tow (112,968 scup in 353 tows) and black sea bass CPUE was 32/tow (11,318 black sea bass in 353 tows) within SSGRA1, while outside the boundaries, scup CPUE was 20/tow (79,566 scup in 3,887 tows) and black sea bass CPUE was about 2/tow (6,023 black sea bass in 3,887 tows; Table 18). These results further suggest that scup and black sea bass are more likely to be encountered within SSGRA1 than outside its boundaries during its effective period.

The small mesh *Loligo* fishery is likely to exploit areas opened by modification of the status quo SSGRA. Presently, effort from that fishery is distributed very near the GRA’s eastern boundary during the SSGRA effective period (Figure 3). Based on the NEFSC trawl survey, 343 out of 353 tows within the SSGRA1 boundaries captured *Loligo* (Table 17). Of the 343 tows that captured *Loligo*, 199 also captured scup (58 percent) and 250 tows (73 percent) also captured black sea bass. There were no tows that captured scup or black sea bass that did not also capture some *Loligo*. On the other hand, of the 343 tows that captured *Loligo*, 144 tows (42 percent) caught no scup while 93 tows (27.1 percent) caught no black sea bass. The lower degree of co-occurrence between *Loligo* and scup compared to *Loligo* and black sea bass suggests that the protective function of SSGRA1 may actually be greater for black sea bass than for scup vis a vis the *Loligo* fishery. However, this is not certain since total survey catches of scup in SSGRA1 (112,968) are an order of magnitude greater than the black sea bass catch (11,318).

Under 66 FR 12902, vessels fishing, targeting, or in possession of whiting (silver hake) are also subject to the restrictions of the scup GRAs. However, less than 3 percent of the winter/spring survey catch of whiting was found to have occurred within SSGRA1. As such, the protective value of SSGRA1 vis a vis the whiting fishery is expected to be trivial.

The available information does not clearly indicate if the overall discard levels for scup and black sea bass have been lowered as a result of SSGRA1. Table 19 presents annual scup and black sea bass discards from 1989 through 2003 within the SSGRA effective period and overall. The number of observer trips and mean discards/trip are also presented, and the discards from small mesh trips are shown separately from overall trips that include all mesh sizes. Referring to Table 19, mean trip-level discards for both scup and black sea bass seem highly variable from year to year, although they are generally higher for scup. In 2001, the first complete year in which the current scup GRAs were in effect, there was a large drop in small mesh scup discards both within the SSGRA effective period and over the entire year. On the other hand, Table 19 shows that 2001 had the highest level of observed scup discards during the SSGRA effective period. Surprisingly, that increase in scup discards during the SSGRA effective period resulted from a big increase in discards observed on large mesh trips. Although overall trip-level discards also increased for black sea bass in 2001, small mesh discards/trip were somewhat greater than large mesh discards/trip. Mean trip-level discards were lower for both species in 2002 and 2003 relative to 2001. Observer data from the year 2001 indicated that 2001 was a high discard year in general. The high degree of year to year variability in discard levels from the observer database suggests that either annual scup and black sea bass discards do indeed vary widely, or that observer coverage (i.e., sample size) is inadequate to accurately characterize trends in discard levels for these species. SSGRA1 clearly offers, to a number of species, a spatial/temporal window of protection from the small mesh trawl fishery. It is less clear whether that window of protection has produced significant reductions in overall discards. Whatever positive biological impacts SSGRA1 has produced, the effect should, over time, correspond to positive cumulative biological impacts. An estimate of the magnitude of those positive impacts remains elusive at present.

7.2.10.1.2 Habitat Impacts

As stated in the final 2001 summer flounder, scup, and black sea bass specifications (section 3.0 in the EA/FRFA), SSGRA1 includes areas of EFH for summer flounder, scup, and black sea bass. A complete description of EFH for these species can be found in section 7.0 of that document. Since summer flounder, scup, and black sea bass eggs and larvae are pelagic, while post-larval life stages (juveniles and adults) are demersal, impacts of small mesh trawl gear on EFH for these species is likely to be limited to post-larval EFH. Additionally, because the southern extent of SSGRA1 is north of Cape Hatteras, the "north of Cape Hatteras" definitions of EFH for post-larval summer flounder, scup, and black sea bass apply to this discussion of impacts.

For all three species, the "north of Cape Hatteras" EFH definitions are based on the distribution of captures by the NEFSC trawl survey. Therefore, capture frequency in the NEFSC trawl survey data, used to characterize biological impacts of this alternative in section 7.2.10.1.1, above, was also used to characterize likely impacts of this alternative on EFH. Based on these data, small positive EFH impacts for scup and black sea bass are expected under this alternative, since the majority of winter/spring captures of scup and black sea bass occur within SSGRA1. On the other hand, although Table 15 indicates some protective value from SSGRA1 for summer flounder, a lower percentage of summer flounder are encountered by the trawl survey in SSGRA1 (21.0 percent) than in SSGRA2 (22.2 percent). It is possible then that the magnitude of the small positive impacts on summer flounder EFH may be not be as great under this alternative compared to alternative 7.2.

In general, continuation of the status quo could benefit EFH by reducing small mesh fishing effort in these habitats. In the three years prior to implementation of SSGRA1 (1997-1999), the VTR data indicate that 285 small mesh trips occurred within the GRA boundaries, while 3,613 trips occurred outside the boundaries. In the three years following implementation of SSGRA1 (2001-2003), the VTR data indicate that 108 small mesh trips occurred within its boundaries while 2,728 trips occurred outside the boundaries. These numbers reflect effort during the January 1 through March 15 SSGRA effective period. Small mesh effort within SSGRA1 is apparently lower since implementation, while no offsetting increase seems to have occurred outside the boundaries. Therefore, it is suggested that a small net positive impact on EFH may be attributable to the establishment of the status quo SSGRA. These small positive impacts are expected to continue under this alternative if it is implemented for the 2005 fishing year.

7.2.10.1.3 Impacts on Endangered and Other Protected Species

It was determined prior to the establishment of the GRAs, that no significant impacts on endangered and other protected species were expected (section 3.0 of the final 2001 specifications package - EA/FRFA). Positive, though perhaps very small, impacts on these species may have resulted from the presence of the GRAs. As discussed in section 7.2.10.1.2 above, a decrease of small mesh trawl effort within SSGRA1, with no corresponding increase in effort outside its boundaries occurred following implementation. Small positive impacts on endangered and other protected species should be associated with this decrease in small mesh trawl effort within the SSGRA and should continue under this alternative if it is implemented for the 2005 fishing year.

7.2.10.1.4 Socioeconomic Impacts

Since the restrictions associated with SSGRA under this alternative have been in effect since 2001, continuation of the status quo alternative is not expected to generate significant impacts on fishing industry revenues relative to 2004. A comprehensive review of economic impacts was conducted by NMFS in their preparation of the final 2001 specifications document (EA/FRFA). In that review, industry-wide revenue losses associated with establishment of both the northern and southern status quo scup GRAs were estimated to be on the order of > 0.9 percent. These losses were independent of proposed quota effects (Tables 17 and 18 in the final 2001 summer flounder, scup, and black sea bass specifications document - EA/FRFA). In terms of long-term impacts, lower per capita revenue losses are likely in 2005, relative to the initial establishment of the GRAs, since change in individual fishing practices is likely to have occurred in order to maintain profitability under the restrictions imposed by the GRAs. Therefore, both short-term and cumulative economic impacts are not considered significant.

Since the restrictions associated with SSGRA under this alternative have been in effect since 2001, continuation of the status quo alternative is not expected to generate noteworthy social impacts for the 2005 fishing year. The analyses conducted in the final 2001 specifications document indicated that 172 vessels were likely to be affected by the implementation of the GRAs, and only one (1) vessel was likely to incur revenue losses in excess of 5 percent. Additionally, it was concluded that the GRAs would likely have minimal effect on ports and communities as fishermen would likely recoup losses in revenues by redirecting their effort into other areas that are open or into closed areas as they reopen. As such, no significant short-term or cumulative social impacts are expected if this alternative is adopted in 2005.

7.2.10.2 Alternative 7.2 (3 Minute Shift Westward of Southern GRA; Preferred Alternative)

7.2.10.2.1 Biological Impacts

Under alternative 7.2, the entire area encompassed by SSGRA1 will be shifted westward by 3 longitudinal minutes while no changes in the northern or southern latitudinal limits of the GRA will occur (Figure 4, Table 14). The total area encompassed by the alternative 7.2 SSGRA (SSGRA2) is equivalent to the area encompassed by SSGRA1. By moving the entire area covered by the current SSGRA 3 longitudinal minutes to the west, a strip of approximately 500 nm2 will be made available to small mesh gear east of SSGRA, while an area of equal size will be closed to small mesh gear to the west of SSGRA. Characterization of the biological, economic and social impacts of alternative 7.2 was based on potential changes in the availability to capture various species of interest that might occur through this modification of the existing boundaries (Table 18).

As discussed in the introductory portion of 7.2.10 above, for a given species, the protective value of the SSGRA during its effective period was characterized by the proportion of total survey catch of the species that occurred within the SSGRA. Catches of scup and black sea bass are focused on here since the protective function of the SSGRA for these species is of particular interest. Tables 15 and 16 allow for comparison of species most frequently encountered by the trawl survey in SSGRA2 with historic (1989-1999) small mesh discards, as well as with the status quo SSGRA (SSGRA1). Besides providing information about survey catches, Table 18 was created in order to assess potential changes in protection reflected by differences in survey catches among the alternative SSGRAs compared to the total survey catch. The total catch (N) within SSGRA2 was 107,506 for scup and 10,536 for black sea bass. These catches are 2.8 percent and 4.5 percent less, respectively, than total winter/spring survey catch. The lower catches are considered reflective of loss in protection (note the eastward loss and westward gain columns in Table 18). The proportional loss is less than 5 percent for both species; therefore, they are not considered significant. Although CPUE was calculated for SSGRA1, a comparison of CPUE values among the alternative GRAs was not conducted since it would likely produce misleading implications about their relative protective value. Given that the estimated loss in protection is low for both scup and black sea bass under alternative 7.2, cumulative positive impacts are expected to continue for these species to the degree that the existing SSGRA has generated small positive impacts thus far.

7.2.10.2.2 Habitat Impacts

Under the rationale given in section 7.2.10.1.2 (Habitat Impacts of alternative 7.1), the NEFSC trawl survey data were also used to characterize impacts of alternative 7.2 on EFH. Note in section 7.2.10.2.1 (Biological Impacts of alternative 7.2) that non-significant negative impacts on scup and black sea bass are expected under alternative 7.2. Additionally, Table 15 indicates that a greater percentage of summer flounder are encountered by the trawl survey in SSGRA2 (22.2 percent) than in SSGRA1 (21.0 percent). Therefore, it is possible that impacts on summer flounder EFH may be more greatly positive relative to the status quo.

Impacts of alternative 7.2 on EFH, in general, should be related to the degree to which small mesh fishing effort is affected by the alternative. Following the implementation of the status quo SSGRA, total small mesh effort within the GRA decreased, while no offsetting increase in small mesh effort in areas outside the GRA boundaries seems to have occurred (section 7.2.10.1.1). Similar (positive) impacts might be expected under this alternative 7.2, and the magnitude of the impacts is likely to be similar given that the size of the GRA will not change under this alternative.

7.2.10.2.3 Impacts on Endangered and Other Protected Species

It was determined prior to the establishment of the GRAs, that no significant impacts on endangered and other protected species were expected (section 3.0 of the final 2001 specifications package). Positive, though perhaps non-significant, impacts may have, in fact, resulted from the presence of the GRAs (section 7.2.10.1.3 above). Similar positive impacts on endangered and other protected species affected by small mesh trawl gear is expected if alternative 7.2 is implemented for the 2005 fishing year. Additionally, the magnitude of the impacts are likely to be similar given that the size of the SSGRA will not change under alternative 7.2.

7.2.10.2.4 Socioeconomic Impacts

Under alternative 7.2, the availability of scup, black sea bass and *Loligo* to small mesh capture should increase relative to the status quo. This expectation is based on the difference in survey captures between SSGRA2 and SSGRA1 relative to total winter/spring survey catch (Table 18: 2.8 percent increase for scup; 4.5 percent increase for black sea bass; 7.5 percent increase for *Loligo*). Calculating revenue gains for the respective fisheries directly from these percentages would require a number of unrealistic assumptions. Short-term economic impacts from alternative 7.2 will be positive in direction, although they are likely to be low in magnitude.

Long-term economic impacts associated with implementing alternative 7.2 in the 2005 fishing year would consist of the overall impacts produced by combining past effects of the existing SSGRA (alternative 7.1) with the short-term impacts of this alternative. As stated in section 7.2.10.1.4 (Socioeconomic Impacts of alternative 7.1), long-term economic impacts are likely to be very small. The positive short-term economic impacts expected under implementation of alternative 7.2 should, therefore, tend to diminish the magnitude of the negative economic impacts accumulated thus far. An attempt to quantify the magnitude of this effect is unfounded given the quantitative uncertainty surrounding the short-term impacts of alternative 7.2 and the long-term impacts of alternative 7.1.

Social impacts associated with alternative 7.2 are likely to be related to changes in the availability of scup, black sea bass and *Loligo* to participants in the small mesh trawl fishery. Trawl survey data indicate that availability for all three species should increase under alternative 7.2 relative to the status quo. This expectation is based on the net difference in survey captures between SSGRA2 and SSGRA1 relative to total winter/spring survey catch (Table 18: 2.8 percent increase for scup; 4.5 percent increase for black sea bass; 7.5 percent increase for *Loligo*). Impacts on ports and communities, relative to the status quo, are likely to be positive, though low in magnitude, as fishermen will have marginally greater access to these resources.

7.2.10.3 Alternative 7.3 (Redefine Seaward Boundary of Southern GRA)

7.2.10.3.1 Biological Impacts

Under SSGRA alternative 7.3, the eastern boundary of the SSGRA will be adjusted such that it approximates the 50 fathom bathymetric contour, while no change to the northern, southern or western boundaries will occur (Figure 5, Table 14). By adjusting the eastern boundary of the SSGRA, an area of approximately 1,455 nm2 will be made available to small mesh gear east of SSGRA, while no new areas will be closed to small mesh gear. This represents a 37 percent reduction in the overall area (3,968 nm2) covered by the SSGRA. Characterization of the biological, economic and social impacts of alternative 7.3 was based on potential changes in the availability to capture various species of interest that might occur through the modification of the existing boundaries.

As discussed in section 7.2.10.1.1 above, the protective value of the SSGRA during its effective period was characterized by the proportion of total survey catch of a given species that occurred within the SSGRA. Catches of scup and black sea bass are focused on here, since the protective function of the SSGRA for these species is of particular interest. Tables 15 and 16 allow for comparison of species most frequently encountered by the trawl survey in SSGRA3 with historic (1989-1999) small mesh discards, as well as with the status quo SSGRA (SSGRA1). Table 18 was created in order assess potential changes in protection reflected by differences in survey catches among the alternative SSGRAs as compared to the total survey catch. The total catch (N) within SSGRA3 was 52,813 for scup and 4,447 for black sea bass. These catches are 31.2 percent and 39.6 percent less, respectively, than total winter/spring survey catch. The lower catches reflect loss in protection (note the eastward loss column in Table 18). Additionally, because the proportional loss is very high for both species, they are considered to be associated with significantly negative impacts. Although CPUE was calculated for SSGRA1, a comparison of CPUE values among the alternative GRAs was not conducted since it would likely produce misleading implications about their relative protective value. Losses in estimated protection under alternative 7.3 would likely have a diminishing effect on any positive impacts accumulated thus far such that the SSGRA will be less likely to adequately function as a protective mechanism for scup and black sea bass.

7.2.10.3.2 Habitat Impacts

Under the rationale given in section 7.2.10.1.2 (Habitat Impacts of alternative 7.1), the NEFSC trawl survey data were also used to characterize impacts of alternative 7.3 on EFH. Note in section 7.2.10.3.1 above that losses in estimated protection for scup and black sea bass are expected under alternative 7.3. Additionally, Table 15 indicates that a lower percentage of summer flounder are encountered by the trawl survey in SSGRA3 (13.3 percent) than in SSGRA1 (21.0 percent). Therefore, negative impacts on summer flounder EFH are expected under alternative 7.3 relative to the status quo.

Impacts of alternative 7.3 on EFH, in general, should be related to the degree to which small mesh fishing effort is affected by the alternative. Following the implementation of the status quo SSGRA, total small mesh effort within the GRA decreased, while no offsetting increase in small mesh effort in areas outside the GRA boundaries seems to have occurred (section 7.2.11.1). A decrease in the small positive impacts associated with the SSGRA might be expected under alternative 7.3 since the size of the SSGRA would be decreased by 37 percent.

7.2.10.3.3 Impacts on Endangered and Other Protected Species

It was determined prior to the establishment of the GRAs, that no significant impacts on endangered and other protected species were expected (section 3.0 of the final 2001 specifications package). Positive, though perhaps very small, impacts may have resulted from the presence of the GRAs (section 7.2.10.1.3). Similar small positive impacts on endangered and other protected species affected by small mesh trawl gear are expected if alternative 7.3 is implemented for the 2005 fishing year. The magnitude of the impacts is likely to be much less, however, since the size of the SSGRA would be decreased by 37 percent.

7.2.10.3.4 Socioeconomic Impacts

Under alternative 7.3, the availability of scup, black sea bass and *Loligo* to small mesh capture should increase relative to the status quo. This expectation is based on the net difference in survey captures between SSGRA3 and SSGRA1 relative to total winter/spring survey catch (Table 18: 31.2 percent increase for scup; 39.6 percent increase for black sea bass; 20.9 percent increase for *Loligo*). Calculating revenue gains for the respective fisheries directly from these percentages requires a number of unrealistic assumptions. It does seem likely, however, that short-term economic impacts from alternative 7.3 will be slightly positive, and that they are likely to be relatively greater in magnitude than the impacts associated with alternative 7.2.

Long-term economic impacts associated with implementing alternative 7.3 in the 2005 fishing year consist of the overall impacts produced by combining past effects of the existing SSGRA (alternative 7.1) with the short-term impacts of alternative 7.3. As stated in section 7.2.10.1.4 (Socioeconomic Impacts of alternative 7.1), long-term economic impacts are considered to be insignificantly negative. The positive short-term economic impacts expected under implementation of alternative 7.3 should tend to diminish the magnitude of the negative economic impacts accumulated thus far. An attempt to quantify the magnitude of this effect is unfounded given the quantitative uncertainty surrounding the short-term impacts of alternative 7.3 and the long-term impacts of alternative 7.1.

Social impacts associated with alternative 7.3 are likely to be related to changes in the availability of scup, black sea bass and *Loligo* to participants in the small mesh trawl fishery. Trawl survey data indicate that availability for all three species should increase under alternative 7.3 relative to the status quo. This expectation is based on the net difference in survey captures between SSGRA3 and SSGRA1 relative to total winter/spring survey catch (Table 18: 31.2 percent increase for scup; 39.6 percent increase for black sea bass; 20.9 percent increase for *Loligo*). The effect of alternative 7.3 on ports and communities is likely to be more greatly positive than either alternatives 7.1 or 7.2, since, under alternative 7.3, fishermen will have the greatest degree of access to these resources.

7.2.11 Alternative 8.1 (Status Quo Exemption Program/No Action)

7.2.11.1 Biological Impacts

The discussion regarding the condition of the scup fishery (i.e., scup abundance; condition of the stock relative to the biological reference point) presented in section 7.2.1.1 also applies here.

The current exemption program for fishermen using modified gear stipulates that vessels fishing with small mesh that have an escapement extension of 45 meshes of 5.5" square mesh behind the body of the net and ahead of the codend could fish in the GRAs while carrying an observer onboard. The continuation of this program is not expected to result in biological impacts (positive or negative) to the scup stock or other fisheries in 2005 relative to 2004.

7.2.11.2 Habitat Impacts

The discussion presented in section 7.2.1.2 regarding the types of gear used in the scup fishery and potential gear impacts on habitat due to changes in effort also applies here.

Given that the proposed exemption program under this alternative was in effect in 2004 (status quo), it is not expected that changes in fishing effort will occur as a consequence of this alternative. For this reason, this alternative is expected to have no additional impacts on EFH relative to 2004.

7.2.11.3 Impacts on Endangered and Other Protected Species

The discussion presented in section 7.2.1.3 regarding the types of gear used to capture scup commercially also applies here.

Given that the proposed exemption program under this alternative was in effect in 2004 (status quo), it is not expected that changes in fishing effort will occur as a consequence of this alternative. For this reason, interaction between commercial scup gear and endangered species or marine mammals is not expected to increase, and impacts on protected resources are not significant.

7.2.11.4 Socioeconomic Impacts

Given that the proposed exemption program under this alternative was in effect in 2004 (status quo), it is not expected to result in changes to the economic and social aspects of the fishery in 2005 relative to 2004.

7.2.12 Alternative 8.2 (End Exemption Program; Preferred Alternative)

7.2.12.1 Biological Impacts

The discussion regarding the condition of the scup fishery (i.e., scup abundance; condition of the stock relative to the biological reference point) presented in section 7.2.1.1 also applies here.

This alternative eliminates the exemption program described in section 7.2.11.1 (alternative 8.1). However, no fishing vessels have participated in the exemption program since its implementation. The elimination of this program is not expected to result in biological impacts (positive or negative) to the scup stock or other fisheries in 2005 relative to the status quo (alternative 7.2.1.1).

7.2.12.2 Habitat Impacts

The discussion presented in section 7.2.1.2 regarding the types of gear used in the scup fishery and potential gear impacts on habitat due to changes in effort also applies here.

It is not expected that elimination of the exemption program will change fishing effort. In fact, no fishing vessels have participated in the exemption program since its implementation. For this reason, this alternative is expected to have no additional impacts on EFH relative to the status quo alternative.

7.2.12.3 Impacts on Endangered and Other Protected Species

The discussion presented in section 7.2.1.3 regarding the types of gear used to capture scup commercially also applies here.

It is not expected that elimination of the exemption program will change fishing effort. In fact, no fishing vessels have participated in the exemption program since its implementation. For this reason, interaction between commercial scup gear and endangered species or marine mammals is not expected to increase, and the impacts on protected resources are not significant compared to the status quo alternative.

7.2.12.4 Socioeconomic Impacts

Given that no fishing vessels have participated in the exemption program since its implementation, its elimination is not expected to result in changes to the economic and social aspects of the fishery compared to the status quo alternative.

7.3 Black Sea Bass Alternatives

7.3.1 Alternative 1 (Preferred TAL)

7.3.1.1 Biological Impacts

Black sea bass alternative 1 (preferred alternative) would implement a TAL of 8.20 million lb (a 3.96 million lb adjusted commercial quota; a 4.13 million lb adjusted recreational harvest limit; a 109,500 lb research set-aside) for 2005. The TALs under this as well as the other black sea bass alternatives were allocated to the commercial and recreation sectors as described in section 5.0, and the commercial quotas and the recreational harvest limits were adjusted as described in section 4.3.

The TAL under this preferred alternative was recommended by the Monitoring Committee and was based on data that indicate that recruitment has been high and stock size has increased in recent years. In fact, NEFSC survey data indicate that the exploitable biomass index for 2002 of 0.799 kg/tow is the highest value in the time series (1968-2002). Although the biomass index declined to 0.493 kg/tow in 2003 and again in 2004 to 0.32 kg/tow, both the 2003 and 2004 index were above average. The three point moving average based on these survey results for the recent time period has steadily increased from a low of 0.093 kg/tow in 1997 to 0.537 kg/tow in 2003.

The target exploitation rate for 2005 is 25 percent, the exploitation rate associated with F_{max} (0.32), and equivalent to the target exploitation rate of 2004. The TAL under this alternative is based on the amount of exploitable biomass in 2005. The higher the biomass, the larger the TAL for a given exploitable rate. The exploitable biomass for 2005 is based on a three-year average; therefore, the actual estimate for 2005 will not be derived until the spring 2006 survey results are available. Given the uncertainty in the survey estimates and the potential underestimation of the 2003 exploitation rate, the Board and monitoring committee recommended a TAL for 2005 of 8.20 million lb. To achieve the target exploitation rate of 25 percent, this TAL assumes a survey estimate of 0.51 which is less than 0.537, the value for 2003. As such, the preferred black sea bass TAL and the associated allocations are not expected to result in biological impacts (positive or negative) to the black sea bass stock in 2005, relative to the status quo alternative (alternative 2).

The proposed black sea bass TAL of 8.20 million lb for 2005 under alternative 1 represents a 3 percent increase (0.2 million lb) relative to the TAL under the status quo alternative. The commercial quota is higher than the 2004 TAL under this alternative, and; therefore, the black sea bass measures could result in negative impacts on other fisheries. The commercial fishery for black sea bass is primarily prosecuted with otter trawls and pots/traps. This fishery often harvests other species, including summer flounder, scup, squid, Atlantic mackerel and silver hake. Given the mixed species nature of the black sea bass fishery, incidental catch of other species does occur. A small quota increase could result in increased effort and greater catches of other species. As such, this black sea bass preliminary adjusted commercial quota could result in negative impacts on other fisheries, relative to the status quo. However, given that the increase in commercial quota from 2004 to 2005 associated with this alternative is not substantially large (i.e., 0.2 million lb higher) and catch-per-unit-effort could correspondingly increase with increased stock abundance, which could result in the same number of tows landing a larger volume of fish, it is unknown if these measures will result in an increase of effort in the black sea bass fishery. Therefore, the impact on incidental catch rates of other species relative to the status quo alternative is unknown.

Under this alternative, the current minimum fish size, minimum mesh regulations, minimum mesh threshold, and minimum vent size regulations will remain unchanged in 2005. As such, these measures are not expected to result in biological impacts (positive or negative) to the black sea bass stock or other fisheries in 2005 relative to 2004.

The proposed black sea bass TAL includes a research set-aside of 109,500 lb. The results of the research conducted through the research set-aside program benefit both the black sea bass stock and the black sea bass fishery. The exemptions that are required under the proposed research projects are analyzed in section 7.4.2. Relative to the status quo, the positive impacts of the research set-aside would be identical to the status quo because the program was in effect in 2004.

The preferred alternative implements an adjusted recreational harvest limit of 4.13 million lb, approximately 0.11 million lb (3 percent) higher than the recreational harvest limit under the status quo alternative. If recreational landings are the same in 2004 as in 2003 (4.26 million lb), this limit could increase recreational landings compared to the status quo alternative. However, as indicated above, based on the current status of the stock, the overall TAL and associated allocations are expected to meet the target exploitation rate in 2005, assuming the TAL and discard level in 2004 are not exceeded. As such, this recreational harvest limit is not expected to result in biological impacts (positive or negative) to the black sea bass stock relative to the status quo alternative.

Overall, the black sea bass measures under the preferred alternative are not expected to have positive or negative impacts on the black sea bass stock, relative to the status quo measures for black sea bass.

7.3.1.2 Habitat Impacts

The discussion presented in section 7.2.1.2 regarding the types of gear used in the scup fishery, potential gear impacts on habitat, and impacts of quota changes on effort also applies here.

The preferred alternative includes an increase in the black sea bass commercial quota by 2 percent in 2005 (0.09 million lb) compared to the status quo alternative (alternative 2). It is difficult to predict precisely whether this quota increase will result in increased fishing effort on EFH. Several possibilities exist that would influence fishing effort. Potentially, the larger quota could result in more fishing trips, or longer fishing trips, with a corresponding potential for greater habitat impacts. Conversely, a larger quota could mean that states establish higher possession limits, which will result in an equal number of fishing trips landing a larger volume of fish. Similarly, with increased species abundance, catch-per-unit-effort could increase which results in the same number of tows landing a larger volume of fish. In these latter instances, the proposed quotas will result in either the same or reduced gear impacts to bottom habitats. Furthermore, the increase in commercial quota under this alternative compared to the status quo alternative is very small, and it is not expected that it will affect fishing effort. Table 13 presents the range of potential habitat impacts that could occur under each of the various quota alternatives.

Under this alternative the current minimum fish size, minimum mesh regulations, minimum mesh threshold, and minimum vent size regulations will remain unchanged in 2005. These actions are not expected to change effort in 2005 compared to 2004 and thus, are not expected to increase adverse impacts on EFH.

The increase in the quota for this species meets the FMP objective of increasing yields while ensuring that overfishing does not occur, and due to the lack of evidence to suggest that fishing effort on bottom habitats will actually increase due to this action, this action minimizes the adverse effects of fishing on EFH to the extent practicable, pursuant to section 305 (a)(7) of the MSFCMA.

7.3.1.3 Impacts on Endangered and Other Protected Species

Commercial capture of black sea bass occurs predominately in the Mid-Atlantic mixed trawl fishery, the Mid-Atlantic commercial hook and line fishery, the Mid-Atlantic pot/trap fishery, and the nearshore floating trap fishery, which is a type of pound net. All of these are Category III fisheries as defined in the NMFS 2003 List of Fisheries (69 FR 48407, August 10, 2004) with the exception of the pot/trap fishery. Category III fisheries are not associated with any documented serious injuries or mortalities of marine mammals.

Black sea bass landings recorded in dealer weighout data from pots/traps may be harvested through the Atlantic mixed species trap/pot fishery. This fishery has been reclassified as Category II (69 FR 48407, August 10, 2004) because the gear used has similarities (buoy lines) to lobster and blue crab traps, which are Category I and II fisheries, respectively. Marine mammal species injured or killed by Mid-Atlantic mixed species traps/pots include fin whale, humpback whale, Minke whale, and harbor porpoise. It is not known whether any of these incidents directly involved the black sea bass fishery. The black sea bass fishery has never been implicated in take reduction efforts for bottlenose dolphin. All fishing gear are required to meet gear restrictions under the LWTRP, HPTRP, MMPA, and the ESA.

The measures in the preferred alternative of this specifications document do not contain major changes to existing black sea bass management measures. Maintaining the existing minimum fish size, minimum mesh regulations, minimum mesh threshold, and minimum vent size regulations in place will not have a different impact on protected resources in 2004 compared to 2003, because these measures are not expected to change fishing effort. Changes in overall fishing effort as a result of the higher black sea bass commercial quota are unknown. Fishing effort could increase as vessels take more, or longer, trips (Table 13). Conversely, fishing effort could remain constant because vessels may achieve a higher catch-per-unit-effort due to increased species abundance. Furthermore, the increases in commercial quota from 2004 to 2005 under this alternative are very small, and it is not expected that it will affect fishing effort. Therefore, it is concluded that the preferred black seas bass alternative will not affect endangered and threatened species in any manner not considered in prior consultations on these fisheries, and will have no adverse impact on marine mammals, relative to the status quo.

7.3.1.4 Socioeconomic Impacts

The proposed TAL of 8.20 million lb for black sea bass under this alternative is approximately 3 percent higher (0.20 million lb) than the TAL under the status quo alternative. The preferred black sea bass TAL includes preliminary adjusted commercial quota of 3.96, a preliminary adjusted recreational harvest limit of 4.13, and a maximum research set-aside of 109,500 lb for 2005. The commercial landings level under this alternative represents a 3 percent increase in landings relative to the status quo alternative (alternative 2). As a result of a greater adjusted commercial quota for black sea bass, positive economic impacts on the black sea bass fishery are likely to occur, relative to the status quo alternative. However, given the small increase in quota under this alternative compared to the status quo alternative, these impacts are likely to be small.

Under this alternative, the current minimum fish size, minimum mesh regulations, minimum mesh threshold, and minimum vent size regulations will remain unchanged in 2005. As such, these measures are not expected to result in changes to the economic and social aspects of the fishery in 2005 relative to 2004.

An adjusted recreational harvest limit of 4.13 million lb is 0.11 million lb higher (3 percent) than the adjusted limit under the status quo alternative. It is expected that this alternative will increase recreational satisfaction for the black sea bass recreational fishery compared to the status quo alternative. However, if 2004 landings are the same as the 2003 landings (4.26 million lb), more restrictive limits (i.e., lower possession limits, greater minimum size limits, and/or shorter seasons) would be necessary to prevent anglers from exceeding this recreational harvest limit in 2005. Specific recreational management measures will be determined in December when recreational landings for 2004 are more complete. However, it is not expected that such measures may result in a decrease in recreational satisfaction relative to 2004.

Overall, it is expected that positive social and economic impacts may occur because of the increase in total landings in 2005, relative to the status quo alternative. These measures will achieve the target exploitation rate for 2005. As such, positive social and economic impacts will be realized in the long-term, once the stock is rebuilt to sustainable levels.

In order to conduct a more complete socioeconomic analysis, proposed allocations for all three species were combined for analysis. Overall impacts (i.e., combined impacts of summer flounder, scup, and black sea bass) were examined because many of the vessels active in these fisheries participate in more than one or even all three of these fisheries. This analysis is presented under the cumulative impact discussion in section 7.5.6 (overall socioeconomic impact of the preferred alternatives), 7.6 (overall socioeconomic impact of the non-preferred alternatives) and in section 5 of the RIR/IRFA.

7.3.2 Alternative 2 (Status Quo/Most Restrictive TAL)

7.3.2.1 Biological Impacts

The most restrictive measures for black sea bass are the status quo measures. As such, the black sea bass TAL under this alternative will be 8.00 million lb for 2005. Under this alternative, the preliminary adjusted commercial quota will be 3.87 million lb, the preliminary adjusted recreational harvest limit will be 4.02 million lb, and the research set-aside will be 109,500 lb. This TAL will likely achieve the target exploitation rate of 25 percent for 2005. In fact, NEFSC survey data indicate that the exploitable biomass index for 2002 of 0.799 kg/tow is the highest value in the time series (1968-2002). Although the biomass index declined to 0.493 kg/tow in 2003 and again in 2004 to 0.32 kg/tow, both the 2003 and 2004 index were above average. The three point moving average based on these survey results for the recent time period has steadily increased from a low of 0.093 kg/tow in 1997 to 0.537 kg/tow in 2003.

The target exploitation rate for 2005 is 25 percent, the exploitation rate associated with F_{max} (0.32), and is the same as the exploitation rate for 2004. The TAL under this alternative is based on the amount of exploitable biomass in 2005. The higher the biomass, the larger the TAL for a given exploitable rate. Because the exploitable biomass for 2005 is based on a three-year average, the actual estimate for 2005 will not be derived until the spring 2006 survey results are available. If the spring survey for 2005 is 0.542, a value slightly higher than the 3 year average value for 2003 (0.534), then the TAL associated with a rate of 25 percent will be 8.70 million lb. However, if the spring survey for 2005 is 0.498, a value slightly lower than the 3 year average value for 2003 (0.534), then the TAL associated with a rate of 25 percent would be 8.00 million lb. As such, the TAL and the associated allocations under this alternative are not expected to result in biological impacts (positive or negative) in 2005 relative to 2004.

The commercial fishery for black sea bass is primarily prosecuted with otter trawls and pots/traps. This fishery often harvests other species, including summer flounder, scup, squid, Atlantic mackerel and silver hake. Given the mixed species nature of the black sea bass fishery, incidental catch of other species does occur. The preliminary adjusted commercial quota under this alternative will be 3.87 million lb. This represents a 0.10 million lb increase from the 2004 adjusted quota. As the black sea bass stock increases, catch-per-unit-effort could correspondingly increase resulting in the same number of tows landing a larger volume of fish. Given that this alternative does not significantly increase or decrease black sea bass landings relative to the quota specified in 2004 and that catch-per-unit-effort could increase as the black sea bass stock increases, impacts to other fisheries in 2005 would be similar to 2004.

Under this alternative the current minimum fish size, minimum mesh regulations, minimum mesh threshold, and minimum vent size regulations will remain unchanged in 2005. As such, these measures are not expected to result in biological impacts (positive or negative) to the black sea bass stock or other fisheries in 2005 relative to 2004.

This TAL implements an adjusted recreational harvest limit of 4.02 million lb, 0.01 million lb (less than 1 percent) higher than the recreational harvest limit in 2004. This recreational harvest limit is not expected to result in biological impacts (positive or negative) to the black sea bass stock in 2005, relative to 2004. Note that even though this is a status quo measure, the adjusted commercial quota and recreational harvest limit are slightly higher than the 2004 allocation because of the lower research set-aside used to derive the adjusted limits for 2005 compared to 2004.

Overall, the black sea bass measures under this alternative should have no impact (positive or negative) on the black sea bass stock or other fisheries in 2005 relative to 2004. However, these measures are most likely more conservative than needed to achieve the target exploitation rate for black sea bass for 2005.

7.3.2.2 Habitat Impacts

The discussion presented in section 7.2.1.2 regarding the types of gear used in the black sea bass fishery, potential gear impacts on habitat, and impacts of quota changes on effort also applies here.

Alternative 2 (most restrictive/status quo alternative) includes an increase in the black sea bass commercial quota by 3 percent in 2005 (0.10 million lb) compared to the adjusted quota specified for 2004. It is difficult to predict precisely whether this quota increase will result in increased fishing effort on EFH. Several possibilities exist that will influence fishing effort. Potentially, the larger quota could result in more fishing trips, or longer fishing trips, with a corresponding potential for greater habitat impacts. Conversely, a larger quota could mean that states establish higher possession limits, which results in an equal number of fishing trips landing a larger volume of fish. Similarly, with increased species abundance, catch-per-unit-effort could increase which results in the same number of tows landing a larger volume of fish. In these latter instances, the proposed quotas result in either the same or reduced gear impacts to bottom habitats. The increase in the adjusted commercial quota in 2005 compared to 2004 is very small; therefore, it is not expected that it will affect fishing effort. Table 13 presents the range of potential habitat impacts that could occur under the various quota alternatives.

Under this alternative the current minimum fish size, minimum mesh regulations, minimum mesh threshold, and minimum vent size regulations will remain unchanged in 2005. These actions are not expected to change effort in 2005 compared to 2004 and thus, are not expected to increase adverse impacts on EFH.

7.3.2.3 Impacts on Endangered and Other Protected Species

The discussion presented in section 7.3.1.3 regarding the types of gear used to capture black sea bass commercially also applies here.

Maintaining the black sea bass status quo alternatives (i.e., quota, minimum fish size, minimum mesh regulations, and minimum mesh threshold) is not expected to change the overall fishing effort. The proposed changes are not expected to cause increases in fishing effort; therefore, it is concluded that this black sea bass alternative will not affect endangered and threatened species in any manner not considered in prior consultations on these fisheries, and will have no adverse impact on marine mammals.

7.3.2.4 Socioeconomic Impacts

The black sea bass TAL under this alternative is 8.00 million lb for 2005 (status quo and most restrictive alternative). This TAL results in a preliminary adjusted commercial quota of 4.02 million lb, 0.10 million lb (3 percent) more than the existing adjusted commercial quota for black sea bass. As such, positive economic impacts such as an increase in revenue are likely to result, relative to the 2004 commercial quota.

Under this alternative, the current minimum fish size, minimum mesh regulations, minimum mesh threshold, and minimum vent size regulations will remain unchanged in 2005. As such, these measures are not expected to result in changes to the economic and social aspects of the fishery in 2005 relative to 2004.

This TAL implements an adjusted recreational harvest limit of 4.02 million lb, 0.01 million lb (< 1 percent) higher than the recreational harvest limit in 2004. If recreational landings are the same in 2004 as in 2003 (4.26 million lb), then recreational management measures must be more restrictive in 2005 to constrain the landings to this harvest limit. Specific recreational management measures will be determined in December when recreational landings for 2003 are complete. However, it is not expected that such measures may result in a decrease in recreational satisfaction relative to 2004.

Overall, the status quo black sea bass TAL and associated allocations under this alternative (most restrictive) will likely result in no or minimal positive social and economic impacts on the black sea bass fishery in 2005.

7.3.3 Alternative 3 (Least Restrictive TAL)

7.3.3.1 Biological Impacts

Black sea bass alternative 3 (least restrictive alternative) implements a TAL of 8.70 million lb (a 4.21 million lb adjusted commercial quota; a 4.38 million lb adjusted recreational harvest limit; a 109,500 lb research set-aside) for 2005. The overall TAL under this alternative is 0.70 million lb (9 percent) higher than the TAL under alternative 2 (status quo). This TAL is based on an increase in stock size in 2005. Although best available data indicate that recruitment has been high and stock size has increased in recent years, it is unknown if this TAL will achieve the target exploitation rate for 2005.

The target exploitation rate for 2005 is 25 percent, the exploitation rate associated with F_{max} (0.32), and is equivalent to the exploitation rate for 2004. The TAL under this alternative is based on the amount of exploitable biomass in 2005. The higher the biomass, the larger the TAL for a given exploitable rate. The exploitable biomass for 2005 is based on a three-year average, therefore the actual estimate for 2005 will not be derived until the spring 2006 survey results are available. If the spring survey for 2005 is 0.542, a value slightly higher than the 3 year average value for 2003 (0.534), then the TAL associated with a rate of 25 percent will be 8.70 million lb (3.94 million kg). Given the uncertainty in the survey estimates and the potential underestimation of the 1998 exploitation rate, the Council and Commission recommended that the TAL for 2005 be 8.20 million lb, an increase of approximately 2 percent relative to the 2004 TAL.

The preliminary adjusted commercial quota under this alternative increases black sea bass landings relative to the status quo alternative by 9 percent (0.34 million lb). The commercial fishery for black sea bass is primarily prosecuted with otter trawls and pots/traps. This fishery often harvests other species, including summer flounder, scup, squid, Atlantic mackerel and silver hake. Given the mixed species nature of the black sea bass fishery, incidental catch of other species does occur. This quota could result in increased effort and greater catches of other species in 2005. Also, as the black sea bass stock increases, catch-per-unit-effort could correspondingly increase resulting in the same number of tows landing a larger volume of fish. As such, it is unknown if these measures will result in an increase of effort in the black sea bass fishery and thus, the impact on incidental catch rates of other species relative to the status quo alternative is also unknown.

Under this alternative the current minimum fish size, minimum mesh regulations, minimum mesh threshold, and minimum vent size regulations will remain unchanged in 2005. As such, these measures are not expected to result in biological impacts (positive or negative) to the black sea bass stock or other fisheries in 2005 relative to 2004.

The least restrictive alternative implements an adjusted recreational harvest limit of 4.38 million lb, approximately 9 percent higher (0.36 million lb) than the recreational harvest limit under the status quo alternative. If recreational landings are the same in 2004 as in 2003 (4.26 million lb), this limit could increase recreational landings compared to the status quo alternative.

The higher TAL under this alternative is based on a biomass value that may be unrealistic for 2005. As such, it will result in an exploitation rate that would likely exceed the target for 2005. If the target is exceeded, stock rebuilding will be slowed. Overall, the black sea bass measures under the least restrictive alternative could have a negative impact on the black sea bass stock, relative to the status quo alternative.

7.3.3.2 Habitat Impacts

The discussion presented in section 7.2.1.2 regarding the types of gear used in the black sea bass fishery, potential gear impacts on habitat, and impacts of quota changes on effort also applies here.

The least restrictive alternative includes an increase in the black sea bass commercial quota by 9 percent (0.34 million lb) in 2005 relative to status quo alternative. Changes in overall fishing effort as a result of the higher black sea bass commercial quota are unknown. Fishing effort could increase as vessels take more, or longer, trips (Table 13). Conversely, fishing effort could remain constant because vessels may achieve a higher catch-per-unit-effort due to increased species abundance.

The increase in the commercial quota under alternative 3 may not achieve the rebuilding schedules for black sea bass. Although there is a lack of evidence to suggest that fishing effort on bottom habitats will actually increase due to this action, this action may not comply with section 305(a)(7) of MSFCMA, and may not minimize the adverse effects of fishing on EFH to the extent practicable.

7.3.3.3 Impacts on Endangered and Other Protected Species

The discussion presented in section 7.3.1.3 regarding the types of gear used to capture black sea bass commercially also applies here.

The measures under this alternative do not contain major changes to existing black sea bass management measures. Maintaining the existing minimum fish size, minimum mesh regulations, minimum mesh threshold, and minimum vent size regulations in place will not change the impact to protected resources in 2005 compared to 2004 because these measures are not expected to alter fishing effort. Changes in overall fishing effort as a result of the higher black sea bass commercial quota are unknown. Fishing effort could increase as vessels take more, or longer, trips (Table 13). Conversely, fishing effort could remain constant because vessels may achieve a higher catch-per-unit-effort due to increased species abundance. Since the proposed change in the commercial quota is not expected to cause large increases in fishing effort, it is concluded that this black sea bass alternative will not affect endangered and threatened species in any manner not considered in prior consultations on these fisheries, and will have no adverse impact on marine mammals, relative to the status quo.

7.3.3.4 Socioeconomic Impacts

The least restrictive black sea bass measures include a TAL of 8.70 million lb. Under this alternative, the preliminary adjusted commercial quota is 4.21 million lb, the preliminary adjusted recreational harvest limit is 4.38 million lb, and the research set-aside is 109,500 lb.

A preliminary adjusted commercial quota of 4.21 million lb is approximately 9 percent higher (0.34 million lb) than the adjusted commercial quota under the status quo alternative. This TAL could result in an increase in revenue for the commercial fishery, relative to the status quo alternative.

Under this alternative, the current minimum fish size, minimum mesh regulations, minimum mesh threshold, and minimum vent size regulations will remain unchanged in 2005. As such, these measures are not expected to result in changes to the economic and social aspects of the fishery in 2005 relative to 2004.

An adjusted recreational harvest limit of 4.38 million lb is approximately 9 percent higher than the adjusted recreational harvest limit under the status quo alternative. If 2004 landings are the same as the 2003 landings (4.26 million lb), this adjusted recreational harvest limit could increase recreational landings compared to the status quo alternative. As such, this alternative is not expected to decrease recreational satisfaction compared to the recreational limit under the status quo alternative.

The black sea bass TAL under this alternative will likely result in short-term, positive social and economic impacts on the black sea bass fishery, relative to the status quo. However, this TAL is based on a biomass value that may be unrealistic for 2005. This results in an exploitation rate that likely exceeds the target for 2005. If the target is exceeded, stock rebuilding is slowed and the long-term social and economic benefits of a rebuilt stock are reduced, relative to the status quo alternative.

7.4 Research Set-Aside Measures

7.4.1 Alternative 1 (No Research Set-Aside/No Action)

Under this alternative no research set-aside would be implemented for summer flounder, scup, or black sea bass.

7.4.1.2 Biological Impacts

Under this alternative there would not be a summer flounder, scup, or black sea bass research set-aside implemented for 2005. Because all summer flounder, scup, and black sea bass landings would count against the overall quota whether or not a research set-aside is implemented, the biological/ecological impacts would not change relative to 2004.

7.4.1.3 Habitat Impacts

The discussion presented in section 7.2.1.2 regarding the types of gear used in these fisheries and potential gear impacts on habitat due to changes in effort also applies here.

The basic fishing operations for summer flounder, scup, and black sea bass are expected to remain the same under this alternative. It is not expected that fishing effort will increase or be redistributed by gear type under this alternative. Therefore, the overall impact to EFH is not expected to change relative to 2004.

7.4.1.4 Impacts on Endangered and Other Protected Species

The discussion presented in sections 7.1.1.3, 7.2.1.3, and 7.3.1.3 regarding the types of gear used to capture summer flounder, scup, and black sea bass commercially also apply here.

The basic fishing operations for summer flounder, scup, and black sea bass are not expected to change under this alternative. As such, overall fishing effort should not change. This alternative is not expected to negatively affect endangered and threatened species or critical habitat in any manner not considered in prior consultations on these fisheries, and will have no adverse impacts on marine animals or other protected resources relative to 2004.

7.4.1.5 Socioeconomic Impacts

Under this alternative, there will be no research set-aside deducted from the overall TALs for summer flounder, scup, and black sea bass. Therefore, the initial commercial quotas and recreational harvest limits for these species do not need to be adjusted downward as would be done under a situation when a research set-aside is established.

In fisheries where the entire quota is taken and the fishery is prematurely closed (i.e., the quota is constraining), the economic and social costs of the program are shared among the non research set-aside participants in the fishery. That is, each participant in a fishery that utilizes a resource that is limited by the annual quota relinquishes a share of the amount of quota retained in the research set-aside quota. Since no research set-aside is implemented under this alternative, there are no direct economic or social costs as described above.

Under this alternative, the collaborative efforts between the public, research institutions, and government in broadening the scientific base upon which management decisions are made will cease. However, the Nation will not receive the benefit derived when data or other information about these fisheries is obtained for management or stock assessment purposes that would not otherwise be obtained.

7.4.2 Alternative 2 (Specify Research Set-Asides; Preferred Alternative/Status Quo)

The Council and Board recommended to specify a maximum summer flounder, scup, and black sea bass research set-aside of 353,917 lb, 303,675 lb, and 109,500 lb for 2005, respectively. There are various research projects submitted to NMFS requesting set-asides for these species for 2005. If the research set-aside is not used, the research set-aside quota will be put back into the overall TAL. A summary of the conditionally approved research set-aside projects requesting summer flounder, scup, and black sea bass for 2005 is presented in Appendix B. This description includes project name, description and duration, amount of research set-aside requested, and gear to be used to conduct the project.

In this specifications package, multi-year TALs (2005 and 2006) for the summer flounder are assessed. Therefore, a research set-aside for year two (2006) equal to the maximum allowable under Framework 1 to the Summer Flounder, Scup, and Black Sea Bass FMP was assumed. That is, research set-aside amounts of up to 3-percent of the TALs were assessed for summer flounder for year 2006. In addition, the same exemptions that apply for the proposed projects for 2005 were assumed for 2006. This was done because the information pertaining to the potential amounts of research set-aside needed to conduct research in 2006 is not yet known. If additional exemptions are proposed for 2006, they will be analyzed when the 2006 research projects are submitted. This alternative is the status quo alternative.

The impacts of the research set-asides for squid, mackerel, and butter fish were discussed in detail in the 2005 Atlantic Mackerel, *Loligo*, *Illex*, and Butterfish Specifications (section 7.4). The impacts of the research set-asides for bluefish was discussed in detail in the 2005 Bluefish Specifications (section 7.4). There are no significant impacts expected from those research set-aside projects.

7.4.2.1 Biological Impacts

Summer Flounder

Proposed research will allow for landings of summer flounder in excess of federal or state possession limits. Federal possession limit will require that otter trawlers whose owners are issued a summer flounder permit and that land or possess 100 or more lb of summer flounder from May 1 through October 31, or 200 lb or more of summer flounder from November 1 through April 30, per trip, must fish with nets that have a minimum mesh size of 5.5" diamond mesh or 6" square mesh applied throughout the body, extension(s), and codend portion of the net. Additional proposed research allows for landings of summer flounder during a state or federal closure. The Regional Administrator shall close the EEZ to fishing for summer flounder by commercial vessels for the remainder of the calendar year by publishing notification in the Federal Register if he/she determines that the inaction of one or more states will cause the applicable F specified in § 648.100(a) to be exceeded, or if the commercial fisheries in all states have been closed.

These landings will count against the overall quota; therefore, the biological/ecological impacts will not change relative to 2004 (section 7.1.1.1). In addition, potential benefits could occur as new data or other information pertaining to these fisheries are obtained for management or stock assessment purposes.

Scup

Proposed research allows for landings of scup in excess of federal or state possession limits. The proposed regulations limit fishermen to a 30,000 lb possession limit (state landings limit for a 2 week period) and 1,500 lb possession limit for the first and second winter periods, respectively. Although the possession limits can be exceeded, the landings count against the quota; therefore, the biological/ ecological impacts would not change relative to 2004.

In addition, proposed research allows for landings of scup during a state or federal closure. These landings count against the overall quota, the biological/ecological impacts will not change relative to 2004 (section 7.2.1.1).

The proposed scup research projects exempt researchers from the minimum mesh size and minimum fish size. The proposed research uses smaller mesh to catch and retain small scup. Based on retention lengths derived from length and body depth measurements, a 4.5" mesh has an associated L_{50} of 9.1" TL. This means that 50 percent of the 9.1" TL scup that encountered the net are retained by this mesh. Mesh sizes of 2.0", 3.0", and 4.0" have associated L_{50s} of 4.8" TL, 6.5" TL, and 8.3" TL, respectively.

The current regulations require a 9" TL minimum fish size in the commercial fishery. Assuming that undersized fish are not caught and discarded, minimum sizes increase the size at full recruitment because yields are increased as fishermen catch larger, heavier fish. These regulations also can increase spawning stock biomass by allowing more fish to spawn. In this specifications package the preferred minimum mesh size for the scup fishery is a 5.0" mesh with a minimum length of 75 meshes from the terminus of the net. For small nets with less than 75 mesh codends, the entire net will be 5".

The smaller mesh allows for the capture and retention of fish less than the current minimum size of 9" TL. If these fish are exempt from the minimum size requirement for sale, they will be landed, and those landings would count against the quota. If they are not landed, the fish are discarded at sea. In either case, mortality on smaller fish could increase slightly relative to the no action alternative. This increase in mortality could be offset by a decrease in mortality for larger fish (greater than 9" TL), if smaller fish are sold instead. However, because overall mortality rates are controlled by the TAL, any changes in mortality should be insignificant, i.e., total landings including the research set-aside cannot exceed the TAL.

Black Sea Bass

The proposed research uses smaller mesh to catch and retain small black sea bass. Based on retention lengths derived from length and body depth measurements, the current minimum mesh size of 4.5" has an associated L_{25} of 10.6" TL. This means that 25 percent of the 10.6" TL black sea bass that encounter the net will be retained by this mesh. Mesh sizes of 2.0", 3.0", and 4.0" have an associated L_{25} of 4.0" TL, 6.6" TL, and 9.3" TL, respectively.

Current regulations require an 11" TL minimum fish size in the commercial fishery. Assuming that undersized fish are not caught and discarded, minimum sizes increase the size at full recruitment because yields increase as fishermen catch larger, heavier fish. These regulations also can increase spawning stock biomass by allowing more fish to spawn.

Current vent size regulations require 1 3/8" x 5 3/4" rectangular vents, 2 3/8" in diameter circular vents, and 2" square vents. Smaller mesh and smaller vent sizes allow for the capture and retention of fish less than the proposed minimum size of 11" TL. If these fish are exempt from the minimum size requirement for sale, they will be landed and counted against the quota. If they are not landed, the fish will be discarded at sea. In either case, mortality on smaller fish may increase slightly relative to the no action alternative. This increase in mortality could be offset by a decrease in mortality for larger fish (greater than 11" TL), if smaller fish are sold instead. However, because overall mortality rates are controlled by the TAL, any changes in mortality should be insignificant, i.e., total landings including the research set-aside cannot exceed the TAL.

Proposed research allows for landings of black sea bass during a state or federal closure. Because these landings count against the overall quota, the biological/ecological impacts do not change relative to 2004 (section 7.3.1.1).

Amounts of non-target species estimated to be caught during the course of these research set-aside projects are at minimal levels compared to the commercial fisheries (Table 20). In addition, any hesitation regarding proposed quantities of catch are outweighed by the information and data to be gained from the proposed research. Total estimated catch of these species is for scientific research purposes only and will not be landed for sale under these proposed projects. The research vessels do not intend to bring back to the dock any fish below legal size, as a result of using smaller mesh gear, or in excess of a quota except for a few specimens that may be retained for scientific purposes or transferred to NMFS/NEFSC (Sarah Thompson , pers. comm.). Under this alternative the collaborative efforts between the public, research institutions, and government in broadening the scientific base upon which management decisions are made will continue. The Nation would receive the benefit derived when data or other information about these fisheries is obtained for management or stock assessment purposes that would not otherwise be obtained.

7.4.2.2 Habitat Impacts

The discussion presented in section 7.2.1.2 regarding the types of gear used in these fisheries and potential gear impacts on habitat due to changes in effort also applies here.

The basic fishing operations for summer flounder, scup, and black sea bass are expected to remain the same in spite of the research set-aside. In addition, the research set-aside specifications should not result in an increase in fishing effort or redistribute effort by gear type. Landings in excess of the state possession limits or during a closure would have no impact on essential fish habitat. Therefore, the overall impact to EFH is not expected to change.

7.4.2.3 Impacts on Endangered and Other Protected Species

The discussion presented in sections 7.1.1.3, 7.2.1.3, and 7.3.1.3 regarding the types of gear used to capture summer flounder, scup, and black sea bass commercially also apply here.

There are numerous species which inhabit the management unit of this FMP that are afforded protection under the ESA and/or the MMPA. Through the use of the research quota set-aside, the basic fishing operations for summer flounder, scup, and black sea bass are expected to remain the same. It should be noted, however, that fishing activities under the research set-aside program may occur in areas and/or times outside those of the normal directed fisheries. The degree of the resulting impacts on protected resources of these research set-aside fishing activities, if any, are not precisely known but are believed to be minimal. Therefore, the overall impact to species afforded protection under the ESA and the MMPA are not expected to change. A complete description of these species and a discussion of the potential impacts the summer flounder, scup, and black sea bass fisheries may have on them can be found in section 6.3.

7.4.2.4 Socioeconomic Impacts

Under this program, successful applicants receive a share of the annual quota for the purpose of conducting scientific research. The Nation receives a benefit in that data or other information about that fishery are obtained for management or stock assessment purposes. In fisheries where the entire quota is taken and the fishery is prematurely closed (i.e., the quota is constraining), the economic and social costs of the program are shared among the non research set-aside participants in the fishery. That is, each participant in a fishery that utilizes a resource that is limited by the annual quota relinquishes a share of the amount of quota retained in the research set-aside quota.

The socioeconomic discussion of the evaluated commercial quotas discussed in sections 7.1.1, 7.2.1, and 7.3.1 were based on adjusted commercial quotas accounting for the research set-aside proposed under this alternative. More specifically, a maximum summer flounder research set-aside of 353,917 lb for 2005 and research set-aside amounts of up to 3-percent of the TALs were assessed for summer flounder for year 2006. These values were used to derive the adjusted commercial quotas and recreational harvest limits in all evaluated alternatives. A research set-aside of 303,675 lb for scup and 109,500 lb for black sea bass for 2005 were also assumed.

Summer Flounder

The social and economic impacts of the summer flounder research should be minimal. For example under the preferred alternative, the set-aside could be worth as much as $569,806 dockside in 2005 and $1,593,900 in 2006 based on a 2003 price of $1.61 per pound. Assuming an equal reduction among all active commercial vessels (i.e., 839 vessels that landed summer flounder in 2003), this could mean a reduction of approximately $679 and $1,900 per individual vessel in 2005 and 2006, respectively. However, these are the maximum allowable amounts of anticipated research set asides. For example, the research set-asides for 2006 were based on amounts of up to 3-percent of the summer flounder TALs for 2006 because the information pertaining to the potential amounts of research set-aside needed to conduct research in 2006 are not yet known. Nevertheless, since the implementation of the research set-aside program in 2003, the amount of summer flounder requested has ranged from

91,163 to 353,917 lb. It is most likely that the amount of set-aside that will be requested for 2006 will be less than 3-percent of the summer flounder TAL for 2006 (i.e., less than 990,000 lb). Therefore, the analyses presented above likely correspond to an upper limit revenue reduction in 2006 for the commercial fishery compared to a commercial quota without research set-aside for that year. Changes in the recreational harvest limit will be insignificant; the limit changes from 11.12 to 11.98 million lb (a 1.5 percent decrease) in 2005 and from 13.20 to 12.80 million lb (a 4.9 percent decrease) in 2006 if 353,917 and 990,000 lb are used for research in 2005 and 2006, respectively. It is unlikely that the possession, size or seasonal limits will change as the result of this research set-aside, and there will be no negative impacts.

Scup and Black Sea Bass

The social and economic impacts of the scup and black sea bass research should be minimal. For example under the preferred alternatives, the 2005 scup and black sea bass set-asides could be worth as much as $182,205 and $221,190 dockside, respectively (based on a 2003 price of $0.60/lb for scup and $2.02/lb for black sea bass). Assuming an equal reduction among all active scup commercial vessels (i.e., 566 vessels that landed scup in 2003), this translates into a reduction of approximately $322 per individual vessel in 2005. Assuming an equal reduction among all active black sea bass commercial vessels (i.e., 702 vessels that landed black sea bass in 2003), this corresponds to a reduction of approximately $315 per individual vessel in 2005.

Changes in the recreational harvest limit will be insignificant; the scup limit changes from 4.03 to 3.96 million lb (a 1.8 percent decrease), and the black sea bass limit changes from 3.92 to 3.87 million lb (a 1.3 percent reduction) in 2005. It is unlikely that the possession, size or seasonal limits will change as the result of this research set-aside and; therefore, there will be no negative impacts.

In addition, it is possible that the vessels that will be used by researchers will not be vessels that have traditionally fished for summer flounder, scup, and/or black sea bass. As such, permit holders that land these species during a period where the quota has been reached and the fishery closed could be disadvantaged.

Research set-aside Impacts on GRAs for Scup, Black Sea Bass, and Loligo

Proposed research exempts vessels fishing with small mesh from the current and proposed GRA regulations, i.e., allows them to catch and retain several species of fish including scup, black sea bass, and *Loligo* squid from these areas during a closure.

NMFS implemented the current GRAs in 2001 based on a recommendation of the Council and Commission. These GRAs regulate the use of otter trawls with codend mesh less than 4.5" in areas and times that were identified as having high scup discards. Current specific areas and times include a northern GRA from November 1 to December 31 and a southern GRA from January 1 to March 15. The Council proposed to continue the GRAs in 2005 with one modification. Specifically, the Council adopted a shift in the southern GRA westward by 3 longitudinal minutes. This change is discussed in detail in section 7.2.10.2. Current regulations prohibit fishing for *Loligo* squid, black sea bass, and silver hake in the GRAs using mesh smaller than 4.5" during the effective times.

Analyses conducted to support these GRAs, indicate that these areas and times were associated with high levels of scup discards. As such, fishing with small mesh in these areas could mitigate the effects of the GRAs, thereby increasing the discards of scup relative to quotas without research set-aside. However, given the level of the research set-aside, the effects on scup discards and mortality should be minimal. In addition, because landings of the regulated species count against the overall quotas for each species, the overall mortality level does not change relative to the no action alternative.

The social and economic impacts of this research should be minimal. The set-aside could be worth as much as $182,205, $221,190, and $424,231 dockside for scup, black sea bass and *Loligo* squid based on 2003 prices, respectively. Assuming an equal reduction among all active vessels (i.e., 566, 702, and 402 vessels that landed scup, black sea bass, and *Loligo* in 2003, respectively), this may mean a reduction of $322, $315, and $1,055 per individual vessel, for scup, black sea bass, and *Loligo*, respectively. However, if a vessel is participating in two or more of these fisheries, the revenue reduction could be greater. It is also possible that the vessels used by researchers to conduct the research are vessels that have not traditionally fished for these species. As such, some minimal distributive effects may result as permit holders that would have landed these species could be disadvantaged.

7.5 Cumulative Impacts of Preferred Alternative

The final specifications are considered the most reasonable to achieve the fishery conservation objectives while minimizing the impacts on fishing communities as per the objectives of the FMP. A summary of the environmental consequences for each of the alternatives considered is given in the Boxes ES-1 through ES-3 (see Executive Summary).

7.5.1 Introduction; Definition of Cumulative Effects

A cumulative impact analysis is required by the Council on Environmental Quality's (CEQ) regulation for implementation of NEPA. Cumulative effects are defined under NEPA as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other action (40 CFR section 1508.7)." A formal cumulative impact assessment is not necessarily required as part of an Environmental Assessment under NEPA as long as the significance of cumulative impacts has been considered (U.S. EPA 1999). The following discussion address the significance of the expected cumulative impacts as they relate to the Federally managed summer flounder, scup, and black sea bass fisheries.

The cumulative impacts of past, present, and future Federal fishery management actions (including the specification recommendations proposed in this document) should generally be positive. Although past fishery management actions to conserve and protect fisheries resources and habitats may have been more timely, the SFA amended mandates of the MSFCMA require management actions be taken only after consideration of impacts to the biological, physical, economic, and social dimensions of the human environment. It is, therefore, expected that under the current management regime, the totality of Federal fisheries management impacts to the environment will contribute toward improving the human environment.

To compensate for any overharvest, and to preserve the conservation intent of the management regime, the FMP under which summer flounder, scup, and black sea bass are managed includes provisions that require any commercial landings exceeding the specifications in one year or quota period be deducted from the commercial quota designated for the following year. Thus, the FMP and the annual specifications anticipate the possibility that landings may exceed targets in any given year and provide a remedy that at least partially compensates for such occurrences in terms of maintaining the conservation goals of the FMP and the rebuilding programs, thus mitigating the impacts of those overages. In addition, overages in the recreational fishery are addressed by way of changes in management measures to reduce the harvest in the following year to the specified level. The annual nature of the management measures is intended to provide the opportunity for the Council and NMFS to assess regularly the status of the fishery and to make necessary adjustments to ensure that there is a reasonable expectation of meeting the objectives of the FMP and the targets associated with any rebuilding programs under the FMP. A detailed historical account of overages in these fisheries is presented below (see "historical account of overages").

However, as mentioned before, Framework Adjustment 5, approved by the Council May 5, 2004 and submitted to NMFS May 12, 2004, allows for the specification of TALs for summer flounder, scup, and/or black sea bass fisheries in any given year for up to three years. The ASMFC Board approved similar measures in August 2004. This modification to the FMP should relieve administrative demands on the Council and NOAA Fisheries imposed by the annual specification process. Additionally, longer term specifications should provide greater regulatory consistency and predictability to the commercial and recreational fishing sectors. If Framework Adjustment 5 is not approved by January 1, 2005, the current management system of annual TALs will remain in effect.

Cumulative effects to the physical and biological dimensions of the environment may also result from non-fishing activities. Non-fishing activities, in this sense, relate to habitat loss from human interaction and alteration or natural disturbances. These activities are widespread and can have localized impacts to habitat such as accretion of sediments from at-sea disposal areas, oil and mineral resource exploration, and significant storm events. In addition to guidelines mandated by the MSFMCA, NMFS reviews these types of effects during the review process required by Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act for certain activities that are regulated by Federal, state, and local authority. The jurisdiction of these activities is in "waters of the United States" and includes both riverine and marine habitats. A database which facilitates documentation regarding cumulative impacts of non-fishing activities on the physical and biological habitat covered by the summer flounder, scup, and black sea bass management units is not available at this time. The development of a habitat and effect database will accelerate the review process and outline areas of increased disturbance. Inter-agency coordination could also prove beneficial.

The MAFMC first considered the development of an FMP for summer flounder in late 1977. During the early discussions, the Council considered that a significant portion of the catch was taken from state waters. As a result, on 17 March 1978 a questionnaire was sent by the Council to east coast state fishery administrators seeking comment on whether the plan should be prepared by the Council or by the states acting through the Commission.

It was decided that the initial plan would be prepared by the Commission. The MAFMC arranged for NMFS to make some of the Council's programmatic grant funds available to finance preparation of the Commission’s plan. New Jersey was designated as the state with lead responsibility for the plan. The state/federal draft was adopted by the Commission at its annual meeting in October 1982. The original Council Summer Flounder FMP (MAFMC 1988) was based on the Commission's management plan. NMFS approved the original FMP on 19 September 1988.

Amendment 1 to the FMP was developed in the summer of 1990 solely to protect the 1989 and 1990 year classes by imposing a minimum net mesh size comparable to the 13" minimum fish size included in the original FMP. On 15 February 1991 the Council was notified that NMFS had approved the overfishing definition for summer flounder contained in Amendment 1, but had disapproved the minimum net mesh provision.

Amendment 2, which was fully implemented in 1993, was a comprehensive amendment designed to rebuild a severely depleted summer flounder stock. Amendment 2 was approved by NMFS on 6 August 1992. It contained a number of management measures to regulate the commercial and recreational fisheries for summer flounder. These included a rebuilding schedule, commercial quotas, recreational harvest limits, size limits, gear restrictions, and permit and reporting requirements. Amendment 2 also established the Summer Flounder Monitoring Committee, which meets annually to review the best available biological and fisheries data and make recommendations regarding the commercial quota and other management measures.

Amendment 3 to the Summer Flounder FMP was developed in response to fishermen's concerns that the demarcation line for the small mesh exempted fishery bisected Hudson Canyon and was difficult to enforce. Amendment 3 revised the Northeast exempted fishery line to 72°30.0'W. In addition, Amendment 3 increased the large mesh net threshold to 200 lb during the winter fishery, 1 November to 30 April. Furthermore, Amendment 3 stipulated that otter trawl vessels fishing from 1 May through 31 October could only retain up to 100 lb of summer flounder before using the large mesh net. Amendment 3 was approved by the Council on 21 January 1993 and submitted to NMFS on 16 February 1993.

Amendment 4 adjusted Connecticut's commercial landings of summer flounder and revised the state-specific shares of the coastwide commercial summer flounder quota as requested by the Commission. Amendment 5 allowed states to transfer or combine the commercial quota. Amendment 6 allowed multiple nets on board as long as they were properly stowed and changed the deadline for publishing the overall catch limits and commercial management measures to 15 October and the recreational management measures to 15 February. Amendment 7 revised the fishing mortality rate reduction schedule for summer flounder.

The Council began the development of a FMP for black sea bass in 1978. Although preliminary work supported the development of a FMP, a plan was not completed. Work on a FMP began again in January 1990 when the Council and the Commission initiated the development of a FMP for black sea bass. However, the development of a black sea bass plan was delayed through a series of amendments to the Summer Flounder FMP and work on a separate Black Sea Bass FMP was not resumed until 1993.

In 1996, NMFS requested that the black sea bass and scup regulations be incorporated into another FMP to reduce the number of separate fisheries regulations issued by the federal government. As a result, the Scup FMP and the Black Sea Bass FMP were incorporated into the summer flounder regulations as Amendments 8 and 9 (included EISs) to the Summer Flounder FMP, respectively. Amendment 8 established management measures for scup and Amendment 9 established a management program for black sea bass. Both of these were major amendments that implemented a number of management measures for scup and black sea bass including commercial quotas, commercial gear requirements, minimum size limits, recreational harvest limits, and permit and reporting requirements.

The Council was notified at a June 1996 meeting that the Regional Director planned to disapprove the provision in Amendment 9 that implements a state-by-state commercial quota. The official disapproval letter was dated July 16, 1996. In the letter, the Regional Director concluded that the state-by-state quota provision was inconsistent with National Standard 7. Specifically, the Regional Director stated that the provisions that apply to the area north of Cape Hatteras, North Carolina impose significant administrative and enforcement costs on NMFS and the state of North Carolina. The letter referenced the fact that Cape Hatteras separates two distinct stocks of black sea bass, a northern stock managed by Amendment 9 regulations and a southern stock regulated by the Snapper/Grouper FMP. The disapproval letter stated that the amendment failed to address how a commercial quota that bifurcated the state of North Carolina and only applied to the northern stock of black sea bass could be implemented. Based on these comments, the Council voted to replace the state-by-state quota system with a coastwide quota allocated in quarterly periods over the year.

Amendment 10 made a number of changes to the summer flounder regulations implemented by Amendment 2 and later amendments to the Summer Flounder, Scup and Black Sea Bass FMP. Specifically this amendment modified the commercial minimum mesh regulations, continued the moratorium on entry of additional commercial vessels, removed provisions that pertain to the expiration of the moratorium permit, prohibited the transfer of summer flounder at sea, and established a special permit for party/charter vessels to allow the possession of summer flounder parts smaller than the minimum size.

Amendment 11, approved by NMFS in 1998, was implemented to achieve consistency among Mid-Atlantic and New England FMPs regarding vessel replacement and upgrade provisions, permit history transfer, splitting, and renewal regulations for fishing vessels issued Northeast Limited Access federal fishery permits.

Amendment 12 was developed to bring the Summer Flounder, Scup, and Black Sea Bass FMP into compliance with the new and revised National Standards and other required provisions of SFA. Specifically, the amendment revised the overfishing definitions (National Standard 1) for summer flounder, scup, and black sea bass and addressed the new and revised National Standards (National Standard 8 - consider effects on fishing communities; National Standard 9 - reduce bycatch; and National Standard 10 - promote safety at sea) relative to the existing management measures. The amendment also identified essential fish habitat for summer flounder, scup and black sea bass. In addition, Amendment 12 added a framework adjustment procedure that allows the Council to add or modify management measures through a streamlined public review process. Amendment 12 was partially approved on 28 April 1999.

Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP, which became effective March 31, 2003, established an annual (calendar year) coastwide quota to complement a state-by-state quota system adopted by the Commission for the commercial black sea bass fishery. This system replaces the quarterly quota allocation system (i.e., implemented in Amendment 9).

The cumulative impacts of this FMP were last fully addressed in the EIS for Amendment 13. All three species in the management units are managed primarily via annual quotas to control fishing mortality. This FMP requires a specifications process that allows for review and modifications to management measures specified in the FMP on an annual basis. In addition, the Council added a framework adjustment procedure in Amendment 12 which allows the Council to add or modify management measures through a streamlined public review process.

Through development of the FMP and the subsequent annual specification process, the Council continues to manage these resources in accordance with the National Standards required under the Magnuson-Stevens Act. First and foremost the Council has met the obligations of National Standard 1 by adopting and implementing conservation and management measures that have prevented overfishing, while achieving on a continuing basis, the optimum yield for the three species and the United States fishing industry. The Council uses the best scientific information available (National Standard 2) and manages these three resources throughout their range (National Standard 3). The management measures do not discriminate between residents of different states (National Standard 4); they do not have economic allocation as their sole purpose (National Standard 5); the measures account for variations in fisheries (National Standard 6); avoid unnecessary duplication (National Standard 7); take into account the fishing communities (National Standard 8); reduce bycatch (National Standard 9); and promote safety at sea (National Standard 10). Amendment 13 fully addresses how the management measures implemented to successfully manage these three species comply with the National Standards. Amendment 13 also addresses the fishing gear impacts to essential fish habitat. The Council has implemented many regulations, that have indirectly acted to reduce fishing gear impacts on EFH. By continuing to meet the National Standards requirements of the Magnuson-Stevens Act through future FMP Amendments and actions, the Council will ensure that cumulative impacts of these actions will remain overwhelmingly positive for the ports and communities that depend on these fisheries, the Nation as a whole, and certainly for the resources.

The cumulative effects of the proposed quotas will be examined for the following five areas: targeted species, non-targeted species, protected species, habitat, and communities.

7.5.2 Targeted Fishery Resources

First and foremost for these three species, the Council has met the obligations of National Standard 1 by adopting and implementing conservation and management measures that have prevented overfishing, while achieving, on a continuing basis, the optimum yield for three species and the United States fishing industry. Summer flounder, scup, and black sea bass were overfished prior to management, and the status of these fisheries have subsequently improved. For example, the summer flounder stock is at record levels, and the resource is no longer overfished but overfishing is occurring relative to the biological reference points detailed in Amendment 12. The fishing mortality rate estimated for 2002 is 0.29, a significant decline from the 1.32 estimated for 1994 and slightly above the threshold F of 0.26. The most recent scup assessment indicates that the scup fishery is no longer overfished and that relative exploitation rates follow a downward trend since the late 1990s. Finally, the black sea bass stock is no longer considered overfished and overfishing is not occurring.

The Council manages these three species only in the EEZ. Any anthropogenic activities in the EEZ that did not consider these three species could impact their populations locally. The Council has commented on anthropogenic projects such as beach replenishment and ocean dumping in the past while raising concerns for the local health of summer flounder, scup, and black sea bass. Since these three species occur over wide areas of the mid and north Atlantic, it is unlikely that any anthropogenic activity could significantly impact either population on more than simply a local level.

None of the proposed quotas or other management measures have any significant effect on the target species by itself, or in conjunction with other anthropogenic activities. Setting these quotas continues to support the sustainability of these species as characterized in the Summer Flounder, Scup, and Black Sea Bass FMP.

7.5.3 Non-Target Species or Bycatch

National Standard 9 addresses bycatch in fisheries. This National Standard requires Councils to consider the bycatch effects of existing and planned conservation and management measures. Bycatch can impede efforts to protect marine ecosystems and achieve sustainable fisheries and the full benefits they can provide to the Nation in two ways. First, bycatch can substantially increase the uncertainty concerning total fishing-related mortality, making it more difficult to assess the status of stocks, to set the appropriate optimal yield (OY) and define overfishing levels, and to ensure that OYs are attained and overfishing levels are not exceeded. Second, bycatch may preclude other more productive uses of fishery resources.

The term "bycatch" means fish that are harvested in a fishery, but that are not sold or kept for personal use. Bycatch includes the discard of whole fish at sea or elsewhere, including economic discards and regulatory discards, and fishing mortality due to an encounter with fishing gear that does not result in capture of fish (i.e., unobserved fishing mortality). Bycatch does not include any fish that are legally retained in a fishery and kept for personal, tribal, or cultural use, or that enter commerce through sale, barter, or trade. Bycatch does not include fish released alive under a recreational catch-and-release fishery management program. A catch-and-release fishery management program is one in which the retention of a particular species is prohibited. In such a program, those fish released alive would not be considered bycatch.

The commercial fisheries for summer flounder, scup, and black sea bass are primarily prosecuted with otter trawls, otter trawls and floating traps, and otter trawls and pots/traps, respectively. These fisheries are managed principally through the specification of annual quotas. In addition, there are other management measures in place which affect discard rates in the summer flounder, scup, and black sea bass fisheries (e.g., minimum size regulation, mesh size/mesh thresholds, and possession limits).

Given the mixed fishery nature of the summer flounder, scup, and black sea bass fisheries, discards of targeted species and/or incidental species will occur. Landings data indicate that vessels that land summer flounder, scup, and black sea bass also harvest other species throughout the year. These fisheries are mixed fisheries, where squid, Atlantic mackerel, silver hake, skates, and other species are harvested with summer flounder, scup, and/or black sea bass.

The nature of the data makes it difficult to develop any definitive or reliable conclusions about discards for these fisheries especially during the periods or in areas where sea sampling has not occurred. It is difficult for the Council and Commission to modify or add management measures to further minimize discards if the data are not available to define the nature and scope of the discard problem or the data indicate that a discard problem does not exist.

The Council recognizes the need for improved estimates of discards for all of the fisheries managed under this FMP. The Council has requested increased at-sea sampling intensity over a broader temporal and geographical scope than is currently available.

The lack of discard data, for summer flounder, scup and black sea bass has hampered the ability of the Council and Commission to respond to potential discard problems in the commercial fisheries. In fact, the lack of this data has been the primary reason cited by the SARC as to why an age-based assessment cannot be developed for either scup or black sea bass. The collection of additional data by NMFS will allow the Council and Commission to more effectively respond to discard problems by changes in mesh, threshold and minimum size regulations or by implementing season and area closures in response to changes in fishermen behavior or an increased level of discards.

There are also significant recreational fisheries for summer flounder, scup, and black sea bass. A large portion of the summer flounder, scup, and black sea bass that are caught is released after capture. It is estimated that 10 percent, 15 percent, and 25 percent of the summer flounder, scup, and black sea bass, respectively, that are caught and released by anglers die after release, i.e, the majority of the fish are released alive and are expected to survive after release. The fish that survive are not defined as bycatch under the SFA. The Council and Commission believe that information and education programs relative to proper catch and release techniques for summer flounder, scup, black sea bass and other species caught by recreational fishermen should help to maximize the number of these species released alive.

Current recreational management measures could affect the discards of summer flounder, scup, and black sea bass. These measures include a possession limit, size limit, and season. The effects of the possession limit would be greatest at small limits and be progressively less at larger limits. The size limit would have similar effects, but the level of discarding will be dependent upon the levels of incoming recruitment and subsequent abundance of small fish. Seasonal effects would differ depending on the length of the season and the amount of summer flounder, scup, and black sea bass caught while targeting other species.

Minimum size limits, bag limits and seasons have proven to be effective management tools in controlling fishing mortality in the recreational fishery. A notable example is the recent success in the management of the Atlantic coast striped bass fishery. The recreational striped bass fishery is managed principally through the use of minimum size limits, bag limits and seasons. When these measures were first implemented, release rates in the recreational striped bass fishery exceeded 90 percent. However, the quick and sustained recovery of the striped bass stock after implementation of these measures provides evidence of their effectiveness in controlling fishing mortality in recreational fisheries.

The Council and Commission can currently implement annual changes in commercial and recreational management measures in response to changes in fishermen behavior or an increased level of discards through the annual specifications process. Currently, the Council and Commission have implemented GRAs through their annual specification process to minimize scup discards in the small mesh fisheries. The Council also funded research to identify gear modifications that reduce the bycatch of scup in small mesh fisheries. In addition, the framework adjustment procedure implemented in Amendment 12 can be used to allow the Council and Commission to respond quickly to changes in the fishery through the implementation of new management measures or the modification of existing measures.

The management system proposed in Amendment 13 represents the most effective tool for managing the black sea bass fishery. It is intended to distribute black sea bass landings throughout the year. In distributing black sea bass landings throughout the year, it is less likely that seasonal closures will occur in the commercial black sea bass fishery. Therefore, when black sea bass are caught in the directed and mixed trawl fisheries, they will not have to be discarded.

A larger quota in the summer flounder and black sea bass fisheries (i.e., scup quota is status quo) could result in increased effort and greater catches of other species. As such, the summer flounder and black sea bass preliminary adjusted commercial quotas could result in negative impacts on other fisheries in 2005 (and 2006 for summer flounder) relative to 2004. However, catch-per-unit-effort could correspondingly increase with increased stock abundance, resulting in the same number of tows landing a larger volume of fish. As such, it is unknown if these measures will result in an increase of effort in the summer flounder or black sea bass commercial fisheries and thus, the impact on incidental catch rates of other species in 2005 (and 2006 for summer flounder) relative to 2004.

None of the proposed quotas or other management measures would have any significant effect on non-target species individually, or in conjunction with other anthropogenic activities.

7.5.4 Protected Species

There are numerous species which inhabit the environment within the management unit of this FMP that are afforded protection under the ESA of 1973 (i.e., for those designated as threatened or endangered) and/or the MMPA of 1972. Fifteen are classified as endangered or threatened under the ESA, while the remainder are protected by the provisions of the MMPA. The Council examined the list (section 6.3) of species protected either by the ESA, the MMPA, or the Migratory Bird Act of 1918 that may be found in the environment utilized by the summer flounder, scup, and black sea bass fisheries. Adverse effects to ESA/MMPA species are occurring, as discussed in Appendix C. These effects will continue to occur until further action on recovery plans and take reduction plans are implemented.

Commercial capture of summer flounder occurs predominately in the Mid-Atlantic mixed trawl fishery. Minor amounts of summer flounder are landed by the Mid-Atlantic commercial sea scallop dredge fishery, the hook and line fishery, and the pound net fishery. All of these are Category III fisheries as defined in the NMFS 2003 List of Fisheries (69 FR 48407, August 10, 2004). Category III fisheries are not associated with any documented serious injuries or mortalities of marine mammals.

Commercial capture of scup and black sea bass occurs predominately in the Mid-Atlantic mixed trawl fishery, the Mid-Atlantic commercial hook and line fishery, the Mid-Atlantic pot/trap fishery, and the nearshore floating trap fishery, which is a type of pound net. All of these are Category III fisheries as defined in the NMFS 2003 List of Fisheries (68 FR 48407, August 10, 2004), with the exception of the pot/trap fishery.

Scup and black sea bass landings recorded in dealer weighout data as coming from pots/traps may be harvested through the Atlantic mixed species trap/pot fishery. This fishery is classified as Category II (69 FR 48407, August 10, 2004) because the gear used has similarities (buoy lines) to lobster and blue crab traps which are category I and II fisheries, respectively. Marine mammal species injured or killed by Mid-Atlantic mixed species traps/pots include fin whales, humpback whales, Minke whales, and harbor porpoises. It is not known whether any of these incidents directly involved the scup fishery. The scup fishery has never been implicated in take reduction efforts for bottlenose dolphins.

None of the proposed quotas or other management measures will have any significant effect on protected resources individually, or in conjunction with other anthropogenic activities.

7.5.5 Habitat (Including EFH Assessment)

The principal commercial gear used to harvest summer flounder, scup and black sea bass is the bottom otter trawl with other major gears including scallop dredge (for summer flounder) and fish pots and traps (for scup and black sea bass). The nature of impacts by these gear on the ocean bottom habitat is described in Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP. Data on the extent of impacts by specific gear on various bottom types are not available. Although the specific consequences for habitat are unknown, it can be assumed that the extent of trawling and dredging impacts are related to fishing effort.

Under the preferred alternative, larger commercial quotas in the summer flounder and black sea bass fisheries (i.e., scup quota is status quo) will occur in 2005 (and 2006 for summer flounder) compared to 2004. It is difficult to predict precisely whether these quota increases will result in increased fishing effort on EFH. Several possibilities exist that may influence fishing effort. Potentially, the larger quota could result in more fishing trips, or longer fishing trips, with a corresponding potential for greater habitat impacts. Conversely, a larger quota could mean that states establish higher possession limits, which result in an equal number of fishing trips landing a larger volume of fish. Similarly, with increased species abundance, catch-per-unit-effort could increase which results in the same number of tows landing a larger volume of fish. In these latter instances, the proposed quotas would result in either the same or reduced gear impacts to bottom habitats.

None of the proposed quotas or other management measures would have any significant effect on habitat individually, or in conjunction with other anthropogenic activities.

7.5.6 Communities

National Standard 8 requires that management measures take into account the fishing communities. The ports and communities that are dependent on summer flounder, scup, and black sea bass are fully described in Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP (section 3.4.2). To examine recent landings patterns among ports, 2003 NMFS dealer data are used. The top commercial landings ports for summer flounder, scup, and black sea bass by pounds landed are shown in Table 1.

The ports and communities involved in these fisheries will positively benefit from the increases in quotas associated with these fisheries. With regard to the specific quota recommendations proposed in this document, impact to the affected biological and physical and human environment are described in section 7.0. Given that no negative impacts are anticipated to result from the preferred alternatives, the synergistic interaction of improvements in the efficiency of the fishery is expected to generate positive impacts overall. These impacts will be felt most strongly in the social and economic dimension of the environment. Direct economic and social benefit from improved fishery efficiency is most likely to affect participants in the summer flounder, scup, and black sea bass fisheries. These benefits are addressed under the socioeconomic impacts discussion in section 7.0 and in the RIR/IRFA.

Historical Account of Overages

Although the measures proposed in this EA are for the year 2005 (summer flounder, scup, and black sea bass) and 2006 (summer flounder) fisheries only, these measures have the potential to result in cumulative impacts on the environment. The extent of any cumulative impacts from measures established in previous years is largely dependent on how effective those measures were in meeting their intended objectives and the extent to which mitigating measures compensated for any quota overages.

The management schemes established by the Council for summer flounder, scup, and black sea bass in the FMP, as previously analyzed in each species' respective EIS, recognize that management measures and fishery specifications established in one fishing year have implications for the measures that follow in subsequent years. In order to end overfishing and remedy the overfished status of these stocks, the Council developed rebuilding programs that have stock biomass targets. To achieve rebuilding, the Council recommends annual specifications that are intended to have a reasonable likelihood of not exceeding the specified target F's for the coming fishing year. Because of the nature of the fisheries (e.g., the landing of these species over a large number of coastal states) and the inherent time lags encountered in collecting landings that are necessary to make final determinations of actual landings, there is always the possibility that some harvest quotas may be unintentionally exceeded before the information necessary to close that portion of the fishery is available. On the other hand, other sectors of the fishery (e.g., certain states, in the case of summer flounder) may under-achieve their allowable harvest levels in a given year.

The rebuilding programs under the FMP began in 1993, 1997, and 1998 for summer flounder, scup, and black sea bass, respectively. Because each year's measures build upon the previous year's measures, the cumulative effects of the management program on the health of the stocks and the fishery are assessed from year to year. As described above, the regulation implementing the FMP requires that any commercial fishery overages in a given year be subtracted from the initial quota for a given state (summer flounder), season (scup), or coastwide (black sea bass) of the following year. An exception to this requirement occurred when a court ruling added 3.05 million lb to the summer flounder commercial fishery for 1995 (February 16, 1995, 60 FR 8958). In the recreational fisheries for these species, projected landings in a given year are used by the Council in recommending recreational management measures for each species in the following year. The Council and NMFS consider angler effort and success, stock availability, and the target harvest limits in establishing recreational measures for the upcoming year, including size limits, seasons, and bag limits. The recreational fisheries have target harvest levels, which do not require the fishery to be closed when attained, as compared to the commercial fishing quotas, which do require the fishery to be closed when the quota is attained.

Harvest limits, total landings, and total overages for each of the three fisheries have been as follows (weight in million lb):

Summer Flounder
Commercial Quotas

Year	Quota	Commercial Share	Adjusted Commercial Quota	Commercial Landings	Overage
1993 -	20.73	12.35	-	12.60	-
1994 -	26.68	16.01	-	14.56	-
1995 -	19.40	14.69 (add on)	-	15.42	0.73
1996 -	18.52	11.11	10.21	12.96	2.75
1997 -	18.52	11.11	8.38	8.81	0.43
1998 -	18.52	11.11	10.93	11.22	0.29
1999 -	18.52	11.11	10.73	10.69[b]	-
2000 -	18.52	11.11	10.88	11.26	0.38
2001 -	17.91	10.75	10.06	10.96[b]	0.90
2002 -	24.30	14.58	14.46	13.89	-
2003[a] -	23.30	13.98	13.87	14.24	0.37
2004 -	28.20	16.92	16.76	N/A	N/A

[a] Preliminary
[b] Although there was not an overall overage, several individual states exceeded their allocation, thus requiring an adjustment in the following year.

Recreational Harvest Limits

	Harvest Limit	Landings	Overage
1995 -	7.76	5.42	-
1996 -	7.04	9.82	2.78
1997 -	7.41	11.87	4.46
1998 -	7.41	12.48	5.07
1999 -	7.41	8.37	0.96
2000 -	7.41	16.47	9.06
2001 -	7.16	11.64	4.48
2002 -	9.72	8.01	-
2003[a] -	9.28	11.61	2.33
2004 -	11.21	N/A	N/A

	Scup[a]			Black Sea Bass[a]		
	TAL	Landings	Overages	TAL	Landings	Overages
1997 -	7.947	6.035	-	-	-	-
1998 -	6.125	5.049	-	6.173	3.715	-
1999 -	3.770	5.209	1.439	6.173	4.562	-
2000 -	3.770	8.103	4.332	6.173	6.630	0.457
2001 -	6.210	8.328	2.118	6.173	6.249	0.076
2002 -	10.770	10.905	0.135	6.800	7.784	0.984
2003[b] -	16.500	19.085	2.585	6.800	7.241	0.441
2004 -	16.500	N/A	N/A	8.000	N/A	

[a] Includes both commercial and recreational harvest limits.
[b] Preliminary.
Note - 2004 landings not yet available.

The summer flounder, scup, and black sea bass commercial fisheries have experienced annual total overages. In 2002, black sea bass overages (recreational and commercial) totaled approximately 1.0 million lb. There were no overages in the summer flounder and scup fisheries in 2002. In 2003, overall overages (recreational and commercial) totaled approximately 2.7, 2.5, 0.4 million lb in the summer flounder, scup, and black sea bass fisheries, respectively. Even though the recreational overage cannot be deducted from the TAL, the total overage factors into the cumulative impact on the stocks.

Quota overages in a given year or period have two expected impacts. First, overages result in lower harvest levels in the following year or period for that portion of the fishery than would otherwise have been allowed. In commercial fisheries, the overages result in a direct reduction in the next year’s quota. This impacts fishery participants by decreasing potential revenues for the fishing year or period in which the overages are deducted. However, the fishery participants have already realized revenues from the landings that exceeded the allowable harvest level in the year they occurred. Thus, from an economic perspective, the timing of revenues is altered and there may be impacts on some fishermen caused by unexpected reductions in their opportunities to earn revenues in these fisheries in the year during which the overages are deducted. In the recreational fisheries, overages in one year may result in lower bag limits, larger minimum size limits, and/or shorter seasons than would otherwise have been allowed, had the overages not occurred. Increased harvests in one year are thus “paid back” by decreased harvest opportunities the next year. Recreational fishing opportunities for those fishermen not desiring to keep their catch of these species would be affected little, if any, by such occurrences.

The second possible result of overages is the potential that the annual F targets of the FMP will not be met and/or that the rebuilding schedule will be delayed. The significance of any such delays depends on the magnitude of the overages and their resultant impact on the stock size and age structure. While it is not possible to quantify those effects precisely, the fact that the FMP’s management regime takes into account the overages and the current status of the stocks in setting the specifications for the next year mitigates any such impacts.

The Council and NMFS recognize that future overages in any of the fisheries could have additional negative impacts on the rate of rebuilding. Given the history of the summer flounder, scup, and black sea bass fisheries, the mitigating influence of annual overage adjustments, and the fact that the stocks have shown continued improvement during the rebuilding period, despite the overages that have occurred, the cumulative impacts of overages are not considered to be significant.

Overall Socioeconomic Impact

In order to conduct a more thorough socioeconomic analysis, overall impacts of the three species combined were examined. The analyses conducted, examined the measures recommended by the Council for each of the three species combined. Overall impacts (i.e., combined impacts of summer flounder, scup, and black sea bass) were examined because many of the vessels active in these fisheries participate in more than one or even all three of these fisheries. The analysis of the preferred alternatives is presented below and the analysis for the non-preferred alternatives (most restrictive and least restrictive alternatives) is presented in the following section (section 7.6). Additional analysis of the combined impact of the management measures for the three species combined is presented under section 5 of the RIR/IRFA.

For example, for 2005, quota alternative 1 (preferred alternative) includes the three preferred alternatives for summer flounder, scup, and black sea bass combined and for 2006. Overall impacts (i.e., combined impacts of summer flounder, scup, and black sea bass) were examined because many of the vessels active in these fisheries participate in more than one or even all three of these fisheries.

New quotas alone have relatively limited social impacts. The changes in social structure and cultural fabric that may have occurred under implementation of limited access are already largely in place. The major impact of quota reductions is on profitability. Only where there is a significant reduction in net revenues or in the ability to meet costs are substantial social impacts likely.

A detailed study and characterization of the black sea bass and scup fisheries were conducted by Finlayson and McCay (1994). The study was conducted in order to assess the economic impacts of the draft management FMP for the scup and black sea bass fisheries. This report indicates that black sea bass pot specialization is found from Cape May, NJ through Virginia. The Montauk and Hampton Roads black sea bass pot fishery really only developed beginning in 1992 and 1993. Nonetheless, already in 1994 Hampton Roads, Cape May, and Ocean City pot fishers and Ocean City handline fishermen were heavily dependent on black sea bass. Given the variety of other fishing activities and in some cases other industries, while individuals may be heavily affected, fishing communities in the region will be minimally impacted. A distinction needs to be made, however, between impacts to individuals and impacts to communities. Where the number of affected individuals in a community is large, the types and degree of impacts are likely to be the same at each level. Where the numbers of individuals are small, however, they may not be.

Farther north, Rhode Island pot fishermen and fish trap/pound net fishers are heavily dependent on scup. However, these fishermen are scattered through communities the length of the Rhode Island coast. So the impacts to individuals are unlikely to translate into large community effects.

More recently, McCay and Cieri (2000) reported a small pot fishery in Wildwood, NJ, that mainly targets black sea bass. In Sea Isle City, NJ, there is an offshore pot fishery for lobster, conch, and fish (mostly black sea bass). The value of fish trapped within the pot fishery accounted for 12 percent of the total value landed by the pot fishery in Sea Isle City in 1998. In Delaware, fishermen (predominantly “bayman” or “watermen”) use a wide array of gear types when working the estuary, bay, and tributaries of the Delaware Bay and River, bordering New Jersey. Pots and traps are an important type of gear for these fishermen. For fish traps, the most important species is black sea bass. A description of ports and communities that are dependent on summer flounder, scup, and black sea bass is found in section 3.4.2 of Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP. Recent landings patterns among ports are examined in section 6.5.1.

Combined socioeconomic impacts in 2005

Alternative 1 (Preferred)

The preferred quotas for summer flounder, scup (status quo), and black sea bass for year 2005 (adjusted for overages and research set-aside)under this alternative are 7 percent higher, < 1 percent lower, and 5 percent higher relative to the adjusted quotas specified for those species in 2004. Even though the overall 2005 commercial TAL for scup under this alternative is the same as in 2004, the adjusted commercial quota is slightly different than the adjusted quota implemented in 2004 mainly due to differences in the research set-aside amounts used to derived the adjusted quotas during those two time periods.

While the overall summer flounder adjusted quota for 2005 is 7 percent higher than the quota specified for 2004 for that species, the state of Delaware is expected to have negative quotas allocated to it due to overages in previous years. However, only a few thousand pounds of summer flounder are typically allocated to this state (i.e., 0.01779 percent of the coastwide quota is allocated to Delaware). While some individual fishermen and their families may find the final adjusted 2005 quotas to have impacts, the larger communities and towns in which they live will not.

The recreational harvest limits (adjusted for research set-asides) in preferred alternative 1 for summer flounder, scup, and black sea bass for the year 2005 are 6 percent higher, < 1 percent lower, and 3 percent higher relative to the adjusted recreational harvest limits for year 2004. The commercial quotas and recreational harvest limits selected as the preferred alternative were chosen because they provide for the maximum level of commercial and recreational landings, yet still achieve the fishing mortality and exploitation rates specified in the FMP.

Commercial Impacts

<u>Vessels affected under the 2005 recommended quota harvest levels (Alternative 1)</u>

Under alternative 1, there are no vessels impacted with significant revenue reductions (Table 21; section 5.1.1 of the RIR/IRFA). The economic impacts for the 1,040 vessels participating in these fisheries ranged from expected revenue losses on the order of < 5 percent for a total of 40 vessels to an increase in revenue for 1,000 vessels. In addition, no vessels were expected to have revenue losses of > 5 percent. It is clear to see the increase in revenues for vessels that fished for summer flounder and black sea bass or scup in combination with summer flounder and/or black sea bass due to the overall increase in the commercial quota level for summer flounder and black sea bass in 2005 relative to 2004 (section 5.1.1 of the RIR/IRFA).

In addition to the threshold analysis described above, the Council also analyzed changes in total ex-vessel gross revenue that would occur as a result of the quota alternatives. Assuming 2003 ex-vessel prices (summer flounder -- $1.61/lb; scup -- $0.60/lb; and black sea bass -- $2.02/lb), the 2005 quotas associated with the preferred alternative would increase summer flounder and black sea bass revenues by approximately $1.9 and $384 thousand, respectively, and decrease scup revenues by $60 thousand relative to 2004.

Assuming the increase in summer flounder total ex-vessel gross revenues associated with the preferred alternative is distributed equally among the 839 vessels that landed summer flounder in 2003, the average increase in revenue associated with the increase in summer flounder quota is approximately $2,322/vessel. Assuming the decrease in scup total ex-vessel gross revenues associated with this alternative is distributed equally among the 566 vessels that landed scup in 2003, the average decrease in revenue associated with the decrease in the scup quota is approximately $106/vessel. Finally, if the increase in black sea bass total ex-vessel gross revenues associated with this alternative is distributed equally among the 702 vessels that landed black sea bass in 2003, the average increase in revenue associated with the increase in black sea bass quota is approximately $546/vessel.

The overall change in ex-vessel gross revenue associated with the three species combined in 2005 relative to 2004 is approximately $2.3 million (assuming 2002 ex-vessel prices) under the preferred alternative. If this is distributed among the 1,040 vessels that landed summer flounder, scup, and black sea bass in 2003, the average increase in revenue is approximately $2,184/vessel. The changes in ex-vessel gross revenues associated with the potential changes in landings in 2005 versus 2004 assumed static prices for summer flounder, scup, and black sea bass. However, if prices for these species decrease or increase as a consequence of changes in landings, then the associated revenue increases and decreases could be different than those estimated above.

It is important to stress that these changes as well as those described under the other alternatives represent merely the potential, i.e., based on available data. Actual changes in revenue will likely vary. This variation would occur for several reasons, including impacts undetermined for unidentifiable vessels, revenues earned or lost due to possession limits and seasons set by a state to manage sub-allocations of quota, and unanticipated reductions in 2005 for quota overages in 2004 that were not accounted for here.

Recreational Impacts

At the present time, there is neither behavioral nor demand data available to estimate how sensitive party/charter boat anglers might be to proposed fishing regulations. In the summer flounder, scup, and black sea bass fisheries, there is no mechanism to deduct overages directly from the recreational harvest limit. Any overages must be addressed by way of adjustments to the management measures. While it is likely that proposed management measures may restrict the recreational fishery for 2005, and these measures may cause some decrease in recreational satisfaction (i.e., low bag limit, larger fish size or closed season), there is no indication that any of these measures may lead to a decline in the demand for party/charter boat trips. Currently, the market demand for this sector is relatively stable. It is unlikely that these measures will result in any substantive decreases in the demand for party/charter boat trips or affect angler satisfaction. It is likely that party/charter anglers will target other species when faced with potential reductions in the amount of scup that they are allowed to catch (section 5.1.1 of the RIR/IRFA).

Other Impacts

<u>Effects of Commercial Possession Limits, Minimum Mesh, and Minimum Fish Size</u>

For the summer flounder and black sea bass fisheries, no changes to the existing current minimum fish size, minimum mesh regulations, minimum mesh threshold, and/or minimum vent size regulations will be made for 2005. The continuation of these alternatives is not expected to result in changes to the economic and social aspects of the fishery relative to 2004. A description of the impacts of these measures is presented in sections 7.1.1 (summer flounder) and 7.3.1 (black sea bass).

For the scup fishery, the current minimum fish size, minimum vent size, Winter II possession limit, the transfer of unused scup quota from Winter I to Winter II period, and winter period mesh threshold regulations will remain unchanged in 2005. The continuation of these alternatives is not expected to result in changes to the economic and social aspects of the fishery in 2005 relative to 2004. A description of the impacts of these scup measures is presented in section 7.2.1.

Alternative measures addressing preferred changes in the scup fishery are: 1) minimum mesh regulation (alternative 5.2); 2) summer period minimum mesh threshold (alternative 6.2); 3) GRA modification (alternative 7.2); Winter I possession limits (alternative 4.2); and end the GRA exemption program (alternative 8.2). The potential impacts of these alternatives are discussed below. In addition, potential impacts of the research set-aside are discussed below.

Effects of the proposed scup Winter I possession limit

Under alternative 4.2 (preferred alternative), the Council and Commission recommended to change the current Winter I possession limits in the scup fishery from 15,000 lb per week (state landings limit for a 1 week period) to a possession limit of 30,000 lb (state landings limit for a 2 week period). Because scup are a schooling species, otter trawl vessels operating where scup occur will occasionally make very large hauls that consist almost entirely of scup. Under the current system, when one of these hauls is brought up, the trip limit may be kept by the hauling vessel while the remaining catch must be discarded. Under the proposed action alternative, the contents of a 30,000 lb scup haul could be landed given the proposed Winter I possession limit. This would convert regulatory discards of scup into landings, thus reducing bycatch and improving the efficiency of the commercial scup fishery. However, in practice this alternative will allow the same amount of scup to be landed in a two week period in 2005 as in 2004. This measure is likely to result in positive biological and socioeconomic impacts to the stock as it allows for regulatory discards of scup to be converted into landings, thus reducing bycatch and improving the efficiency of the commercial scup fishery. A description of the impacts of the preferred scup Winter I possession limit is presented in section 7.2.5.

Effects of the scup minimum mesh size

Alternative 5.2 (preferred alternative) would implement a minimum mesh size for the scup fishery of 5" with a minimum length of 75 meshes from the terminus of the net. For small nets with less than 75 meshes codends, the entire net will be 5". While this alternative is not expected to substantially alter overall scup landings, it will have positive biological and socioeconomic impacts as it allows for a reduction in the discard of undersized fish, thus improving the efficiency of the commercial scup fishery relative to the status quo minimum mesh. Vessels currently participating in the scup fishery would only require to make minor modifications to the existing mesh in order to comply with this measure, and no additional material (mesh) needs to be purchased. More specifically, in existing scup gear, the 4.5" portion of the net needs to be eliminated, and the length of the 5.0" mesh needs to be reduced to comply with the proposed mesh regulations under this alternative. It is likely that these modifications can be made in a few hours depending on the size (length) of the mesh to be modified (James Ruhle Sr., pers. comm.). The cost of making the proposed mesh modifications under this alternative is minimal. A description of the impacts of the preferred scup minimum mesh size alternative is presented in section 7.2.7.

Effects of the scup mesh threshold level

Alternative 6.2 (preferred alternative) would change the current threshold level used to trigger the mesh requirement from 100 lb to 200 lb from May through October 31. The Winter threshold would remain unchanged. While this alternative is not expected to substantially alter overall scup landings, it will have positive biological and socioeconomic impacts as it allows for a reduction in the discard of undersized fish, thus improving the efficiency of the commercial scup fishery relative to the status quo (May 1 through October 31) threshold. A description of the impacts of the preferred threshold levels to trigger the scup mesh requirement is presented in section 7.2.9.

Effects of the GRAs

Alternative 7.2 (preferred alternative) would move the southern GRA three minutes westward. By moving the entire area covered by the current southern GRA three longitudinal minutes to the west, a strip of approximately 500 nm^2 would be made available to small mesh gear east of southern GRA, while an area of equal size would be closed to small mesh gear to the west of the southern GRA. Social impacts associated with alternative 7.2 are likely to be related to changes in the availability of scup, black sea bass and *Loligo* to participants in the small mesh trawl fishery. Trawl survey data indicate that availability for all three species should increase under alternative 7.2 relative to the status quo (current GRA). This expectation is based on the net difference in survey captures between the proposed southern GRA and the current GRA relative to total winter/spring survey catch (Table 18: 2.8 percent increase for scup; 4.5 percent increase for black sea bass; 7.5 percent increase for *Loligo*). Calculating revenue gains for the respective fisheries directly from these percentages would require a number of unrealistic assumptions. Impacts on ports and communities are likely to be positive, though low in magnitude as fishermen will have marginally greater access to these resources. A description of the impacts of the preferred GRA measure is presented in section 7.2.10.2.

Effects of terminating the current GRA exemption program

Alternative 8.2 (preferred alternative) eliminates the current GRA exemption program. The current exemption program for fishermen using modified gear stipulates that vessels fishing with small mesh and having an escapement extension of 45 meshes of 5.5" square mesh behind the body of the net and ahead of the codend could fish in the GRAs while carrying an observer onboard.

Since no fishing vessels have participated in the exemption program since its implementation, it is not expected that the elimination of this program would result in changes to the economic and social aspects of the fishery relative to previous years. A description of the impacts associated with the elimination of the GRA exemption program is presented in section 7.2.12.

Effects of the research set-aside (2005 and 2006)

The research set-aside discussion presented in this section corresponds to the 2005 (summer flounder, scup, and black sea bass) and 2006 (summer flounder) fishing years.

Under this program, successful applicants receive a share of the annual quota for the purpose of conducting scientific research. The Nation receives a benefit in that data or other information about that fishery are obtained for management or stock assessment purposes. In fisheries where the entire quota is taken and the fishery is prematurely closed (i.e., the quota is constraining), the economic and social costs of the program are shared among the non research set-aside participants in the fishery. That is, each participant in a fishery that utilizes a resource that is limited by the annual quota relinquishes a share of the amount of quota retained in the research set-aside quota.

The socioeconomic discussions of the preferred commercial quotas evaluated in sections 7.1.1, 7.2.1, and 7.3.1 were based on adjusted commercial quotas accounting for the research set-aside proposed under this alternative. More specifically, a maximum summer flounder research set-aside of 353,917 lb for 2005 and research set-aside amounts of up to 3-percent of the TALs were assessed for summer flounder for year 2006. These values were used to derive the adjusted commercial quotas and recreational harvest limits in all evaluated alternatives. A research set-aside of 303,675 lb for scup and 109,500 lb for black sea bass for 2005 were also assumed.

Summer Flounder

The social and economic impacts of the summer flounder research should be minimal. For example under the preferred alternative, the set-aside could be worth as much as $569,806 dockside in 2005 and $1,593,900 in 2006 based on a 2003 price of $1.61 per pound. Assuming an equal reduction among all active commercial vessels (i.e., 839 vessels that landed summer flounder in 2003), this could mean a reduction of approximately $679 and $1,900 per individual vessel in 2005 and 2006, respectively. However, these are the maximum allowable amounts of anticipated research set asides. For example, the research set-asides for 2006 were based on amounts of up to 3-percent of the summer flounder TALs for 2006 because the information pertaining to the potential amounts of research set-aside needed to conduct research in 2006 are not yet known. Nevertheless, since the implementation of the research set-aside program in 2003, the amounts of summer flounder requested has ranged from 91,163 to 353,917 lb. It is most likely that the amount of set-aside that will be requested for 2006 will be less than 3-percent of the summer flounder TAL for 2006 (i.e., less than 990,000 lb). Therefore, the analyses presented above likely correspond to an upper limit revenue reduction in 2006 for the commercial fishery compared to a commercial quota without research set-aside for that year. Changes in the recreational harvest limit will be insignificant; the limit changes from 11.12 to 11.98 million lb (a 1.5 percent decrease) in 2005 and from 13.20 to 12.80 million lb (a 4.9 percent decrease) in 2006 if 353,917 and 990,000 lb are used for research in 2005 and 2006, respectively. It is unlikely that the possession, size or seasonal limits will change as the result of this research set-aside, and there will be no negative impacts.

Scup and Black Sea Bass

The social and economic impacts of the scup and black sea bass research should be minimal. For example under the preferred alternatives, the 2005 scup and black sea bass set-asides could be worth as much as $182,205 and $221,190 dockside, respectively (based on a 2003 price of $0.60/lb for scup and $2.02/lb for black sea bass). Assuming an equal reduction among all active scup commercial vessels (i.e., 566 vessels that landed scup in 2003), this translates into a reduction of approximately $322 per individual vessel in 2005. Assuming an equal reduction among all active black sea bass commercial vessels (i.e., 702 vessels that landed black sea bass in 2003), this corresponds to a reduction of approximately $315 per individual vessel in 2005.

Changes in the recreational harvest limit will be insignificant; the scup limit changes from 4.03 to 3.96 million lb (a 1.8 percent decrease) and the black sea bass limit changes from 3.92 to 3.87 million lb (a 1.3 percent reduction) in 2005. It is unlikely that the possession, size or seasonal limits will change as the result of this research set-aside and; therefore, there will be no negative impacts.

In addition, it is possible that the vessels that will be used by researchers will not be vessels that have traditionally fished for summer flounder, scup, and/or black sea bass. As such, permit holders that land these species during a period where the quota has been reached and the fishery closed could be disadvantaged.

If the amounts of summer flounder, scup, and black sea bass allocated to research set-aside are not used and are put back into the overall TAL for each fishery in 2005 and 2006, then the amounts of summer flounder, scup, and black sea bass available to all vessels would increase by the respective set-asides originally deducted for each of the species. In this case, the revenue reductions described above would disappear.

Research set-aside Impacts on GRAs for Scup, Black Sea Bass, and Loligo

Proposed research exempts vessels fishing with small mesh from the current and proposed GRA regulations, i.e., allows them to catch and retain several species of fish including scup, black sea bass, and *Loligo* squid from these areas during a closure.

NMFS implemented the current GRAs in 2001 based on a recommendation of the Council and Commission. These GRAs regulate the use of otter trawls with codend mesh less than 4.5" in areas and times that were identified as having high scup discards. Current specific areas and times include a northern GRA from November 1 to December 31 and a southern GRA from January 1 to March 15. The Council proposed to continue the GRAs in 2005 with one modification. Specifically, the Council adopted a shift in the southern GRA westward by 3 longitudinal minutes. This change is discussed in detail in section 7.2.10.2. Current regulations prohibit fishing for *Loligo* squid, black sea bass, and silver hake in the GRAs using mesh smaller than 4.5" during the effective times.

Analyses conducted to support these GRAs indicate that these areas and times were associated with high levels of scup discards. As such, fishing with small mesh in these areas could mitigate the effects of the GRAs, thereby increasing the discards of scup relative to quotas without research set-aside. However, given the level of the research set-aside, the effects on scup discards and mortality should be minimal. In addition, because landings of the regulated species count against the overall quotas for each species, the overall mortality level does not change relative to the no action alternative.

The social and economic impacts of this research should be minimal. The set-aside could be worth as much as $182,205, $221,190, and $424,231 dockside for scup, black sea bass and *Loligo* squid based on 2003 prices, respectively. Assuming an equal reduction among all active vessels (i.e., 566, 702, and 402 vessels that landed scup, black sea bass, and *Loligo* in 2003, respectively), this may mean a reduction of $322, $315, and $1,055 per individual vessel for scup, black sea bass, and *Loligo*, respectively. However, if a vessel is participating in two or more of these fisheries, the revenue reduction could be greater. It is also possible that the vessels used by researchers to conduct the research are vessels that have not traditionally fished for these species. As such, some minimal distributive effects may result as permit holders that would have landed these species could be disadvantaged.

If the amounts of summer flounder, scup, and black sea bass allocated to research set-asides are not used and are put back into the overall TAL for each fishery in 2004, then the amounts of summer flounder, scup, and black sea bass available to all vessels in 2004 could increase by 174,750 lb, 160,000 lb, and 134,792 lb, respectively. Assuming 2002 ex-vessel prices (summer flounder -- $1.51/lb; scup -- $0.66/lb; and black sea bass -- $1.73/lb), the 2004 research set-aside could be worth as much as $263,873 for summer flounder, $105,600 for scup, and $233,190 for black sea bass. As such, assuming an equal increase among all active vessels (i.e., 796, 499, and 736 vessels that landed summer flounder, scup, and black sea bass in 2002, respectively), this could mean a potential increase in revenue of approximately $331, $212, and $317 per individual vessel in the summer flounder, scup, and black sea bass fishery, respectively, relative to commercial quotas without research set-aside in place. If research set-asides are not used and are put back into the overall TAL for each fishery, then the estimated economic impacts would be smaller than those estimated in threshold analyses presented in this section and in the IRFA (sections 5.1.1, 5.2.1, and 5.3.1).

<u>Socioeconomic impacts of summer flounder alternatives in 2006</u>

Quota Alternative 1 (Preferred)

Under this alternative, the summer flounder specifications would result in an aggregate 15 percent increase in allowable commercial landings relative to the 2004 quota and a 14 percent increase in recreational harvest limit relative to the 2004 limit.

Commercial Impacts

<u>Vessels affected under the 2006 summer flounder recommended quota harvest level (Alternative 1)</u>

The results of the threshold analysis indicate that across all vessel classes, a total of 835 vessels were projected to be impacted to incur a revenue increase (relative to 2004) and 1 vessel was projected to incur in a revenue reduction of < 5 percent. There are no vessels projected to incur revenue losses of 5 percent or more (section 5.2.1 of the RIR/IRFA).

In addition to the threshold analysis described above, the Council also analyzed changes in total ex-vessel gross revenue that would occur as a result of this quota alternative. Assuming 2003 ex-vessel price ($1.61/lb), the 2006 quota associated with alternative 1 would increase summer flounder ex-vessel revenue by approximately $3.9 million relative to 2004. Assuming the increase in summer flounder total ex-vessel gross revenues associated with alternative 1 is distributed equally among the 839 vessels that landed summer flounder in 2003, the average increase in revenue associated with the increase in summer flounder quota is $4,701/vessel. The change in gross revenues associated with the potential changes in landings in 2006 versus 2004 assumed static prices for summer flounder. However, if prices for this species decrease or increase as a consequence of changes in landings, then the associated revenue increases and decreases could be different than those estimated above.

Recreational Impacts

The proposed recreational limit under this alternative is not expected to restrict the recreational summer flounder fishery for 2006 relative to 2004. Given that the summer flounder limit is projected to increase, it is not anticipated that angler satisfaction or the demand for party/charter boat trips will be adversely affected in 2006 relative to 2004 (section 5.2.1 of the RIR/IRFA).

Other Impacts

The current summer flounder minimum fish size, minimum mesh regulations, and minimum mesh threshold regulations will remain unchanged in 2005 and 2006. The continuation of these alternatives is not expected to result in changes to the economic and social aspects of the fishery relative to 2004.

<u>Effects of the research set-aside</u>

The discussion regarding the impacts of the research set-aside presented above also applies here.

7.5.7 Conclusions

None of the proposed quotas or other management measures will have any significant effect on non-target species individually, or in conjunction with other anthropogenic activities. The proposed actions, together with past and future actions are expected to result in positive cumulative impacts on the biological, physical, and human components of the environment. As long as management continues to prevent overfishing and continue the rebuilding process, the fisheries and their associated communities will prosper.

This action builds on actions taken in the original FMP, subsequent amendments, and the annual specification process for the 2004 fishing year. Based on the information and analyses presented in these documents, and this document, there are no significant cumulative effects associated with the proposed summer flounder, scup, and black sea bass specifications.

7.6 Combined Socioeconomic Analyses of the Non-preferred Alternatives

The combined impacts of the preferred summer flounder, scup, and black sea bass quota measures were analyzed in section 7.5.6 above. The combined impacts of the non-preferred quotas are discussed in this section. For example, for 2005, quota alternative 2 (most restrictive alternative) includes the three most restrictive alternatives for summer flounder, scup, and black sea bass combined; and quota alternative 3 (least restrictive alternative) would includes the three most restrictive alternatives for summer flounder, scup, and black sea bass combined. Overall impacts (i.e., combined impacts of summer flounder, scup, and black sea bass) were examined because many of the vessels active in these fisheries participate in more than one or even all three of these fisheries.

<u>**Combined socioeconomic impacts in 2005**</u>

Combined socioeconomic impacts of Alternative 2 (most restrictive)

The same overall discussion regarding the social impacts of quotas and characterization of the summer flounder, scup, and black sea bass fisheries by port and community presented above also applies here.

The most restrictive quotas for summer flounder (status quo), scup, and black sea bass (status quo) for year 2005 (adjusted for overages and research set-aside) are < 1 percent lower, 36 percent lower, and 3 percent higher relative to the quotas specified (adjusted quotas) for those species in 2004, respectively. In addition, adjusted recreational limits for year 2005 are < 1 percent lower for summer flounder, 31 percent lower for scup, and 3 percent higher for black sea bass relative to the 2004 limits.

Even though the overall 2005 commercial TALs for summer flounder and black sea bass under this alternative are the same as in 2004, the adjusted commercial quotas and recreational harvest limits are slightly different than the allocations implemented in 2004 mainly due to differences in the research set-aside used to derived adjusted allocations during those two time periods.

Commercial Impacts

<u>Vessels affected under the most restrictive alternative (Alternative 2)</u>

The analysis of the harvest levels under this alternative indicate that the economic impacts ranged from expected revenue losses in the order of 30-39 percent for 10 vessels that landed scup only and 3 vessels that landed scup and black sea bass to increase in revenue for 191 vessels that landed black sea bass only or a combination of black sea bass with the other two species (Table 22). The majority of the revenue losses of 5 percent or higher are attributed to quota reductions associated with the scup fishery. All vessels with revenue losses of 5 percent or higher had landed scup only, or a combination of scup with the other two species. Since there is a number of vessel that could experience large revenue reductions under this alternative, additional analysis regarding these vessels is presented below (e.g., evaluation of permit status, geographic distribution of permitted vessel). Since Alterative 2 is the most restrictive alternative, impacts of other alternatives will be less than the impacts under this alternative (section 5.1.2 of the RIR/IRFA).

Of the 105 vessels showing revenue reduction of 5 to 39 percent, 65 are identified as holders of federal summer flounder, scup, or black sea bass permits. The 65 vessels holding various combinations of summer flounder, scup, and black sea bass permits are described in Table 23. It is most common for vessels to have permits for all 3 species and scup/black sea bass.

Many of the vessel projected to have revenue reductions in the 5 to 39 percent range hold permits in other fisheries (Table 24). In particular, most vessels have bluefish, dogfish, and squid-mackerel-butterfish. As a result, they have access to some alternative fisheries, although some like multispecies and scallops, are already under heavy regulation and likely to have increasingly stringent catch limits for the near future.

The majority of the 65 vessels with federal permits for summer flounder, scup and/or black sea bass have home ports in New York. The principal ports of landing for these vessels are mainly located in New York as well (Table 25).

Although the summer flounder quota is allocated to the individual states, vessels are not necessarily constrained to land in their home state. It is useful, therefore, to examine the degree to which vessels from different states make it a practice to land in states other than their home state. Thus, of the four states home-porting vessels projected to have revenue reductions in the 5 to 39 percent range (Massachusetts, New Jersey, New York, and Rhode Island), vessels in those states are likely to land in their home port state (82-100 percent; Table 25). This information is important because impacts will occur both in the community of residence and in the community where the vessel’s catch is landed and sold.

The largest vessels are found in New Jersey (Table 25). Larger vessels often have more options than smaller vessels, due to increased range and more deck space for alternative gear configurations. This can help them to respond to cuts in quota in particular states. They also, however, need larger volumes to remain profitable.

Most commercial vessels showing revenue reductions in the 5 to 39 percent range are concentrated in New York (Table 26). Within this state, the most impacted counties are: Suffolk and Kings. Some individual ports with large numbers of impacted vessels are: Montauk and New York. Other impacted counties are Barnstable in Massachusetts; Monmouth and Ocean in Maryland; and Washington in Rhode Island. If communities having larger numbers of impacted vessels also have a larger total numbers of vessels, the proportion that may be impacted thus may be lower. This effect may mitigate the impacts on the community as a whole.

To further characterize the potential impacts on indirectly impacted entities and the larger communities within which owners of impacted vessels reside, selected county profiles were constructed. Each profile are based on impacts under the most restrictive possible alternative. The most restrictive alternative is chosen to identify impacted counties because it would identify the maximum number possible and thus include the broadest possible range of counties in the analysis. Reported statistics including demographic statistics, employment, and wages for these counties is presented in section 6.1 of the RIR/IRFA. In addition, a description of important ports and communities to the summer flounder, scup, and black sea bass fisheries is presented in Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP. Recent landings patterns among ports is examined in section 6.5.1. Note that in the analysis to assess the impacts of the summer flounder alternatives for 2006 conducted below there were no counties identified to be impacted as a consequence of the proposed summer flounder quota for that year.

In addition to the threshold analysis described above, the Council also analyzed changes in total ex-vessel gross revenue that would occur as a result of the quota alternatives. Assuming 2003 ex-vessel prices (summer flounder -- \$1.61/lb; scup -- \$0.60/lb; and black sea bas --\$2.02/lb), the 2005 quotas associated with alternative 2 would approximately increase black sea bass ex-vessel revenues by approximately \$202 thousand and decrease revenues for summer flounder and scup by < \$81 thousand and \$2.6 million relative to 2004, respectively.

Assuming the decrease in summer flounder total ex-vessel gross revenues associated with alternative 2 is distributed equally between the 839 vessels that landed summer flounder in 2003, the average decrease in revenue associated with the decrease in summer flounder quota is \$95/vessel. Assuming the decrease in scup total ex-vessel gross revenues associated with this alternative is distributed equally between the 566 vessels that landed scup in 2003, the average decrease in revenue associated with the decrease in scup quota is \$4,654/vessel. Finally, if the increase in black sea bass total ex-vessel gross revenues associated with this alternative is distributed equally between the 702 vessels that landed black sea bass in 2003, the average increase in revenue associated with the increase in black sea bass quota is \$288/vessel.

The overall reduction in ex-vessel gross revenue associated with the three species combined in 2005, relative to 2004, is approximately \$2.5 million (assuming 2003 ex-vessel prices) under alternative 2. If this is distributed among the 1,040 vessels that landed summer flounder, scup, and black sea bass in 2003, the average decrease in revenue is approximately \$2,416/vessel. The changes in gross revenues associated with the potential changes in landings in 2005 versus 2004 assumed static prices for summer flounder, scup, and black sea bass. However, if prices for these species decrease or increase as a consequence of changes in landings, then the associated revenue increases and decreases could be different than those estimated above.

Recreational Impacts

Recreational landings for all three fisheries have fluctuated over the past several years. The number of trips targeting a given species in any given year is quite variable. In the aggregate, total number of recreational trips (all modes combined) in the North Atlantic and Mid-Atlantic subregions combined have remained relatively stable with a slight downward trend for the 1990 to 2002 time period. On average, for the 1990-2002 period, approximately 23.0 million marine recreational fishing trips (all modes combined) were taking in the North Atlantic and Mid-Atlantic subregions combined. For that period, marine recreational trips ranged from 18.0 million trips in 1992 to 30.2 million trips in 2001. In addition, the number of party/charter boat trips taken in the North Atlantic and Mid-Atlantic subregions combined have fluctuated throughout the 1990-2002 period, ranging from 2.6 million trips in 1993 to 1.1 million trips in 1999. On average, for the 1990-2002 period, 1.8 million party/charter marine fishing trips were taken in the North Atlantic and Mid-Atlantic sub-regions combined. In 2000, 2001, and 2002 1.4, 1.6, and 1.3 million party/charter boat trips were taken in the North Atlantic and Mid-Atlantic subregions combined, respectively.

At the present time, there is neither behavioral nor demand data available to estimate how sensitive party/charter boat anglers might be to proposed fishing regulations. In the summer flounder, scup, and black sea bass fisheries, there is no mechanism to deduct overages directly from the recreational harvest limit. Any overages must be addressed by way of adjustments to the management measures. While it is likely that proposed management measures may restrict the recreational fishery for 2005, and these measures may cause some decrease in recreational satisfaction (i.e., low bag limit, larger fish size or closed season), there is no indication that any of these measures may lead to a decline in the demand for party/charter boat trips. Currently, the market demand for this sector is relatively stable. It is unlikely that these measures will result in any substantive decreases in the demand for party/charter boat trips. It is likely that party/charter anglers will target other species when faced with potential reductions in the amount of summer flounder or scup that they are allowed to catch (section 5.1.2 of the RIR/IRFA).

Other Impacts

The impacts of non-quota management measures described in alternative 1 above also apply here.

Combined socioeconomic impacts of Alternative 3 (least restrictive)

The same overall discussion regarding the social impacts of quotas and characterization of the summer flounder, scup, and black sea bass fisheries by port and community presented under alternative 1 also applies here.

The least restrictive quotas for summer flounder, scup, and black sea bass for year 2005 (adjusted for overages and research set-aside)are 15, 34, and 12 percent higher relative to the quotas specified (adjusted quotas) for those species in 2004, respectively. In addition, adjusted recreational limits for year 2005 are 15, 31, and 4 percent higher for summer flounder, scup, and black sea bass relative to the 2004 limits, respectively.

Commercial Impacts

Vessels affected under the least restrictive alternative (Alternative 3)

The results of the analysis for this alternative indicates that across all vessel classes, a total of 1,040 vessels were projected to be impacted by revenue increase (relative to 2004). There were no vessels projected to incur revenue losses relative to 2004 (section 5.1.3 of the RIR/IRFA).

The overall negative projected summer flounder quota for Delaware is the consequence of overages in previous years and projected 2004 overages. Even though, the Delaware overall summer flounder quota for 2005 (adjusted) is projected to be zero, there were no vessels impacted to incur in revenue losses. Summer flounder landings in Delaware are typically only a few thousand ponds per year and it is possible that vessels landing small quantities of summer flounder in Delaware also landed larger quantities of summer flounder in other states, thus benefitting from the increase in quota in those other states in 2005 versus 2004. In addition, it is possible that some of these vessels also landed scup and black sea bass along with summer flounder, thus benefitting from the increase in scup and black sea bass quotas in 2005 and therefore not showing a reduction in ex-vessel revenue (section 5.1.3 of the RIR/IRFA).

In addition to the threshold analysis described above, the Council also analyzed changes in total ex-vessel gross revenue that would occur as a result of the quota alternatives. Assuming 2003 ex-vessel prices (summer flounder -- $1.61/lb; scup -- $0.60/lb; and black sea bass -- $2.02/lb), the 2005 quotas associated with alternative 3 would increase summer flounder, scup, and black sea bass by approximately $4.2 million, $2.5 million, and $889 thousand, respectively, relative to 2004.

Assuming the increase in summer flounder total ex-vessel gross revenues associated with alternative 3 is distributed equally between the 839 vessels that landed summer flounder in 2003, the average increase in revenue associated with the increase in summer flounder quota is $4,970/vessel. Assuming the increase in scup total gross revenues associated with this alternative is distributed equally between the 566 vessels that landed scup in 2003, the average increase in revenue associated with the increase in scup quota is $4,442/vessel. Finally, if the increase in black sea bass total gross revenues associated with this alternative is distributed equally between the 702 vessels that landed black sea bass in 2003, the average increase in revenue associated with the increase in black sea bass quota is $1,266/vessel.

The overall change in gross revenue associated with the three species combined in 2005 relative to 2004 is approximately $7.6 million (assuming 2003 ex-vessel prices) under alternative 3. If this is distributed among the 1,040 vessels that landed summer flounder, scup, and black sea bass in 2003, the average increase in revenue is approximately $7,281/vessel. The changes in gross revenues associated with the potential changes in landings in 2005 versus 2004 assumed static prices for summer flounder, scup, and black sea bass. However, if prices for these species decrease or increase as a consequence of changes in landings, then the associated revenue increases and decreases could be different than those estimated above.

Recreational Impacts

At the present time, there is neither behavioral nor demand data available to estimate how sensitive party/charter boat anglers might be to proposed fishing regulations. Given that the proposed management measures under this alternative are not expected to restrict the recreational summer flounder, scup, or black sea bass fisheries for 2005 relative to 2004, it is not anticipated that restrictive measures would be required under this alternative. It is not anticipated that these measures will result in decrease in the demand for party/charter boat trips or affect angler participation in a negative manner (section 5.1.3 of the RIR/IRFA).

Other Impacts

The impacts of non-quota management measures described in alternative 1 above also apply here.

Socioeconomic impacts of summer flounder alternatives in 2006

Quota Alternative 2 (Most Restrictive)

Under this alternative, the summer flounder specifications would result in an aggregate 2 percent decrease in allowable commercial landings and recreational harvest limit in 2006 relative to the 2004.

Even though the overall 2006 TAL for summer flounder under this alternative is the same as in 2004, the adjusted commercial quota and recreational harvest limit are slightly different than the allocations implemented in 2004 mainly due to differences in the research set-asides used to derived adjusted allocations during those two time periods.

Commercial Impacts

Vessels affected under the 2006 summer flounder most restrictive quota harvest level (Alternative 2)

The results of the threshold analysis indicate that across all vessel classes, a total of 836 vessels were projected to incur in a revenue reduction of < 5 percent. However, given the small reduction in commercial landings associated with the adjusted 2006 quota relative to the adjusted 2004 quota (2 percent decrease), the average revue loss for these vessels is likely to be around the 2 percent level. Even though this is the most restrictive summer flounder alternative for 2006, there are no vessels projected to incur in revenue losses of more than 5 percent in 2006 relative to 2004 (section 5.2.2 of the RIR/IRFA).

In addition to the threshold analysis described above, the Council also analyzed changes in total ex-vessel gross revenue that would occur as a result of this quota alternative. Assuming 2003 ex-vessel price ($1.61/lb), the 2006 quota associated with alternative 2 would decrease summer flounder ex-vessel revenue by approximately $564 thousand relative to 2004. Assuming the decrease in summer flounder total ex-vessel gross revenues associated with alternative 2 is distributed equally between the 839 vessels that landed summer flounder in 2003, the average decrease in revenue associated with the decrease in summer flounder quota is $672/vessel. The change in gross revenues associated with the potential changes in landings in 2006 versus 2004 assumed static prices for summer flounder. However, if price for this species decrease or increase as a consequence of changes in landings, then the associated revenue increases and decreases could be different than those estimated above.

Recreational Impacts

At the present time, there is neither behavioral nor demand data available to estimate how sensitive party/charter boat anglers might be to proposed fishing regulations. In the summer flounder, scup, and black sea bass fisheries, there is no mechanism to deduct overages directly from the recreational harvest limit. Any overages must be addressed by way of adjustments to the management measures. While it is likely that proposed management measures may restrict the recreational fishery for 2006, and these measures may cause some decrease in recreational satisfaction (i.e., low bag limit, larger fish size or closed season), there is no indication that any of these measures may lead to a decline in the demand for party/charter boat trips. Currently, the market demand for this sector is relatively stable. It is unlikely that these measures will result in any substantive decreases in the demand for party/charter boat trips or negatively affect angler satisfaction (section 5.2.2 of the RIR/IRFA).

Other Impacts

The current summer flounder minimum fish size, minimum mesh regulations, and minimum mesh threshold regulations will remain unchanged in 2005 and 2006. The continuation of these alternatives is not expected to result in changes to the economic and social aspects of the fishery relative to 2004.

Effects of the research set-aside

The discussion regarding the impacts of the research set-aside presented above also applies here.

Quota Alternative 3 (Least Restrictive)

Under this alternative, the summer flounder specifications would result in an aggregate 23 percent increase in allowable commercial landings and recreational harvest limit in 2006 relative to the 2004.

Commercial Impacts

Vessels affected under the 2006 summer flounder least restrictive quota harvest level (Alternative 3)

The results of the threshold analysis indicate that across all vessel classes, a total of 835 vessels were projected to be impacted by revenue increase (relative to 2004) and 1 vessel was projected to incur in a revenue reduction of < 5 percent. There are no vessels projected to incur in revenue losses of 5 percent or more (section 5.2.3 of the RIR/IRFA).

In addition to the threshold analysis described above, the Council also analyzed changes in total ex-vessel gross revenue that would occur as a result of this quota alternative. Assuming 2003 ex-vessel price ($1.61/lb), the 2006 quota associated with alternative 1 would increase summer flounder ex-vessel revenue by approximately $3.9 million relative to 2004. Assuming the increase in summer flounder total ex-vessel gross revenues associated with alternative 1 is distributed equally between the 839 vessels that landed summer flounder in 2003, the average increase in revenue associated with the increase in summer flounder quota is $4,701/vessel. The change in gross revenues associated with the potential changes in landings in 2006 versus 2004 assumed static prices for summer flounder. However, if price for this species decrease or increase as a consequence of changes in landings, then the associated revenue increases and decreases could be different than those estimated above.

Recreational Impacts

The proposed recreational limit under this alternative is not expected to restrict the recreational summer flounder fishery for 2006 relative to 2004. Given that the summer flounder limit is projected to increase, it is not anticipated that angler satisfaction or the demand for party/charter boat trips will be adversely affected in 2006 relative to 2004.

Other Impacts

The current summer flounder minimum fish size, minimum mesh regulations, and minimum mesh threshold regulations will remain unchanged in 2005 and 2006. The continuation of these alternatives is not expected to result in changes to the economic and social aspects of the fishery relative to 2004.

Effects of the research set-aside

The discussion regarding the impacts of the research set-aside presented above also applies here.

8.0 ESSENTIAL FISH HABITAT ASSESSMENT

Summer flounder, scup and black sea bass have EFH designated in many of the same bottom habitats that have been designated as EFH for most of the MAFMC managed species. Such MAFMC-managed species include surfclams/ocean quahogs, squid/mackerel/butterfish, bluefish, and dogfish, as well as the New England Fishery Management Council species of groundfish within the Northeast Multispecies FMP, including: Atlantic cod, haddock, monkfish, ocean pout, American plaice, pollock, redfish, white hake, windowpane flounder, winter flounder, witch flounder, yellowtail flounder, Atlantic halibut, and Atlantic sea scallops. Numerous species within the NMFS Highly Migratory Species Division and the South Atlantic Fishery Management Council have EFH identified in areas also identified as EFH for summer flounder, scup and black sea bass. Broadly, EFH is designated as the pelagic and demersal waters along the continental shelf from off southern New England through the south Atlantic to Cape Canaveral, Florida. The specific identification and description of summer flounder, scup, and black sea bass EFH is detailed in section 3.2.4 of Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP.

Summer flounder, scup, and black sea bass are demersal species that have associations with substrates, submerged aquatic vegetation, and structured habitat (Packer and Griesbach 1999, Steimle *et al.* 1999 a-b). Specific habitats that are designated as EFH and are important to these species are as follows:

Summer Flounder: pelagic waters, demersal waters, saltmarsh creeks, sea grass beds, mudflats, open bay areas

Scup: demersal waters, sands, mud, mussel and eelgrass beds

Black Sea Bass: pelagic waters, structured habitat (e.g., sponge beds), rough bottom shellfish, sand and shell

Under the EFH Final Rule, "Councils must act to prevent, mitigate, or minimize any adverse effect from fishing, to the extent practicable, if there is evidence that a fishing activity adversely affects EFH in a manner that is more than minimal and not temporary in nature..." "Adverse effect" means any impact that reduces the quality or quantity of EFH.

Summer flounder, scup, and black sea bass are primarily landed using otter trawls and pots/traps. The baseline, potential impacts of otter trawls and pots/traps are described in detail and evaluated in section 3.2.7.2.2 of Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP. That evaluation indicates that the baseline impact of otter trawls and pots/traps on EFH is "more than minimal and not temporary in nature" (section 3.2.7.2.2 of Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP). As such, in Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP the Council proposed alternatives to prevent, mitigate or minimize adverse effects from these gear (section 2.2 of Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP) and evaluated those alternatives for practicability (section 4.2 of Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP).

However, the actions proposed in this EA are necessary to achieve target exploitation rates for summer flounder in 2005 and 2006, and scup and black sea bass in 2005, and other commercial management measures. The impacts of the actions proposed in this EA, on EFH, are described in detail in section 7.0.

In summary, the 2005 and 2006 summer flounder commercial quotas and 2005 black sea bass commercial quotas are higher than those specified for 2004. The proposed 2005 scup commercial quota is status quo. However, a change in quota is not necessarily directly proportional to a change in fishing effort. As discussed in section 7.0, with improving stock abundance, fishermen may be able to catch more fish with less or constant effort. Conversely, fishing effort could increase as vessels take more, or longer trips, to land the higher quota. Tables 11-13 present the range of potential habitat impacts that could occur under each of the various quota alternatives for each of the three species. Therefore, the measures proposed in this specification package may have adverse effects to EFH that range from increased adverse impacts to impacts that are less than existing impacts. The non-quota setting specifications associated with this action will not have an adverse effect on EFH. Since the change in the quota for each species is a balance of meeting the FMP objectives of improving yield while ensuring that overfishing does not occur, and due to the lack of direct evidence to suggest that fishing effort on bottom habitats will actually increase due to this action, it is expected that this action minimizes the adverse effects of fishing on EFH to the extent practicable, pursuant to section 305(a)(7) of the Magnuson-Stevens Fishery Conservation and Management Act.

9.0 OTHER APPLICABLE LAWS

9.1 NEPA

Finding of no significant impact

National Oceanic and Atmospheric Administration Administrative Order (NAO) 216-6 (revised May 20, 1999) provides nine criteria for determining the significance of the impacts of a proposed fishery management action. The significance of this fishery management action is analyzed through this EA. These criteria are discussed below:

1. *Can the proposed action be reasonably expected to jeopardize the sustainability of any target species that may be affected by the action?*

The proposed action is not expected to jeopardize the sustainability of any target species that may be affected by the action, as described in section 7.0

of the EA. All of the proposed quota specifications under the preferred alternative are consistent with the FMP overfishing definitions. This action will protect the long-term sustainability of the summer flounder, scup, and black sea bass stocks, as well as afford protection for several other stocks of fish.

2. *Can the proposed action be reasonably expected to allow substantial damage to the ocean and coastal habitats and/or EFH as defined under the Magnuson-Stevens Act and identified in FMPs?*

The proposed action as described in section 7.0 of the EA is not expected to cause damage to the ocean, coastal habitats, and/or EFH as defined under the Magnuson-Stevens Act and identified in the FMP. In general, bottom-tending mobile gear, primarily otter trawls, have the potential to adversely effect EFH for the species detailed in section 6.2 of the EA.

Overall, the measures proposed in this action are expected to have effects ranging from a reduction in adverse effects to no more than minimal adverse impacts to any EFH associated with the fishing activities managed under the FMP.

3. *Can the proposed action be reasonably expected to have a substantial adverse impact on public health or safety?*

This action proposes commercial quotas and other management measures for summer flounder in 2005 and 2006 and for scup and black sea bass in 2005. None of the measures alters the manner in which the industry conducts fishing activities for the target species. Therefore, there is no change in fishing behavior that would affect safety. The overall effect of the proposed actions on these fisheries, including the communities in which they operate, will not impact adversely public health or safety. NMFS will consider comments received concerning safety and public health issues.

4. *Can the proposed action be reasonably expected to have an adverse impact on endangered or threatened species, marine mammals, or critical habitat of these species?*

This action proposes commercial quotas and other management measures for summer flounder in 2005 and 2006 and for scup and black sea bass in 2005. None of the specifications are expected to alter fishing methods or activities. Therefore, this action is not expected to affect endangered or threatened species or critical habitat in any manner not considered in previous consultations on the fisheries. It has been determined that fishing activities conducted under this proposed rule will have no adverse impacts on endangered or threatened species, marine mammals, or their critical habitat.

5. *Can the proposed action be reasonably expected to result in cumulative adverse effects that could have a substantial effect on the target species or non-target species?*

The cumulative effects of the proposed action on target and non-target species are detailed in section 7.5 of the EA. The proposed measures are not expected to alter fishing methods or activities. As such, the proposed measures are not expected to result in any cumulative effects on target or non-target species.

6. *Can the proposed action be reasonably expected to jeopardize the*

sustainability of any non-target species?

The proposed action is not expected to jeopardize the sustainability of any non-target species, as discussed in section 7.0 of the EA.

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

The proposed action is not expected to have a substantial impact on biodiversity and ecosystem function within the affected area. This action merely revises the proposed annual commercial quotas and other management measures for the summer flounder fisheries in 2005 and 2006 and for scup and black sea bass fisheries in 2005.

8. *Are significant social or economic impacts interrelated with significant natural or physical environmental effects?*

As discussed in section 7.0 of the EA, the proposed specifications for summer flounder in 2005 and 2006 and for scup and black sea bass in 2005 are not expected to result in significant social or economic impacts or significant natural or physical environmental effects. Therefore, there are no significant social or economic impacts interrelated with significant natural or physical environmental impacts.

9. *To what degree are the effects on the quality of human environment expected to be highly controversial?*

The impacts of the proposed measures on the human environment are described in section 7.0 of the EA. The proposed action merely revises the proposed annual commercial quotas and other management measures for the summer flounder fisheries in 2005 and 2006 and for scup and black sea bass fisheries in 2005. The measures contained in this action are not expected to be highly controversial.

FONSI Statement

Having reviewed the environmental assessment on the specifications for the summer flounder fisheries in 2005 and 2006 and for scup and black sea bass fisheries in 2005 and the available information relating to the action, I have determined that there will be no significant environmental impact, including cumulative impacts, resulting from the action and that preparation of an environmental impact statement on the action is not required by section 102 (2)(c) of the National Environmental Policy Act or its implementing regulations.

______________________________ _________________
Assistant Administrator for Date
Fisheries, NOAA

9.2 Endangered Species Act

Sections 6.3 and 7.5.4 of the EA should be referenced for an assessment of the impacts of the proposed action on endangered species and protected resources. None of the specifications proposed in this document are expected to alter fishing methods or activities. Therefore, this action is not expected to affect endangered or threatened species or critical habitat in any manner not considered in previous consultations on the fisheries.

9.3 Marine Mammal Protection Act

Sections 6.3 and 7.5.4 of the EA should be referenced for an assessment of the impacts of the proposed action on marine mammals. None of the specifications proposed in this document are expected to alter fishing methods or activities. Therefore, this action is not expected to affect marine mammals or critical habitat in any manner not considered in previous consultations on the fisheries.

9.4 Coastal Zone Management Act

The Coastal Zone Management Act (CZMA) of 1972, as amended, provides measures for ensuring stability of productive fishery habitat while striving to balance development pressures with social, economic, cultural, and other impacts on the coastal zone. It is recognized that responsible management of both coastal zones and fish stocks must involve mutually supportive goals.

The Council must determine whether the FMP will affect a state's coastal zone. If it will, the FMP must be evaluated relative to the state's approved CZM program to determine whether it is consistent to the maximum extent practicable. The states have 60 days in which to agree or disagree with the Council's evaluation. If a state fails to respond within 60 days, the state's agreement may be presumed. If a state disagrees, the issue may be resolved through negotiation or, if that fails, by the Secretary.

The Council determined that the action in this specifications package is consistent to the maximum extent practicable with the enforceable provisions of the approved coastal management programs as understood by the Council. This determination was submitted for review by the responsible state agencies on October 8, 2004 under section 307 of the Coastal Zone Management Act. Letters were sent to each of the following states (point of contact in parentheses) within the management unit reviewing the consistency of the proposed action relative to each state’s Coastal Zone Management Program: Maine (Kathleen Leyden), New Hampshire (Brian Mazerski), Massachusetts (Joe Pelcarski), Rhode Island (Grover Fugate), Connecticut (Charles Evans), New York (William Barton), New Jersey (Mark Mauriello), Pennsylvania (Lawrence Toth), Delaware (Sarah Cooksey), Maryland (Gwynne Schultz), Virginia (Silvia Gazzera), and North Carolina (Steven Benton).

9.5 Administrative Procedure Act

Sections 551-553 of the Federal Administrative Procedure Act establish procedural requirements applicable to informal rulemaking by federal agencies. The purpose is to ensure public access to the federal rulemaking process and to give the public notice and an opportunity to comment before the agency promulgates new regulations.

The Administrative Procedure Act requires solicitation and review of public comments on actions taken in the development of a fishery management plan and subsequent amendments and framework adjustments. Development of this specifications document provided many opportunities for public review, input, and access to the rulemaking process. This proposed specifications document was developed as a result of a multi-stage process that involved review of the source document (2005 Specifications package) by affected members of the public. The public had the opportunity to review and comment on management measures during the Summer Flounder, Scup, and Black Sea Bass Monitoring

Committee Meeting held on July 26-27, 2004 and during the MAFMC meeting held on August 10-12, 2004 in Baltimore, Maryland. In addition, the public will have further opportunity to comment on this specifications package once NMFS publishes a request for comments notice in the Federal Register (FR).

9.6 Section 515 (Data Quality Act)

Utility of Information Product

The proposed document includes: A description of the 2005 specifications, the proposed changes to the implementing regulations of the FMP, description of the alternatives considered, and the reasons for selecting the proposed management measures. This action proposes commercial quotas and other management measures for summer flounder in 2005 and 2006 and for scup and black sea bass in 2005. This proposed specifications document implements the FMP's conservation and management goals consistent with the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) as well as all other existing applicable laws.

This proposed specifications document was developed as a result of a multi-stage process that involved review of the source document (2005 Specifications package) by affected members of the public. The public had the opportunity to review and comment on management measures during the Summer Flounder, Scup, and Black Sea Bass Monitoring Committee Meeting held on July 26-27, 2004 and during the MAFMC meeting held on August 10-12, 2004 in Baltimore, Maryland.

The Federal Register notice that announces the proposed rule and the implementing regulations will be made available in printed publication and on the website for the Northeast Regional Office. The notice provides metric conversions for all measurements.

Integrity of Information Product

The information product meets the standards for integrity under the following types of documents:

Other/Discussion (e.g., Confidentiality of Statistics of the Magnuson-Stevens Fishery Conservation and Management Act; NOAA Administrative Order 216-100, Protection of Confidential Fisheries Statistics; 50 CFR 229.11, Confidentiality of information collected under the Marine Mammal Protection Act.)

Objectivity of Information Product

The category of information product that applies for this product is “Natural Resource Plans.”

In preparing specifications documents, the Council must comply with the requirements of the Magnuson-Stevens Act, the National Environmental Policy Act, the Regulatory Flexibility Act, the Administrative Procedure Act, the Paperwork Reduction Act, the Coastal Zone Management Act, the Endangered Species Act, the Marine Mammal Protection Act, the Data Quality Act, and Executive Orders 12630 (Property Rights), 12866 (Regulatory Planning), 13132 (Federalism), and 13158 (Marine Protected Areas).

This specifications document has been developed to comply with all applicable National Standards, including National Standard 2. National Standard 2 states that the FMP's conservation and management measures shall be based upon the best scientific information available. Despite current data limitations, the conservation and management measures proposed to be implemented under this specifications document are based upon the best scientific information available. This information includes NMFS dealer weighout data for 2003, which was used to characterize the economic impacts of the management proposals. These data, as well as the NMFS Observer program database, were used to characterize historic landings, species co-occurrence in the summer flounder, scup, and black sea bass catch, and discarding. The specialists who worked with these data are familiar with the most recent analytical techniques and with the available data and information relevant to the summer flounder, scup, and black sea bass fisheries. Marine Recreational Fisheries Statistics Survey data were used to characterize the recreational fishery for these species.

The policy choices (i.e., management measures) proposed to be implemented by this specifications document are supported by the available scientific information and, in cases where information was unavailable, proxy reference points are based on observed trends in survey data. The management measures contained in the specifications document are designed to meet the conservation goals and objectives of the FMP, and prevent overfishing and rebuild overfished resources, while maintaining sustainable levels of fishing effort to ensure a minimal impact on fishing communities.

The supporting materials and analyses used to develop the measures in the proposed rule are contained in the specifications document and to some degree in previous specifications and/or FMPs as specified in this document.

The review process for this specifications package involves the Mid-Atlantic Fishery Management Council, the Northeast Fisheries Science Center, the Northeast Regional Office, and NOAA Fisheries headquarters. The Center's technical review is conducted by senior level scientists with specialties in population dynamics, stock assessment methods, demersal resources, population biology, and the social sciences. The Council review process involves public meetings at which affected stakeholders have opportunity to provide comments on the specifications document. Review by staff at the Regional Office is conducted by those with expertise in fisheries management and policy, habitat conservation, protected species, and compliance with the applicable law. Final approval of the specifications document and clearance of the rule is conducted by staff at NOAA Fisheries Headquarters, the Department of Commerce, and the U.S. Office of Management and Budget.

9.7 Paperwork Reduction Act

The Paperwork Reduction Act (PRA) concerns the collection of information. The intent of the PRA is to minimize the Federal paperwork burden for individuals, small businesses, state and local governments, and other persons as well as to maximize the usefulness of information collected by the Federal government. There are no changes to the existing reporting requirements previously approved under this FMP for vessel permits, dealer reporting, or vessel logbooks. This action does not contain a collection-of-information requirement for purposes of the Paperwork Reduction Act.

9.8 Impacts of the Plan Relative to Federalism/EO 13132

This specifications document does not contain policies with federalism implications sufficient to warrant preparation of a federalism assessment under Executive Order (EO) 13132.

9.9 Environmental Justice/EO 12898

This EO provides that "each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations. " EO 12898 directs each Federal agency to analyze the environmental effects, including human health, economic, and social effects of Federal actions on minority populations, low-income populations, and Indian tribes, when such analysis is required by NEPA. Agencies are further directed to "identify potential effects and mitigation measures in consultation with affected communities, and improve the accessibility of meetings, crucial documents, and notices."

The proposed actions are not expected to affect participation in the summer flounder, scup, and black sea bass fisheries. Since the proposed action represents no change relative to the current level of participation in these fisheries, no negative economic or social effects are anticipated as a result (section 7.0). Therefore, the proposed action under the preferred alternatives is not expected to cause disproportionately high and adverse human health, environmental or economic effects on minority populations, low-income populations, or Indian tribes.

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11.0 LIST OF PREPARERS OF THE ENVIRONMENTAL ASSESSMENT

The summer flounder, scup and black sea bass specifications were submitted to the NMFS by the MAFMC. This specifications package was prepared by the following members of the MAFMC staff: Dr. Christopher M. Moore, Dr. José L. Montañez, James Armstrong, Kathy M. Collins, Shannon Lyons, and Deborah Donnangelo. Dr. Eric Thunberg (NEFSC) assisted in documenting the analysis of permit data.

12.0 LIST OF AGENCIES AND PERSONS CONSULTED

In preparing this specifications document the Council consulted with the NMFS, New England and South Atlantic Fishery Management Councils, Fish and Wildlife Service, and the states of Maine through North Carolina through their membership on the Mid-Atlantic and New England Fishery Management Councils. In addition, states that are members within the management unit were be consulted through the Coastal Zone Management Program consistency process. Letters were sent to each of the following states (point of contact in parentheses) within the management unit reviewing the consistency of the proposed action relative to each state’s Coastal Zone Management Program: Maine (Kathleen Leyden), New Hampshire (Brian Mazerski), Massachusetts (Joe Pelcarski), Rhode Island (Grover Fugate), Connecticut (Charles Evans), New York (William Barton), New Jersey (Mark Mauriello), Pennsylvania (Lawrence Toth), Delaware (Sarah Cooksey), Maryland (Gwynne Schultz), Virginia (Silvia Gazzera), and North Carolina (Steven Benton).

In order to ensure compliance with NMFS formatting requirements, the advice of NMFS Northeast Region personnel, including Sarah Thompson, Sarah McLaughlin, Michael Pentony, and Jennifer Anderson was relied upon during document preparation.

REGULATORY IMPACT REVIEW/INITIAL REGULATORY FLEXIBILITY ANALYSIS

1.0 INTRODUCTION

The National Marine Fisheries Service (NMFS) requires the preparation of a Regulatory Impact Review (RIR) for all regulatory actions that either implement a new Fishery Management Plan (FMP) or significantly amend an existing plan. This RIR is part of the process of preparing and reviewing FMPs and provides a comprehensive review of the changes in net economic benefits to society associated with proposed regulatory actions. This analysis also provides a review of the problems and policy objectives prompting the regulatory proposals and an evaluation of the major alternatives that could be used to solve the problems. The purpose of this analysis is to ensure that the regulatory agency systematically and comprehensively considers all available alternatives so that the public welfare can be enhanced in the most efficient and cost-effective way. This RIR addresses many items in the regulatory philosophy and principles of Executive Order (E.O.) 12866.

Also included is a Initial Regulatory Flexibility Analysis (IRFA) to evaluate the economic impacts of the alternatives on small business entities. This analysis is undertaken in support of a more thorough analysis for the commercial specifications for summer flounder (2005 and 2006), scup (2005), and black sea bass (2005). The economic analyses presented for the various alternatives are principally for the commercial fishery. While general statements regarding potential changes in the recreational fishery due to changes in recreational harvest limits for summer flounder, scup, and black sea bass are made in this document, the effects of specific recreational management measures (i.e., bag limits, size limits, seasonal closures) will be analyzed when the Council and Board submit recommendations for 2005 recreational measures. The Council and the Board will meet in December 2004 to adopt 2005 recreational management measures, when more complete data regarding 2004 recreational landings are available. A comprehensive document for the recreational specifications for summer flounder, scup, and black sea bass will be prepared after the December Council meeting.

2.0 EVALUATION OF E.O. 12866 SIGNIFICANCE

2.1 Description of the Management Objectives

A complete description of the purpose and need and objectives of this proposed rule is found under section 4.0 of the EA. This action is taken under the authority of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) and regulations at 50 CFR part 648.

2.2 Description of the Fishery

A description of the summer flounder, scup, and black sea bass fisheries is presented in section 6.0 of the EA. A description of ports and communities that are dependent on summer flounder, scup, and black sea bass is found in section 3.4.2 of Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP. Recent landings patterns among ports is examined in section 6.5.1 of the EA. An analysis of permit data is found in section 6.5.2 of the EA.

2.3 A Statement of the Problem

A statement of the problem for resolution is presented under section 4.0 of the EA.

2.4 A Description of Each Alternative

A full description of the alternatives analyzed in this section and the TAL derivation process is presented in sections 4.0 and 5.0 of the EA. A brief description of each alternative is presented below for reference purposes.

2.5 The Economic Effects of the Summer Flounder, Scup, and Black Sea Bass Effort Reductions

The economic benefits of the summer flounder, scup and black sea bass FMP have been evaluated periodically as amendments to the FMP have been implemented to either change the effort reduction schedule or as new species have been added. These analyses have been conducted at the time a major amendment is developed and interim actions (framework adjustments or quota specifications) may be presumed to leave the conclusions reached in the initial benefit-cost analyses unchanged provided the original conservation and economic objectives of the plan are being met. The summer flounder coastwide quota has been implemented since 1993. While in some years overages have occurred in the commercial/and or recreational sectors (section 7.5 of the EA), adjustments have been made to bring overall landings within the quota specifications. Preliminary assessment of the 2004 fishing season indicates that overages will not occur if current landings patterns continue. The latest assessment indicates that the stock is not overfished but overfishing is occurring relative to the biological reference points detailed in Amendment 12. The fishing mortality rate estimated for 2002 is 0.29, a significant decline from the 1.32 estimated for 1994 and slightly above the threshold F of 0.26. In addition, total stock biomass has increased substantially since 1991 to 149 million lb in 2003, 27 percent above the biomass threshold (117 million lb). Spawning stock biomass has increased each year since 1993 to 109 million lb in 2003, the highest value in the time series (1981-2003; section 6.1.2.1 of the EA).

The economic effects of the scup effort reductions were evaluated at the time scup was added to the FMP through Amendment 8. The expected economic benefits and costs for the scup effort reduction were also described in qualitative terms. The scup coastwide quota has been implemented since 1997. While in some years overages have occurred in the commercial/and or recreational sectors (section 7.5 of the EA), adjustments have been made to bring overall landings within the quota specifications. A preliminary assessment of the 2004 fishing season indicates that overages will not occur this year (assuming that overages will not occur in the Summer or Winter II periods). At this time, the plan objectives appear to be met so there is a reasonable expectation that the expected economic benefits of managing scup will not be compromised. The most recent assessment on scup was completed in June, 2002 (35th SARC or Stock Assessment Review Committee). That assessment indicated that scup are no longer overfished "but stock status with respect to overfishing cannot currently be evaluated." The SARC also concluded that although "the relative exploitation rates have declined in recent years the absolute value of F cannot be determined." However, they did indicate that "survey data indicate strong recruitment and some rebuilding of age structure" in recent years. State and federal survey indices for scup indicate an increase in stock abundance in recent years. The NEFSC spring survey results indicate that spawning stock biomass has increased each year since 1998. Biomass estimates are based on three year averages and the estimate for 2003 (3 yr average of 2002-2004) is 3.74 kg/tow, or about 35 percent above the biomass threshold of 2.77 kg/tow that defines an overfished stock. Given that the index is above the biomass threshold, the stock is no longer considered overfished. The spring survey index increased significantly in 2004 relative to the low value derived in 2003; the index jumped from 0.15 to 1.82 kg/tow.

In fact, if the 2002 value from the survey series is excluded, the 2004 index is the highest value in the spring survey since 1978. The winter trawl survey exhibited a similar trend increasing from 0.49 kg/tow in 2003 to 3.82 kg/tow in 2004. In fact, the 2004 winter index was the second highest in the time series (1992 to 2004) by weight and the highest by number. In 2002 and 2003, the Council and Commission discussed the uncertainty associated with the spring survey estimate for 2002 and decided not to use it in setting the TAC. In fact, the 35th SARC noted the "high degree of inter-annual variation in individual survey indices." They noted that the "abundance of all age groups in the survey increased substantially as compared with the 2001 results" suggesting that increased availability of scup to the survey gear was an important determinant in the 2002 survey results (section 6.1.2.2 of the EA).

The economic effects of the black sea bass effort reductions were evaluated at the time black sea bass was added to the FMP through Amendment 9. The economic analysis presented at that time was largely qualitative in nature. The coastwide black sea bass quota has only been implemented from 1998 to 2004. While in some years overages have occurred in the commercial/and or recreational sectors (section 7.5 of the EA), adjustments have been made to bring overall landings within the quota specifications. Preliminary assessment of the 2004 fishing season indicates that overages will not occur if current landings patterns continue. At this time, the plan objectives appear to be met so there is a reasonable expectation that the expected economic benefits of managing black sea bass will not be compromised.

The most recent assessment on black sea bass, completed in June 2004, indicates that black sea bass are no longer overfished and overfishing is not occurring. Amendment 12 to the Summer Flounder, Scup and Black Sea Bass FMP, which was partially approved by NMFS in 1999, established a biomass threshold based on the spring survey. Specifically, the biomass threshold is defined as the maximum value of a three-year moving average of the NEFSC spring survey catch-per-tow (1977-1979 average of 0.9 kg/tow). The 2003 biomass index is 1.4 kg/tow (the three-year average for 2001-2003) or about 55 percent above the threshold. Based on this value, the stock is no longer overfished. Because of the potential influence of an extremely small or large number for a single tow, Gary Shepherd, NEFSC (pers. comm.) has suggested that the survey indices be log transformed to give a better indication of stock status. The transformed series indicates a general increase in the exploitable biomass since 1996. The index for 2002 of 0.799 kg/tow is the highest value in the time series (1968-2002). Although the biomass index declined to 0.493 kg/tow in 2003 and again in 2004 to 0.32 kg/tow, both the 2003 and 2004 index were above average. The three point moving average based on these survey results for the recent time period has steadily increased from a low of 0.093 kg/tow in 1997 to 0.537 kg/tow in 2003. The spring survey can also be used as an index of recruitment. The survey indicates good year classes were produced in 1988, 1990 through 1992, and 1995 and poor year classes in 1993, 1994, and 1996 through 1998. Results for 2000 indicate a strong year class; the index is 0.661 kg/tow, the highest in the time series. The 2002 year class was good; the index was about four times the average for the period and the third largest value since 1968. Preliminary results indicate that a below average year class was produced in 2004. Relative exploitation based on the total commercial and recreational landings and the moving average of the transformed spring survey index indicates a significant reduction in mortality from 1998 to 2003 relative to 1996 and 1997 levels. Based on tag recapture models, the F estimated for 2003 is less than 0.26; exploitation rates for 2003 ranged from 15-20 percent. However, preliminary F estimates for June 2003 to March 2004 ranged from 0.24 to 0.3 and the SARC working group indicated that "uncertainty remains in the tag reporting rates and may result in under estimated exploitation rates. Also, discard losses in the commercial fisheries were not estimated and remain an uncertain component of the fishery" (section 6.1.2.3 of the EA).

2.6 Analysis of Alternatives

In order to conduct a more thorough socioeconomic analysis, overall impacts of the three species combined were examined. The analyses conducted for all three alternatives examined the measures recommended by the Council for each of the three species combined. For example, for 2005, quota alternative 1 (preferred alternative) would include the three preferred alternatives for summer flounder, scup, and black sea bass combined; quota alternative 2 (most restrictive alternative) would include the three most restrictive alternatives for summer flounder, scup, and black sea bass combined; and quota alternative 3 (least restrictive alternative) would include the three most restrictive alternatives for summer flounder, scup, and black sea bass combined. Overall impacts (i.e., combined impacts of summer flounder, scup, and black sea bass) were examined because many of the vessels active in these fisheries participate in more than one or even all three of these fisheries.

As indicated in the EA, under the current management system, the TALs for these species are specified every year and apply only to the following year. However, Framework Adjustment 5, approved by the Council May 5, 2004 and submitted to NMFS May 12, 2004, allows for the specification of TALs for summer flounder, scup, and/or black sea bass fisheries in any given year for up to three years. The ASMFC Board approved similar measures in August, 2004. This modification to the FMP should relieve administrative demands on Council and NOAA Fisheries imposed by the annual specification process. Additionally, longer term specifications should provide greater regulatory consistency and predictability to the commercial and recreational fishing sectors. If Framework Adjustment 5 is not approved by January 1, 2005 the current management system of annual TALs will remain in effect. This specifications package details all management alternatives for summer flounder evaluated for a two year period (2005 and 2006), and all management measures for the scup and black sea bass fisheries for a one year period (2005). The two year summer flounder specifications will apply if the following takes place: a) Framework Adjustment 5 is approved by January 1, 2005; and 2) NMFS accepts the 2-year management specifications proposed by the Council and Commission. However, if the NMFS decides that the 2-year management alternatives are unacceptable or Framework Adjustment 5 is not approved by January 1, 2005, then only the first year of the proposed specifications (2005) will apply.

For each alternative potential impacts on several areas of interest are discussed. The objective of this analysis is to describe clearly and concisely the economic effects of the various alternatives. The types of effects that should be considered include the following changes in landings, prices, consumer and producer benefits, harvesting costs, enforcement costs, and distributional effects. Due to the lack of an empirical model for these fisheries and knowledge of elasticities of supply and demand, a qualitative approach to the economic assessment was adopted. Nevertheless, quantitative measures are provided whenever possible.

A more detailed description of the economic concepts involved can be found in "Guidelines for Economic Analysis of Fishery Management Actions" (NMFS 2000), as only a brief summary of key concepts will be presented here.

Benefit-cost analysis is conducted to evaluate the net social benefit arising from changes in consumer and producer surpluses that are expected to occur upon implementation of a regulatory action. Total Consumer Surplus (CS) is the difference between the amounts consumers are willing to pay for products or services and the amounts they actually pay. Thus CS represents net benefits to consumers. When the information necessary to plot the supply and demand curves for a particular commodity is available, CS is represented by the area that is below the demand curve and above the market clearing price where the two curves intersect. Since an empirical model describing the elasticities of supply and demand for these species is not available, it was assumed that the price for these species was determined by the market clearing price or the intersection of the supply and demand curves. These prices were the base prices used to determine potential changes in prices due to changes in landings.

Net benefit to producers is producer surplus (PS). Total PS is the difference between the amounts producers actually receive for providing goods and services and the economic cost producers bear to do so. Graphically, it is the area above the supply curve and below the market clearing price where supply and demand intersect. Economic costs are measured by the opportunity cost of all resources including the raw materials, physical and human capital used in the process of supplying these goods and services to consumers.

One of the more visible costs to society of fisheries regulation is that of enforcement. From a budgetary perspective, the cost of enforcement is equivalent to the total public expenditure devoted to enforcement. However, the economic cost of enforcement is measured by the opportunity cost of devoting resources to enforcement vis à vis some other public or private use and/or by the opportunity cost of diverting enforcement resources from one fishery to another.

Methodology

For purposes of this analysis, all alternatives will be evaluated under the assumption that the primary measure for achieving the conservation objectives will be through changes in quota levels. All alternatives will be evaluated against a base line. The base line condition provides the standard against which all other alternative actions are compared. In this analysis, the base line condition are the adjusted quotas for 2004. This comparison will allow for the evaluation of the potential fishing opportunities associated with each alternative versus the fishing opportunities that were in place in 2004. Aggregate changes in fishing opportunities in 2005 and 2006 (quotas adjusted for overages and research set-asides) versus adjusted quotas for 2004 are shown in Tables 27 and 28. Overages were determined and deducted appropriately from the upcoming fishing year’s quota, e.g., by state for summer flounder, period for scup, or coastwide for black sea bass. In addition, 2005 and 2006 quotas were also adjusted to account for research set-asides for those years. A detailed description of this process is presented in sections 1.1, 4.3, and 5.0 of the EA. The information presented in Tables 27 and 28 was used to determine potential changes in landings (i.e., fishing opportunities) associated with the proposed quota levels associated with each of the alternatives evaluated in this analysis.

2.6.1 Quota Alternatives for 2005

Under this section, the summer flounder, scup, and black sea bass quota alternatives for 2005 are analyzed.

2.6.1.1 Quota Alternative 1 (Preferred Alternative)

Under alternative 1, the preferred management measures are analyzed for summer flounder, scup (statu quo), and black sea bass. The assumptions regarding landings relative to the base line and changes in fishing opportunities discussed under the methodology section above also apply here.

Landings - Under the preferred alternative, aggregate landings for summer flounder and black sea bass are expected to be approximately 7 and 5 percent higher relative to 2004 adjusted quota, respectively. Aggregate landings for scup are expected to be less than 1 percent lower relative to 2004 adjusted quota. Note that even though the scup quota is the status quo measure, the 2005 adjusted scup commercial quota is slightly different than the adjusted quota implemented in 2004 due to due to the fat that a higher research set-aside was used to derive the 2005 allocations relative to 2004.

Prices - Given the likelihood that this alternative will result in small changes in scup landings, it is assumed that there will not be a change in the price for this species holding all other factors constant. However, it is possible that given the potential large increase in summer flounder and black sea bass landings, price for this species may decrease holding all other factors constant.

Consumer Surplus - Assuming scup price will not be affected under the scenario constructed above, there will be no corresponding change in CS associated with this fishery. However, assuming the potential decrease in the price for summer flounder and scup, it is expected that CS associated with these fisheries may increase.

Harvest Costs - No changes in harvest costs are identified under this alternative.

Producer Surplus - Assuming scup prices will not be affected under the scenario constructed above, there will be no corresponding change in PS associated with this fishery. However, if there is a change in the price of summer flounder or black sea bass, there will be associated changes in PS. The magnitude of the PS change will be associated with the price elasticity of demand for the species in question.

The law of demand states that price and quantity demanded are inversely related. Given a demand curve for a commodity (good or service), the elasticity of demand is a measure of the responsiveness of the quantity that will be taken by consumers giving changes in the price of that commodity (while holding other variables constant). There are several major factors that influence the elasticity for a specific commodity. These factors largely determine whether demand for a commodity is price elastic or inelastic[2]: 1) the number and closeness of substitutes for the commodity under consideration, 2) the number of uses to which the commodity can be put; and 3) the price of the commodity relative to the consumers's purchasing power (income). There are other factors that may also determine the elasticity of demand but are not mention here because they are beyond the scope of this discussion. As the number and closeness of substitutes and/or the number of uses for a specific commodity increase, the demand for the specific commodity will tend to be more

[2]Price elasticity of demand is elastic when a change in quantity demanded is large relative to the change in price. Price elasticity of demand is inelastic when a change in quantity demanded is small relative to the change in price. Price elasticity of demand is unitary when when a change in quantity demanded and price are the same.

elastic. Demand for commodities that take a large amount of the consumer's income is likely to be elastic compared to services with low prices relative to the consumer's income. It is argued that the availability of substitutes is the most important of the factors listed in determining the elasticity of demand for a specific commodity (Leftwich 1973; Awk 1988). Seafood demand in general appears to be elastic. In fact, for most species, product groups, and product forms, demand is elastic (Asche and Bjørndal).

For example, an increase in the ex-vessel price of summer flounder may increase PS. A decrease in the ex-vessel price of summer flounder may also increase PS if we assumed that the demand for summer flounder is moderate to highly elastic. However, the magnitude of these changes cannot be entirely assessed without knowing the exact shape of the market demand curve for this species.

Enforcement Costs - Properly defined, enforcement costs are not equivalent to the budgetary expense of dockside or at-sea inspection of vessels. Rather, enforcement costs from an economic perspective, are measured by opportunity cost in terms of foregone enforcement services that must be diverted to enforcing summer flounder, scup, and black sea bass regulations. The proposed measures are not expected to change enforcement costs.

Distributive Effects - There are no changes to the quota allocation process for any of the species. As such, no distributional effects are identified under this alterative.

2.6.1.2 Quota Alternative 2 (Most Restrictive)

The same assumptions regarding landings relative to the base line and changes in fishing opportunities discussed under the methodology section also apply here. This alternative evaluates the overall quotas that are most restrictive for summer flounder (status quo), scup, and black sea bass (status quo) among all quotas evaluated.

Landings - Under the most restrictive alternative, aggregate landings for summer flounder are expected to decrease by a negligible amount relative to the 2004 quota. Scup and black sea bass are expected to be approximately 36 percent lower and 3 percent higher in 2005 relative to 2004 adjusted quota, respectively. Note that even though these are the summer flounder and black sea bass status quo measures, the adjusted commercial quotas for these species are different than the adjusted quota implemented in 2004. This is mainly due to differences in the research set-aside values used to derive the 2005 allocations relative to 2004.

Prices - It is possible that given the substantial decrease in scup landings, price for this species may increase holding all other factors constant. In addition, it is also possible that given the increase in black sea bass landings price for these species may decrease holding all other factors constant. It is not expected that summer flounder prices will change as a result of the very small change in landings for that species.

Consumer Surplus - Assuming that prices behave as stated above, it is expected that the CS may decrease for the scup fishery and increase for the black sea bass fishery. No changes in CS are expected for the summer flounder fishery.

Harvest Costs - No changes in harvest costs are identified under this alternative.

Producer Surplus - The discussion regarding the effects of elasticity of demand on PS given price changes presented under alternative 1 also applies here. A decrease in the ex-vessel price of black sea bass may increase PS if we assumed that the demand for black sea bass is moderate to highly elastic. An increase in the ex-vessel price for scup may increase PS (assuming the demand for scup is moderate to highly elastic). No changes in production surplus associated with the summer flounder fishery are expected under this alternative.

Enforcement Costs - The same definitions and assumptions regarding enforcement costs presented in alternative 1 also apply here. The proposed measures are not expected to change enforcement costs.

Distributive Effects - There are no changes to the quota allocation process for any of the species. As such, no distributional effects are identified under this alterative.

2.6.1.3 Quota Alternative 3 (Least Restrictive)

The same assumptions regarding landings relative to the base line and changes in fishing opportunities discussed under the methodology section also apply here. This alternative evaluates the overall quotas that are least restrictive for summer flounder, scup, and black sea bass among all quotas evaluated.

Landings - Under the least restrictive alternative, aggregate landings for summer flounder, scup, and black sea bass are expected to be approximately 15, 34, and 12 percent higher in 2005 relative to 2004 adjusted quota, respectively.

Prices - Given the potential increase in landings for these species associated with this alternative, the price for summer flounder, scup, and black sea bass may decrease holding all other factors constant.

Consumer Surplus - Assuming the potential decrease in the price for summer flounder, scup, and black sea bass, it is expected that CS associated with these fishery may increase.

Harvest Costs - No changes in harvest costs are identified under this alternative.

Producer Surplus - The discussion regarding the effects of elasticity of demand on PS given price changes presented under alternative 1 also applies here. A decrease in the ex-vessel price for these species may increase PS if we assumed that the demand for these species is moderate to highly elastic.

Enforcement Costs - The same definitions and assumptions regarding enforcement costs presented in alternative 1 also apply here. The proposed measures are not expected to change enforcement costs.

Distributive Effects - There are no changes to the quota allocation process for any of the species. As such, no distributional effects are identified under this alterative.

2.6.2 Quota Alternatives for 2006

As indicated in the EA, under the current management system, the TALs for summer flounder, scup, and black sea bass are specified every year and apply only to the following year. However, Framework Adjustment 5, approved by the Council May 5, 2004 and submitted to NMFS May 12, 2004, allows for the specification of TALs for summer flounder, scup, and/or black sea bass fisheries in any given year for up to three years. The ASMFC Board approved similar measures in August, 2004. This modification to the FMP should relieve administrative demands on Council and NOAA Fisheries imposed by the annual specification process. Additionally, longer term specifications should provide greater regulatory consistency and predictability to the commercial and recreational fishing sectors. If Framework Adjustment 5 is not approved by January 1, 2005 the current management system of annual TALs will remain in effect.

This specifications package details all management alternatives for summer flounder evaluated for a two year period (2005 and 2006), and all management measures for the scup and black sea bass fisheries for a one year period (2005). The two year summer flounder specifications will apply if the following takes place: a) Framework Adjustment 5 is approved by January 1, 2005; and 2) NMFS accepts the 2-year management specifications proposed by the Council and Commission. However, if the NMFS decides that the 2-year management alternatives are unacceptable or Framework Adjustment 5 is not approved by January 1, 2005, then only the first year of the proposed specifications (2005) will apply. Under this section, summer flounder quota alternatives for 2006 are also analyzed.

Summer flounder quota alternative 1 is the preferred alternative for 2006. Alternative 2 is the summer flounder status quo and most restrictive alternative and alternative 3 is the least restrictive summer flounder alternative for 2006. Summer flounder landings are expected to increase by 14 percent, decrease by 2 percent, and increase by 23 percent in 2006 under alternatives 1, 2, and 3, respectively) relative to the base year (2004). The impacts associated with the increase in summer flounder landings in 2006 under alternatives 1 and 3 would be similar to those described for summer flounder under the 2005 alternative 1 but larger in magnitude given the potentially larger increase in summer flounder landings for the 2006 quota alternative 1 relative to the increase in summer flounder landings under the 2005 quota alternative 1. The impacts associated with the decrease in summer flounder landings in 2006 under alternative 2 would be opposite to those described for summer flounder under the 2005 alternative 1.

2.6.3 Other Management Measures

In addition to the quota alternatives discussed above, other non-quota management measures are also proposed by the Council and Commission under this specifications package. These measures are fully described in sections 5.0 and 7.0 of the EA. A brief description of the other non-quota preferred alternatives is presented below for reference purposes.

For the summer flounder and black sea bass fisheries no changes to the existing current minimum fish size, minimum mesh regulations, minimum mesh threshold, and/or minimum vent size regulations will be made for 2005 and 2006 for summer flounder and 2005 for black sea bass. The continuation of these alternatives is not expected to result in changes to the economic and social aspects of the fishery relative to 2004.

For the scup fishery the current minimum fish size, minimum vent size, Winter II possession limit, the transfer of unused scup quota from Winter I to Winter II period, and winter period mesh threshold regulations will remain unchanged in 2005. The continuation of these alternatives is not expected to result in changes to the economic and social aspects of the fishery in 2005 relative to 2004. Alternative measures addressing preferred changes in the scup fishery are: 1) minimum mesh regulation (alternative 5.2 of the EA); 2) summer period minimum mesh threshold (alternative 6.2 of the EA); 3) GRA modification (alternative 7.2 of the EA); Winter I possession limits (alternative 4.2 of the EA); and end the GRA exemption program (alternative 8.2).

Under alternative 4.2 (preferred alternative) the Council and Commission recommended to change the current Winter I possession limits in the scup fishery from 15,000 lb (state landings limit for a 1 week period) to a possession limit of 30,000 lb (state landings limit for a 2 week period). Because scup are a schooling species, otter trawl vessels operating where scup occur will occasionally make very large hauls that consist almost entirely of scup. Under the current system, when one of these hauls is brought up, the trip limit may be kept by the hauling vessel while the remaining catch must be discarded. Under the proposed action alternative the contents of a 30,000 lb scup haul could be landed given the proposed Winter I possession limit. This would convert regulatory discards of scup into landings, thus reducing bycatch and improving the efficiency of the commercial scup fishery. However, in practice this alternative will allow the same amount of scup to be landed in a two week period in 2005 as in 2004. This measure is likely to result in positive biological and socioeconomic impacts to the stock as it allows for regulatory discards of scup to be converted into landings, thus reducing bycatch and improving the efficiency of the commercial scup fishery.

Alternative 5.2 (preferred alternative) would implement a minimum mesh size for the scup fishery of 5" with a minimum length of 75 meshes from the terminus of the net. For small nets with less than 75 meshes codends the entire net will be 5". While this alternative is not expected to substantially alter overall scup landings, it will have positive biological and socioeconomic impacts as it allows for a reduction in the discard of undersized fish thus improving the efficiency of the commercial scup fishery relative to the status quo minimum mesh. As indicated in the EA, vessels currently participating in the scup fishery would only require to make minor modifications to the existing mesh in order to comply with this measure and no additional material (mesh) needs to be purchased. More specifically, in existing scup gear, the 4.5" portion of the net needs to be eliminated and the length of the 5.0" mesh needs to be reduced to comply with the proposed mesh regulations under this alternative. It is likely that these modifications can be made in a few hours depending on the size (length) of the mesh to be modified (James Ruhle Sr., pers. comm.). The cost of making the proposed mesh modifications under this alternative is minimal.

Alternative 6.2 (preferred alternative) would change the current threshold level used to trigger the mesh requirement from 100 lb to 200 lb from May through October 31. The Winter threshold would remain unchanged. While this alternative is not expected to substantially alter overall scup landings, it will have positive biological and socioeconomic impacts as it allows for a reduction in the discard of undersized fish thus improving the efficiency of the commercial scup fishery relative to the status quo (May 1 through October 31) threshold.

Alternative 7.2 (preferred alternative) would move the souther GRA three minutes westward. By moving the entire area covered by the current southern GRA three longitudinal minutes to the west, a strip of approximately 500 nm^2, would be made available to small mesh gear east of southern GRA, while an area of equal size, would be closed to small mesh gear to the west of southern GRA. Social impacts associated with alternative 7.2 are likely to be related to changes in the availability of scup, black sea bass and *Loligo* to participants in the small mesh trawl fishery. Trawl survey data indicate that availability for all three species should increase under alternative 7.2 relative to the status quo (current GRA). This expectation is based on the net difference in survey captures between proposed southern GRA and the current GRA relative to total winter/spring survey catch (Table 18: 2.8 percent increase for scup; 4.5 percent increase for black sea bass; 7.5 percent increase for *Loligo*). Calculating revenue gains for the respective fisheries directly from these percentages would require a number of unrealistic assumptions. Impacts on ports and communities are likely to be positive, though low in magnitude, as fishermen will have marginally greater access to these resources.

Alternative 8.2 (preferred alternative) eliminates the current GRA exemption program. The current exemption program for fishermen using modified gear stipulates that vessels fishing with small mesh and having an escapement extension of 45 meshes of 5.5" square mesh behind the body of the net and ahead of the codend could fish in the GRAs while carrying an observer onboard. However, since no fishing vessels have participated in the exemption program since its implementation, it is not expected that the elimination of this program would result in changes to the economic and social aspects of the fishery relative to previous years.

Summary of Impacts of Alternatives

The overall impacts of summer flounder, scup, and black sea bass landings on prices, consumer surplus, and producer surplus are difficult to determine without detailed knowledge of the relationship between supply and demand factors for these fisheries. In the absence of detailed empirical models for these fisheries and knowledge of elasticities of supply and demand, a qualitative approach was employed to assess potential impacts of the proposed management measures.

The impact of each of the regulatory quota alternatives relative to the base year is summarized in Tables 29 and 30. A "-1" indicates that the level of the given feature would be reduced given the action as compared to the base year. A "+1" indicates that the level of the given feature would increase relative to the base year and a "0" indicates no change. In this analysis, the base line condition is the adjusted quotas for 2004. This comparison will allow for the evaluation of the potential fishing opportunities associated with each alternative (e.e., summer flounder in 2005 and 2006 and scup and black sea bass in 2005) versus the fishing opportunities that were in place in 2004.

Quota Alternatives for 2005 - The preferred alternative (alternative 1) and the least restrictive alternative (alternative 3) may be expected to have similar overall directional impacts for the summer flounder fishery. These alternatives show a potential decrease in the summer flounder price, and thus potential increase in consumer surplus in 2005 relative to the 2004 base year. It is also possible that producer surplus may increase if the demand for summer flounder is moderate to highly elastic. No changes in summer flounder landings are expected under alternative 2. Thus, no changes in prices, producer surplus or consumer surplus are not expected under the most restrictive alternative (alternative 2).

For scup, no changes in landings, prices, producer surplus and consumer surplus are expected under alternative 1 (preferred alternative) due to the very small decrease in fishing opportunity in 2005 relative to 2004. However, scup landings are expected to significantly decrease under alternative 2 (most restrictive). Under this alternative, the price of scup is projected to increase, consumer surplus is projected to decrease, and producer surplus is expected to increase (assuming the demand for scup is moderate to highly elastic). Under the least restrictive alternative (alternative 3), opposite impacts for the scup fishery as those described under alternative 2 are expected.

The preferred alternative, the most restrictive alternative, and the least restrictive alternative may be expected to have similar overall directional impacts for the black sea bass fishery. These alternatives show a likely decrease in prices associated with higher landings in 2005 relative to the 2004 base year. As such, consumer surplus is expected to increase. It is also possible that producer surplus may increase if the demand for black sea bass is moderate to highly elastic. However, the magnitude of the changes will likely vary across alternatives due to the potential changes in landings associated with each alternative. For example, the impact on price reduction for black sea bass associated with the least restrictive alternative (alternative 3) may be expected to be higher than those associated with alternative 1 (preferred) or the most restrictive alternative (alternative 2) and thus the magnitude of impacts associated with consumer surplus and producer surplus.

Quota Alternatives for 2006 - The preferred alternative (alternative 1) and the least restrictive alternative (alternative 3) may be expected to have similar overall directional impacts for the summer flounder fishery. These alternatives show a potential decrease in the summer flounder price, and thus potential increase in consumer surplus in 2006 relative to the 2004 base year. It is also possible that producer surplus may increase if the demand for summer flounder is moderate to highly elastic. The impacts associated with the decrease in summer flounder landings in 2006 under alternative 2 would be opposite to those described for summer flounder under the 2005 alternative 1.

In total, no changes in the competitive nature of these fisheries is expected to occur if any of these management measures are implemented (in 2005 or 2006). All the alternatives would maintain the competitive structure of the fishery, that is, there are no changes in the manner the quotas are allocated by region, period, or state from the base year. However, large reductions in quota levels from year to year may affect vessels differently due to their capability to adjust to quota changes.

No changes in enforcement costs or harvest costs have been identified for any of the evaluated alternatives.

Since empirical models describing the elasticities of supply and demand for these species is not available, we cannot determine with certainty the impact of changes in landings on prices, consumer surplus, or producer surplus. Therefore, in order to assess the potential net benefits of each of the combined quota alternatives, changes in ex-vessel gross revenues associated with each alternative were estimated. More specifically, combined changes in landings for summer flounder, scup, and black sea bass in 2005 relative to the 2004 base year were derived to assess the potential changes in fishing opportunities between these two time periods. In addition, changes in landings for summer flounder in 2006 relative to the 2004 base year were derived to assess the potential changes in fishing opportunities between these two time periods. Potential changes in landings (i.e, fishing opportunities) for summer flounder, scup, and black sea bass were then multiplied by the overall 2003 ex-vessel price for each species to derive changes in net revenues which are used as a proxy for changes in net benefits. NMFS dealer data from Maine to Virginia and NMFS general canvass data for North Carolina were used to derive the ex-vessel price for summer flounder from Maine to North Carolina, and for scup and black sea bass from Maine to Cape Hatteras, North Carolina. The ex-vessel price for summer flounder, scup, and black sea bass in 2003 was estimated at $1.61/lb, $0.60/lb, and $2.02/lb, respectively. The aggregate percent change in landings in 2005 for summer flounder, scup, and black sea bass and 2006 for summer flounder relative to the base year is presented in Tables 27 and 28, respectively. The overall change in gross revenue in 2005 relative to 2004 is an approximate increase of $2.2 million, a reduction of $2.5 million, and an increase of $7.6 million under alternatives 1, 2, and 3, respectively. The overall change in gross revenue in 2006 relative to 2004 (summer flounder only) is an approximate increase of $3.9, a reduction of $564 thousand, and an increase of $9.8 million under alternatives 1, 2, and 3, respectively. These changes in revenues assume that the overall quota for each species will be taken in 2004, the constant ex-vessel price for each species presented above, and that the overall quota for summer flounder (2005 and 2006), scup (2005), and black sea bass (2005) will be taken. The changes in gross revenues associated with the potential changes in landings in 2005 and 2006 versus 2004 assumed static prices (i.e., 2003) for summer flounder, scup, and black sea bass. However, if prices for these species decrease or increase as a consequence of changes in landings, then the associated revenue increases and decreases could be different than those estimated above.

The changes in gross revenues indicate that in alternative 3 will provide the largest net benefits followed by alternatives 1 and 2 in 2005 and 2006. While alternative 3 provides the largest net benefits among all the evaluated alternative, it was not chosen as the preferred alternative by the Council and Board because it does not meet the overall recovery objectives of the FMP. Alternative 1 (preferred) on the other hand provides overall positive net benefits and establishes required commercial landings limits that address the general goals of the FMP. It is important to mention that the estimated benefits derived above are likely to correspond to the upper/lower limits due to the fact that in deriving those values it was assumed that all available commercial TALs would be harvested and constant 2003 ex-vessel prices.

It is important to mention that although the commercial measures that are evaluated in this specification package are for 2005 and 2006 for the summer flounder fishery and 2005 for scup and black sea bass fisheries, the annual and/or multi-year specification process for these fisheries could have potential cumulative impacts. The extent of any cumulative impacts from measures established in previous years is largely dependent on how effective those measures were in meeting their intended objectives and the extent to which mitigating measures compensated for any quota overages. Section 7.5 of the EA has a detailed description or historical account or cumulative impacts of the measures established in previous years. This information is important because it allows for the evaluation of projected results from the implementation of specific management measures versus actual results.
In addition to the suite of preferred commercial quota alternatives, other management measures are also being considered to constrain landings to the commercial quota. The commercial possession limits were chosen as an appropriate balance between the economic concerns of the industry (e.g., landing enough scup to make the trip economically viable) and the need to ensure the equitable distribution of the quota over the period.

The current minimum fish size, minimum mesh regulations, minimum mesh threshold, and/or minimum vent size regulations for summer flounder (2005 and 2006) and black sea bass (2005) will remain unchanged. As such, these measures are not expected to result in changes to the economic and social aspects of the fisheries relative to 2004.

Changes in possession limits can impact profitability in various ways. These impacts would vary depending on fishing practices. The preferred alternative adopted by the Council and Board includes a scup possession limits for Winters I (30,000 lb possession limit; state landings limit for a 2 week period) and II (1,500 lb possession limit) for 2005. These possession limits are expected to constrain commercial landings to the commercial TAL, distribute landings equitably throughout the periods to avoid derby-style fishing effort and associated market gluts. According to anecdotal information potential price fluctuations occur as result of irregular supply. The recommended possession limits for Winter I would allow fishermen to determine when the best time for them to fish and further help to avoid market gluts, unsafe fishing practices, and allow for regulatory discards of scup to be converted into landings, thus reducing bycatch and improving the efficiency of the commercial scup fishery. As such, the possession limits are expected to result in some positive social and economic impacts, relative to the status quo possession limits.

The Summer Flounder, Scup, and Black Sea Bass Framework Adjustment 3 allows for the transfer of unused scup quota from the Winter I to the Winter II period. As such, if the fishery did not land their quota in Winter I due to poor weather conditions, changes in the distribution of scup, or market conditions (i.e., low price) the opportunity to land those scup would not be lost. A complete description and impact analyses of the proposed provision allowing the rollover of unused quota from Winter I to Winter II period is found in Framework Adjustment 3 to the Summer Flounder, Scup, and Black Sea Bass FMP. The potential increase in Winter II possession limits given various hypothetical amounts of scup rolled over from Winter I to Winter II are presented in Appendix A. Overall it is anticipated that allowing the transfer of unused quota from Winter I to Winter II period will result in positive economic and social impacts to fishermen and communities as quota not landed in Winter I due to poor weather conditions, changes in the distribution of scup, or market conditions (i.e., low price) will not be lost. In addition, any scup regulatory discards which have occurred in Winter II (i.e., when the fishery closes early) can be converted into landings.

The preferred GRA alternative under this specifications package would move the souther GRA three minutes westward. Trawl survey data indicate that availability for all three species should increase under alternative 7.2 relative to the status quo (current GRA). Impacts on ports and communities are likely to be positive, though low in magnitude, as fishermen will have marginally greater access to these resources. Lastly, ending the current GRA exemption program would likely have no socioeconomic or biological implications because no fishing vessels have participated in the exemption program since its implementation.

The proposed mesh size alternative for scup (preferred alternative) would implement a minimum mesh size of 5" with a minimum length of 75 meshes from the terminus of the net in that fishery. Vessels currently participating in the scup fishery would only require to make minor modifications to the existing mesh in order to comply with this measure and no additional material (mesh) needs to be purchased. The cost of making the proposed mesh modifications under this alternative is minimal. Furthermore, this alternative would allow for a reduction in the discard of undersized fish thus improving the efficiency of the commercial scup fishery relative to the status quo minimum mesh.

The proposed change in the current threshold level used to trigger the mesh requirement from 100 lb to 200 lb from May through October 31 in the scup fishery would also allow for a reduction in the discard of undersized fish. While this alternative is not expected to substantially alter overall scup landings, it will have positive biological and socioeconomic impacts as it improves the efficiency of the commercial scup fishery relative to the status quo. The Winter threshold would remain unchanged for 2005.

The proposed action does not constitute a significant regulatory action under E.O. 12866 for the following reasons. First, it will not have an annual effect on the economy of more than $100 million. The total value of all commercial landings of these species combined is approximately $34.9 million. Based on preliminary unpublished NMFS dealer data from Maine to Virginia, and South Atlantic unpublished General Canvass for North Carolina, the 2003 total commercial value for summer flounder was estimated at $23.0 million from Maine to North Carolina, and at $5.9 million and $6.0 million for scup and black sea bass from Maine to Cape Hatteras, NC, respectively. More importantly, as estimated above, assuming 2003 ex-vessel prices and the potential change in landings due to the adjusted quotas in 2005 and 2006 relative to the adjusted 2004 quotas, the overall gross revenue under the preferred alternative would increase by $2.3 million (i.e., for all three species combined) in 2005 and $3.9 million (i.e., for summer flounder only) in 2006 relative to 2004. The preferred alternative, and other non-quota measures, being considered by this action are necessary to advance the recovery of summer flounder, scup and black sea bass stocks, and to establish the harvest of these species at sustainable levels. The action benefits in a material way the economy, productivity, competition and jobs. The action will not adversely affect, in the long-term, competition, jobs, the environment, public health or safety, or state, local, or tribal government communities. Second, the action will not create a serious inconsistency or otherwise interfere with an action taken or planned by another agency. No other agency has indicated that it plans an action that will affect the summer flounder, scup or black sea bass fisheries in the EEZ. Third, the actions will not materially alter the budgetary impact of entitlement, grants, user fees, or loan programs or the rights and obligations of their participants. And, fourth, the actions do not raise novel, legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in E.O. 12866.

3.0 INITIAL REGULATORY FLEXIBILITY ANALYSIS

3.1 Introduction and Methods

The Regulatory Flexibility Act (RFA) requires the federal rulemaker to examine the impacts of proposed and existing rules on small businesses, small organizations, and small governmental jurisdictions. In reviewing the potential impacts of proposed regulations, the agency must either certify that the rule "will not, if promulgated, have a significant economic impact on a substantial number of small entities." A determination of substantial depends on the context of the proposed action, the problem to be addressed, and the structure of the regulated industry. Standards for determining significance are discussed below. Although overall negative economic impacts are not anticipated as a result of this action due to quota increases in the summer flounder (7 percent) and black sea bass (5 percent) fisheries, and near identical scup quota (< 1 percent decrease) contained in the preferred alternative, the IRFA was prepared to further evaluate the economic impacts of the three quota alternatives and other non-quota measures (i.e., gear requirements and possession limits) on small business entities. This analysis is undertaken in support of a more thorough analysis for the commercial specifications for fishing for summer flounder (2005 and 2006), scup (2005), and black sea bass (2005).

3.1.1 Description of the Reasons Why Action by the Agency is being Considered

A complete description of the purpose and need and objectives of this proposed rule is found under section 4.0 of the EA. A statement of the problem for resolution is presented under section 4.0 of the EA.

3.1.2 The Objectives and legal basis of the Proposed Rule

A complete description of the objectives of this proposed rule is found under section 4.0 of the EA. This action is taken under the authority of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) and regulations at 50 CFR part 648.

3.1.3 Estimate of the Number of Small Entities

The potential number of small entities that may be affected by the proposed rule is presented below.

3.1.4 Reporting Requirements

There are no changes to the existing reporting requirements previously approved under this FMP for vessel permits, dealer reporting, or vessel logbooks. This action does not contain a collection-of-information requirement for purposes of the Paperwork Reduction Act.

3.1.5 Conflict with Other Federal Rules

This action does not duplicate, overlap, or conflict with other federal rules.

A description of the summer flounder, scup, and black sea bass fisheries is presented in section 6.0 of the EA and section 3.0 of Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP. A description of ports and communities that are dependent on summer flounder, scup, and black sea bass is found in section 3.4.2 of Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP. An analysis of permit data is found in section 6.5.2 of the EA. A full description of the alternatives analyzed in this section and the TAL derivation process is presented in sections 4.0 and 5.0 of the EA. A brief description of each alternative is presented below for reference purposes.

The Small Business Administration (SBA) defines a small business in the commercial fishing and recreational fishing activity, as a firm with receipts (gross revenues) of up to $3.0 and $5.0 million, respectively. The proposed measures regarding the 2005 and 2006 summer flounder quotas, and 2005 quotas for scup and black sea bass could affect any vessel holding an active federal permit for summer flounder, scup, or black sea bass as well as vessels that fish for any one of these species in state waters. Data from the Northeast permit application database shows that in 2003 there were 2,114 vessels that were permitted to take part in the summer flounder, scup, and/or black sea bass fisheries (both commercial and charter/party sectors). These permitted vessels may be further categorized depending upon which permits or combinations of permits that were held (section 6.5.2 of the EA). Table 5 reports the number of vessels for all possible combinations of permits. For example, the proposed possession limits for scup could potentially affect all scup permit holders. However, active participants are more likely to be affected in the near term. All permitted vessels readily fall within the definition of small business.

Since all permit holders may not actually land any of the three species the more immediate impact of the rule may be felt by the 1,040 commercial vessels that are actively participating in these fisheries (Table 31). An active participant was defined as being any vessel that reported having landed one or more pounds of any one of the three species in the Northeast dealer data during calendar year 2003. The dealer data covers activity by unique vessels that hold a federal permit of any kind and provides summary data for vessels that fish exclusively in state waters. This means that an active vessel may be a vessel that holds a valid federal summer flounder, scup, or black sea bass permit; a vessel that holds a valid federal permit but no summer flounder, scup or black bass permit; a vessel that holds a federal permit other than summer flounder, scup, or black sea bass and fishes for those species exclusively in state waters; or may be vessel that holds no federal permit of any kind. Of the four possibilities the number of vessels in the latter two categories cannot be estimated because the dealer data provides only summary information for state waters vessels and because the vessels in the last category do not have to report landings. Of the active vessels reported in Table 31, 272 commercial vessels did not hold a valid federal permit for summer flounder, scup, or black sea bass during calendar year 2003. Note that in a manner similar to that of Table 5 these active vessels are also reported by all possible combinations of reported landings.

In this IRFA, the primary unit of observation for purposes of performing a threshold analysis is vessels that participated in any one or more of the three fisheries (summer flounder, scup, and black sea bass) during calendar year 2003, irrespective of their current permit status. Not all landings and revenues reported through the federal dealer data can be attributed to a specific vessel. Vessels without federal permits are not subject to any federal reporting requirements with which to corroborate the dealer reports. Similarly, dealers that buy exclusively from state waters only vessels and have no federal permits, are also not subject to federal reporting requirements. Thus, it is possible that some vessel activity cannot be tracked with the landings and revenue data that are available. Thus, these vessels cannot be included in the threshold analysis, unless each state were to report individual vessel activity through some additional reporting system - which currently does not exist. This problem has two consequences for performing threshold analyses. First, the stated number of entities subject to the regulation is a lower bound estimate, since vessels that operate strictly within state waters and sell exclusively to non-federally permitted dealers cannot be counted. Second, the portion of activity by these uncounted vessels may cause the estimated economic impacts to be over- or underestimated.

The effects of actions were analyzed by employing quantitative approaches to the extent possible. Where quantitative data were not available, qualitative analyses were conducted. In the current analysis, effects on profitability associated with the proposed management measures should be evaluated by looking at the impact the proposed measures on individual vessel costs and revenues. However, in the absence of cost data for individual vessels engaged in these fisheries, changes in gross revenues are used a proxy for profitability.

In order to conduct a more thorough socioeconomic analysis, overall impacts of the three species combined were examined. The analyses conducted for all three alternatives examined the measures recommended by the Council for each of the three species combined. For example, for 2005, quota alternative 1 (preferred alternative) would include the three preferred alternatives for summer flounder, scup, and black sea bass combined; quota alternative 2 (most restrictive alternative) would include the three most restrictive alternatives for summer flounder, scup, and black sea bass combined; and quota alternative 3 (least restrictive alternative) would include the three most restrictive alternatives for summer flounder, scup, and black sea bass combined. Overall impacts (i.e., combined impacts of summer flounder, scup, and black sea bass) were examined because many of the vessels active in these fisheries participate in more than one or even all three of these fisheries.

As indicated in the EA, under the current management system, the TALs for these species are specified every year and apply only to the following year. However, Framework Adjustment 5, approved by the Council May 5, 2004 and submitted to NMFS May 12, 2004, allows for the specification of TALs for summer flounder, scup, and/or black sea bass fisheries in any given year for up to three years. The ASMFC Board approved similar measures in August, 2004. This modification to the FMP should relieve administrative demands on Council and NOAA Fisheries imposed by the annual specification process. Additionally, longer term specifications should provide greater regulatory consistency and predictability to the commercial and recreational fishing sectors. If Framework Adjustment 5 is not approved by January 1, 2005 the current management system of annual TALs will remain in effect. This specifications package details all management alternatives for summer flounder evaluated for a two year period (2005 and 2006), and all management measures for the scup and black sea bass fisheries for a one year period (2005). The two year summer flounder specifications will apply if the following takes place: a) Framework Adjustment 5 is approved by January 1, 2005; and 2) NMFS accepts the 2-year management specifications proposed by the Council and Commission. However, if the NMFS decides that the 2-year management alternatives are unacceptable or Framework Adjustment 5 is not approved by January 1, 2005, then only the first year of the proposed specifications (2005) will apply.

Procedurally, the economic effects of the quota alternatives were estimated using five steps. First, the Northeast dealer data were queried to identify all vessels that landed at least one or more pounds of summer flounder, scup, or black sea bass in calendar year 2003. The fact that individual owners' business organization may differ from one another is reflected in the different combinations of species landed by these vessels. Thus, for purposes of the threshold analysis, active vessels were grouped into seven classes or tiers (Table 31) based on combinations of summer flounder, scup and black sea bass landings. In this manner, the original universe of vessels is treated as seven distinct "sub-universes" with a separate threshold analysis conducted for each. Note that the States of Connecticut and Delaware report canvas (summary) data to NMFS, so landings and revenues by individual vessels cannot be included. Thus, vessels that land exclusively in those states cannot be analyzed. Vessels that land in these, plus other states, are analyzed - but landings and revenues represent only that portion of business conducted in states other than Connecticut and Delaware. It is presumed that the impacts on vessels that cannot be identified will be similar to the participating vessels that are analyzed herein.

The second step was to estimate total revenues from all species landed by each vessel during calendar year 2003. This estimate provides the base from which subsequent quota changes and their associated effects on vessel revenues were compared. Since 2003 is the last full year from which data are available (partial year data could miss seasonal fisheries), it was chosen as the base year for the analysis. That is, partial landings data for 2004 were not used in this analysis because the year is not complete. As such, 2003 data were used as a proxy for 2004.

The third step was to deduct or add, as appropriate, the expected change in vessel revenues depending upon which of the three quota alternatives were evaluated. This was accomplished by estimating proportional reductions or increases in the three quota alternatives for 2005 for all three species and 2006 for summer flounder versus the base quota year 2004. Landings to date, overages, and research set-aside estimates were employed to adjust the 2005 and 2006 quotas. For the purpose of estimating the 2005 and 2006 quotas and revenue changes, the following assumptions were made: a) that the states with overages at the time of the analysis will harvest no additional summer flounder, and that the industry will fully harvest, and not exceed, the remaining 2004 state allocations; b) that no additional summer flounder overages will occur in 2005; c) that the black sea bass and scup quotas will be fully harvested and not to exceed the 2004 allocation; and d) that the entire summer flounder quota allocations will be taken in 2005 and 2006, and that the entire scup and black sea bass allocations will be taken in 2005. Detailed description of the 2005 and 2006 quota derivation process (accounting for overages and research set-asides) is presented in sections 4.0 and 5.0 of the EA.

The fourth step was to compare the estimated 2005 revenues from all species to the 2004 base revenues and the 2006 summer flounder revenues to the 2004 base revenue for every vessel in each of the classes to assess potential changes. For each quota alternative a summary table was constructed that report the results of the threshold analysis by class when necessary. These results were further summarized by home state as defined by permit application data when appropriate.

The threshold analysis just described is intended to identify impacted vessels and to characterize the potential economic impact on directly affected entities. In addition to evaluating if the proposed regulations reduce profit for a significant number of small entities, the RFA also requires that disproportionality be evaluated. Disproportionality is judged to occur when a proportionate affect on profits, costs, or net revenue is expected to occur for a substantial number of small entities compared to large entities, that is, if a regulation places a substantial number of small entities at a significant competitive disadvantage. According to the SBA definition of small business presented above, all permitted vessels in these fisheries readily fall within the definition of small business. Therefore, there are no disproportionality issues.

To further characterize the potential impacts on indirectly impacted entities and the larger communities within which owners of impacted vessels reside, selected county profiles are typically constructed. Each profile are based on impacts under the most restrictive possible alternative. The most restrictive alternative is chosen to identify impacted counties because it would identify the maximum number possible and thus include the broadest possible range of counties in the analysis. The following criteria was employed to derive the range of counties profiled: the number of vessels with revenue losses exceeding 5 percent per county was either greater than 4, or all vessels with losses exceeding 5 percent in a given state were from the same home county. It is expected that this system will allow for a county profile that may include a wide range of potentially affected areas.

Based on these criteria, a total of three counties were identified to be impacted in 2005: Barnstable County, MA; Monmouth County, NJ; and Suffolk County. Counties not included in this analysis (e.g., Ocean and Cape May, NJ;

Kings, New York, and Nassau, NY; Washington and Newport, RI; Dukes and Bristol, MA; Ocean City and Worcester, MD; City of Norfolk, VA; and New London, CT) did not have enough impacted vessels to meet the criteria specified, i.e., there were less than 4 impacted vessels per county, or all impacted vessels in a state were not home ported within the same county. There were no counties identified to be impacted in 2006 as a consequence of the proposed summer flounder quota for that year.

It should be noted that the county profiles are intended to characterize the relative importance of commercial fishing and fishing related industries in the home counties. As such, the county profiles provide a link to the social impacts described in the socioeconomic impacts sections in section 7.5.6 of the EA, but are not intended to be a substitute for that analysis. The target counties were identified based on the county associated with the vessels homeport as listed in the owner's 2003 permit application.

Counties are typically selected as the unit of observation because a variety of secondary economic and demographic statistical data were available from several different sources. Limited data are available for place names (i.e., by town or city name) but in most instances reporting is too aggregated or is not reported due to confidentiality requirements. Reported statistics include demographic statistics, employment, and wages. In addition, a description of important ports and communities to the summer flounder, scup, and black sea bass fisheries is presented in section 3.4.2 of Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP. Recent landings patterns among ports is examined in section 6.5.1 of the EA.

4.0 DESCRIPTION OF QUOTA ALTERNATIVES

All quota alternatives considered in this IRFA are based on three harvest levels for each of the species (a high, medium, and low level of harvest). Aggregate changes in fishing opportunities in 2005 and 2006 (quotas adjusted for overages and research set-asides) versus adjusted quotas for 2004 are shown in Tables 27 and 28, respectively. A full description of the alternatives analyzed in this section and the TAL derivation process is presented in sections 4.0 and 5.0 of the EA.

4.1 Quota and Non-Quota Alternatives for 2005

Under this section, the summer flounder, scup, and black sea bass quota alternatives for 2005 are analyzed.

Alternative 1 includes the harvest levels recommended by the Council and Board for summer flounder, scup (status quo), and black sea bass on vessels that are permitted to catch any of these three species. Harvest levels were recommended to achieve the target fishing mortality or exploitation rates specified in the rebuilding schedule for each species. In addition to the proposed TALs for summer flounder, scup, and black sea bass, the Council and Board approved the continuation of the current summer flounder minimum fish size, minimum mesh regulations, and minimum mesh threshold regulations for 2005; and the continuation of the current black sea bass minimum fish size, minimum mesh regulations, minimum mesh threshold, and minimum vent size regulations for 2005.

For the scup fishery, the Council and Board proposed preferred changes in the in the minimum mesh regulation (alternative 5.2), summer period minimum mesh threshold (alternative 6.2), GRA management measure (alternative 7.2), and Winter I possession limit (alternative 4.2) for 2005. The Council and Board approved the scup status quo minimum fish size, minimum vent size, Winter II possession limit, the transfer of unused scup quota from Winter I to Winter II period, and winter period mesh threshold regulations for 2005.

A detailed description of all of these measures (quota and non-quota measures) for the three species was presented under section 5 of the EA. A brief discussion and impact of these measures is presented in section 5.1 below. Under alternative 1, the summer flounder, scup, and black sea bass TALs selected by the Council and Commission are identical to the TALs recommended by the monitoring committee.

Alternative 2 includes the most restrictive possible harvest levels, i.e., those that would result in the greatest reductions in landings (relative to 2004) for summer flounder, scup, and black sea bass. This alternative includes non-selected alternatives for all three species.

Alternative 3 includes the least restrictive possible harvest levels, i.e., those that would result in the least reductions (or greatest increases) in landings (relative to 2004) for all species. These limits resulted in the highest possible landings for 2005, regardless of their probability of achieving the biological targets. This alternative includes non-selected alternatives for all three species.

4.2 Quota and Non-Quota Alternatives for 2006

As indicated above, under the current management system, the TALs for summer flounder, scup, and black sea bass are specified every year and apply only to the following year. However, Framework Adjustment 5, approved by the Council May 5, 2004 and submitted to NMFS May 12, 2004, allows for the specification of TALs for summer flounder, scup, and/or black sea bass fisheries in any given year for up to three years. The ASMFC Board approved similar measures in August, 2004. This modification to the FMP should relieve administrative demands on Council and NOAA Fisheries imposed by the annual specification process. Additionally, longer term specifications should provide greater regulatory consistency and predictability to the commercial and recreational fishing sectors. If Framework Adjustment 5 is not approved by January 1, 2005 the current management system of annual TALs will remain in effect.

This specifications package details all management alternatives for summer flounder evaluated for a two year period (2005 and 2006), and all management measures for the scup and black sea bass fisheries for a one year period (2005). The two year summer flounder specifications will apply if the following takes place: a) Framework Adjustment 5 is approved by January 1, 2005; and 2) NMFS accepts the 2-year management specifications proposed by the Council and Commission. However, if the NMFS decides that the 2-year management alternatives are unacceptable or Framework Adjustment 5 is not approved by January 1, 2005, then only the first year of the proposed specifications (2005) will apply. Under this section, summer flounder quota alternatives for 2006 are also analyzed.

Alternative 1 includes the harvest level recommended by the Council and Board for summer flounder on vessels that are permitted to catch this species. This harvest level was recommended to achieve the target fishing mortality or exploitation rates specified in the rebuilding schedule for this species. In addition to the proposed TAL for summer flounder the Council and Board approved the continuation of the current summer flounder minimum fish size, minimum mesh regulations, and minimum mesh threshold regulations for 2006.

A detailed description of all of these measures (quota and non-quota measures) for this species was presented under section 5 of the EA. A brief discussion and impact of these measures is presented in section 5.1 below. Under alternative 1, the summer flounder TAL selected by the Council and Commission are identical to the TALs recommended by the monitoring committee.

Alternative 2 includes the most restrictive possible harvest levels, i.e., those that would result in the greatest reductions in landings (relative to 2004) for summer flounder. This alternative is also the summer flounder status quo alternative.

Alternative 3 includes the least restrictive possible harvest levels, i.e., those that would result in the least reductions (or greatest increases) in landings (relative to 2004) for summer flounder. These limits resulted in the highest possible landings for 2006, regardless of the probability of achieving the biological target.

5.0 ANALYSES OF IMPACTS OF ALTERNATIVES

For the purpose of analysis of the following alternatives, several assumptions must be made. First, average revenue changes noted in this analysis are made using 2003 dealer data and participation. In addition to this, 2003 permit files were used to describe permit holders in these fisheries. It is important to mention that revenue changes for 2005 and 2006 are dependent upon previous landings and overages. Overages were determined and deducted appropriately from the upcoming fishing year's quota, e.g., by state for summer flounder, period for scup, or coastwide for black sea bass. In addition, 2005 and 2006 quotas were also adjusted to account for research set-asides for those years. A detailed description of this process is presented in sections 1.1, 4.3, and 5.0 of the EA.

For the analyses themselves, reductions are estimated by examining the total revenue earned by an individual vessel in 2003, and comparing it to its potential revenue in 2005 and 2006 when applicable, given the changes in fishing opportunity (harvest levels) from 2004 to 2005 and 2006 when applicable. Generally, the percent of a vessel's revenue reduction varies considerably based on the permits it holds (i.e., based on the fisheries in which it was able to participate) and species it landed. Diversity in the fleet, helps to balance loss in one fishery with revenue generated from other fisheries. Lastly, it is important to keep in mind that while the analyses are based on landings for federally permitted vessels only, those vessels may be permitted to, and frequently do, fish in state waters for a species of fish for which it does not hold a federal permit.

5.1 Quota and Non-Quota Alternatives for 2005

In this section management the 2005 measures for summer flounder, scup, and black sea bass are discussed.

5.1.1 Quota Alternative 1 (Preferred)

This alternative examines the impacts on industry that would result from the preferred harvest levels for summer flounder, scup (status quo), and black sea bass. To analyze the economic effects of this alternative, the total harvest levels specified under section 5 of the EA were employed.

Under this alternative, the summer flounder specifications would result in an aggregate 7 percent increase in allowable commercial landings relative to the

2004 quota and a 6 percent increase in recreational harvest limit relative to the 2004 limit (Tables 27 and 32). The scup specifications would result in an aggregate < 1 percent decrease in allowable commercial landings and recreational harvest limit relative to the 2004 allocations (Tables 27 and 33). The black sea bass specifications would result in an aggregate 5 percent increase in allowable commercial landings relative to the 2004 quota and a 3 percent increase in the recreational harvest limit relative to the 2004 limit (Tables 27 and 34).

Even though the overall 2005 commercial TAL for scup under this alternative is the same as in 2004, the adjusted commercial quota and recreational harvest limit are slightly different than the allocations implemented in 2004 mainly due to differences in the research set-asides used to derived adjusted allocations during those two time periods.

5.1.1.1 Commercial Impacts

The result of the threshold analysis are presented in Table 21. The economic impacts for the 1,040 vessels participating in these fisheries ranged from expected revenue losses on the order of < 5 percent for a total of 40 vessels to increase in revenue for 1,000 vessels. In addition, no vessels were expected to have revenue losses of > 5 percent. It is clear to see the increase in revenues for vessels that fished for any of these species due to the overall increase in the commercial quota levels of summer flounder and black sea bass in 2005 relative to 2004. However, since the overall commercial quota level for scup in 2005 is slightly lower (< 1 percent) than that of the base year, there are some vessels (40 vessels) projected to incur in revenue losses of < 5 percent in 2005 relative to 2004. The largest number of vessels projected to be incur in revenue reductions of < 5 percent landed scup only (24 vessels) followed by vessels that landed scup and black sea bass (11 vessels; Table 21). It is evident that revenue losses associated with the small decrease in the scup quota are mitigated by quota gains in the other fisheries (summer flounder and black sea bass) for vessels that land summer flounder and/or black sea bass in addition to scup. However, the revenue reductions associated with this alternative are very small given the projected overall reduction in the scup quota level (< 1 percent) in 2005 relative to 2004.

In addition to the threshold analysis described above, the Council also analyzed changes in total ex-vessel gross revenue that would occur as a result of the quota alternatives. Assuming 2003 ex-vessel prices (summer flounder -- $1.61/lb; scup -- $0.60/lb; and black sea bass -- $2.02/lb), the 2005 quotas associated with the preferred alternative would increase summer flounder and black sea bass ex-vessel revenues by $1.9 million and $384 thousand, respectively, and decrease scup revenues by $60 thousand relative to 2004.

Assuming the increase in summer flounder total ex-vessel gross revenues associated with the preferred alternative is distributed equally among the 839 vessels that landed summer flounder in 2003, the average increase in revenue associated with the increase in summer flounder quota is approximately $2,322/vessel. Assuming the decrease in scup total ex-vessel gross revenues associated with this alternative is distributed equally among the 566 vessels that landed scup in 2003, the average increase in revenue associated with the increase in the scup quota is approximately $106/vessel. Finally, if the increase in black sea bass total ex-vessel gross revenues associated with this alternative is distributed equally among the 702 vessels that landed black sea bass in 2003, the average increase in revenue associated with the increase in black sea bass quota is approximately $546 vessel.

The overall change in ex-vessel gross revenue associated with the three species combined in 2005 relative to 2004 is approximately $2.3 million (assuming 2002 ex-vessel prices) under the preferred alternative. If this is distributed among the 1,040 vessels that landed summer flounder, scup, and black sea bass in 2003, the average increase in revenue would be approximately $2,184/vessel. The changes in ex-vessel gross revenues associated with the potential changes in landings in 2005 versus 2004 assumed static prices for summer flounder, scup, and black sea bass. However, if prices for these species decrease or increase as a consequence of changes in landings, then the associated revenue increases and decreases could be different than those estimated above.

5.1.1.2 Recreational Impacts

Landing statistics from the last several years show that recreational summer flounder landings have generally exceeded the recreational harvest limits, ranging from 5 percent in 1993 to 122 percent in 2000. In 1994 and 1995, summer flounder landings were below the recreational harvest limit by approximately 20 percent for both years combined (Table 32). In 2001, recreational landings were 11.64 million lb, exceeding the limit for that year by approximately 4.5 million lb (63 percent). In 2002 and 2003, recreational landings were 1.76 million lb (18 percent) and 2.29 million lb (25 percent) below the recreational harvest limit for those years. Under this alternative, the summer flounder 2005 recreational harvest limit (adjusted for research set-aside) is 11.98 million lb. Thus, the harvest limit in 2005 would represent an increase of approximately 6 percent from 2004 limit.

Scup recreational landings have declined over 89 percent for the period 1991 to 1998, then increased by 517 percent from 1998 to 2000 (Table 33). The number of fishing trips has also declined over 86 percent from 1991 to 1998, and then increased by 316 percent from 1998 to 2000. The decrease in the recreational fishery in the 1990s occurred both with and without any recreational harvest limits, and it is perhaps a result of the stock being over-exploited and at a low biomass level during that period. In addition, it is possible that party/charter boats may had targeted other species that were relatively more abundant than scup (e.g., striped bass), thus accounting for the decrease in the number of fishing trips in this fishery in the 1990s. Recreational landings decreased from 5.44 million lb in 2000 to 3.62 million lb in 2002 (e.g., a 33 percent decrease). In 2003, recreational landings increased 5.71 million lb (158 percent) from the 2002 landings value of 3.62 million lb. Under this alternative, the scup 2005 recreational harvest limit (adjusted for research set-aside) is 3.96 million lb. Thus, the harvest limit in 2005 would be a decrease of <1 percent from the 2004 recreational limit. If 2004 landings equal the 2003 landings (9.33 million lb), more restrictive limits (i.e., lower possession limits, greater minimum size limits, and/or shorter seasons) would be necessary to prevent anglers from exceeding this recreational harvest limit in 2005. As indicated above, under alternative 1, the scup TAL is the status quo measure. The difference between the scup recreational harvest limit between year 2005 and 2004 is due to a higher research set-aside value used to derive the adjusted limits in 2005 relative to 2004.

Black sea bass recreational fishing trips have shown a slight upward trend from the early to Mid-1990's (Table 34). Black sea bass recreational landings have also shown a slight upward trend from 1991 to 1997. However, landings decreased considerably from 1995-1996 to 1998-1999, but then substantially increased in 2000 to 4.01 million lb. In 2001, 2002, and 2003 recreational landings were 3.42, 4.46, and 4.26 million lb, respectively. Under this alternative, the black sea bass 2005 recreational harvest limit (adjusted for Research set-aside) is 4.13 million lb. Thus, the harvest limit in 2005 would represent an increase of 3 percent from the 2004 recreational harvest limit.

Recreational landings for all three fisheries have fluctuated over the past several years. The number of trips targeting a given species in any given year is quite variable. In the aggregate, total number of recreational trips (all modes combined) in the North Atlantic and Mid-Atlantic subregions combined have remained relatively stable with a slight downward trend for the 1990 to 2002 time period. On average, for the 1990-2002 period, approximately 23.0 million marine recreational fishing trips (all modes combined) were taking in the North Atlantic and Mid-Atlantic subregions combined. For that period, marine recreational trips ranged from 18.0 million trips in 1992 to 30.2 million trips in 2001. In addition, the number of party/charter boat trips taken in the North Atlantic and Mid-Atlantic subregions combined have fluctuated throughout the 1990-2002 period, ranging from 2.6 million trips in 1993 to 1.1 million trips in 1999. On average, for the 1990-2002 period, 1.8 million party/charter marine fishing trips were taken in the North Atlantic and Mid-Atlantic sub-regions combined. In 2000, 2001, and 2002 1.4, 1.6, and 1.3 million party/charter boat trips were taken in the North Atlantic and Mid-Atlantic subregions combined, respectively.

At the present time, there is neither behavioral nor demand data available to estimate how sensitive party/charter boat anglers might be to proposed fishing regulations. In the summer flounder, scup, and black sea bass fisheries, there is no mechanism to deduct overages directly from the recreational harvest limit. Any overages must be addressed by way of adjustments to the management measures. While it is likely that proposed management measures may restrict the recreational fishery for 2005, and these measures may cause some decrease in recreational satisfaction (i.e., low bag limit, larger fish size or closed season), there is no indication that any of these measures may lead to a decline in the demand for party/charter boat trips. Currently, the market demand for this sector is relatively stable. It is unlikely that these measures will result in any substantive decreases in the demand for party/charter boat trips. It is likely that party/charter anglers will target other species when faced with potential reductions in the amount of scup that they are allowed to catch.

As indicated in the introduction to the RIR/IRFA, the effects of the specific recreational management measures (i.e., bag limits, size limits, seasonal closures) for summer flounder, scup, and black sea bass will be analyzed when the Council and Board submit recommendations for 2005 recreational measures. The Council and the Board will meet in December 2004 to adopt 2005 recreational management measures, when more complete data regarding 2004 recreational landings are available. A comprehensive document for the recreational specifications for summer flounder, scup, and black sea bass will be prepared after the December Council meeting.

5.1.1.3 Other Impacts

Effects of Commercial Possession Limits, Minimum Mesh, and Minimum Fish Size

For the summer flounder and black sea bass fisheries no changes to the existing current minimum fish size, minimum mesh regulations, minimum mesh threshold, and/or minimum vent size regulations will be made for 2005. The continuation of these alternatives is not expected to result in changes to the economic and social aspects of the fishery relative to 2004. A description of the impacts of these measures is presented in sections 7.1.1 (summer flounder) and 7.3.1 (black sea bass) of the EA.

For the scup fishery the current minimum fish size, minimum vent size, Winter II possession limit, the transfer of unused scup quota from Winter I to Winter II period, and winter period mesh threshold regulations will remain unchanged in 2005. The continuation of these alternatives is not expected to result in changes to the economic and social aspects of the fishery in 2005 relative to 2004. A description of the impacts of these scup measures is presented in section 7.2.1 of the EA.

Alternative measures addressing preferred changes in the scup fishery are: 1) minimum mesh regulation (alternative 5.2 of the EA); 2) summer period minimum mesh threshold (alternative 6.2 of the EA); 3) GRA modification (alternative 7.2 of the EA); Winter I possession limits (alternative 4.2 of the EA); and end the GRA exemption program (alternative 8.2). The potential impacts of these alternatives are discussed below. In addition, potential impacts of the research set-aside are discussed below.

Effects of the proposed scup Winter I possession limit

Under alternative 4.2 (preferred alternative) the Council and Commission recommended to change the current Winter I possession limits in the scup fishery from 15,000 lb per week (state landings limit for a 1 week period) to a possession limit of 30,000 lb (state landings limit for a 2 week period). Because scup are a schooling species, otter trawl vessels operating where scup occur will occasionally make very large hauls that consist almost entirely of scup. Under the current system, when one of these hauls is brought up, the trip limit may be kept by the hauling vessel while the remaining catch must be discarded. Under the proposed action alternative the contents of a 30,000 lb scup haul could be landed given the proposed Winter I possession limit. This would convert regulatory discards of scup into landings, thus reducing bycatch and improving the efficiency of the commercial scup fishery. However, in practice this alternative will allow the same amount of scup to be landed in a two week period in 2005 as in 2004. This measure is likely to result in positive biological and socioeconomic impacts to the stock as it allows for regulatory discards of scup to be converted into landings, thus reducing bycatch and improving the efficiency of the commercial scup fishery. A description of the impacts of the preferred scup Winter I possession limit is presented in section 7.2.5 of the EA.

Effects of the scup minimum mesh size

Alternative 5.2 (preferred alternative) would implement a minimum mesh size for the scup fishery of 5" with a minimum length of 75 meshes from the terminus of the net. For small nets with less than 75 meshes codends the entire net will be 5". While this alternative is not expected to substantially alter overall scup landings, it will have positive biological and socioeconomic impacts as it allows for a reduction in the discard of undersized fish thus improving the efficiency of the commercial scup fishery relative to the status quo minimum mesh. As indicated in the EA, vessels currently participating in the scup fishery would only require to make minor modifications to the existing mesh in order to comply with this measure and no additional material (mesh) needs to be purchased. More specifically, in existing scup gear, the 4.5" portion of the net needs to be eliminated and the length of the 5.0" mesh needs to be reduced to comply with the proposed mesh regulations under this alternative. It is likely that these modifications can be made in a few hours depending on the size (length) of the mesh to be modified (James Ruhle Sr., pers. comm.). The cost of making the proposed mesh modifications under this alternative is minimal. A description of the impacts of the preferred scup minimum mesh size alternative is presented in section 7.2.7 of the EA.

Effects of the scup mesh threshold level

Alternative 6.2 (preferred alternative) would change the current threshold level used to trigger the mesh requirement from 100 lb to 200 lb from May through October 31. The Winter threshold would remain unchanged. While this alternative is not expected to substantially alter overall scup landings, it will have positive biological and socioeconomic impacts as it allows for a reduction in the discard of undersized fish thus improving the efficiency of the commercial scup fishery relative to the status quo (May 1 through October 31) threshold. A description of the impacts of the preferred threshold levels to trigger the scup mesh requirement is presented in section 7.2.9 of the EA.

Effects of the GRAs

Alternative 7.2 (preferred alternative) would move the souther GRA three minutes westward. By moving the entire area covered by the current southern GRA three longitudinal minutes to the west, a strip of approximately 500 nm^2, would be made available to small mesh gear east of southern GRA, while an area of equal size, would be closed to small mesh gear to the west of southern GRA. Social impacts associated with alternative 7.2 are likely to be related to changes in the availability of scup, black sea bass and *Loligo* to participants in the small mesh trawl fishery. Trawl survey data indicate that availability for all three species should increase under alternative 7.2 relative to the status quo (current GRA). This expectation is based on the net difference in survey captures between proposed southern GRA and the current GRA relative to total winter/spring survey catch (Table 18: 2.8 percent increase for scup; 4.5 percent increase for black sea bass; 7.5 percent increase for *Loligo*). Calculating revenue gains for the respective fisheries directly from these percentages would require a number of unrealistic assumptions. Impacts on ports and communities are likely to be positive, though low in magnitude, as fishermen will have marginally greater access to these resources. A description of the impacts of the preferred GRA measure is presented in section 7.2.10.2 of the EA.

Effects of terminating the current GRA exemption program

Alternative 8.2 (preferred alternative) eliminates the current GRA exemption program. The current exemption program for fishermen using modified gear stipulates that vessels fishing with small mesh and having an escapement extension of 45 meshes of 5.5" square mesh behind the body of the net and ahead of the codend could fish in the GRAs while carrying an observer onboard. However, since no fishing vessels have participated in the exemption program since its implementation, it is not expected that the elimination of this program would result in changes to the economic and social aspects of the fishery relative to previous years. A description of the impacts of associated with the elimination of the GRA exemption program is presented in section 7.2.12 of the EA.

Effects of the research set-aside (2005 and 2006)

The research set-aside discussion presented in this section corresponds to the 2005 (summer flounder, scup, and black sea bass) and 2006 (summer flounder) fishing years.

Under this program, successful applicants receive a share of the annual quota for the purpose of conducting scientific research. The Nation receives a benefit in that data or other information about that fishery is obtained for management or stock assessment purposes that would not otherwise be obtained. In fisheries where the entire quota would be taken and the fishery is prematurely closed (i.e., the quota is constraining), the economic and social costs of the program are shared among the non research set-aside participants in the fishery. That is, each participant in a fishery that utilizes a resource that is limited by the annual quota relinquishes a share of the amount of quota retained in the research set-aside quota.

The socioeconomic discussion of the evaluated commercial quotas discussed in sections 7.1.1, 7.2.1, and 7.3.1 of the EA were based on adjusted commercial quotas accounting for the research set-aside proposed under this alternative. More specifically, a maximum summer flounder research set-aside of 353,917 lb for 2005 and a research set-aside amount of up to 3-percent of the TAL were assessed for summer flounder for year 2006 and were used to derived the adjusted commercial quotas and recreational harvest limits in all evaluated alternatives. In addition, a research set-aside of 303,675 lb for scup and 109,500 lb for black sea bass for 2005 were also assumed.

Summer Flounder

The social and economic impacts of the summer flounder research should be minimal. For example under the preferred alternative, the set-aside could be worth as much as $569,806 dockside in 2005 and $1,593,900 in 2006 based on a 2003 price of $1.61 per pound. As such, assuming an equal reduction among all active commercial vessels (i.e., 839 vessels that landed summer flounder in 2003), this could mean a reduction of approximately $679 and $1,900 per individual vessel in 2005 and 2006, respectively. However, it is important to mention that these are the maximum allowable amounts of anticipated research set asides. For example, the research set-asides for 2006 were based on amounts of up to 3-percent of the summer flounder TALs for 2006. This was done because the information pertaining the potential amounts of research set-aside needed to conduct research in 2006 are not yet known. Nevertheless, since the implementation of the research set-aside program in 2003, the amount of summer flounder requested has ranged from 91,163 to 353,917 lb. It is most likely that the amount of set-aside that will be requested for 2006 will be less than 3-percent of the summer flounder TAL for 2006 (i.e., less than 990,000 lb). Therefore, the analyses presented above likely corresponds to an upper limit revenue reduction in 2006 for the commercial fishery compared to a commercial quota without research set-aside for that year. Changes in the recreational harvest limit would be insignificant; the limit changes from 11.12 to 11.98 million lb (a 1.5 percent decrease) in 2005 and from 13.20 to 12.80 million lb (a 4.9 percent decrease) in 2006 if 353,917 and 990,000 lb are used for research in 2005 and 2006, respectively. As such, it is unlikely that the possession, size or seasonal limits would change as the result of this research set-aside and, as such, there would be no negative impacts.

Scup and Black Sea Bass

The social and economic impacts of the scup and black sea bass research should be minimal. For example under the preferred alternatives, the scup and black sea bass set-asides could be worth in 2005 as much as $182,205 and $221,190 dockside, respectively, (based on a 2003 price of $0.60/lb for scup and $2.02/lb for black sea bass). As such, assuming an equal reduction among all active scup commercial vessels (i.e., 566 vessels that landed scup in 2003), this could mean a reduction of approximately $322 per individual vessel in

2005. Assuming an equal reduction among all active black sea bass commercial vessels (i.e., 702 vessels that landed black sea bass in 2003), this could mean a reduction of approximately $315 per individual vessel in 2005.

Changes in the recreational harvest limit would be insignificant; the scup limit changes from 4.03 to 3.96 million lb (a 1.8 percent decrease) and the black sea bass limit changes from 3.92 to 3.87 million lb (a 1.3 percent reduction) in 2005. As such, it is unlikely that the possession, size or seasonal limits would change as the result of this research set-aside and, as such, there would be no negative impacts.

In addition, it is possible that the vessels that would be used by researchers to conduct the research would be vessels that have not traditionally fished for summer flounder, scup, and/or black sea bass. As such, permit holders that would have landed these species during a period were the quota has been reached and the fishery closed could be disadvantaged.

If the amounts of summer flounder, scup, and black sea bass allocated to research set-aside are not used and are put back into the overall TAL for each fishery in 2005 and 2006, then the amount of summer flounder, scup, and black sea bass available to all vessels in would increase by the respective set-asides originally deducted for each of the species. In this case scenario, the revenue reductions described above would disappear.

Research set-aside Impacts on GRAs for Scup, Black Sea Bass, and Loligo

Proposed research will exempt vessels fishing with small mesh from the current and proposed GRA regulations, i.e., allow them to catch and retain several species of fish including scup, black sea bass, and *Loligo* squid from these areas during a closure.

NMFS implemented the current GRAs in 2001 based on a recommendation of the Council and Commission. These GRAs regulate the use of otter trawls with codend mesh less than 4.5" in areas and times that were identified as having high scup discards. Current specific areas and times include a northern GRA from November 1 to December 31 and a southern GRA from January 1 to March 15. The Council proposed to continue the GRAs in 2005 with one modification. Specifically, the Council adopted a shift in the southern GRA westward by 3 longitudinal minutes. This change is discussed in detail in **section** 7.2.10.2 of the EA. Current regulations prohibit fishing for *Loligo* squid, black sea bass, and silver hake in the GRAs using mesh smaller than 4.5" during the effective times.

Analyses conducted to support these GRAs, indicate that these areas and times were associated with high levels of scup discards. As such, fishing with small mesh in these areas could mitigate the effects of the GRAs thereby increasing the discards of scup relative to quotas without research set-aside. However, given the level of the research set-aside, the effects on scup discards and mortality should be minimal. In addition, because landings of the regulated species count against the overall quotas for each species, the overall mortality level does not change relative to the no action alternative.

The social and economic impacts of this research should be minimal. The set-aside could be worth as much as $182,205, $221,190, and $424,231 dockside for scup, black sea bass and *Loligo* squid based on 2003 prices, respectively. Assuming an equal reduction among all active vessels (i.e., 566, 702, and 402 vessels that landed scup, black sea bass, and *Loligo* in 2003, respectively), this may mean a reduction of $322, $315, and $1,055 per individual vessel, for scup, black sea bass, and *Loligo*, respectively. However, if a vessel is participating in two or more of these fisheries, the revenue reduction could be greater. It is also possible that the vessels used by researchers [to conduct the research] are vessels that have not traditionally fished for these species. As such, some minimal distributive effects may result as permit holders that would have landed these species could be disadvantaged.

5.1.1.4 Summary of Impacts

In sum, the proposed 2005 adjusted commercial quotas in preferred alternative 1 for summer flounder, scup, and black sea bass for the year 2004 are 7 percent higher, < 1 percent lower, and 5 percent higher, respectively, relative to the adjusted quotas for year 2004. The recreational harvest limits (adjusted for research set-asides) in preferred alternative 1 for summer flounder, scup, and black sea bass for the year 2005 are 6 percent higher, < 1 percent lower, and 3 percent higher relative to the adjusted recreational harvest limits for year 2004. The commercial quotas and recreational harvest limits selected as the preferred alternative were chosen because they provide for the maximum level of commercial and recreational landings, yet still achieve the fishing mortality and exploitation rates specified in the FMP.

The threshold analysis indicates that 40 commercial vessels are projected to incur in small revenue reductions (less than 5 percent). However, given the reduction in the scup fishing opportunity in 2005 relative to 2004 (< 1 percent) would result in very small revenue reductions. In addition, potential revenue losses associated with the small reduction in scup quota can be further mitigated by quota gains in the other fisheries (summer flounder and black sea bass) for vessels that land summer flounder and/or black sea bass in addition to scup.

Assuming 2003 ex-vessel prices and the effect of potential changes in prices due to changes in landings in 2005 versus 2004, the 2005 quotas in alternative 1 (after overages and research set-aside have been applied) would increase summer flounder and black sea bass ex-vessel revenues by $1.9 million and $384 thousand, respectively, and decrease scup revenues by $60 thousand relative to 2004.

If the increase in total summer flounder total ex-vessel gross revenues associated with the preferred alternative is distributed equally among the 839 vessels that landed summer flounder in 2003, the average increase in revenue associated with the increase in summer flounder quota is approximately $2,322/vessel. Assuming the decrease in scup total ex-vessel gross revenues associated with this alternative is distributed equally among the 566 vessels that landed scup in 2003, the average increase in revenue associated with the increase in the scup quota is approximately $106/vessel. Finally, if the increase in black sea bass total ex-vessel gross revenues associated with this alternative is distributed equally among the 702 vessels that landed black sea bass in 2003, the average increase in revenue associated with the increase in black sea bass quota is approximately $546 vessel. The overall change in ex-vessel gross revenue associated with the three species combined in 2005 relative to 2004 is approximately $2.3 million (assuming 2002 ex-vessel prices) under the preferred alternative. If this is distributed among the 1,040 vessels that landed summer flounder, scup, and black sea bass in 2003, the average increase in revenue is approximately $2,184/vessel.

It is important to stress that these are potential changes, i.e., based on available data. Actual changes in revenue will likely vary. This variation would occur for several reasons, including impacts undetermined for unidentifiable vessels, revenues earned or lost due to possession limits and seasons set by a state to manage sub-allocations of quota, and unanticipated reductions in 2005 for quota overages that were not accounted for here. These commercial quotas were identified as the preferred alternative because they are consistent with the requirement to eliminate overfishing and to attain the rebuilding objectives specified in the FMP for summer flounder, scup and black sea bass, and because they maximize commercial landings to the extent practicable.

Recreational landings for all three fisheries have fluctuated over the past several years. The number of trips targeting a given species in any given year is quite variable. The recreational harvest limits chosen under alternative 1 were selected by the Council and Commission because they are consistent with the requirement to eliminate overfishing and to attain the rebuilding objectives specified in the FMP for summer flounder, scup and black sea bass, and because they maximize recreational landings to the extent practicable. These limits are not expected to produce a decline in the demand for party/charter boat trips or affect angler participation in a negative manner.

The preferred GRA alternative would move the souther GRA three minutes westward. By moving the entire area covered by the current southern GRA three longitudinal minutes to the west, a strip of approximately 500 nm^2, would be made available to small mesh gear east of southern GRA, while an area of equal size, would be closed to small mesh gear to the west of southern GRA. Social impacts associated with this preferred alternative are likely to be related to changes in the availability of scup, black sea bass and *Loligo* to participants in the small mesh trawl fishery. Because the loss of protection from associated with moving the souther GRA three minutes westward is small it is not considered to have adverse biological impacts to the scup stock.

The scup possession limits were chosen as an appropriate balance between the economic concerns of the industry (e.g., landing enough scup to make the trip economically viable) and the need to ensure the equitable distribution of the quota over the period. Changes in possession limits can impact profitability in various ways. These impacts would vary depending of fishing practices. The possession limits were selected to provide the market a regular product supply, avoiding market gluts, and according to anecdotal information potential price fluctuations that occur as result of irregular supply. Furthermore, the proposed Winter I possession limit of 30,000 lb (state landings limit for a 2 week period) would convert regulatory discards of scup into landings, thus reducing bycatch and improving the efficiency of the commercial scup fishery.

For the summer flounder and black sea bass fisheries no changes to the existing current minimum fish size, minimum mesh regulations, minimum mesh threshold, and/or minimum vent size regulations will be made for 2005. The continuation of these alternatives is not expected to result in changes to the economic and social aspects of the fishery relative to 2004.

In addition, under this alternative the scup current minimum fish size, minimum vent size, Winter II possession limit, the transfer of unused scup quota from Winter I to Winter II period provision, and winter period mesh threshold regulations will remain unchanged in 2005. As such, these measures are not expected to result in changes to the economic and social aspects of the fisheries in 2004 relative to 2003.

The social and economic impacts of research set-asides should be minimal. The research set-asides are, conceptually, available for commercial vessels to participate in research, as well as for other vessels. Also, the research set-asides are expected to yield important long-term benefits associated with improved data upon which to base management decisions.

Alternative 1 was selected as the preferred alternative by the Council and Board because it provides harvest levels that will attain the rebuilding objectives specified in the FMP. This alternative is projected to minimize the negative economic impacts upon small entities among all alternatives evaluated while meeting the rebuilding objectives of the FMP.

5.1.2 Quota Alternative 2 (Most Restrictive)

This alternative examines the impacts on industry that would result from the most restrictive harvest levels for summer flounder (status quo), scup, and black sea bass (status quo). To analyze the economic effects of this alternative, the total harvest levels specified under section 5 of the EA were employed.

Under this alternative, the summer flounder specifications would result in a small aggregate decrease (< 1 percent) in allowable commercial landings and recreational harvest limit relative to the 2004 allocations (Tables 27 and 32). The scup specifications would result in an aggregate 36 percent decrease in allowable commercial landings relative to the 2004 quota and a 31 percent decrease in the recreational harvest limit relative to the 2004 limit (Tables 27 and 33). The black sea bass specifications would result in an aggregate 3 percent increase in allowable commercial landings relative to the 2004 quota and a < 1 percent increase in the recreational harvest limit relative to the 2004 limit (Tables 27 and 34). Again, this alternative makes the same assumptions about landings as are made in the previous analyses.

Even though the overall 2005 commercial TALs for summer flounder and black sea bass under this alternative are the same as in 2004, the adjusted commercial quotas and recreational harvest limits are slightly different than the allocations implemented in 2004 mainly due to differences in the research set-asides used to derived adjusted allocations during those two time periods.

5.1.2.1 Commercial Impacts

The results of the threshold analysis are reported in Table 22. The analysis of the harvest levels under this alternative indicate that the economic impacts ranged from expected revenue losses in the order of 30-39 percent for 10 vessels that landed scup only and 3 vessels that landed scup and black sea bass to increase in revenue for 191 vessels that landed black sea bass only or a combination of black sea bass with the other two species. The majority of the revenue losses of 5 percent or higher are attributed to quota reductions associated with the scup fishery. All vessels with revenue losses of 5 percent or higher had landed scup only, or a combination of scup with the other two species. Since Alterative 2 is the most restrictive alternative, impacts of other alternatives will be less than the impacts under this alternative.

Impacts of the quotas provisions were examined relative to a vessel's home state as reported on the vessel's permit application (Table 35). "Home state" indicates the state where a vessel is based and primarily ported, and is presumed to reflect to where the costs and benefits of management actions return. However, home state is self-reported at the time an individual applies for a federal permit and may not necessarily indicate where the vessel subsequently conducts most of its activity. The number of vessels with revenue reduction of less than 5 percent by home state ranged from 1 in Delaware to 156 in Massachusetts. The number of vessels with revenue reduction of 5 to 39 percent, ranged from 1 vessel in New Jersey, Maryland, and Virginia to 38 vessels in New York.

By virtue of holding a valid federal permit for summer flounder, scup, or black sea bass a vessel is subject to any regulations that are promulgated under the FMP. From this perspective, these vessels are subject to any quota specification whether or not they actually choose to engage in any one of the three (summer flounder, scup, or black sea bass) fisheries. The decision to engage in any given fishery during a given time period is subject to numerous considerations from temporary suspension of fishing due to illness or vessel construction or repair to merely a reasoned decision to pursue other fisheries. Given the limited access nature of the fisheries, a vessel may wish to continue to hold a permit to preserve the opportunity to engage in the fishery when circumstance allows.

In addition to the threshold analysis described above, the Council also analyzed changes in total ex-vessel gross revenue that would occur as a result of the quota alternatives. Assuming 2003 ex-vessel prices (summer flounder -- $1.61/lb; scup -- $0.60/lb; and black sea bas --$2.02/lb), the 2005 quotas associated with alternative 2 would approximately increase black sea bass ex-vessel revenues by approximately $202 thousand and decrease revenues for summer flounder and scup by < $81 thousand and $2.6 million relative to 2004, respectively.

Assuming the decrease in summer flounder total ex-vessel gross revenues associated with alternative 2 is distributed equally among the 839 vessels that landed summer flounder in 2003, the average decrease in revenue associated with the decrease in summer flounder quota is $95/vessel. Assuming the decrease in scup total ex-vessel gross revenues associated with this alternative is distributed equally among the 566 vessels that landed scup in 2003, the average decrease in revenue associated with the decrease in scup quota is $4,654/vessel. Finally, if the increase in black sea bass total ex-vessel gross revenues associated with this alternative is distributed equally among the 702 vessels that landed black sea bass in 2003, the average increase in revenue associated with the increase in black sea bass quota is $288/vessel.

The overall reduction in ex-vessel gross revenue associated with the three species combined in 2005, relative to 2004, is approximately $2.5 million (assuming 2003 ex-vessel prices) under alternative 2. If this is distributed among the 1,040 vessels that landed summer flounder, scup, and black sea bass in 2003, the average decrease in revenue is approximately $2,416/vessel. The changes in gross revenues associated with the potential changes in landings in 2005 versus 2004 assumed static prices for summer flounder, scup, and black sea bass. However, if prices for these species decrease or increase as a consequence of changes in landings, then the associated revenue increases and decreases could be different than those estimated above.

5.1.2.2 Recreational Impacts

Under this alternative, the summer flounder 2005 recreational harvest limit (adjusted for research set-aside) is 11.14 million lb. This limit is a < 1 percent decrease from the 2004 recreational harvest limit (Table 32). The scup recreational harvest limit (adjusted for research set-aside) for 2005 would be set equal to 2.74 million lb. This is a 31 percent decrease over the 2004 recreational harvest limit (Table 33). Finally, this alternative would set the black sea bass recreational harvest limit (adjusted for research set-aside) for 2005 at 4.02 million lb. This level represents a < 1 percent increase from the 2004 recreational harvest limit (Table 34).

Recreational landings for all three fisheries have fluctuated over the past several years. The number of trips targeting a given species in any given year is quite variable. In the aggregate, total number of recreational trips (all modes combined) in the North Atlantic and Mid-Atlantic subregions combined have remained relatively stable with a slight downward trend for the 1990 to 2002 time period. On average, for the 1990-2002 period, approximately 23.0 million marine recreational fishing trips (all modes combined) were taking in the North Atlantic and Mid-Atlantic subregions combined. For that period, marine recreational trips ranged from 18.0 million trips in 1992 to 30.2 million trips in 2001. In addition, the number of party/charter boat trips taken in the North Atlantic and Mid-Atlantic subregions combined have fluctuated throughout the 1990-2002 period, ranging from 2.6 million trips in 1993 to 1.1 million trips in 1999. On average, for the 1990-2002 period, 1.8 million party/charter marine fishing trips were taken in the North Atlantic and Mid-Atlantic sub-regions combined. In 2000, 2001, and 2002 1.4, 1.6, and 1.3 million party/charter boat trips were taken in the North Atlantic and Mid-Atlantic subregions combined, respectively.

At the present time, there is neither behavioral nor demand data available to estimate how sensitive party/charter boat anglers might be to proposed fishing regulations. In the summer flounder, scup, and black sea bass fisheries, there is no mechanism to deduct overages directly from the recreational harvest limit. Any overages must be addressed by way of adjustments to the management measures. While it is likely that proposed management measures may restrict the recreational fishery for 2005, and these measures may cause some decrease in recreational satisfaction (i.e., low bag limit, larger fish size or closed season), there is no indication that any of these measures may lead to a decline in the demand for party/charter boat trips. Currently, the market demand for this sector is relatively stable. It is unlikely that these measures will result in any substantive decreases in the demand for party/charter boat trips. It is likely that party/charter anglers will target other species when faced with potential reductions in the amount of summer flounder or scup that they are allowed to catch.

5.1.2.3 Other Impacts

The impacts of non-quota management measures described in section 5.1.1.3 above also apply here.

5.1.2.4 Summary of Impacts

Alternative 2 allows commercial fishermen to land approximately the same quantity of summer flounder and black sea bass, and significantly less scup in 2005 versus 2004. Recreational harvest limits would be about the same for summer flounder and black sea bass relative to the 2004 limits. However, under this alternative the scup limit in 2005 is significantly lower relative to the 2004 limit.

Under this alternative, a total of 105 of 1,040 commercial vessels were projected to incur in revenue losses ranging from 5 to 39 percent. In addition, it is estimated that 191 vessels would increase revenue in 2005 relative to 2004 and 744 would have decrease in revenue of less than 5 percent. Vessels that landed scup only were proportionally more affected with revenue losses of more than 5 percent.

Assuming 2003 ex-vessel prices and the effect of potential changes in prices due to changes in landings in 2005 versus 2004, the 2005 quotas in alternative 2 (after overages and research set-aside have been applied) would increase black sea bass ex-vessel revenues by approximately $202 thousand and decrease summer flounder and scup revenues by < $81 thousand and $2.6 million, respectively.

If the increase in total black sea bass ex-vessel gross revenues associated with alternative 2 is distributed equally among the 702 vessels that landed that species in 2003, the average increase in revenue in the commercial black sea bass fishery is approximately $288/vessel. If the decrease in total summer flounder and scup gross revenues associated with this alternative are also distributed equally among the vessels landed summer flounder (839) and scup (566) in 2003, the average decrease in revenue in the summer flounder and scup fisheries is approximately $96/vessel and $4,654/vessel, respectively. However, it is important to mention that the changes in gross revenues associated with the potential changes in landings in 2004 versus 2003 assumed static prices (i.e., 2002) for summer flounder, scup, and black sea bass. However, if prices for these species decrease or increase as a consequence of changes in landings, then the associated revenue increases and decreases could be different than those estimated above.

The total harvest levels for summer flounder, scup, and black sea bass analyzed under this alternative is more conservative than those presented in alternative 1 (preferred). More specifically, the commercial summer flounder, scup, and black sea bass harvest levels (after overages and research set-aside have been applied) under this alternative are approximately 1.3, 4.3, and 0.1 million lb lower than the limits specified under alternative 1, respectively. While these measures may present an improved probability of attaining the rebuilding objectives specified in the FMP, the negative economic impacts upon small entities are significantly higher than under alternative 1. Therefore, this alternative was not selected by the Council and Board because of the potential adverse economic impacts associated with it.

The preferred GRA alternative would move the souther GRA three minutes westward. By moving the entire area covered by the current southern GRA three longitudinal minutes to the west, a strip of approximately 500 nm^2, would be made available to small mesh gear east of southern GRA, while an area of equal size, would be closed to small mesh gear to the west of southern GRA. Social impacts associated with this preferred alternative are likely to be related to changes in the availability of scup, black sea bass and *Loligo* to participants in the small mesh trawl fishery. Because the loss of protection from associated with moving the souther GRA three minutes westward is small it is not considered to have adverse biological impacts to the scup stock.

The scup possession limits were chosen as an appropriate balance between the economic concerns of the industry (e.g., landing enough scup to make the trip economically viable) and the need to ensure the equitable distribution of the quota over the period. Changes in possession limits can impact profitability in various ways. These impacts would vary depending of fishing practices. The possession limits were selected to provide the market a regular product supply, avoiding market gluts, and according to anecdotal information potential price fluctuations that occur as result of irregular supply. Furthermore, the proposed Winter I possession limit of 30,000 lb (state landings limit for a 2 week period) would convert regulatory discards of scup into landings, thus reducing bycatch and improving the efficiency of the commercial scup fishery.

Under this alternative the current summer flounder minimum fish size, minimum mesh regulations, and minimum mesh threshold regulations for 2005; and the continuation of the current black sea bass minimum fish size, minimum mesh regulations, minimum mesh threshold, and minimum vent size regulations for 2005. As such, these measures are not expected to result in changes to the economic and social aspects of the fisheries in 2004 relative to 2003.

In addition, under this alternative the scup current minimum fish size, minimum vent size, Winter II possession limit, the transfer of unused scup quota from Winter I to Winter II period provision, and winter period mesh threshold regulations will remain unchanged in 2005. As such, these measures are not expected to result in changes to the economic and social aspects of the fisheries in 2004 relative to 2003.

The social and economic impacts of research set-asides should be minimal. The research set-asides are, conceptually, available for commercial vessels to participate in research, as well as for other vessels. Also, the research set-asides are expected to yield important long-term benefits associated with improved data upon which to base management decisions. However, given the substantial decrease in the scup quota in 2005 relative to 2004, the cost of any premature closure of the fishery (pounds of scup allocated for set-aside) would be shared among the non research set-aside participants in the fishery.

It is important to stress that these changes represent merely the potential, i.e., based on available data. Actual changes in revenue will likely vary. This variation would occur for several reasons, including impacts undetermined for unidentifiable vessels, revenues earned or lost due to possession limits and seasons set by a state to manage sub-allocations of quota, and unanticipated reductions in 2005 for quota overages in 2004 that were not accounted for here.

5.1.3 Quota Alternative 3 (Least Restrictive)

This alternative examines the impacts on industry that would result from the least restrictive harvest levels for summer flounder, scup and black sea bass. To analyze the economic effects of this alternative, the total harvest levels specified under section 5 of the EA were employed.

Under this alternative, the summer flounder specifications would result in a 15 percent increase in allowable commercial landings and recreational harvest limit relative to the 2004 allocations (Tables 27 and 32). The scup specifications would result in an aggregate 34 percent increase in allowable commercial landings relative to the 2004 quota and a 31 percent increase in recreational harvest relative to the 2004 limit (Tables 27 and 33). The black sea bass specifications would result in an aggregate 12 percent increase in allowable commercial landings relative to the 2004 quota and a 4 percent increase in the recreational harvest limit relative to 2004 limit (Tables 27 and 34). Again, this alternative makes the same assumptions about landings as are made in the previous analyses.

5.1.3.1 Commercial Impacts

The results of the threshold analysis indicate that across all vessel classes, a total of 1,040 vessels were projected to be impacted by revenue increase (relative to 2004). There were no vessels projected to incur in revenue losses relative to 2004.

The overall negative projected summer flounder quota for Delaware is the consequence of overages in previous years and projected 2004 overages. Even though, the Delaware overall summer flounder quota for 2005 (adjusted) is projected to be zero, there were no vessels impacted to incur in revenue losses. Summer flounder landings in Delaware are typically only a few thousand ponds per year and it is possible that vessels landing small quantities of summer flounder in Delaware also landed larger quantities of summer flounder in other states, thus benefitting from the increase in quota in those other states in 2005 versus 2004. In addition, it is possible that some of these vessels also landed scup and black sea bass along with summer flounder, thus benefitting from the increase in scup and black sea bass quotas in 2005 and therefore not showing a reduction in ex-vessel revenue. The vessel distribution by landing combination and home port state for these vessels is similar to that presented under the 3rd column from the left in Table 22 and 2nd column from the left in Table 35, respectively.

In addition to the threshold analysis described above, the Council also analyzed changes in total ex-vessel gross revenue that would occur as a result of the quota alternatives. Assuming 2003 ex-vessel prices (summer flounder -- $1.61/lb; scup -- $0.60/lb; and black sea bass -- $2.02/lb), the 2005 quotas associated with alternative 3 would increase summer flounder, scup, and black sea bass by approximately $4.2 million, $2.5 million, and $889 thousand, respectively, relative to 2004.

Assuming the increase in summer flounder total ex-vessel gross revenues associated with alternative 3 is distributed equally among the 839 vessels that landed summer flounder in 2003, the average increase in revenue associated with the increase in summer flounder quota is $4,970/vessel. Assuming the increase in scup total gross revenues associated with this alternative is distributed equally among the 566 vessels that landed scup in 2003, the average increase in revenue associated with the increase in scup quota is $4,442/vessel. Finally, if the increase in black sea bass total gross revenues associated with this alternative is distributed equally among the 702 vessels that landed black sea bass in 2003, the average increase in revenue associated with the increase in black sea bass quota is $1,266/vessel.

The overall change in gross revenue associated with the three species combined in 2005 relative to 2004 is approximately $7.6 million (assuming 2003 ex-vessel prices) under alternative 3. If this is distributed among the 1,040 vessels that landed summer flounder, scup, and black sea bass in 2003, the average increase in revenue is approximately $7,281/vessel. The changes in gross revenues associated with the potential changes in landings in 2005 versus 2004 assumed static prices for summer flounder, scup, and black sea bass. However, if prices for these species decrease or increase as a consequence of changes in landings, then the associated revenue increases and decreases could be different than those estimated above.

5.1.3.2 Recreational Impacts

Under this “least restrictive” alternative, the 2005 summer flounder, scup, and black sea bass recreational harvest limits (adjusted for research set-asides) are 12.90, 5.17, and 4.38 million lb, respectively. The 2005 limits for summer flounder, scup, and black sea bass represent a 15, 31, and 4 percent increase relative to the 2004 limits for these species, respectively.

The proposed management measures under this alternative are not expected to restrict the recreational summer flounder, scup, or black sea bass fisheries for 2005 relative to 2004. Given that the summer flounder, scup, and black sea bass harvest limits levels are projected to increase, it is not anticipated that angler satisfaction or the demand for party/charter boat trips will be adversely affected in 2005 relative to 2004.

5.1.3.3 Other Impacts

The impacts of non-quota management measures described in section 5.1.1.3 above also apply here.

5.1.3.4 Summary of Impacts

Alternative 3 allows commercial fishermen to land more summer flounder in 2005 than in each year from 1996-2004. It would also allow fishermen to land more scup in 2005 than in each year from 1997-2004. This alternative would also allow more black sea bass to be landed in 2005 than in each year from 1998-2004. In addition, recreational landings would increase for summer flounder, scup, and black sea bass relative to the 2004 limits.

The threshold analysis indicates that all 1,040 commercial vessels were projected to incur revenue gain. This due to the fact that quotas in 2005 are substantially higher than in 2004 for all species under this alternative.

Assuming 2003 ex-vessel prices and the effect of potential changes in quotas in 2005 versus 2004, the 2005 quotas in alternative 3 (after overages and research set-aside have been applied) would increase summer flounder, scup, and black sea bass ex-vessel revenues by $4.2 million, $2.5 million, and $899 thousand, respectively, relative to 2004, for a total revenue increase of $7.6 million.

If the increase in total summer flounder, scup, and black sea bass ex-vessel gross revenues associated with alternative 3 is distributed equally among the vessels landed these species in 2003, the average increase in revenue in the summer flounder, scup, and black sea bass fisheries is $4,970, $4,442, and $1,266/vessel, respectively. However, it is important to mention that the changes in gross revenues associated with the potential changes in landings in 2005 versus 2004 assumed static prices (i.e., 2003) for summer flounder, scup, and black sea bass. However, if prices for these species decrease or increase as a consequence of changes in landings, then the associated revenue increases and decreases could be different than those estimated above.

These measures under this alternative would allow for significant increases in the overall harvest of summer flounder, scup, and black sea bass. None of these harvest levels have a high probability of achieving the rebuilding goals of the FMP. Therefore, while this alternative may mitigate the impacts on small entities, it does not comport with the fishing mortality and exploitation rates specified in the FMP. While the economic benefits associated from this alternative are higher than those described under the preferred alternative (alternative 1), it was not chosen by the Council and Board because it does not meet the overall recovery objectives of the FMP. Alternative 1 (preferred) on the other hand provides overall positive net benefits and establishes required overall harvest levels that address the general goals of the FMP.

The preferred GRA alternative would move the souther GRA three minutes westward. By moving the entire area covered by the current southern GRA three longitudinal minutes to the west, a strip of approximately 500 nm^2, would be made available to small mesh gear east of southern GRA, while an area of equal size, would be closed to small mesh gear to the west of southern GRA. Social impacts associated with this preferred alternative are likely to be related to changes in the availability of scup, black sea bass and *Loligo* to participants in the small mesh trawl fishery. Because the loss of protection from associated with moving the souther GRA three minutes westward is small it is not considered to have adverse biological impacts to the scup stock.

The scup possession limits were chosen as an appropriate balance between the economic concerns of the industry (e.g., landing enough scup to make the trip economically viable) and the need to ensure the equitable distribution of the quota over the period. Changes in possession limits can impact profitability in various ways. These impacts would vary depending of fishing practices. The possession limits were selected to provide the market a regular product supply, avoiding market gluts, and according to anecdotal information potential price fluctuations that occur as result of irregular supply. Furthermore, the proposed Winter I possession limit of 30,000 lb (state landings limit for a 2 week period) would convert regulatory discards of scup into landings, thus reducing bycatch and improving the efficiency of the commercial scup fishery.

Under this alternative the current summer flounder minimum fish size, minimum mesh regulations, and minimum mesh threshold regulations will continue for 2005; and the current black sea bass minimum fish size, minimum mesh regulations, minimum mesh threshold, and minimum vent size regulations will continue for 2005. As such, these measures are not expected to result in changes to the economic and social aspects of the fisheries in 2004 relative to 2004.

In addition, under this alternative the scup current minimum fish size, minimum vent size, Winter II possession limit, the transfer of unused scup quota from Winter I to Winter II period provision, and winter period mesh threshold regulations will remain unchanged in 2005. As such, these measures are not expected to result in changes to the economic and social aspects of the fisheries in 2005 relative to 2004.

The social and economic impacts of research set-asides should be minimal. The research set-asides are, conceptually, available for commercial vessels to participate in research, as well as for other vessels. Also, the research set-asides are expected to yield important long-term benefits associated with improved data upon which to base management decisions.

It is important to stress that these changes represent merely the potential, i.e., based on available data. Actual changes in revenue will likely vary. This variation would occur for several reasons, including impacts undetermined for unidentifiable vessels, revenues earned or lost due to possession limits and seasons set by a state to manage sub-allocations of quota, and unanticipated reductions in 2005 quota due to overages that were not accounted for here.

The proposed TALs under this alternative would result in the greatest short-term economic benefic relative to alternatives 1 and 2. However, the TALs for scup and black sea bass under alternative 3 are unrealistic. As such, it they result in an exploitation rate that may exceed the scup and black sea bass targets for 2005. If these targets are exceeded, the rebuilding of these stocks would be slowed. As such, these measures will have a negative impact on the scup and black sea bass stocks relative to alternative 1.

5.2 Quota and Non-Quota Alternatives for 2006

In this section management the 2006 measures for summer flounder are discussed.

5.2.1 Quota Alternative 1 (Preferred)

This alternative examines the impacts on industry that would result from the preferred harvest levels for summer flounder. To analyze the economic effects of this alternative, the total harvest levels specified under section 5 of the EA were employed.

Under this alternative, the summer flounder specifications would result in an aggregate 15 percent increase in allowable commercial landings relative to the 2004 quota and a 14 percent increase in recreational harvest limit relative to the 2004 limit (Tables 28 and 32).

5.2.1.1 Commercial Impacts

The results of the threshold analysis indicate that across all vessel classes, a total of 835 vessels were projected to be impacted by revenue increase (relative to 2004) and 1 vessel was projected to incur in a revenue reduction of < 5 percent. There are no vessels projected to incur in revenue losses of 5 percent or more.

In addition to the threshold analysis described above, the Council also analyzed changes in total ex-vessel gross revenue that would occur as a result of this quota alternative. Assuming 2003 ex-vessel price ($1.61/lb), the 2006 quota associated with alternative 1 would increase summer flounder ex-vessel revenue by approximately $3.9 million relative to 2004. Assuming the increase in summer flounder total ex-vessel gross revenues associated with alternative 1 is distributed equally among the 839 vessels that landed summer flounder in 2003, the average increase in revenue associated with the increase in summer flounder quota is $4,701/vessel. The change in gross revenues associated with the potential changes in landings in 2006 versus 2004 assumed static prices for summer flounder. However, if price for this species decrease or increase as a consequence of changes in landings, then the associated revenue increases and decreases could be different than those estimated above.

5.2.1.2 Recreational Impacts

Under this alternative, the 2006 summer flounder recreational harvest limit (adjusted for research set-asides) is 12.80 million lb. The 2006 limit for summer flounder represents a 14 percent increase relative to the 2004 limit.

The proposed recreational limit under this alternative is not expected to restrict the recreational summer flounder fishery for 2006 relative to 2004. Given that the summer flounder limit is projected to increase, it is not anticipated that angler satisfaction or the demand for party/charter boat trips will be adversely affected in 2006 relative to 2004.

5.2.1.3 Other Impacts

The current summer flounder minimum fish size, minimum mesh regulations, and minimum mesh threshold regulations will remain unchanged in 2005 and 2006. The continuation of these alternatives is not expected to result in changes to the economic and social aspects of the fishery relative to 2004.

Effects of the research set-aside

The discussion regarding the impacts of the research set-aside presented in section 5.1.1.3 above also applies here.

5.2.1.4 Summary of Impacts

Alternative 1 allows commercial fishermen to land approximately 15 percent more summer flounder in 2006 relative to 2004. The summer flounder recreational harvest limit in 2006 is 14 percent higher than the 2004 limit.

Under this alternative, a total of 835 commercial vessels were projected to incur in gains. In addition, 1 vessel was projected to incur in a revenue reduction of < 5 percent and there are no vessels projected to incur in revenue losses of 5 percent or more.

Assuming 2003 ex-vessel prices and the effect of potential changes in prices due to changes in landings in 2006 versus 2004, the 2006 quota in alternative 1 (after overages and research set-aside have been applied) would increase summer flounder ex-vessel revenues by approximately $3.9 million. If the increase in total summer flounder ex-vessel gross revenues associated with this alternative is distributed equally among the vessels landed this species in 2003, the average increase in revenue in the summer flounder is $4,701/vessel.

The continuation of the current minimum fish size, minimum mesh regulations, and minimum mesh threshold regulations under this alternative will not result in changes to the economic and social aspects of the fishery relative to 2004.

It is important to stress that these changes represent merely the potential, i.e., based on available data. Actual changes in revenue will likely vary. This variation would occur for several reasons, including impacts undetermined for unidentifiable vessels, revenues earned or lost due to possession limits and seasons set by a state to manage sub-allocations of quota, and unanticipated reductions in 2005 and 2006 quota due to overages that were not accounted for here.

5.2.2 Quota Alternative 2 (Most Restrictive)

This alternative examines the impacts on industry that would result from the most restrictive harvest levels for summer flounder. To analyze the economic effects of this alternative, the total harvest levels specified under section 5 of the EA were employed. The summer flounder TAL under this alternative is the status quo measure.

Under this alternative, the summer flounder specifications would result in an aggregate 2 percent decrease in allowable commercial landings and recreational harvest limit in 2006 relative to the 2004 (Tables 28 and 32).

Even though the overall 2006 TAL for summer flounder under this alternative is the same as in 2004, the adjusted commercial quota and recreational harvest limit are slightly different than the allocations implemented in 2004 mainly due to differences in the research set-asides used to derived adjusted allocations during those two time periods.

5.2.2.1 Commercial Impacts

The results of the threshold analysis indicate that across all vessel classes, a total of 836 vessels were projected to incur in a revenue reduction of < 5 percent. However, given the small reduction in commercial landings associated with the adjusted 2006 quota relative to the adjusted 2004 quota (2 percent decrease), the average revue loss for these vessels is likely to be around the 2 percent level. Even though this is the most restrictive summer flounder alternative for 2006, there are no vessels projected to incur in revenue losses of more than 5 percent in 2006 relative to 2004.

In addition to the threshold analysis described above, the Council also analyzed changes in total ex-vessel gross revenue that would occur as a result of this quota alternative. Assuming 2003 ex-vessel price ($1.61/lb), the 2006 quota associated with alternative 2 would decrease summer flounder ex-vessel revenue by approximately $564 thousand relative to 2004. Assuming the decrease in summer flounder total ex-vessel gross revenues associated with alternative 2 is distributed equally among the 839 vessels that landed summer flounder in 2003, the average decrease in revenue associated with the decrease in summer flounder quota is $672/vessel. The change in gross revenues associated with the potential changes in landings in 2006 versus 2004 assumed static prices for summer flounder. However, if price for this species decrease or increase as a consequence of changes in landings, then the associated revenue increases and decreases could be different than those estimated above.

5.2.2.2 Recreational Impacts

Under this alternative, the 2006 summer flounder recreational harvest limit (adjusted for research set-asides) is 10.94 million lb. The 2006 limit for summer flounder represents a 2 percent decrease relative to the 2004 limit.

At the present time, there is neither behavioral nor demand data available to estimate how sensitive party/charter boat anglers might be to proposed fishing regulations. In the summer flounder, scup, and black sea bass fisheries, there is no mechanism to deduct overages directly from the recreational harvest limit. Any overages must be addressed by way of adjustments to the management measures. While it is likely that proposed management measures may restrict the recreational fishery for 2006, and these measures may cause some decrease in recreational satisfaction (i.e., low bag limit, larger fish size or closed season), there is no indication that any of these measures may lead to a decline in the demand for party/charter boat trips. Currently, the market demand for this sector is relatively stable. It is unlikely that these measures will result in any substantive decreases in the demand for party/charter boat trips or negatively affect angler satisfaction.

5.2.2.3 Other Impacts

The current summer flounder minimum fish size, minimum mesh regulations, and minimum mesh threshold regulations will remain unchanged in 2005 and 2006. The continuation of these alternatives is not expected to result in changes to the economic and social aspects of the fishery relative to 2004.

<u>Effects of the research set-aside</u>

The discussion regarding the impacts of the research set-aside presented in section 5.1.1.3 above also applies here.

5.2.2.4 Summary of Impacts

Under alternative 2, commercial fishermen will land approximately 2 percent less summer flounder in 2006 relative to 2004. The summer flounder recreational harvest limit in 2006 is 2 percent lower than the 2004 limit.

Under this alternative, a total of 836 commercial vessels were projected to incur revue losses of < 5 percent. However, given the small reduction in commercial landings associated with the adjusted 2006 quota relative to the adjusted 2004 quota (2 percent decrease), the average revue loss for these vessels is likely to be around the 2 percent level.

Assuming 2003 ex-vessel prices and the effect of potential changes in prices due to changes in landings in 2006 versus 2004, the 2006 quota in alternative 2 (after overages and research set-aside have been applied) would decrease summer flounder ex-vessel revenues by approximately $564 thousand. If the increase in total summer flounder ex-vessel gross revenues associated with this alternative is distributed equally among the vessels landed this species in 2003, the average increase in revenue in the summer flounder is $672/vessel.

The continuation of the current minimum fish size, minimum mesh regulations, and minimum mesh threshold regulations under this alternative will not result in changes to the economic and social aspects of the fishery relative to 2004.

It is important to stress that these changes represent merely the potential, i.e., based on available data. Actual changes in revenue will likely vary. This variation would occur for several reasons, including impacts undetermined for unidentifiable vessels, revenues earned or lost due to possession limits and seasons set by a state to manage sub-allocations of quota, and unanticipated reductions in 2005 and 2006 quota due to overages that were not accounted for here.

5.2.3 Quota Alternative 3 (Least Restrictive)

This alternative examines the impacts on industry that would result from the least restrictive harvest levels for summer flounder. To analyze the economic effects of this alternative, the total harvest levels specified under section 5 of the EA were employed.

Under this alternative, the summer flounder specifications would result in an aggregate 23 percent increase in allowable commercial landings and recreational harvest limit in 2006 relative to the 2004 (Tables 28 and 32).

5.2.3.1 Commercial Impacts

The results of the threshold analysis indicate that across all vessel classes, a total of 835 vessels were projected to be impacted by revenue increase (relative to 2004) and 1 vessel was projected to incur in a revenue reduction of < 5 percent. There are no vessels projected to incur in revenue losses of 5 percent or more.

In addition to the threshold analysis described above, the Council also analyzed changes in total ex-vessel gross revenue that would occur as a result of this quota alternative. Assuming 2003 ex-vessel price ($1.61/lb), the 2006 quota associated with alternative 3 would increase summer flounder ex-vessel revenue by approximately $9.8 million relative to 2004. Assuming the increase in summer flounder total ex-vessel gross revenues associated with alternative 3 is distributed equally among the 839 vessels that landed summer flounder in 2003, the average increase in revenue associated with the increase in summer flounder quota is $11,706/vessel. The change in gross revenues associated with the potential changes in landings in 2006 versus 2004 assumed static prices for summer flounder. However, if price for this species decrease or increase as a consequence of changes in landings, then the associated revenue increases and decreases could be different than those estimated above.

5.2.3.2 Recreational Impacts

Under this alternative, the 2006 summer flounder recreational harvest limit (adjusted for research set-asides) is 13.77 million lb. The 2006 limit for summer flounder represents a 23 percent increase relative to the 2004 limit.

The proposed recreational limit under this alternative is not expected to restrict the recreational summer flounder fishery for 2006 relative to 2004. Given that the summer flounder limit is projected to increase, it is not anticipated that angler satisfaction or the demand for party/charter boat trips will be adversely affected in 2006 relative to 2004.

5.2.3.3 Other Impacts

The current summer flounder minimum fish size, minimum mesh regulations, and minimum mesh threshold regulations will remain unchanged in 2005 and 2006. The continuation of these alternatives is not expected to result in changes to the economic and social aspects of the fishery relative to 2004.

<u>Effects of the research set-aside</u>

The discussion regarding the impacts of the research set-aside presented in section 5.1.1.3 above also applies here.

5.2.3.4 Summary of Impacts

Alternative 3 allows commercial fishermen to land approximately 23 percent more summer flounder in 2006 relative to 2004. The summer flounder recreational harvest limit in 2006 is 23 percent higher than the 2004 limit.

Under this alternative, a total of 835 commercial vessels were projected to incur in gains. In addition, 1 vessel was projected to incur in a revenue reduction of < 5 percent and there are no vessels projected to incur in revenue losses of 5 percent or more.

Assuming 2003 ex-vessel prices and the effect of potential changes in prices due to changes in landings in 2006 versus 2004, the 2006 quota in alternative 3 (after overages and research set-aside have been applied) would increase summer flounder ex-vessel revenues by approximately $9.8 million. If the increase in total summer flounder ex-vessel gross revenues associated with this alternative is distributed equally among the vessels landed this species in 2003, the average increase in revenue in the summer flounder is $11,706/vessel.

The continuation of the current minimum fish size, minimum mesh regulations, and minimum mesh threshold regulations under this alternative will not result in changes to the economic and social aspects of the fishery relative to 2004.

It is important to stress that these changes represent merely the potential, i.e., based on available data. Actual changes in revenue will likely vary. This variation would occur for several reasons, including impacts undetermined for unidentifiable vessels, revenues earned or lost due to possession limits and seasons set by a state to manage sub-allocations of quota, and unanticipated reductions in 2005 and 2006 quota due to overages that were not accounted for here.

6.0 OTHER IMPACTS

6.1 County Impacts

For the reasons specified in section 3.1 of this RIR/IRFA, the economic impacts on vessels of a specified home port were analyzed on a county wide basis. As stated in section 3.1, this profile of impacted counties was based on impacts under various alternatives evaluated. Counties included in the profile had to meet the following criteria:
- the number of vessels with revenue loss exceeding 5 percent per county was either greater than 4, or
- all vessels with revenue loss exceeding 5 percent in a given state were from the same home county.

The results of these analyses are summarized below. The most restrictive alternative (alternative 2) in 2005 and 2006 was used to assess impacted counties. A total of three counties were identified to be impacted in 2005: Barnstable County, MA; Monmouth County, NJ; and Suffolk County. Counties not included in this analysis (e.g., Ocean and Cape May, NJ; Kings, New York, and Nassau, NY; Washington and Newport, RI; Dukes and Bristol, MA; Ocean City and Worcester, MD; City of Norfolk, VA; and New London, CT) did not have enough impacted vessels to meet the criteria specified, i.e., there were less than 4 impacted vessels per county, or all impacted vessels in a state were not home ported within the same county. There were no counties identified to be impacted in 2006 as a consequence of the proposed summer flounder quota for that year.

Table 36 details population, employment personal income and the contribution of commercial fishing and sea food processing to total personal income for selected counties (counties impacted under alternative 2 in 2005). Counties presented in Table 36 correspond to the counties identified as impacted (>= 4 vessels with revenue loss exceeding 5 percent per county) due to the management measures evaluated (i.e., as described in the above paragraph). Data presented in Table 36 were obtained from data bases supplied by the Minnesota IMPLAN Group for the calendar year 2001.

Of the 3 counties identified in Table 36, the percentage of total personal income derived from commercial fishing sales and from seafood processing was less than 1% for all counties. These data indicate that each of the identified counties in Table 36 are not substantially dependent upon sales of commercial fishing products to sustain the county economies. Population in these counties ranged from 31 thousand in Dare County to 623 thousand in Monmouth County.

Table 1. Top ports of landing (in pounds) for summer flounder (FLK), scup (SCP), and black sea bass (BSB), based on NMFS 2003 dealer data. Since this table includes only the "top ports," it may not include all of the landings for the year.

Port	Landings of FLK (lb)	# FLK Vessels	Landings of SCP (lb)	# SCP Vessels	Landings of BSB (lb)	# BSB Vessels
PT. JUDITH, RI	1,614,568	139	1,682,171	128	204,948	147
HAMPTON, VA	1,438,221	54	262,879	21	81,741	31
WANCHESE, NC	1,289,246	58	98,034	10	217,207	31
NEWPORT NEWS, VA	1,170,247	46	167,431	7	76,584	18
PT. PLEASANT, NJ	969,337	29	963,955	21	104,007	29
BEAUFORT, NC	838,460	19	15,243	4	60,992	13
CHINCOTEAGUE, VA	747,085	45	127,209	9	81,753	22
ENGELHARD, NC	695,447	17	C	1	81,516	11
CAPE MAY, NJ	651,138	62	1,020,499	25	363,824	41
BELFORD, NJ	640,038	23	304,962	24	10,364	23
HAMPTON BAY, NY	423,672	54	374,103	57	89,564	55
MONTAUK, NY	402,045	75	606,828	85	58,306	82
NEW BEDFORD, MA	390,396	131	376,850	36	85,733	34
ORIENTAL, NC	337,208	14	0	0	10,805	7
OTHER, CT	261,102	29	131,119	27	16,364	18
OCEAN CITY, MD	250,440	22	46,532	7	311,283	22
NEWPORT, RI	237,656	48	856,053	35	39,947	39
BAYBORO, NC	140,124	3	0	0	0	0
OTHER DUKES, MA	127,113	26	102,793	23	68,627	28
TIVERTON, RI	91,070	21	105,809	14	7,122	14
AMMAGANSETT, NY	78,728	7	194,221	10	6,113	9
LITTLE COMPTON, RI	69,711	19	1,024,178	13	103,084	17
GREENPORT, NY	64,449	15	174,326	13	26,846	11
FALL RIVER, MA	49,318	7	114,893	C	C	1
FREEPORT, NY	37,644	17	384,465	17	12,441	18
CHATHAM, MA	29,897	30	230,856	22	68,078	25
VIRGINIA BCH, VA	C	1	0	0	243,043	20
INDIAN RIVER, DE	C	2	0	0	121,900	6

C = Confidential

Table 2. Statistical areas that accounted for at least 5 percent of the summer flounder, scup, or black sea bass catch in 2003, NMFS VTR data (A map showing the location of these statistical areas is presented in Figure 1).

Statistical Area	Summer Flounder (percent)	Scup (percent)	Black Sea Bass (percent)
626	19.33	2.24	13.63
537	8.42	2.83	1.53
612	7.94	2.79	1.67
622	7.48	11.93	12.87
631	7.47	0.01	6.26
625	6.97	0.11	4.94
539	6.67	21.51	4.31
621	6.33	7.62	19.59
613	6.07	6.37	3.79
616	5.92	25.48	4.16
611	3.18	9.61	3.35
538	2.75	3.10	6.04
615	0.99	5.22	2.84
614	0.44	0.31	7.79

Table 3. Statistical areas that accounted for at least 5 percent of the summer flounder, scup, or black sea bass trips in 2003, NMFS VTR data (A map showing the location of these statistical areas is presented in Figure 1).

Statistical Area	Summer Flounder	Scup	Black Sea Bass
611	22.10	45.58	18.06
539	18.57	19.27	21.78
613	16.34	15.36	15.41
612	11.22	7.52	11.19
538	6.99	5.39	6.74
537	5.65	2.06	4.03
621	3.62	0.28	5.47
616	2.46	2.43	2.6

Table 4. MRFSS preliminary estimates of 2003 recreational harvest (numbers of fish kept) and total catch (numbers of fish) for summer flounder (FLK), scup (SCP) and black sea bass (BSB).

State	FLK Harvest (# of fish kept)	FLK Catch (# of fish caught)	SCP Harvest (# of fish kept)	SCP Catch (# of fish caught)	BSB Harvest (# of fish kept)	BSB Catch (# of fish caught)
NH	359	558	0	0	0	0
MA	179,962	421,391	1,635,817	2,842,103	115,763	309,846
CT	163,720	667,755	1,502,479	2,292,194	5,079	59,386
RI	202,001	547,016	1,010,750	1,803,187	69,341	270,804
NY	1,525,246	7,184,857	5,030,575	6,809,474	320,858	1,048,695
NJ	1,758,832	7,467,417	146,861	530,334	1,860,881	6,066,503
DE	102,963	506,811	1,175	3,405	303,825	1,161,022
MD	40,294	437,070	513	2,851	232,818	989,997
VA	452,852	2,968,489	7,533	182,687	313,894	2,019,108
NC	86,017	86,641	1,096	1,452	162,741	571,873

Table 5. Summary of number of vessels holding federal commercial and/or recreational permit combinations for summer flounder (FLK), scup (SCP) and black sea bass (BSB), 2003.

Comm. Permit Combinations	Recreational Permit Combinations								
	No Rec. Permit	FLK Only	SCP Only	BSB Only	FLK/ Scup	FLK/ BSB	SCP/ BSB	FLK/ SCP/ BSB	Row Total
No Comm. Permit	0	41	11	15	22	71	22	478	660
FLK Only	322	3	3	1	0	1	1	4	335
SCP Only	63	0	0	1	2	3	0	7	76
BSB Only	168	3	0	2	3	7	1	12	196
FLK/ SCP	108	1	0	0	0	0	0	2	111
FLK/ BSB	45	0	0	0	0	3	0	1	49
SCP/ BSB	161	4	0	0	0	2	3	28	198
FLK/ SCP/ BSB	470	2	0	0	2	0	0	15	489
Column Total	1,337	54	14	19	29	87	27	547	2,114

Table 6. Federal northeast region permits held by summer flounder, scup, and black sea bass commercial and recreational vessels, 2003.

	Commercial Only (n= 1,337)		Party/Charter Only (n= 660)		Commercial and Party/Charter (n= 117)	
Northeast Permits	Vessels (No.)	Percent of Total	Vessels (No.)	Percent of Total	Vessels (No.)	Percent of Total
Surfclam	740	55.35	129	19.55	26	22.22
Ocean Quahog	694	51.91	127	19.24	24	20.51
Scallop	296	21.14	0	0	2	1.71
Non-trap Lobster	697	52.13	15	2.27	17	14.53
Lobster Trap	361	27.00	45	6.82	19	16.24
Party/ Charter Lobster	2	0.15	17	2.58	5	4.27
Party/ Charter Multi-Species	479	35.83	547	82.88	60	51.28
Comm. Multi-species	689	51.53	62	9.39	38	32.48
Party/ Charter Squid/ Mackerel/ Butterfish	4	0.30	526	79.70	81	69.23
Comm. Squid/ Mackerel/ Butterfish	1,149	85.94	296	44.85	88	75.21
Comm. Bluefish	1,208	90.35	331	50.15	105	89.74
Party/ Charter Bluefish	14	1.05	597	90.45	100	85.47
Tier 1 Tilefish	2	0.15	0	0	0	0
Tier 2 Tilefish	2	0.15	0	0	0	0

Table 6 (cont'd). Federal northeast region permits held by summer flounder, scup, and black sea bass commercial and recreational vessels, 2003.

	Commercial Only (n= 1,337)		Party/Charter Only (n= 660)		Commercial and Party/Charter (n= 117)	
Northeast Permits	Vessels (No.)	Percent of Total	Vessels (No.)	Percent of Total	Vessels (No.)	Percent of Total
Part-time Tilefish	12	0.90	0	0	1	0.85
Incidental Tilefish	808	60.43	267	40.45	59	50.43
Herring VMS	71	5.31	1	0.15	0	0
Herring Non-VMS	785	58.71	305	46.21	71	60.68
Spiny Dogfish	1,145	85.64	392	59.39	86	73.50
Monkfish	527	39.42	5	0.76	7	5.98
Incidental Monkfish	627	66.94	345	52.27	71	60.68
Skate	895	66.94	185	28.03	63	53.85
Red Crab Incidental	529	39.57	88	13.33	25	21.37
Red Crab 75,000 lb trip limit	0	0.00	0	0.00	0	0.00
Red Crab 125,000 lb trip limit	0	0.00	0	0.00	0	0.00

Table 7. Descriptive data from northeast region permit files for commercial vessels, 2003.

	CT	DE	FL	MA	MD	ME	NC	NH	NJ	NY	PA	RI	VA	GA	Other
No. of Permits by Mailing Address State	32	15	2	426	21	44	134	18	199	164	2	153	122	3	2
No. of Permits by Home Port State	26	13	7	461	21	38	125	11	185	181	10	131	126	0	2
No. of Permits by Principal Port State	31	11	2	432	21	42	124	15	197	169	1	157	133	1	1
Average Length by Principal Port	59.4	41.5	58.0	58.4	51.4	52.2	61.3	51.3	56.0	42.7	64.0	57.0	63.7	65.0	NA
Average Tonnage by Principal Port	81.2	18.8	73	80.4	39.0	65.1	79.6	46.2	67.5	36.3	109	70.0	94.7	48	NA
Average Horse Power by Principal Port	574.8	461.1	537.5	488.9	355.9	392.9	457.0	389.7	475.5	332.5	850.0	456.4	513.9	500.0	NA
Percent Home Port Equal Principal Port	100.0	76.9	28.6	92.0	85.7	92.1	84.8	100.0	93.5	90.6	0	96.9	81.7	0	0

Table 8. Descriptive data from northeast region permit files for party/charter vessels, 2003.

	CT	DE	FL	MA	MD	ME	NC	NH	NJ	NY	PA	RI	VA	Other
No. of Permits by Mailing Address State	31	1	5	183	15	30	17	25	159	107	6	41	40	0
No. of Permits by Home Port State	23	3	5	186	13	27	21	26	140	114	16	42	43	1
No. of Permits by Principal Port State	31	2	1	180	12	33	20	23	163	103	1	46	45	0
Average Length by Principal Port	42.6	30.0	56.0	35.2	42.9	35.9	40.5	36.0	45.1	43.7	38.0	35.4	37.9	NA
Average Tonnage by Principal Port	24.3	9.5	58.0	17.2	38.6	18.9	22.1	17.7	31.1	29.2	8.0	17.6	20.6	NA
Average Horse Power by Principal Port	595.8	352.5	1300	426.2	695.8	432.8	652.8	459.6	433.5	582.9	470.0	425.9	498.7	0
Percent Home Port Equals Principal Port	95.7	33.3	20.0	94.6	76.9	100.0	95.3	88.5	98.6	84.2	0	95.2	95.3	0

Table 9. Descriptive data from northeast region permit files for combination commercial/recreational vessels, 2003.

	CT	DE	FL	MA	ME	NC	NH	NJ	NY	PA	RI	VA	Other
No. of Permits by Mailing Address State	5	3	2	16	1	9	1	17	41	1	10	11	0
No. of Permits by Home Port State	3	3	2	20	1	10	1	15	43	2	7	10	0
No. of Permits by Principal Port State	4	3	1	15	1	10	1	17	42	1	12	10	0
Average Length by Principal Port	36.8	51.3	34.0	36.7	46.0	41.5	42.0	49.1	38.6	69.0	42.8	43.0	0
Average Tonnage by Principal Port	11.0	42.3	7.0	17.6	48.0	21.5	5.0	36.1	26.6	94	30.6	25.2	0
Average Horse Power by Principal Port	338.8	733.3	500.0	302.3	400.0	449.5	357.0	571.5	463.7	800.0	587.9	460.6	0
Percent Home Port Equal Principal Port	100.0	100.0	50.0	75.0	100.0	100.0	100.0	82.4	97.6	0	58.3	100.0	0

Table 10. Dealers reporting buying summer flounder, scup, and/or black sea bass, by state (from NMFS commercial landings database) in 2003.

	MA	NJ	NY	NC	RI	VA	MD	CT	DE	Other
Number of Dealers	52	39	63	30	45	35	4	7	4	1

Table 11. Comparison of habitat impacts and considerations for selecting summer flounder alternatives.

Alternative	Quota in mill lb	Potential Change in CPUE and Habitat Impacts	Considerations for selecting alternative
Preferred Alternative 1	Yr 2005 30.30 Yr 2006 33.00	Based upon species abundance, impacts may remain the same as existing, or may increase. An increase in abundance and increased CPUE will tend to lead toward stable or decreased impacts to habitat. The potential impacts to habitat are more than Alternative 2 but less than Alternative 3.	Maximizes landings while achieving the target exploitation rate, minimal to no increased habitat impacts, potential for highest short-term financial benefits and long-term financial benefits to industry.
Alternative 2 (Status Quo)	Yr 2005 28.20 Yr 2006 28.20	Impacts may range from maintaining existing level of effort to a decrease. The potential for maintaining or decreasing impacts is greatest with this alternative.	Does not maximize landings, reduced short-term yields, potential decreased impacts on habitat, decrease in short-term financial benefit to industry.
Alternative 3	Yr 2005 32.60 Yr 2006 35.50	Based upon species abundance, impacts may remain the same as existing, or may increase or decrease. If abundance increases, increased CPUE will tend to lead toward stable or decreased impacts to habitat. However, this alternative has the potential for the greatest increase in habitat impacts.	Maximizes landings to greatest extent, may not achieve the target exploitation rate, potential for highest habitat impacts, potential for highest short-term financial benefits to industry; however, no long-term increased financial benefit or potential decreased long-term financial benefit.

Table 12. Comparison of habitat impacts and considerations for selecting scup alternatives.

Alternative	Quota in mill lb	Potential Change in CPUE and Habitat Impacts	Considerations for selecting alternative
Preferred Alternative 1 (Status Quo)	16.50	Based upon species abundance, impacts may remain the same as existing levels or decrease. An increase in abundance with possession limits and increased CPUE will tend to lead toward stable or decreased impacts to habitat. This is a potential increase in habitat impacts and it is more than Alternative 2 but less than Alternative 3.	Maximizes landings while achieving the target exploitation rate, minimal to no increased habitat impacts, no increase or decrease in financial benefit to industry.
Alternative 2	11.00	Impacts may range from maintaining existing level to decreases. The potential for maintaining or decreasing impacts is greatest with this alternative.	Does not maximize landings, reduced short-term yields, potential decreased impacts on habitat, decrease in short-term financial benefit to industry.
Alternative 3	22.00	Based upon species abundance, impacts may remain the same as existing, or may increase or decrease. Increased CPUE will tend to lead toward stable or decreased impacts to habitat. However, this alternative has the potential for the greatest increase in habitat impacts.	Maximizes landings to greatest extent, may not achieve the target exploitation rate, potential for highest habitat impacts, potential for highest short-term financial benefits to industry, may result in decreased long-term financial benefits to industry.

Table 13. Comparison of habitat impacts and considerations for selecting black sea bass alternatives.

Alternative	Quota in mill lb	Potential Change in CPUE and Habitat Impacts	Considerations for selecting alternative
Preferred Alternative 1	8.20	Based upon species abundance, impacts may remain the same as existing, or may increase. Increased abundance and increased CPUE will tend to lead toward stable or decreased impacts to habitat. The potential impacts to habitat are more than Alternative 2 but less than Alternative 3.	Maximizes landings while achieving the target exploitation rate, minimal to no increased habitat impacts, potential for highest short-term financial benefits and long-term financial benefits to industry.
Alternative 2 (Status Quo)	8.00	Impacts may range from maintaining existing level or to decreases. The potential for maintaining or decreasing habitat impacts is greatest with this alternative.	Does not maximize landings, reduced short-term yields, potential decreased impacts on habitat, decrease in short-term financial benefit to industry.
Alternative 3	8.70	Based upon species abundance, impacts may remain the same as existing, or may increase. Increased CPUE will tend to lead toward stable or decreased impacts to habitat. However, this alternative has the potential for the greatest increase in habitat impacts.	Maximizes landings to greatest extent, may not achieve the target exploitation rate, potential for highest habitat impacts, potential for highest short-term financial benefits to industry, may result in decreased long-term financial benefits to industry.

Table 14. Geographic reference points used to define the alternative southern scup GRAs (SSGRAs). For a given alternative, the SSGRA is defined as the area bounded by straight lines connecting, in sequential order, the vertices associated with that alternative.

Alternative 1 SSGRA (status quo)		
Vertex	N Lat	W Long
SGA 1	39*20’	72*50’
SGA 2	39*20’	72*25”
SGA 3	38*00’	73*55’
SGA 4	37*00’	74*40’
SGA 5	36*30’	74*40’
SGA 6	36*30’	75*00’
SGA 7	37*00’	75*00’
SGA 8	38*00’	74*20’
SGA1	39*20’	72*50’

Alternative 2 SSGRA (3 min shift to West)		
Vertex	N Lat	W Long
SGA 1	39*20’	72*53’
SGA 2	39*20’	72*28”
SGA 3	38*00’	73*58’
SGA 4	37*00’	74*43’
SGA 5	36*30’	74*43’
SGA 6	36*30’	75*03’
SGA 7	37*00’	75*03’
SGA 8	38*00’	74*23’
SGA 1	39*20’	72*53’

Alternative 3 SSGRA (redefined eastern boundary)		
Vertex	N Lat	W Long
SGA 1	39*20'	72*45'
SGA 2	39*10'	72*49'
SGA 3	38*49'	73*04'
SGA 4	38*16'	73*47'
SGA 5	37*30'	74*30'
SGA 6	37*00'	74*46'
SGA 7	36*30'	74*46'
SGA 8	36*30'	75*00'
SGA 9	37*00'	75*00'
SGA 10	38*00'	74*20'
SGA 11	39*20'	72*50'
SGA 1	39*20'	72*45'

Table 15. **NEFSC winter/spring trawl survey catch (N)** by species that occurred within the alternative SSGRAs from 1996-2004 compared to total winter/spring trawl survey catch. The proportional catch among the GRAs should reflect differences in availability for these species during the SSGRA effective period. Only species which comprised >95% of the total catch within the status quo SSGRA are shown.

	SSGRA1 (status quo - Alternative 1)			SSGRA2 (3 minute shift - Alternative 2)			SSGRA3 (redefined eastern boundary - Alternative 3)			
SPECIES	Catch (N)	As pct of catch within SSGRA	As pct of overall winter/spring survey catch	Catch (N)	As pct of catch within SSGRA	As pct of overall winter/spring survey catch	Catch (N)	As pct of catch within SSGRA	As pct of overall winter/spring survey catch	Overall winter/spring survey catch (N) 1996-2004
LONGFIN SQUID	170,094	29.5%	30.5%	127,705	25.5%	22.9%	53,009	19.9%	9.5%	556,998
SCUP	112,968	19.6%	58.7%	107,506	21.5%	55.8%	52,813	19.9%	27.4%	192,534
SPINY DOGFISH	73,649	12.8%	20.3%	62,312	12.4%	17.1%	41,232	15.5%	11.3%	363,564
BUTTERFISH	69,091	12.0%	29.5%	64,421	12.9%	27.5%	39,601	14.9%	16.9%	234,071
NORTHERN SEAROBIN	51,261	8.9%	68.6%	50,257	10.0%	67.2%	35,721	13.4%	47.8%	74,734
SEA SCALLOP	19,383	3.4%	19.9%	23,243	4.6%	23.9%	19,113	7.2%	19.6%	97,414
SPOTTED HAKE	13,907	2.4%	8.7%	10,707	2.1%	6.7%	2,717	1.0%	1.7%	159,724
FOURSPOT FLOUNDER	11,937	2.1%	18.9%	9,777	2.0%	15.5%	3,166	1.2%	5.0%	63,197
BLACK SEA BASS	11,318	2.0%	65.3%	10,536	2.1%	60.8%	4,447	1.7%	25.6%	17,341
SUMMER FLOUNDER	5,403	0.9%	21.0%	5,715	1.1%	22.2%	3,424	1.3%	13.3%	25,687
ROSETTE SKATE	4,380	0.8%	66.4%	2,994	0.6%	45.4%	481	0.2%	7.3%	6,592
CLEARNOSE SKATE	3,999	0.7%	26.2%	3,790	0.8%	24.9%	1,687	0.6%	11.1%	15,243

Table 16. **Observed small mesh trawl discards (lbs)** by species that occurred within the alternative SSGRAs from 1989-1999 compared to total observed discards during the SSGRA effective period (Jan 1 - Mar 15). Only species which comprised >95% of the total discards within the status quo SSGRA are shown.

	SSGRA1 (status quo - Alternative 1)			SSGRA2 (3 minute shift - Alternative 2)			SSGRA3 (redefined eastern boundary - Alternative 3)			
Species	Discards (lbs)	As pct of catch within SSGRA	As pct of overall Jan1-Mar15 small mesh discards	Discards (lbs)	As pct of catch within SSGRA	As pct of overall Jan1-Mar15 small mesh discards	Discards (lbs)	As pct of catch within SSGRA	As pct of overall Jan1-Mar15 small mesh discards	Overall observed small mesh discards (lbs) Jan1-Mar15 1989-1999
SPINY DOGFISH	171,421	36.9%	25.4%	151,356	37.0%	22.4%	115,701	42.3%	17.1%	675,642
SEA ROBINS	97,200	17.1%	47.6%	74,063	18.1%	36.3%	62,497	22.8%	30.6%	204,116
BUTTERFISH	31,920	7.6%	18.6%	25,678	6.3%	15.0%	348	0.1%	0.2%	171,167
SCUP	28,489	6.9%	38.2%	23,879	5.8%	32.1%	11,063	4.0%	14.8%	74,500
UNKNOWN	27,752	6.3%	32.5%	18,884	4.6%	22.1%	11,586	4.2%	13.6%	85,376
SKATES	25,327	4.7%	13.0%	27,749	6.8%	14.3%	22,189	8.1%	11.4%	194,144
SUMMER FLOUNDER	13,417	2.5%	31.0%	13,971	3.4%	32.2%	10,652	3.9%	24.6%	43,332
FOURSPOT FLOUNDER	12,274	2.4%	7.4%	11,846	2.9%	7.2%	7,689	2.8%	4.7%	165,239
SILVER HAKE	10,938	2.4%	5.8%	9,009	2.2%	4.8%	3,159	1.2%	1.7%	187,128
LONGFIN SQUID	10,833	2.3%	17.4%	7,665	1.9%	12.3%	1,644	0.6%	2.6%	62,311
MONKFISH	9,105	1.7%	39.7%	8,900	2.2%	38.8%	3,263	1.2%	14.2%	22,909
SEA SCALLOP	6,877	1.2%	41.0%	7,127	1.7%	42.5%	6,406	2.3%	38.2%	16,755
STARFISH	5,463	1.2%	25.4%	5,464	1.3%	25.4%	3,459	1.3%	16.1%	21,549
BLACK SEA BASS	5,137	1.0%	61.8%	2,026	0.5%	24.4%	1,106	0.4%	13.3%	8,317

Table 17. Winter/spring survey encounter incidence (N tows) for scup, black sea bass (BSB), and Loligo. Co-occurrence of scup/Loligo (top) and BSB/Loligo (bottom) among SSGRAs is also indicated. Source: NMFS Winter and Spring trawl survey (1996-2004).

	Total survey tows (N)	Survey tows within SSGRA (N)	Survey tows within SSGRA (Pct)	Survey tows within SSGRA which captured scup (N)	Survey tows within SSGRA which captured scup (Pct)	Survey tows within SSGRA which captured Loligo (N)	Survey tows within SSGRA which captured Loligo (Pct)	Survey tows within SSGRA in which scup/Loligo co-occurred (N)	Survey tows within SSGRA in which scup/Loligo co-occurred (Pct)
Alternative 1 (Status Quo)	4,240	353	8.3%	199	56.4%	343	97.2%	199	56.4%
Alternative 2_3 (3 min shift westward)	4,240	311	7.3%	182	58.5%	305	98.1%	182	58.5%
Alternative 3 (redefined seaward boundary)	4,240	157	3.7%	104	66.2%	152	96.8%	104	66.2%

	Total survey tows (N)	Survey tows within SSGRA (N)	Survey tows within SSGRA (Pct)	Survey tows within SSGRA which captured BSB (N)	Survey tows within SSGRA which captured BSB (Pct)	Survey tows within SSGRA which captured Loligo (N)	Survey tows within SSGRA which captured Loligo (Pct)	Survey tows within SSGRA in which BSB/Loligo co-occurred (N)	Survey tows within SSGRA in which BSB/Loligo co-occurred (Pct)
Alternative 1 (Status Quo)	4,240	353	8.3%	250	70.8%	343	97.2%	250	70.8%
Alternative 2_3 (3 min shift westward)	4,240	311	7.3%	235	75.6%	305	98.1%	234	75.2%
Alternative 3 (redefined seaward boundary)	4,240	157	3.7%	129	82.2%	152	96.8%	129	82.2%

Table 18. Captures of scup, black sea bass, and Loligo in Winter and Spring trawl surveys (1996-2004). Gains or losses in survey catch associated with areas opened or closed by the redefined boundaries are all relative to the status quo GRA.

	Total survey Scup catch (N)	Scup catch (N) within GRA	Pct	Scup catch (N) within GRA when Scup/Loligo co-occurred	Survey catch in new area opened by redefined boundaries (gain in availability)	Survey catch in new area closed by redefined boundaries (loss in availability)	Net gain/loss	Net difference relative to total winter/spring catch (Pct)
Alternative 1 (Status Quo)	192,534	112,968	58.7%	112,968	Ø	Ø	Ø	Ø
Alternative 2 (3 min shift westward)	192,534	107,506	55.8%	107,506	6,037	575	5,462	2.8%
Alternative 3 (redefined seaward boundary)	192,534	52,813	27.4%	52,813	60,155	0	60,155	31.2%

	Total survey BSB catch (N)	BSB catch (N) within GRA	Pct	BSB catch (N) within GRA when BSB/Loligo co-occurred	Eastward gain in availability	Westward loss in availability	Net gain/loss	Net difference relative to total winter/spring catch (Pct)
Alternative 1 (Status Quo)	17,341	11,318	65.3%	11,318	Ø	Ø	Ø	
Alternative 2 (3 min shift westward)	17,341	10,536	60.8%	10,535	1,040	258	782	4.5%
Alternative 3 (redefined seaward boundary)	17,341	4,447	25.6%	4,447	6,871	0	6,871	39.6%

	Total survey Loligo catch (N)	Loligo catch (N) within GRA	Pct	Loligo catch (N) within GRA when Scup/Loligo co-occurred	Eastward gain in availability	Westward loss in availability	Net gain/loss	Net difference relative to total winter/spring catch (Pct)
Alternative 1 (Status Quo)	556,998	171,421	30.8%	97,317	Ø	Ø	Ø	Ø
Alternative 2 (3 min shift westward)	556,998	129,728	23.3%	78,216	48,648	6,955	41,693	7.5%
Alternative 3 (redefined seaward boundary)	556,998	54,962	9.9%	37,560	116,459	0	116,459	20.9%

Table 19. Observed scup (top table) and black sea bass (bottom table) discards (lbs) and trips (N) within the SSGRA effective period (Jan1-Mar15) and over the entire year for small mesh (< 4.5 in) trawls and all mesh size trawls.

Scup

		SSGRA Effective Period (Jan1 - Mar 15)						Total Annual					
		Small Mesh			All Mesh Sizes			Small Mesh			All Mesh Sizes		
	Year	Scup discards small mesh (lbs)	Observed small mesh trips that caught scup (N)	Mean Discards/trip (lbs)	Scup discards all mesh sizes (lbs)	Observed trips that caught scup - all mesh sizes (N)	Mean Discards/trip (lbs)	Scup discards small mesh (lbs)	Observed small mesh trips that caught scup (N)	Mean Discards/trip (lbs)	Scup discards all mesh sizes (lbs)	Observed trips that caught scup - all mesh sizes (N)	Mean Discards/trip (lbs)
pre-GRA implementation	1989	9,702	6	1,617	10,530	8	1,316	38,711	51	759	39,544	59	670
	1990	12,470	8	1,559	12,502	9	1,389	63,303	37	1,711	63,631	51	1,248
	1991	12,418	12	1,035	12,420	13	955	108,368	69	1,571	110,707	84	1,318
	1992	3,056	23	133	8,035	36	223	65,882	47	1,402	72,305	68	1,063
	1993	1,863	10	186	2,050	12	171	21,336	23	928	21,353	31	689
	1994	2,728	10	273	2,972	15	198	4,884	22	222	5,292	34	156
	1995	56	5	11	225	13	17	4,807	44	109	5,948	76	78
	1996	1,001	4	250	1,035	9	115	16,889	52	325	17,143	76	226
	1997	18,488	14	1,321	18,502	17	1,088	20,872	32	652	20,886	36	580
	1998	1,103	4	276	1,573	9	175	165,087	23	7,178	165,615	31	5,342
	1999	10,341	3	3,447	10,341	3	3,447	23,229	23	1,010	23,279	26	895
post-GRA implementation	2000	19,491	7	2,784	19,588	11	1,781	24,765	21	1,179	27,954	45	621
	2001	218	7	31	32,688	12	2,724	25,872	31	835	58,383	50	1,168
	2002	1,750	2	875	1,990	6	332	26,204	28	936	39,166	56	699
	2003	2	1	2	196	7	28	8,345	26	321	16,691	63	265
	pre-GRA avg			919			827			1,442			1,115
	post-GRA avg			303			1,028			697			711

Black sea bass

		SSGRA Effective Period (Jan1 - Mar 15)						Total Annual					
		Small Mesh			All Mesh Sizes			Small Mesh			All Mesh Sizes		
	Year	BSB discards small mesh (lbs)	Observed small mesh trips that caught BSB (N)	Mean Discards/trip (lbs)	BSB discards all mesh sizes (lbs)	Observed trips that caught BSB - all mesh sizes (N)	Mean Discards/trip (lbs)	BSB discards small mesh (lbs)	Observed small mesh trips that caught BSB (N)	Mean Discards/trip (lbs)	BSB discards all mesh sizes (lbs)	Observed trips that caught BSB - all mesh sizes (N)	Mean Discards/trip (lbs)
pre-GRA implementation	1989	464	6	77	641	8	80	844	32	26	1,031	39	26
	1990	494	7	71	494	8	62	599	25	24	618	31	20
	1991	64	9	7	64	9	7	365	35	10	401	43	9
	1992	159	11	14	589	24	25	1,048	29	36	1,439	48	30
	1993	2,242	10	224	2,247	12	187	2,251	19	118	2,251	25	90
	1994	71	10	7	226	15	15	193	14	14	392	24	16
	1995	54	6	9	102	15	7	217	19	11	549	44	12
	1996	2,367	6	395	2,835	11	258	13,979	42	333	14,564	61	239
	1997	1,634	14	117	1,706	19	90	1,803	27	67	1,875	32	59
	1998	405	10	41	486	16	30	1,226	24	51	1,309	34	38
	1999	99	3	33	100	4	25	468	26	18	478	29	16
post-GRA implementation	2000	1,358	7	194	1,476	17	87	1,842	19	97	2,237	45	50
	2001	1,063	9	118	1,464	16	92	8,019	31	259	9,280	55	169
	2002	0	4	0	192	15	13	124	25	5	458	59	8
	2003	51	1	51	2,094	10	209	3,001	33	91	5,396	85	63
	pre-GRA avg			90			71			64			51
	post-GRA avg			56			105			118			80

Table 20. Estimated expected catch and status of stock for non-target species for all proposed research set-aside projects (Table provided by Sarah Thompson of NMFS/NERO).

Species	Total Estimated Catch (lb)	Status of Stock
American Lobster	349.86	Overfishing
Atlantic Cod	1.54	GOM-Overfishing, overfished GB-Overfishing, overfished
Atlantic Herring	7443.37	-
Atlantic Mackerel	15803.63	-
Barndoor Skate	398.3	Overfished
Clearnose Skate	339.36	-
Haddock	13.16	GOM-Overfished GB-Overfished
Little Skate	4226.04	-
Monkfish	11029.45	Northern-Overfishing Southern-Overfishing
Offshore Hake	16046.66	-
Rosette Skate	1475.60	-
Silver Hake	26045.31	-
Smooth Skate	65.24	-
Spiny Dogfish	69741.12	Overfished
Thorny Skate	217.28	Overfished
Weakfish	119.05	-
Winter Flounder	0.00	SNE-Overfishing, Overfished
Yellowtail Flounder	0.22	SNE/MA-Overfished GC/GOM-Overfishing, Overfished
CC-Cape Cod; GB-George's Bank; GOM-Gulf of Maine; MA-Mid-Atlantic; SNE-Southern New England		

Table 21. Threshold analysis of revenue impacts for participating vessels associated with the 2005 combined summer flounder, scup, and black sea bass quotas, "FLK" is summer flounder, "BSB" is black sea bass, and "SCP" is scup.

Quota Alternative 1 (Preferred)				Increased Revenue (number)	No Change in Revenue (number)	Number of Impacted Vessels by Reduction Percentile (%)						
Class	Landings Combination	Total Vessels	Number of Vessels Impacted by ≥ 5 Reduction			<5	36288	36451	20-29	30-39	40-49	≥50
1	SCP Only	24	0	0	0	24	0	0	0	0	0	0
2	BSB Only	98	0	98	0	0	0	0	0	0	0	0
3	FLK ONLY	286	0	286	0	0	0	0	0	0	0	0
4	SCP/BSB	82	0	71	0	11	0	0	0	0	0	0
5	SCP/FLK	30	0	28	0	2	0	0	0	0	0	0
6	BSB/FLK	93	0	93	0	0	0	0	0	0	0	0
7	SCP/BSB/FLK	427	0	424	0	3	0	0	0	0	0	0
	Totals	1,040	0	1,000	0	40	0	0	0	0	0	0

Table 22. Threshold analysis of revenue impacts for participating vessels associated with the 2005 combined summer flounder, scup, and black sea bass quotas, "FLK" is summer flounder, "BSB" is black sea bass, and "SCP" is scup.

Quota Alternative 2 (Most Restrictive)				Increased Revenue (number)	No Change in Revenue (number)	Number of Impacted Vessels by Reduction Percentile (%)						
Class	Landings Combination	Total Vessels	Number of Vessels Impacted by ≥ 5 Reduction			<5	5-9	10-19	20-29	30-39	40-49	≥50
1	SCP Only	24	12	0	0	12	0	0	2	10	0	0
2	BSB Only	98	0	98	0	0	0	0	0	0	0	0
3	FLK Only	286	0	0	0	286	0	0	0	0	0	0
4	SCP/BSB	82	22	37	0	23	2	6	11	3	0	0
5	SCP/FLK	30	4	0	0	26	2	2	0	0	0	0
6	BSB/FLK	93	0	37	0	56	0	0	0	0	0	0
7	SCP/BSB/FLK	427	67	19	0	341	44	16	7	0	0	0
	Totals	1,040	105	191	0	744	48	24	20	13	0	0

Table 23. Combinations of 2003 summer flounder (FLK), scup (SCP), and black sea bass (BSB) permits held by commercial vessels projected to have revenue reductions in the 5 to 39 percent range under the most restrictive alternative (Alternative 2).

	All 3	FLK only	BSB only	SCP only	SCP/ BSB	SCP/ FLK	BSB/ FLK	None*
Commercial	31	1	4	4	21	2	2	40

* "None" indicates no summer flounder, scup, or black sea bass permit held, and not necessarily no commercial permits held.

Table 24. Other 2003 permits held by the 65 vessels holding summer flounder, scup and black sea bass permits projected to have revenue reductions in the 5 to 39 percent range under the most restrictive alternative (Alternative 2 in 2005).

	Northeast Region Permit Status	Number of Vessels	Percent of Permitted Vessels
Commercial	Multispecies	28	43
	Surfclam	18	28
	Scallop	3	5
	Lobster, trap gear	11	17
	Lobster, non-trap gear	25	38
	Squid/Mackerel/ Butterfish	52	80
	Quahog	18	28
	Bluefish	64	98
	Dogfish	55	85
	Tilefish Incidental	36	55
	Herring VMS	1	2
	Herring non-VMS	38	58
	Atl. Deep-Sea Red Crab (Incidental)	13	20
	Skate	42	65
	Monkfish (Limited Access)	10	15
	Monkfish (Open Access)	35	54
Recreational	Summer flounder, Scup, and/or BSB	5	8
	Multispecies	33	51
	Squid/Mackerel/ Butterfish	6	9
	Bluefish	7	11

Table 25. Descriptive information for the commercial vessels showing revenue reductions in the 5 to 39 percent range (in 2005) based on 2003 descriptive data from NMFS permit files. No vessel characteristics data are reported for states with fewer than 3 permits.

	MA	NJ	NY	RI	Other
# Permits by Home Port State	11	9	38	5	3
# Permits by Principal Port State	9	7	40	7	2
# Permits by Mailing Address state	9	10	37	7	2
Avg. Length in Feet by Principal Port	30	71	41	46	58
Avg. GRT by Principal Port	9	114	35	24	60
Avg. Vessel Horsepower	200	553	330	277	395
% of Vessels where Home Port State = Principal Port State	82	89	95	100	66

Table 26. Distribution of commercial vessels showing revenue reductions in the 5 to 39 percent range (in 2005; holding permits for summer flounder, scup, and black sea bass) by state, county and home port, from 2003 NMFS permit files - home ports with fewer than three vessels are not reported - only county-level data supplied; counties with fewer than three vessels are not reported.

State	County	Home port	Number of Vessels
Massachusetts	Barnstable	Chatham	3
		Other	3
New Jersey	Monmouth	Belford	4
	Ocean	Pt. Pleasant	3
New York	Suffolk	New York	4
		Montauk	19
		Shinnecock	3
		Other	5
	Kings	Other	3
Rhode Island	Washington	Other	3

Table 27. Percentage changes associated with allowable commercial landings for various alternatives in 2005 (adjusted for overages and RSA) relative to the adjusted quotas for 2004.

	Total Change Including Overages and RSA		
Geographic Area or Time Period	Quota Alternative 1 (Preferred)	Quota Alternative 2 (Most Restrictive)	Quota Alternative 3 (Least Restrictive)
	Summer Flounder		
States other than ME & DE	+7.20%	-0.31%	+15.44%
Delaware[a]	-100.00%	-100.00%	-100.00%
Aggregate Change	+7.20%	-0.31%*	+15.44%
	Scup		
Aggregate Change	-0.85%*	-35.60%	+33.90%
	Black Sea Bass		
Aggregate Change[b]	+5.32%	+2.93%*	+11.97%

*Denotes status quo management measures.
[a]Delaware has no quota allocation in 2005.
[b]Quota changes by period (i.e., Winter I, Summer, and Winter II) are the same as those under the aggregate change.

Table 28. Percentage changes associated with allowable commercial landings for summer flounder alternatives in 2006 (adjusted for overages and RSA) relative to the adjusted quotas for 2004.

	Total Change Including Overages and RSA		
Geographic Area or Time Period	Quota Alternative 1 (Preferred)	Quota Alternative 2 (Most Restrictive)	Quota Alternative 3 (Least Restrictive)
States other than ME & DE	+14.59%	-2.08%	+23.27%
Delaware[a]	-100.00%	-100.00%	-100.00%
Aggregate Change	+14.59%	-2.08%*	+23.27%

*Denotes status quo management measures.
[a]Delaware has no quota allocation in 2006.

Table 29. Qualitative comparative summary of economic effects of 2005 regulatory alternatives relative to the base line "adjusted quotas for 2004".

Feature	Alternative 1 Preferred	Alternative 2 Most Restrictive	Alternative 3 Least Restrictive
Landings	FLK +1	FLK 0	FLK +1
	SCP +0	SCP -1	SCP +1
	BSB +1	BSB +1	BSB +1
Prices	FLK -1	FLK 0	FLK -1
	SCP 0	SCP +1	SCP -1
	BSB -1	BSB -1	BSB -1
Consumer Surplus	FLK +1	FLK 0	FLK +1
	SCP 0	SCP -1	SCP +1
	BSB +1	BSB +1	BSB +1
Harvest Costs	0	0	0
Producer Surplus	FLK +1 (?)	FLK 0	FLK +1 (?)
	SCP 0	SCP +1 (?)	SCP +1 (?)
	BSB +1 (?)	BSB +1 (?)	BSB +1 (?)
Enforcement Costs	0	0	0
Distributive Impacts	0	0	0
"-1" denotes a reduction relative to the base line; "0" denotes no change relative to the base line; and "+1" denotes an increase relative to the base line. FLK denotes Summer Flounder; SCP denotes Scup; and BSB denotes Black Sea Bass.			

Table 30. Qualitative comparative summary of economic effects of 2006 summer flounder regulatory alternatives relative to the base line "adjusted quotas for 2004".

Feature	Alternative 1 Preferred	Alternative 2 Most Restrictive	Alternative 3 Least Restrictive
Landings	+1	0	+1
Prices	-1	0	-1
Consumer Surplus	+1	0	+1
Harvest Costs	0	0	0
Producer Surplus	+1 (?)	0	+1 (?)
Enforcement Costs	0	0	0
Distributive Impacts	0	0	0
"-1" denotes a reduction relative to the base line; "0" denotes no change relative to the base line; and "+1" denotes an increase relative to the base line.			

Table 31. Numbers of vessels landing scup, black sea bass and/or summer flounder in 2003.

Landings Class	Landings Combinations	Commercial Vessels (#)
1	Scup Only	24
2	Black Sea Bass Only	98
3	Summer Flounder Only	286
4	Scup/Black Sea Bass	82
5	Scup/Summer Flounder	30
6	Black Sea Bass/Summer Flounder	93
7	Scup/Black Sea Bass/Summer Flounder	427
	Total	1,040
Data from Northeast Region dealer data.		

Table 32. Number of summer flounder recreational fishing trips, recreational harvest limit, and recreational landings from 1991 to 2005.

Year	Number of Fishing Trips[a]	Recreational Harvest Limit (million lb)	Recreational Landings of Summer Flounder (million lb)[b]
1991	4,645,993	None	7.96
1992	3,751,815	None	7.15
1993	4,829,252	8.38	8.83
1994	5,761,918	10.67	9.33
1995	4,699,292	7.76	5.42
1996	4,857,952	7.04	9.82
1997	5,620,640	7.41	11.87
1998	5,296,982	7.41	12.48
1999	4,230,627	7.41	8.37
2000	5,772,585	7.41	16.47
2001	6,146,798	7.16	11.64
2002	4,566,580	9.72	8.01
2003	N/A	9.32[c]	11.61
2004	N/A	11.21[c]	N/A
2005	-	11.98[c]	-

[a]Number of fishing trips as reported by anglers in the intercept survey indicating that the primary species sought was summer flounder, North Atlantic, Mid-Atlantic, and South Atlantic regions combined. Estimates are not expanded. Source: MRFSS.
[b]From Maine to North Carolina.
[c]Adjusted for research set-aside.
N/A = Data not available.

Table 33. Number of scup recreational fishing trips, recreational harvest limit, and recreational landings from 1991 to 2005.

Year	Number of Fishing Trips[a]	Recreational Harvest Limit (million lb)	Recreational Landings of Scup (million lb)[b]
1991	763,284	None	8.09
1992	495,201	None	4.41
1993	252,017	None	3.20
1994	221,074	None	2.63
1995	155,039	None	1.34
1996	147,161	None	2.16
1997	118,286	1.95	1.20
1998	105,283	1.55	0.88
1999	133,703	1.24	1.89
2000	459,598	1.24	5.44
2001	253,698	1.77	4.26
2002	476,008	2.71[c]	3.62
2003	N/A	4.01[c]	9.33
2004	N/A	3.99[c]	N/A
2005	-	3.96[c]	-

[a]Number of fishing trips as reported by anglers in the intercept survey indicating that the primary species sought was scup, North Atlantic, Mid-Atlantic, and South Atlantic regions combined. Estimates are not expanded. Source: MRFSS.
[b]From Maine to North Carolina.
[c]Adjusted for research set-aside.
N/A = Data not available.

Table 34. Number of black sea bass recreational fishing trips, recreational harvest limit, and recreational landings from 1991 to 2005.

Year	Number of Fishing Trips[a]	Recreational Harvest Limit (million lb)	Recreational Landings of BSB (million lb)[b]
1991	N/A	None	4.19
1992	218,700	None	2.71
1993	296,370	None	4.84
1994	265,402	None	2.95
1995	317,608	None	6.21
1996	207,058	None	4.00
1997	313,095	None	4.27
1998	N/A	3.15	1.15
1999	N/A	3.15	1.70
2000	228,135	3.15	4.01
2001	268,248	3.15	3.42
2002	258,513	3.43[c]	4.46
2003	N/A	3.43[c]	4.26
2004	-	4.01[c]	-
2005	-	4.13[c]	-

[a]Number of fishing trips as reported by anglers in the intercept survey indicating that the primary species group sought was black sea bass, North Atlantic, Mid-Atlantic, and South Atlantic regions combined. Estimates are not expanded. Source: MRFSS.
[b]From Maine to Cape Hatteras, North Carolina.
[c]Adjusted for research set-aside.
N/A = Data not available.

Table 35. Review of revenue impacts under quota Alternative 2 (associated with the 2005 combined summer flounder, scup, and black sea bass quotas), by home state.

State	Participating Vessels	Number of Vessels Impacted $\geq$5 percent	Increased Revenue (number)	No Change in Revenue (number)	Number of Impacted Vessels by Reduction Percentile (percent)						
					<5	5-9	10-19	20-29	30-39	40-49	≥50
CT	16	1	0	0	15	1	0	0	0	0	0
DE	6	0	5	0	1	0	0	0	0	0	0
MA	183	11	16	0	156	3	5	1	2	0	0
MD	17	1	10	0	6	1	0	0	0	0	0
NC	94	0	11	0	83	0	0	0	0	0	0
NJ	118	9	25	0	84	9	0	0	0	0	0
NY	141	38	18	0	85	17	8	9	4	0	0
PA	6	0	1	0	5	0	0	0	0	0	0
RI	106	5	13	0	88	4	1	0	0	0	0
VA	77	1	28	0	48	1	0	0	0	0	0
OTHER[a]	4	0	1	0	3	0	0	0	0	0	0
NOT KNOWN[b]	272	39	63	0	170	12	10	10	7	0	0
Total	1,040	105	191	0	744	48	24	20	13	0	0

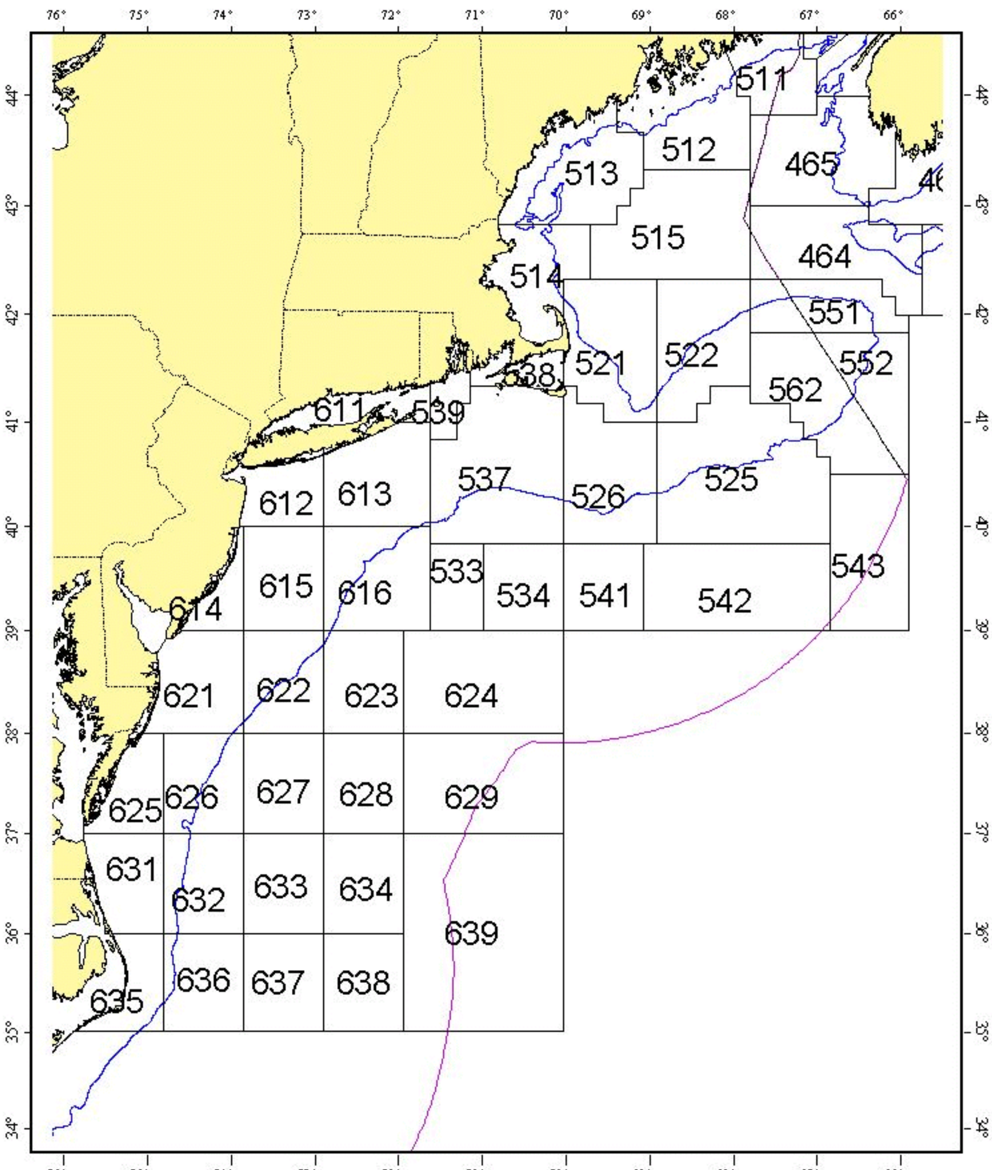
[a]States with fewer than 3 vessels were aggregated.
[b]Vessels have shown landings of either of those three species in 2003, but did not hold any of the requisite federal permits in 2003. These vessels may be fishing exclusively in state waters fisheries for those species, and landings are indicated because of reporting requirements for their other federal permits or they do not hold a federal permit to participate in these fisheries any longer.

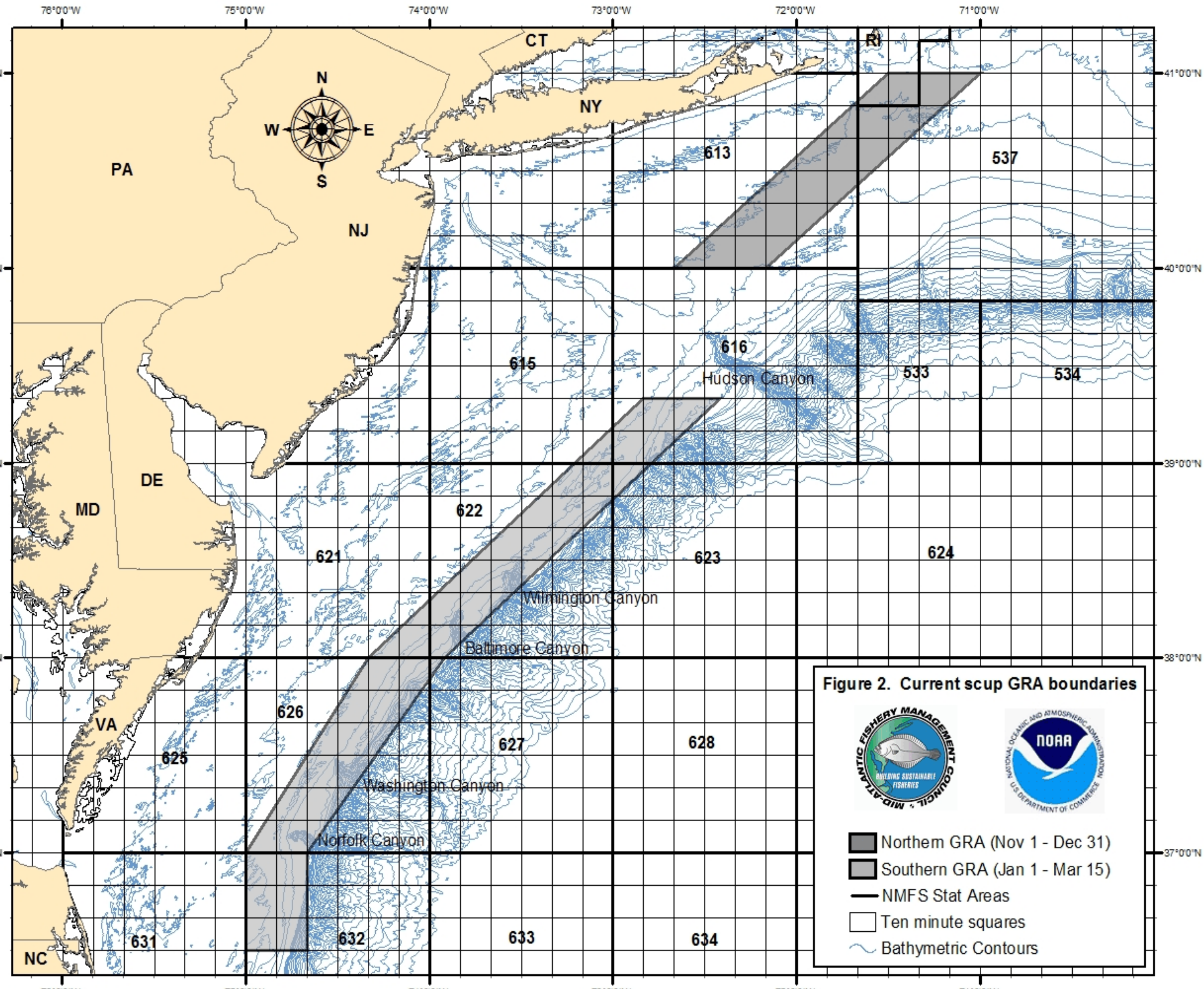
Table 36. Counties identified as having >= 4 commercial vessels showing revenue reductions of 5% or more as a consequence of the most restrictive 2005 alternative (alternative 2) evaluated in this document (section 5.1.2 of the RIR/IRFA).

State	County[a]	Population[b]	Employment[c]	Total Personal Income[d] (million of $'s)	Commercial Fishing Employment	Percent of Personal Income Derived From Commercial Fishing	Fresh and Frozen Seafood Processing Employment	Percent of Personal Income Derived from Seafood Processing
NC	Dare	31,168	25,453	830.10	77	.08%	17	.01%
MA	Barnstable	226,809	132,491	8,159.31	793	.08%	0	.0008%
NJ	Monmouth	622,977	326,491	26,192.23	52	.01%	23	.002%

* = < 10 observations.
a = Data obtained from the Minnesota IMPLAN Group, Inc., IMPLAN System (data and software), 1725 Tower Drive West, Suite 140, Stillwater, MN 55082, www.implan.com, 2001.
b = Year-round population.
c = Includes both full-time and part-time workers.
d = Includes employee compensation (wage and salary payments and benefits paid by employers) and proprietary income (payments received by self-employed individuals as income).

Figure 1. NMFS Northeast statistical areas.




CT
RI
NY
PA
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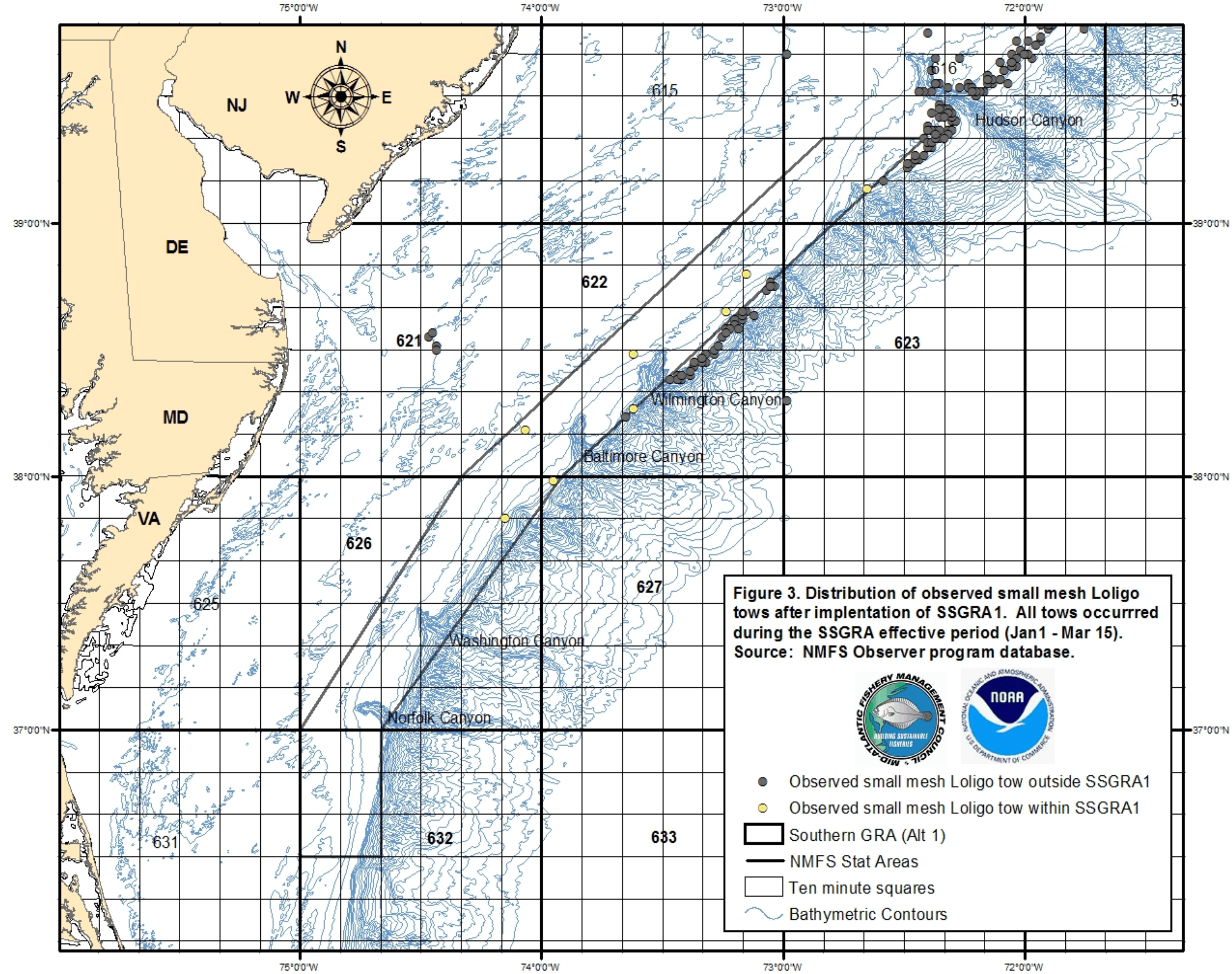
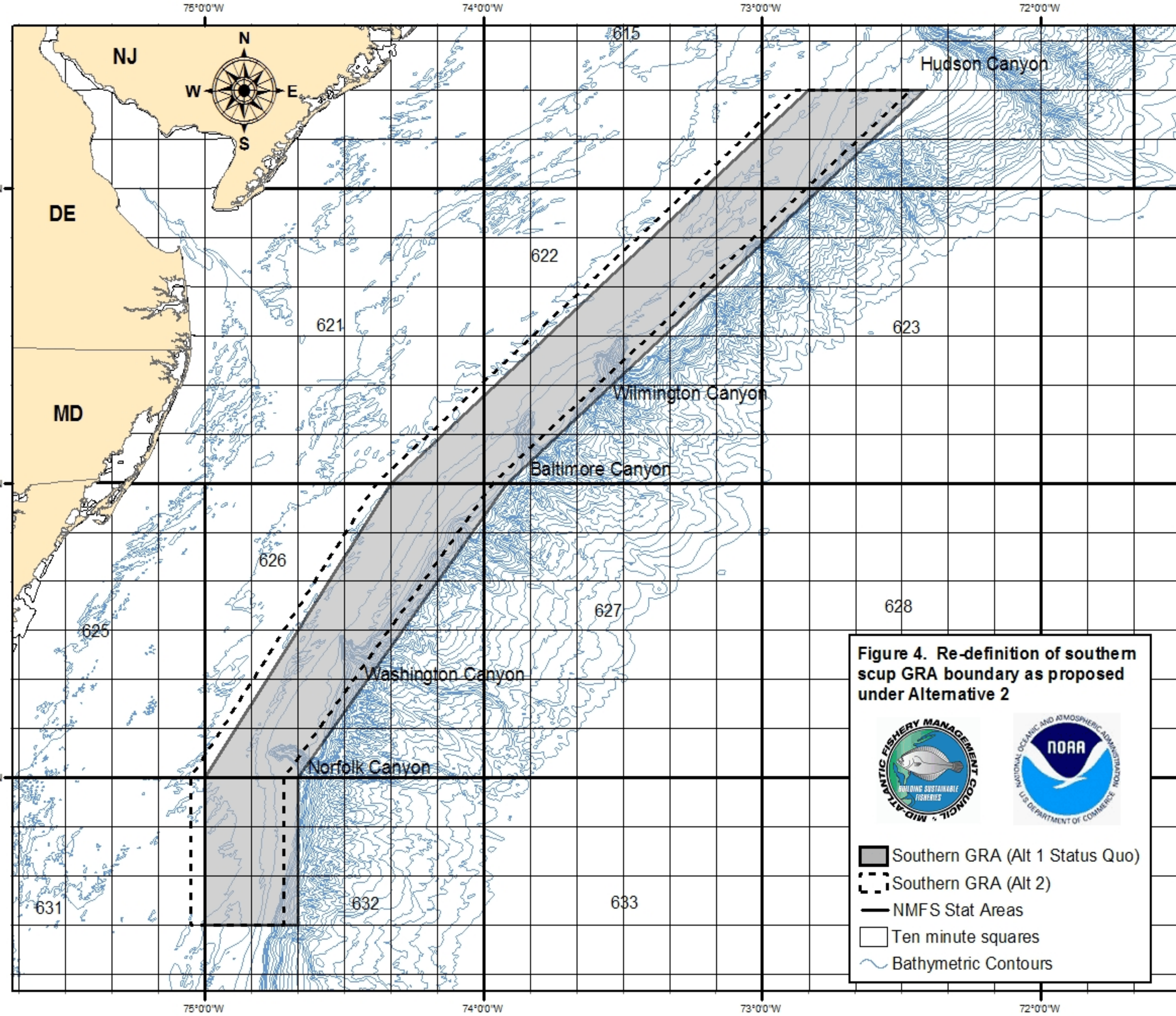
MD
VA
NC
613
537
616
615
533
534
Hudson Canyon
622
621
623
624
Wilmington Canyon
Baltimore Canyon
626
627
628
625
Washington Canyon
Norfolk Canyon
631
632
633
634
76°0'0"W
75°0'0"W
74°0'0"W
73°0'0"W
72°0'0"W
71°0'0"W
41°0'0"N
40°0'0"N
39°0'0"N
38°0'0"N
37°0'0"N
Figure 2. Current scup GRA boundaries
Northern GRA (Nov 1 - Dec 31)
Southern GRA (Jan 1 - Mar 15)
NMFS Stat Areas
Ten minute squares
Bathymetric Contours


75°0'0"W
74°0'0"W
73°0'0"W
72°0'0"W
39°0'0"N
38°0'0"N
37°0'0"N
N
S
W
E
NJ
DE
MD
VA
615
616
621
622
623
625
626
627
631
632
633
Hudson Canyon
Wilmington Canyon
Baltimore Canyon
Washington Canyon
Norfolk Canyon
Figure 3. Distribution of observed small mesh Loligo tows after implentation of SSGRA1. All tows occurrred during the SSGRA effective period (Jan1 - Mar 15).
Source: NMFS Observer program database.
Observed small mesh Loligo tow outside SSGRA1
Observed small mesh Loligo tow within SSGRA1
Southern GRA (Alt 1)
NMFS Stat Areas
Ten minute squares
Bathymetric Contours



75°0'0"W
74°0'0"W
73°0'0"W
72°0'0"W
39°0'0"N
38°0'0"N
37°0'0"N
NJ
DE
MD
N
S
E
W
615
622
621
623
626
627
628
625
631
632
633
Hudson Canyon
Wilmington Canyon
Baltimore Canyon
Washington Canyon
Norfolk Canyon
Figure 4. Re-definition of southern scup GRA boundary as proposed under Alternative 2
Southern GRA (Alt 1 Status Quo)
Southern GRA (Alt 2)
NMFS Stat Areas
Ten minute squares
Bathymetric Contours

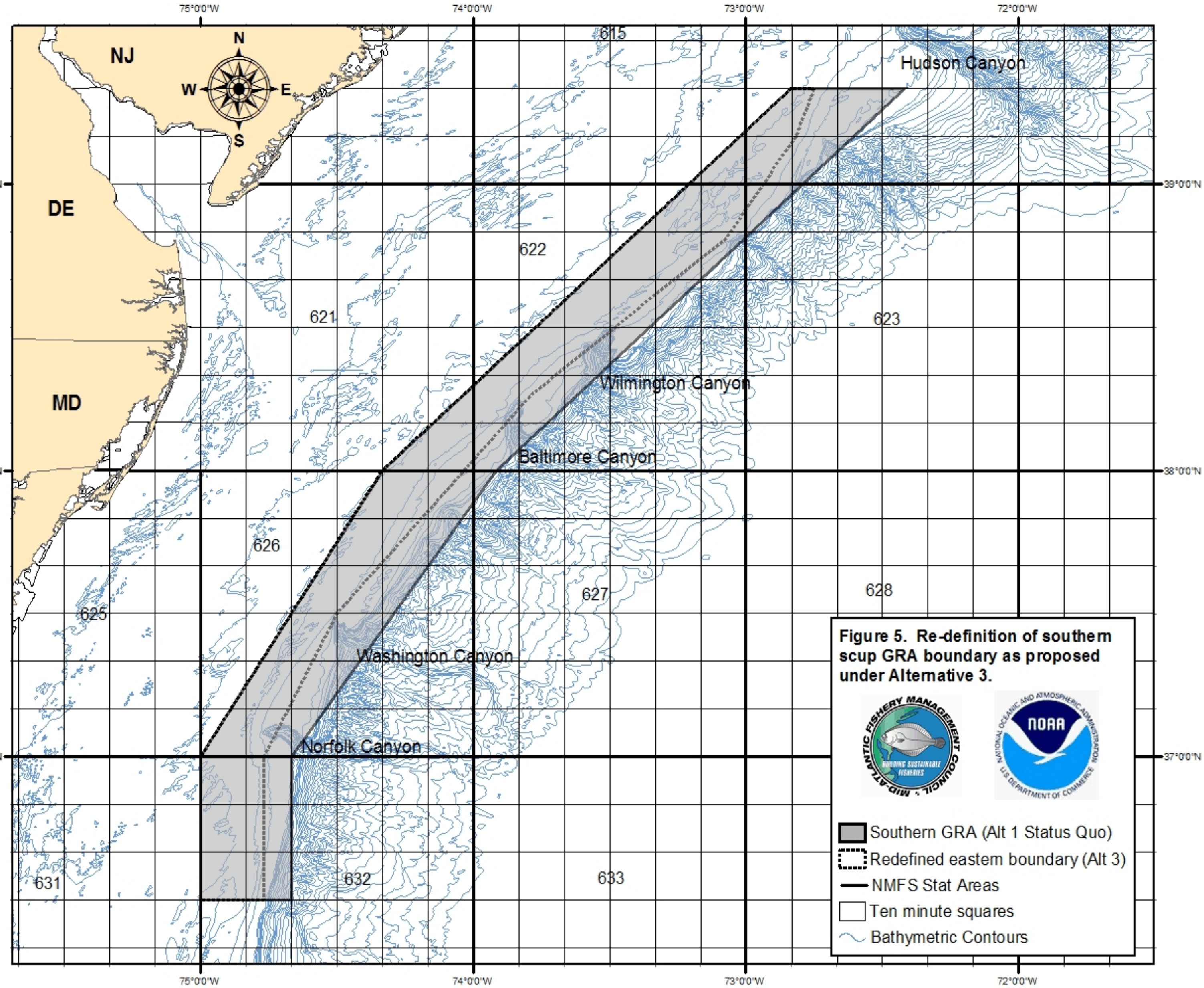


Figure 5. Re-definition of southern scup GRA boundary as proposed under Alternative 3.

APPENDIX A

Potential increase in Winter II possession limits based on the amount of scup rolled over from Winter I to Winter II period.

Original Winter II possession limit (pounds)	Rollover from Winter I to Winter II period (pounds)	Increase in Original Winter II possession limit (pounds)	Final Winter II possession limit after roll over from Winter I to Winter II
1,500	0-499,999	0	1,500
1,500	500,000-999,999	500	2,000
1,500	1,000,000-1,499,999	1,000	2,500
1,500	1,500,000-1,999,999	1,500	3,000
1,500	2,000,000-2,500,000	2,000	3,500

APPENDIX B

[This information was provided by Paul Perra, NMFS/NERO]

Scope of Work for 2005 Mid-Atlantic Research Set-Aside (RSA) Projects

04-RSA-003 - National Fisheries Institute, Inc. (NFI) and Rutgers, The State University of New Jersey (Rutgers), "Development of a Supplemental Finfish Survey Targeting Mid-Atlantic Migratory Species." Principal Investigator – Eric N. Powell.

Project Abstract: To obtain third year support for the development/refinement of a commercial-vessel based survey program in the Mid-Atlantic region that tracks the migratory behavior of selected recreationally and commercially important species. Information gathered from the study would supplement the National Marine Fisheries Service (NMFS) finfish survey databases and will include development of methods to better evaluate how seasonal migration of fish in the Mid-Atlantic influences stock abundance estimates.

RSA Amount: 192,177 lbs (87,170 kg) of summer flounder, 120,000 lbs (54,431 kg) of scup, 281,350 lbs (127,618 kg) of *Loligo* squid, 61,500 lbs (27,859 kg) of black sea bass, and 297,750 lbs (135,057 kg) of bluefish

Project Description: This project involves collaborative efforts from NFI, Rutgers, and the NMFS Northeast Fisheries Science Center (NEFSC). The field work will be carried out by up to two research vessels conducting approximately 170 trawl survey tows along a total of about 12 offshore transects with 4 transects sampled in January and March and 2 transects sampled in May and November (Figure 1). The transects will include 6 fixed offshore transects, one each near Alvin, Hudson, Baltimore, Poor Man's, Washington, and Norfolk Canyons, and 2 adaptive transects positioned within the Mid-Atlantic area based on a pre-cruise meeting with NFI, Rutgers, and the NEFSC.

Sampling will be conducted along each transect at depths near 40 (73 m), 50 (91m), 60 (110 m), 80 (183 m), 100 (183 m), 125 (229 m), 150 (247 m), 200 (366 m), 225 (411 m), and 250 fm (457 m), with up to five additional trawl sites added along each of the transects based on the catches of the target species. Primary target species will be summer flounder, scup, black sea bass, monkfish, silver hake, Loligo squid, offshore hake, and spiny dogfish, and secondary target species will be skates, yellowtail flounder, winter flounder, and lobster. One tow will be conducted at each station over a fixed distance of 1 nautical mile (1.8 km), with a tow speed of 3 to 3.2 knots (5.8 to 5.9 km/hr). Careful records will be kept of all gear descriptions so that subsequent surveys can use consistent gear. A four-seam box net will be used with a 2.4-inch (6.1- cm) mesh codend. Sampling protocol for handling the catch from the trawl survey will follow standard NOAA Fisheries survey methods. Every effort will be made to weigh the entire catch, or to put in baskets the entire catch and weigh a subsample of the baskets. Lengths will be obtained for target species. If time does not permit sampling between tows, fish sorted for length measurement will be placed in labeled containers and stored until processing can occur. Temperature and depth profiles will be taken for each tow. Pre- and post-cruise meetings will be held to confirm study logistics and conduct retrospective analysis of cruise activities. Scientific research personnel will be on board the vessel at all times when the survey is conducted.

Table 1 presents an estimate of the possible total pounds by species that could be caught if all 14 transects are sampled. This information is based upon study results from 2003 and 2004, primarily from Hudson and Baltimore Canyons. Additional transects will be sampled at other canyons in 2005. Therefore, the total pounds given are only a crude estimate, since we cannot predict the seasonality or abundance of species that will be captured along these transects.

Table 1. 2005 Supplemental Finfish Survey Targeting Migratory Species Estimated Expected Catch Rate of Species

Primary Target Species:	**Average Catch Per Transect (lb) ***	**Total Estimated Catch (lb)****
Black Sea Bass	550.46	7706.44
Loligo Squid	1577.51	22085.14
Monkfish	729.27	10209.78
Offshore Hake	1146.19	16046.66
Scup	454.92	6368.88
Silver Hake	1109.76	15536.64
Spiny Dogfish	4944.55	69223.70
Summer Flounder	1030.18	14422.52
Secondary Species:		
American Lobster	24.99	349.86
Barndoor Skate	28.45	398.30
Clearnose Skate	24.24	339.36
Little Skate	301.86	4226.04
Rosette Skate	105.40	1475.60
Smooth Skate	4.66	65.24
Thorny Skate	15.52	217.28
Winter Flounder	0.00	0.00
Winter Skate	1.39	19.46
Yellowtail Flounder	0.00	0.00
Other Managed Species:		
Atlantic Cod	0.11	1.54
Butterfish	1056.27	14787.78
Haddock	0.94	13.16
Illex Squid	208.76	2922.64
Atlantic Herring	531.67	7443.37
Atlantic Mackerel	1061.40	14859.62

*Average catch per transect is based on a 1-nautical mile tow.
**Total estimated catch is based on sampling a maximum of 14 transects during 2005.

The project will involve one or two vessels in the 75 to 100 ft (23 to 30 m) size range conducting approximately 170, 15 to 30 minute, research bottom tows. The research survey and the harvest of the set-aside will result in no mammal interactions beyond that normally experienced during the NMFS spring and winter surveys and normal commercial fishing operations in the spring, winter, and fall. This impact is minimal. No effects will occur on Essential Fish Habitat, the managed species, associated species such as prey species, etc., beyond the normal effects of the legal fishery.

The research vessel/vessels will need exemptions from closed areas, seasonal and gear restrictions, and trip limits. As the program does not target any specific species- it is, in fact, a survey designed to catch whatever is there – it is not clear what species will be captured. Accordingly, a general mesh-size exemption permitting the taking of any regulated species using a 6.1-cm codend mesh is requested.

The specific exemptions would exempt the vessel/s from summer flounder fishery regulations at 50 CFR 648.101(a) and (b); summer flounder gear restrictions at § 648.104; scup trimester quota closures at § 648.121(a); scup time and area restrictions at § 648.122(a) and (b); scup trawl gear restrictions at § 648.123; black sea bass trip limits at § 648.140(b)(2); black sea bass gear restrictions at § 648.144(1)-(4); *Loligo* squid and Atlantic mackerel closures at § 648.22(a) and ©); and bluefish closures at § 648.161(a) and (b). In addition, in order to collect individual size measurements and other data, the EFP for the research vessel will grant exemptions from the following regulations: Minimum size for summer flounder at § 648.103(a)-©), for scup at § 648.124(a), for black sea bass at § 648.143, for monkfish at § 648.93, for spiny dogfish at § 648.233, for yellowtail flounder and winter flounder at § 648.83, and for lobster at § 697.20 (b); from spiny dogfish closures at § 648.231; and from Northeast multispecies regulated mesh, restrictions on gear, and methods of fishing at § 648.80.

The research vessel/vessels does not intend to bring back to the dock any fish below legal size or in excess of any quota, except that some specimens may be retained for scientific purposes or transferred to NMFS/NEFSC. However, the research vessel/vessels may retain the remaining catch that meets legal size and quota restrictions. Although it is unlikely that their catch would exceed any landing limits because the field program will be in survey mode and so tows will be short and not located so as to specifically catch a particular species, in the eventuality that the catch exceeds the landing limits, an exemption for landing limits is requested. At this time, researchers cannot predict which species might be encountered and what trip limits will be in place at that time. Consequently, an exemption from all landings limits associated with the regulated species has been requested, However, this has not been allowed during the 2 previous years of the project, and is only consider to allow for the option of granting this type of exemption if excessive waste results from the project's operations. Any minimal impact that might occur from landing fish above the landings limits might be justified by the anticipated long-term benefits to the Mid-Atlantic stocks because of the increased information on the seasonal movements of key fish species.

For harvesting the set-aside quota, approximately 25 fishing vessels will operate under standard commercial fishing operations to take the set-aside quota for scup, black sea bass, summer flounder, *Loligo* squid, and bluefish. No additional mortality of other fish species will occur because the study will be conducted during standard commercial fishing trips. The harvest of the set-aside should result in no mammal interactions beyond that normally experienced during normal commercial fishing operations. This impact is minimal. No effects should occur on Essential Fish Habitat, the managed species, associated species such as prey species, etc., beyond the normal effects of the legal fishery.

EFH Concerns
The area affected by the proposed action has been identified as EFH for species managed by the following FMPs: Northeast Multispecies; Summer Flounder, Scup, and Black Sea Bass; Squid, Atlantic Mackerel, and Butterfish; Atlantic Surf Clam and Ocean Quahog; Atlantic Herring; Atlantic Bluefish; and Atlantic Tunas, Swordfish, and Sharks. The action in the context of the fishery as a whole should not be substantial.

Endangered Species Concerns
This action should not adversely affect endangered and threatened species or their critical habitat.

Marine Mammal Concerns
Fishing activities conducted under this project should have no adverse impact on marine mammals.

These vessels will need exemptions to closed seasons and trip limits for the RSA species listed under the project. The most likely ports for landings will be in Rhode Island, New York, New Jersey, and Virginia.

The specific exemptions would exempt these vessels from summer flounder closures at §648.101(a) and (b); scup trimester quota closures at §648.121(a); black sea bass trip limits at §648.140(b)(2); black sea bass closures at §648.141; *Loligo* squid closures at §648.22(a) and ©); and bluefish closures at §648.161(a) and (b).

<u>04-RSA-002</u> - NFI and Rutgers, "Increased Escapement of Finfish in the *Loligo* Squid Fishery". Principal Investigator – Eric N. Powell.

<u>Project Abstract:</u> To obtain second year support for a study on finfish discarded due to regulatory restrictions in quota or bycatch landing limits in *Loligo* squid-targeted tows. The investigation would be conducted using up to two fishing vessels. Nets will be compared using legal mesh size for squid of 1.875 inch (4.8 cm) and several larger mesh sizes such as 2.36 inch (6.0 cm), and 3.0 inch (7.6 cm). Study results will lend insight into bycatch of finfish species when different mesh sizes are used in the *Loligo* squid fishery.

<u>RSA Amount:</u> 30,000 lbs (13,608 kg) of black sea bass, 120,000 lbs (54,431 kg) of scup, flounder, 281,000 lbs (127,460 kg) of *Loligo* squid, and 161,740 lbs (73,364 kg) of summer flounder

Project Description: This project will test different mesh sizes in squid nets under commercial use. Exact tow number will depend on the time of each tow, which will be determined by the Captain during fishing. The project proposes a total of 36 days at sea for up to 2 research vessels in the 75 to 100 ft (23 m to 30 m) range. Assuming a fishing trip of about 4 days dock to dock, this will provide for about 27 fishing days. Commercial vessels fishing for *Loligo* squid normally do not exceed 4 tows per day. Thus, the field work would entail 80 to100 tows. The vessels conducting the research, preferably will be fishing in parallel, since this permits discriminating the time/location (always confounded) and boat effect statistically. The effort per vessel will be 40-50 tows, about 14 fishing days, and about 4 fishing trips for each vessel. Research scientists will be on board each vessel. The research protocol for handling the catch includes the measurement of catch weight for all caught species, and the acquisition of length and weight measurements for up to 100 individuals for a selected subset of species on each tow.

Field work is most likely to take place in February/March near the Hudson Canyon. High butterfish and silver hake discarding events in the Loligo fishery are recorded in the observer database in this area during January-March, but are much less common further south. Based on input from NMFS and Industry, field work may encompass a broader area in and/or near the Northern and Southern Gear Restricted Areas (Figure 2).

The legal mesh size for *Loligo* squid is 1.875 inches (4.8 cm). However, a 2.36-inch (6.0-cm) mesh is also commonly used. Up to three mesh sizes may be tested ranging from 1.875 (4.8 cm) to 3.0 inch (7.6 cm). The most likely meshes tested will be 1.875 inch (4.8 cm), 2.36 inch (6.0 cm), and 3.0 inch (7.6 cm). Evaluating three mesh sizes will reduce the total number of replicate tows per mesh to about 30, (15 per boat) if two boats are used.

To estimate mean landings and discards of species during this study, an average catch per tow for discards and landings for bycatch species and Loligo squid was calculated from directed Loligo tows from the NMFS observer database from 1997-2002. A total of about 80 tows will be taken during the study so mean landings per tow and mean discards per tow were then multiplied by 80 tows to obtain total estimated landings and discards. Many tows during this study will be using a larger mesh codend than is typically used in the directed Loligo fishery and therefore the total estimates are probably over estimating the actual landings and discards for all species (Table 2). In addition, the majority of the tows will be conducted during the Loligo fishing season and the estimated catch, landings, and discards will be no greater than any other targeted Loligo commercial fishing trip (Table 2).

The research vessels will need exemptions from squid Gear Restricted Areas (GRAs)) which are, seasonal gear restrictions, and trip limits. The research vessels must be exempt from trip limits so that the length of the trip can be determined by the need of the science program, and not trip limits. Without trip limits, the vessels will be forced to return to shore when the trip limit is reached to offload and then return to sea to complete the research.

These vessels would be granted exemptions to black sea bass quarterly quota closures at 50 CFR 648.141; scup trimester quota closures at §648.121(a); scup time and area restrictions at §648.122(a) and (b); scup trawl gear restrictions at §648.123; and *Loligo* squid trip limits

and quarterly closures at §648.22. In addition, in order to collect individual size measurements and other data, the EFP for the 10 vessels identified as research vessels to conduct the mesh study would also grant additional exemptions from the following regulations: Minimum sizes for scup at §648.124(a), summer flounder at §648.103(a), (b), and ©), and black sea bass at §648.143.

Table 2. 2005 Loligo Squid Mesh Size Selectivity Study Estimated Expected Catch Rates

Primary Target Species:	**Mean Landings Per Tow (lb)**	**Mean Discard Per Tow (lb)**	**Total Estimated Landings (lb)***	**Total Estimated Discards (lb)***
Loligo Squid	1114.37	34.04	89149.97	2723.44
Secondary Target Species:				
Silver Hake	105.09	164.05	10508.67	16405.40
Butterfish	26.06	181.15	2606.28	18114.69
Scup	2.74	15.04	274.47	1504.37
Summer Flounder	12.74	23.59	1274.26	2358.79
Illex Squid	12.65	22.60	1264.78	2259.56
Black Sea Bass	3.77	4.70	377.21	469.69
Other Managed Species:				
Spiny Dogfish	5.17	59.06	517.42	5905.55
Atlantic Mackerel	9.44	23.67	944.01	2366.86
Monkfish	8.20	14.74	819.67	1474.26
Weakfish	1.19	0.29	119.05	28.64
Yellowtail Flounder	0.00	1.09	0.22	109.46

*The calculations for total estimated landings and discards are based on 80 commercial tows.

Additionally, approximately 25 more vessels will be harvesting the RSA amounts allocated to the project. These vessels will need exemptions to closed seasons and trip limits for the RSA species listed under the project.

These vessels would be granted exemptions Black sea bass trip limits at §648.140(b)(2); black sea bass quarterly quota closures at §648.141, and, scup trimester quota closures at §648.121(a); and *Loligo* squid possession limits, and quarterly closures at §648.22 (a) and ©).

The most likely ports for landings will be in Rhode Island, New York, New Jersey, Virginia, and North Carolina.

The research and the harvest of the set-aside should result in no mammal interactions beyond that normally experienced during normal commercial fishing operations. This impact is minimal. No effects will occur on Essential Fish Habitat, the managed species, associated species such as prey species, etc., beyond the normal effects of the legal fishery. The majority of the research tows will be conducted during the commercial fishing season for Loligo and the only potential environmental impact that could occur is on scup discards if research tows are conducted in the GRAs.

EFH Concerns
The area affected by the proposed action has been identified as EFH for species managed by the following FMPs: Northeast Multispecies; Summer Flounder, Scup, and Black Sea Bass; Squid, Atlantic Mackerel, and Butterfish; Atlantic Surf Clam and Ocean Quahog; Atlantic Herring; Atlantic Bluefish; and Atlantic Tunas, Swordfish, and Sharks. The action in the context of the fishery as a whole should not be substantial.

Endangered Species Concerns
This action should not adversely affect endangered and threatened species or their critical habitat.

Marine Mammal Concerns
Fishing activities conducted under this project should have no adverse impact on marine mammals.

04-RSA-005 – Charles Borden, "2005 Fishery Independent Scup Survey of Selected Areas in Southern New England " Principal Investigator – Laura Skrobe, University of Rhode Island.

Project Abstract: To conduct a second year fishery independent scup survey that utilizes unvented fish traps fished on hard bottom areas in southern New England waters to characterize the size composition of the population. Survey activities will be conducted from May through November at 8 rocky bottom study sites that are located offshore, where there is a minimal scup pot fishery and no active trawl fishery. Study results will expand the current understanding of the scup resource in areas where the resource is otherwise unavailable to existing survey gear.

RSA Amount: 18,000 lbs (8,165 kg) of black sea bass, 63,675 lbs (28,882 kg) of scup

Project Description: This project is a fishery independent study to survey scup at 8 rocky bottom areas in southern New England waters that are currently not typically sampled by state or Federal finfish trawl surveys. It involves research and compensation fishing in state and Federal waters. Field work will be conducted off the coast of Rhode Island and Massachusetts from June 1 through November 7, 2004. The resultant data will be compared to finfish trawl data collected by NMFS.

This project includes the cooperative efforts of 1 to 2 vessels in the 30 to 60 ft (9.1 to 18.3 m) size range, the University of Rhode Island, and the Rhode Island Department of Environmental Management, Division of Fish and Wildlife. The vessel will conduct the research and some compensation fishing. Research and compensation fishing will take place in state and Federal waters off of Rhode Island and Massachusetts. Research sites are listed in (Table 1). Fish will be landed in Rhode Island and Massachusetts. The sampling protocol will require the research vessel to take 15 traps to each sampling site once during each 3-week sampling cycle. Traps will be placed as single pots for a 1-hour soak time twice per day at each sample site, with a total of 30 trap hauls occurring on each sample site once during each 3-week cycle. Two sites will be sampled each day, requiring 3 sea days to sample the six sites. The same sampling format will be followed every 3 weeks from June 1 through November 7, 2004, for a total of nine complete cycles (27 sea days).

The vessel, when conducting research, will need to be exempt form, scup closure restrictions, black sea bass closure restrictions, scup possession limit restrictions, black sea bass possession limit restrictions, and lobster trap limits and vent regulations. Exemption from the closure restrictions will allow the compensation fishing to proceed during a fishery closure.

Additionally, a second vessel in the same size range as the research vessel may harvest some of the RSA amounts allocated to the project.

These vessels will need exemptions to closed seasons and trip limits for the RSA listed under the project. The most likely ports for landings will be in Rhode Island and Massachusetts.

These vessels would be granted exemptions scup closure restrictions specified at 50 CFR 648.121(a), the NE black sea bass closure restrictions specified at § 648.141, the scup possession limit restrictions at § 648.125, and the black sea bass possession limit restrictions at § 648.145.

No bycatch/mortality is expected from this project. The few traps used are only fished for 1 hour, and what few none target species that may be found in the trap are returned to the water alive.

EFH Concerns
The area affected by the proposed action has been identified as EFH for species managed by the following FMPs: Northeast Multispecies; Summer Flounder, Scup, and Black Sea Bass; Squid, Atlantic Mackerel, and Butterfish; Atlantic Surf Clam and Ocean Quahog; Atlantic Herring; Atlantic Bluefish; and Atlantic Tunas, Swordfish, and Sharks. The action in the context of the fishery as a whole should not have an adverse effect on EFH.

Endangered Species Concerns
This action should not adversely affect endangered and threatened species or their critical habitat.

Marine Mammal Concerns

Fishing activities conducted under this project should have no adverse impact on marine mammals.

Figure1.

Supplemental Finfish Trawl Survey Transects

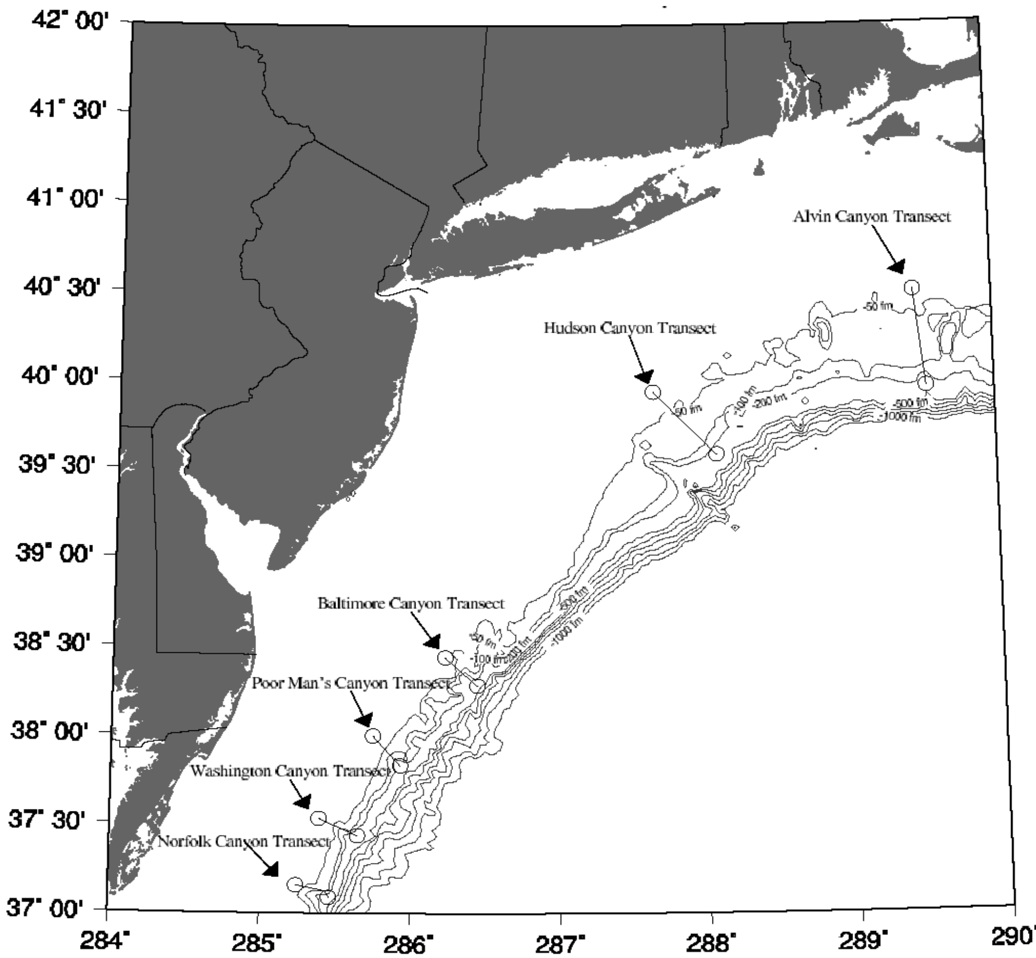
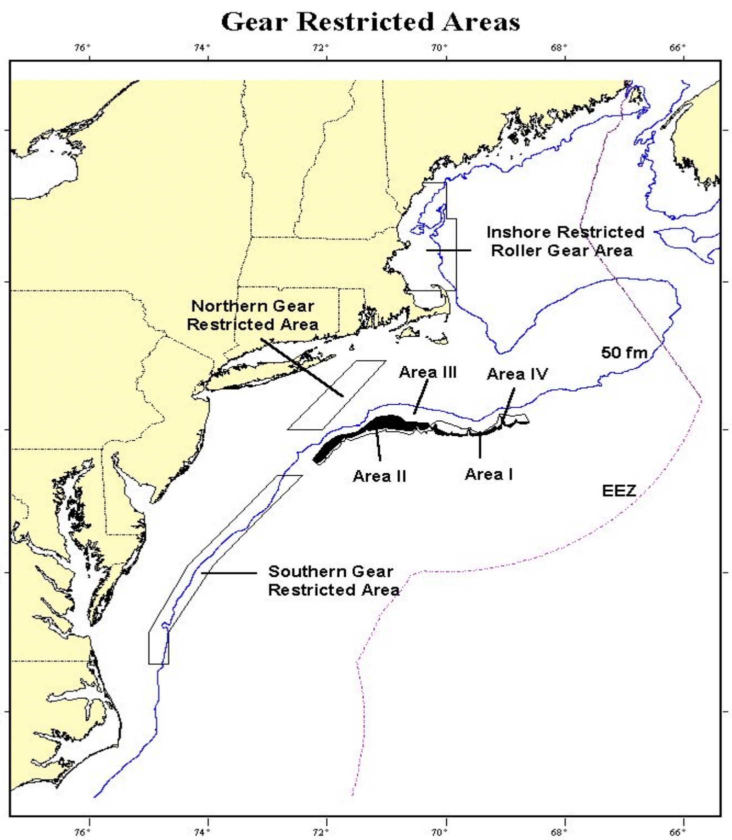


Figure 2.


Gear Restricted Areas
76°
74°
72°
70°
68°
66°
44°
42°
40°
38°
36°
Inshore Restricted
Roller Gear Area
Northern Gear
Restricted Area
50 fm
Area III
Area IV
Area II
Area I
EEZ
Southern Gear
Restricted Area

APPENDIX C

Description of Species Listed as Endangered which inhabit the management unit of the FMP

North Atlantic Right Whale

Right whales have occurred historically in all the world's oceans from temperate to subarctic latitudes. NMFS recognizes three major subdivisions of right whales: North Pacific, North Atlantic, and Southern Hemisphere. NMFS further recognizes two extant subunits in the North Atlantic: eastern and western. A third subunit may have existed in the central Atlantic (migrating from east of Greenland to the Azores or Bermuda), but this stock appears to be extinct (Waring *et al.* 2002).

The north Atlantic right whale has the highest risk of extinction among all of the large whales in the worlds oceans. The scarcity of right whales is the result of an 800-year history of whaling that continued into the 1960s (Klumov 1962). Historical records indicate that right whales were subject to commercial whaling in the North Atlantic as early as 1059. Between the 11th and 17th centuries, an estimated 25,000-40,000 right whales may have been harvested. The size of the western north Atlantic right whale population at the termination of whaling is unknown, but the stock was recognized as seriously depleted as early as 1750. However, right whales continued to be taken in shore-based operations or opportunistically by whalers in search of other species as late as the 1920's. By the time the species was internationally protected in 1935, there may have been fewer than 100 western north Atlantic right whales in the western Atlantic (Hain 1975; Reeves *et al.* 1992; Waring *et al.* 2002).

Right whales appear to prefer shallow coastal waters, but their distribution is also strongly correlated to the distribution of their prey (zooplankton). In both the northern and southern hemispheres, right whales are observed in the lower latitudes and more coastal waters during winter where calving takes place, and then tend to migrate to higher latitudes during the summer. The distribution of right whales in summer and fall in both hemispheres appears linked to the distribution of their principal zooplankton prey (Winn *et al.* 1986). They generally occur in Northwest Atlantic waters west of the Gulf Stream and are most commonly associated with cooler waters (21° C). They are not found in the Caribbean and have been recorded only rarely in the Gulf of Mexico.

Right whales feed on zooplankton through the water column, and in shallow waters may feed near the bottom. In the Gulf of Maine they have been observed feeding on zooplankton, primarily copepods, by skimming at or below the water's surface with open mouths (NMFS 1991b; Kenney *et al.* 1986; Murison and Gaskin 1989; and Mayo and Marx 1990). Research suggests that right whales must locate and exploit extremely dense patches of zooplankton to feed efficiently (Waring *et al.* 2000). New England waters include important foraging habitat for right whales and at least some portion of the North Atlantic right whale population is present in these waters throughout most months of the year. They are most abundant in Cape Cod Bay between February and April (Hamilton and Mayo 1990; Schevill *et al.* 1986; Watkins and Schevill 1982) and in the Great South Channel in May and June (Payne *et al.* 1990) where they have been observed feeding predominantly on copepods, largely of the genera *Calanus* and *Pseudocalanus* (Waring *et al.* 2002). Right whales also frequent Stellwagen Bank and Jeffrey's Ledge, as well as Canadian waters including the Bay of Fundy and Browns and Baccaro Banks, in the spring and summer months. Mid-Atlantic waters are used as a migratory pathway from the spring and summer feeding/nursery areas to the winter calving grounds off the coast of Georgia and Florida.

NMFS designated right whale critical habitat on June 3, 1994 (59 FR 28793) to help protect important right whale foraging and calving areas within the U.S. These include the waters of Cape Cod Bay and the Great South Channel off the coast of Massachusetts, and waters off the coasts of southern Georgia and northern Florida. In 1993, Canada's Department of Fisheries declared two conservation areas for right whales; one in the Grand Manan Basin in the lower Bay of Fundy, and a second in Roseway Basin between Browns and Baccaro Banks (Canadian Recovery Plan for the North Atlantic Right Whale 2000).

The northern right whale was listed as endangered throughout it's range on June 2, 1970 under the ESA. The current population is considered to be at a low level and the species remains designated as endangered (Waring *et al.* 2002). A Recovery plan has been published and currently is in effect (NMFS 1991). This is a strategic stock because the average annual fishery-related mortality and serious injury from all fisheries exceeds the PBR.

The western North Atlantic population of right whales was estimated to be 291 individuals in 1998 (Waring *et al.* 2002). The current population growth rate of 2.5% as reported by Knowlton *et al.* (1994) suggests the stock may be showing signs of slow recovery. The best available information makes it reasonable to conclude that the current death rate exceeds the birth rate in the western North Atlantic right whale population. The nearly complete reproductive failure in this population from 1993 to 1995 and again in 1998 and 1999 suggests that this pattern has continued for almost a decade, though the 2000/2001 season appears the most promising in the past 5 years, in terms of calves born. Because no population can sustain a high death rate and low birth rate indefinitely, this combination places the North Atlantic right whale population at high risk of extinction. Coupled with an increasing calving interval, the relatively large number of young right whales (0-4 years) and adults that are killed, by human-related factors, the likelihood of extinction is high. The recent increase in births gives rise to optimism, however these young animals must be provided with protection so that they can mature and contribute to future generations in order to be a factor in stabilizing of the population.

Right whales may be adversely affected by habitat degradation, habitat exclusion, acoustic trauma, harassment, or reduction in prey resources due to trophic effects resulting from a variety of activities including the operation of commercial fisheries. However, the major known sources of anthropogenic mortality and injury of right whales clearly are ship strikes and entanglement in commercial fishing gear. Waring *et al. (* 2002) give a detailed description of the annual human related mortalities of right whales.

Humpback Whale

The humpback whale was listed as endangered throughout it's range on June 2, 1970. This species is the fourth most numerically depleted large cetacean worldwide. Humpback whales calve and mate in the West Indies and migrate to feeding areas in the northwestern Atlantic during the summer months. Six separate feeding areas are utilized in northern waters after their return (Waring *et al.* 2002). Only one of these feeding areas, the GOM, lies within U.S. waters and is within the action area of this consultation. Most of the humpbacks that forage in the GOM visit Stellwagen Bank and the waters of Massachusetts and Cape Cod Bays. Sightings are most frequent from mid-March through November between 41° N and 43° N, from the Great South Channel north along the outside of Cape Cod to Stellwagen Bank and Jeffreys Ledge (CeTAP 1982), and peak in May and August. Small numbers of individuals may be present in this area year-round. They feed on a number of species of small schooling fishes, particularly sand lance and Atlantic herring, by targeting fish schools and filtering large amounts of water for their associated prey.

Humpback whales have also been observed feeding on krill (Wynne and Schwartz 1999).

Various papers (Barlow & Clapham 1997; Clapham *et al.* 1999) summarized information gathered from a catalogue of photographs of 643 individuals from the western North Atlantic population of humpback whales. These photographs identified reproductively mature western North Atlantic humpbacks wintering in tropical breeding grounds in the Antilles, primarily on Silver and Navidad Banks, north of the Dominican Republic. The primary winter range also includes the Virgin Islands and Puerto Rico (Waring *et al.* 2002). In general, it is believed that calving and copulation take place on the winter range. Calves are born from December through March and are about 4 meters at birth. Sexually mature females give birth approximately every 2 to 3 years. Sexual maturity is reached between 4 and 6 years of age for females and between 7 and 15 years for males. Size at maturity is about 12 meters.

Humpback whales use the mid-Atlantic as a migratory pathway, but it may also be an important feeding area for juveniles. Since 1989, observations of juvenile humpbacks in the mid-Atlantic have been increasing during the winter months, peaking January through March (Swingle *et al.* 1993). Biologists speculate that non-reproductive animals may be establishing a winter feeding range in the mid-Atlantic since they are not participating in reproductive behavior in the Caribbean. Swingle *et al.* (1993) identified a shift in distribution of juvenile humpback whales in the nearshore waters of Virginia, primarily in winter months. Those whales using this mid-Atlantic area that have been identified were found to be residents of the GOM and Atlantic Canada (Gulf of St. Lawrence and Newfoundland) feeding groups, suggesting a mixing of different feeding stocks in the mid-Atlantic region. A shift in distribution may be related to winter prey availability. Studies conducted by the Virginia Marine Science Museum indicate that these whales are feeding on, among other things, bay anchovies and menhaden. In concert with the increase in mid-Atlantic whale sightings, strandings of humpback whales have increased between New Jersey and Florida since 1985. Strandings were most frequent during September through April in North Carolina and Virginia waters, and were composed primarily of juvenile humpback whales of no more than 11 meters in length (Wiley *et al.* 1995). Six of 18 humpbacks for which the cause of mortality was determined were killed by vessel strikes. An additional humpback had scars and bone fractures indicative of a previous vessel strike that may have contributed to the whale's mortality. Sixty percent of those mortalities that were closely investigated showed signs of entanglement or vessel collision.

New information has recently become available on the status and trends of the humpback whale population in the North Atlantic. Although current and maximum net productivity rates are unknown at this time, the population is apparently increasing. It has not yet been determined whether this increase is uniform across all six feeding stocks (Waring *et al.* 2002). For example, the overall rate of increase has been estimated at 9.0% (CV=0.25) by Katona and Beard (1990), while a 6.5% rate was reported for the Gulf of Maine by Barlow and Clapham (1997) using data through 1991. The rate reported by Barlow and Clapham (1997) may roughly approximate the rate of increase for the portion of the population within the action area.

Estimating abundance for the Gulf of Maine stock has proved problematic. Three approaches have been investigated: mark-recapture estimates, minimum population size, and line-transect estimates. Most of the mark recapture estimates were affected by heterogeneity of sampling, which was heavily focused on the southwestern Gulf of Maine. However, an estimate of 652 (CV=0.29) derived from the more extensive and representative YONAH sampling in 1992 and 1993 was probably less subject to this bias. The second approach uses photo-identification data to establish the minimum number of humpback whales known to be alive in a particular year, 1997. By determining the number of identified individuals seen either in that year, or in both a previous and subsequent year, it is possible to determine that at least 497 humpbacks were alive in 1997. This figure is also likely to be negatively biased, again because of heterogeneity of sampling. A similar calculation for 1992 (which would correspond to the YONAH estimate for the Gulf of Maine) yields a figure of 501 whales (Waring *et al.* 2002).

In the third approach, data were used from a 28 July to 31 August 1999 line-transect sighting survey conducted by a ship and airplane covering waters from Georges Bank to the mouth of the Gulf of St. Lawrence. Total track line length was 8,212 km. However, in light of the information on stock identity of Scotian Shelf humpback whales noted above, only the portions of the survey covering the Gulf of Maine were used; surveys blocks along the eastern coast of Nova Scotia were excluded. Shipboard data were analyzed using the modified direct duplicate method (Palka 1995) that accounts for school size bias and g(0), the probability of detecting a group on the track line. Aerial data were not corrected for g(0) (Palka 2000). These surveys yielded an estimate of 816 humpbacks (CV = 0.45). However, given that the rate of exchange between the Gulf of Maine and both the Scotian Shelf and mid-Atlantic region is not zero, this estimate is likely to be somewhat conservative. Accordingly, inclusion of data from 25% of the Scotian Shelf survey area (to reflect the match rate of 25% between the Scotian Shelf and the Gulf of Maine) gives an estimate of 902 whales (CV=0.41). Since the mark-recapture figures for abundance and minimum population size given above falls above the lower bound of the CV of the line transect estimate, and given the known exchange between the Gulf of Maine and the Scotian Shelf, we have chosen to use the latter as the best estimate of abundance for Gulf of Maine humpback whales (Waring *et al.* 2002).

The minimum population estimate is the lower limit of the two-tailed 60% confidence interval of the lognormally distributed best abundance estimate. This is equivalent to the 20th percentile of the log-normal distribution as specified by Wade and Angliss (1997). The best estimate of abundance for Gulf of Maine humpback whales is 902 (CV=0.41). The minimum population estimate for this stock is 647 (Waring *et al.* 2002).

As detailed below, current data suggest that the Gulf of Maine humpback whale stock is steadily increasing in size. This is consistent with an estimated average trend of 3.2% (SE=0.005) in the North Atlantic population overall for the period 1979-1993 (Stevick *et al.* 2001), although there are no other feeding-area-specific estimates. Barlow and Clapham (1997) applied an interbirth interval model to photographic mark-recapture data and estimated the population growth rate of the Gulf of Maine humpback whale stock at 6.5% (CV=0.012). Maximum net productivity is unknown for this population, although a theoretical maximum for any humpback population can be calculated using known values for biological parameters (Brandão *et al.* 2000, Clapham *et al.* 2001b). For the Gulf of Maine, data supplied by Barlow and Clapham (1997) and Clapham *et al.* (1995) gives values of 0.96 for survival rate, 6y as mean age at first parturition, 0.5 as the proportion of females, and 0.42 for annual pregnancy rate. From this, a maximum population growth rate of 0.072 is obtained according to the method described by Brandão et al. (2000). This suggests that the observed rate of 6.5% (Barlow and Clapham 1997) was close to the maximum for this stock. Clapham *et al.* (2001a) updated the Barlow and Clapham (1997) analysis using data from the period 1992 to 2000. The estimate was either 0% (for a calf survival rate of 0.51) or 4.0% (for a calf survival rate of 0.875). Although confidence limits are not available (because maturation parameters could not be estimated), both estimates of population growth rate are outside the 95% confidence intervals of the previous estimate of 6.5% for the period 1979 to 1991 (Barlow and Clapham 1997). It is unclear whether this apparent decline is an artifact resulting from a shift in distribution; indeed, such a shift occurred during exactly the period (1992-95) in which survival rates declined. It is possible that this shift resulted in calves born in those years imprinting on (and thus subsequently returning to) areas other than those in which intensive sampling occurs. If the decline is a real phenomenon it may be related to known high mortality among young-of-the-year whales in the waters of the U.S. mid-Atlantic states. However, calf survival appears to have increased since 1996, presumably accompanied by an increase in population growth. In light of the uncertainty accompanying the more recent estimate of population growth rate for the Gulf of Maine, for purposes of this assessment the maximum net productivity rate was assumed to be the default value for cetaceans of 0.04 (Barlow et al. 1995). Current and maximum net productivity rates are unknown for the North Atlantic population overall (Waring *et al.* 2002). As noted above, Stevick et al. (2001) calculated an average population growth rate of 3.2% (SE=0.005) for the period 1979–1993.

PBR is the product of minimum population size, one-half the maximum productivity rate, and a "recovery" factor (MMPA Sec. 3. 16 U.S.C. 1362; Wade and Angliss 1997). The minimum population size is 647 . The maximum productivity rate is the default value of 0.04. The "recovery" factor, which accounts for endangered, depleted, threatened stocks, or stocks of unknown status relative to optimum sustainable population (OSP) is assumed to be 0.10 because this stock is listed as an endangered species under the ESA. PBR for the Gulf of Maine humpback whale stock is 1.3 whales (Waring *et al.* 2002).

The major known sources of anthropogenic mortality and injury of humpback whales include entanglement in commercial fishing gear and ship strikes. Based on photographs of the caudal peduncle of humpback whales, Robbins and Mattila (1999) estimated that at least 48% --- and possibly as many as 78% --- of animals in the Gulf of Maine exhibit scarring caused by entanglement. Several whales have apparently been entangled on more than one occasion. These estimates are based on sightings of free-swimming animals that initially survive the encounter. Because some whales may drown immediately, the actual number of interactions may be higher. In addition, the actual number of species-gear interactions is contingent on the intensity of observations from aerial and ship surveys.

For the period 1996 through 2000, the total estimated human-caused mortality and serious injury to the Gulf of Maine humpback whale stock is estimated as 3.0 per year (USA waters, 2.4; Canadian waters, 0.6). This average is derived from two components: 1) incidental fishery interaction records, 2.8 (USA waters, 2.2; Canadian waters, 0.6); and 2) records of vessel collisions, 0.2 (USA waters, 0.2; Canadian waters, 0). There were additional humpback mortalities and serious injuries that occurred in the southeastern and mid-Atlantic states that could not be confirmed as involving members of the Gulf of Maine stock (Waring *et al.* 2002). These records represent an additional minimum annual average of 1.6 human-caused mortalities and serious injuries to humpbacks over the time period, of which 1.0 per year are attributable to incidental fishery interactions and 0.6 per year are attributable to vessel collisions (Waring *et al.* 2002).

As with right whales, human impacts (vessel collisions and entanglements) are factors which may be slowing recovery of the humpback whale population. There is an average of four to six entanglements of humpback whales a year in waters of the southern Gulf of Maine and additional reports of vessel-collision scars (unpublished data, Center for Coastal Studies). Of 20 dead humpback whales (principally in the mid-Atlantic, where decomposition did not preclude examination for human impacts), Wiley et al. (1995) reported that 6 (30%) had major injuries possibly attributable to ship strikes, and 5 (25%) had injuries consistent with possible entanglement in fishing gear. One whale displayed scars that may have been caused by both ship strike and entanglement. Thus, 60% of the whale carcasses which were suitable for examination showed signs that anthropogenic factors may have contributed to, or been responsible for, their death. Wiley et al. (1995) further reported that all stranded animals were sexually immature, suggesting a winter or migratory segregation and/or that juvenile animals are more susceptible to human impacts.

An updated analysis of humpback whale mortalities from the mid-Atlantic states region has recently been produced by Barco *et al.* (2001). Between 1990 and 2000, there were 52 known humpback whale mortalities in the waters of the U.S. mid-Atlantic states (summarized by Barco *et al.* 2001). Length data from 48 of these whales (18 females, 22 males and 8 of unknown sex) suggested that 39 (81.2%) were first-year animals, 7 (14.6%) were immature and 2 (4.2%) were adults. However, sighting histories of 5 of the dead whales indicate that some were small for their age, and histories of live whales further indicate that the population contains a greater percentage of mature animals than is suggested by the stranded sample. In their study of entanglement rates estimated from caudal peduncle scars, Robbins and Mattila (2001) found that males were more likely to be entangled than females. The scarring data also suggested that yearlings were more likely than other age classes to be involved in entanglements. Finally, female humpbacks showing evidence of prior entanglements produced significantly fewer calves, suggesting that entanglement may significantly impact reproductive success. Humpback whale entanglements also occur in relatively high numbers in Canadian waters. Reports of collisions with fixed fishing gear set for groundfish around Newfoundland averaged 365 annually from 1979 to 1987 (range 174-813). An average of 50 humpback whale entanglements (range 26-66) were reported annually between 1979 and 1988, and 12 of 66 humpback whales that were entangled in 1988 died (Lien et al. 1988). Volgenau et al. (1995) also summarized existing data and concluded that in Newfoundland and Labrador, cod traps caused the most entanglements and entanglement mortalities (21%) of humpbacks between 1979 and 1992. They also reported that gillnets are the gear that has been the primary cause of entanglements and entanglement mortalities (20%) of humpbacks in the Gulf of Maine between 1975 and 1990.

Humpback whales may also be adversely affected by habitat degradation, habitat exclusion, acoustic trauma, harassment, or reduction in prey resources due to trophic effects resulting from a variety of activities including the operation of commercial fisheries.

Fin Whale

Fin whales inhabit a wide range of latitudes between 20-75° N and 20-75° S (Perry *et al.* 1999). Fin whales spend the summer feeding in the relatively high latitudes of both hemispheres, particularly along the cold eastern boundary currents in the North Atlantic and North Pacific Oceans and in Antarctic waters (IWC 1992). Most migrate seasonally from relatively high-latitude Arctic and Antarctic feeding areas in the summer to relatively low-latitude breeding and calving areas in the winter (Perry *et al.* 1999).

As in the case of right and humpback whales, fin whale populations were heavily affected by commercial whaling. However, commercial exploitation of fin whales occurred much later than for right and humpback whales. Although some fin whales were taken as early as the 17th century by the Japanese using a fairly primitive open-water netting technique (Perry *et al.* 1999) and were hunted occasionally by sailing vessel whalers in the 19th century (Mitchell and Reeves 1983), wide-scale commercial exploitation of fin whales did not occur until the 20th century when the use of steam power and harpoon- gun technology made exploitation of this faster, more offshore species feasible.

In the southern hemisphere, over 700,000 fin whales were landed in the 20th century. More than 48,000 fin whales were taken in the North Atlantic between 1860 and 1970 (Perry *et al.* 1999). Fisheries existed off of Newfoundland, Nova Scotia, Norway, Iceland, the Faroe Islands, Svalbard (Spitsbergen), the islands of the British coasts, Spain and Portugal. Fin whales were rarely taken in U.S. waters, except when they ventured near the shores of Provincetown, MA, during the late 1800's (Perry *et al.* 1999).

Various estimates have been provided to describe the current status of fin whales in western North Atlantic waters. Based on the catch history and trends in Catch Per Unit Effort, an estimate of 3,590 to 6,300 fin whales was obtained for the entire western North Atlantic (Perry *et al.* 1999). Hain *et al.* (1992) estimated that about 5,000 fin whales inhabit the Northeastern United States continental shelf waters. The latest (Waring *et al.* 2002) SAR gives a best estimate of abundance for fin whales of 2,814 (CV = 0.21). The minimum population estimate for the western North Atlantic fin whale is 2,362. This is currently an underestimate, as too little is known about population structure, and the estimate is derived from surveys over a limited portion of the western North Atlantic. There is also not enough information to estimate population trends.

In the North Atlantic today, fin whales are widespread and occur from the Gulf of Mexico and Mediterranean Sea northward to the edges of the arctic pack ice (Waring *et al.* 2002). A number of researchers have suggested the existence of fin whale subpopulations in the North Atlantic. Mizroch *et al.* (1984) suggested that local depletions resulting from commercial overharvesting supported the existence of North Atlantic fin whale subpopulations. Others have used genetics information to provide support for the belief that there are several subpopulations of fin whales in the North Atlantic and Mediterranean (Bérubé *et al.* 1998). In 1976, the IWC's Scientific Committee proposed seven stocks for North Atlantic fin whales. These are: (1) North Norway; (2) West Norway-Faroe Islands; (3) British Isles-Spain and Portugal; (4) East Greenland-Iceland; (5) West Greenland; (6) Newfoundland-Labrador; and (7) Nova Scotia (Perry *et al.* 1999). However, it is uncertain whether these stock boundaries define biologically isolated units (Waring *et al.* 2002). The NMFS has designated one stock of fin whale for U.S. waters of the North Atlantic where the species is commonly found from Cape Hatteras northward.

During 1978-1982 aerial surveys, fin whales accounted for 24% of all cetaceans and 46% of all large cetaceans sighted over the continental shelf between Cape Hatteras and Nova Scotia (Waring *et al.* 1998). Underwater listening systems have also demonstrated that the fin whale is the most acoustically common whale species heard in the North Atlantic (Clark 1995). The single most important area for this species appeared to be from the Great South Channel, along the 50 meter isobath past Cape Cod, over Stellwagen Bank, and past Cape Ann to Jeffrey's Ledge (Hain *et al.* 1992).

Despite our broad knowledge of fin whales, less is known about their life history as compared to right and humpback whales. Age at sexual maturity for both sexes ranges from 5-15 years. Physical maturity is reached at 20-30 years. Conception occurs during a 5 month winter period in either hemisphere. After a 12 month gestation, a single calf is born. The calf is weaned between 6 and 11 months after birth. The mean calving interval is 2.7 years, with a range of between 2 and 3 years (Agler *et al.* 1993). Like right and humpback whales, fin whales are believed to use northwestern North Atlantic waters primarily for feeding and migrate to more southern waters for calving. However, the overall pattern of fin whale movement consists of a less obvious north-south pattern of migration than that of right and humpback whales. Based on acoustic recordings from hydrophone arrays, Clark (1995) reported a general pattern of fin whale movements in the fall from the

Labrador/Newfoundland region, south past Bermuda, and into the West Indies. However, evidence regarding where the majority of fin whales winter, calve, and mate is still scarce. Some populations seem to move with the seasons (e.g., one moving south in winter to occupy the summer range of another), but there is much structuring in fin whale populations that what animals of different sex and age class do is not at all clear. Neonate strandings along the U.S. mid-Atlantic coast from October through January suggest the possibility of an offshore calving area.

The overall distribution of fin whales may be based on prey availability. This species preys opportunistically on both invertebrates and fish. The predominant prey of fin whales varies greatly in different geographical areas depending on what is locally available. In the western North Atlantic fin whales feed on a variety of small schooling fish (i.e., herring, capelin, sand lance) as well as squid and planktonic crustaceans. As with humpback whales, fin whales feed by filtering large volumes of water for their prey through their baleen plates. Photo identification studies in western North Atlantic feeding areas, particularly in Massachusetts Bay, have shown a high rate of annual return by fin whales, both within years and between years (Seipt *et al.* 1990).

As discussed above, fin whales were the focus of commercial whaling, primarily in the 20th century. The IWC did not begin to manage commercial whaling of fin whales in the North Atlantic until 1976. In 1987, fin whales were given total protection in the North Atlantic with the exception of a subsistence whaling hunt for Greenland. The IWC set a catch limit of 19 whales for the years 1995-1997 in West Greenland. All other fin whale stocks had a zero catch limit for these same years. However, Iceland reported a catch of 136 whales in the 1988/89 and 1989/90 seasons, and has since ceased reporting fin whale kills to the IWC (Perry *et al.* 1999). In total, there have been 239 reported kills of fin whales from the North Atlantic from 1988 to 1995.

The major known sources of anthropogenic mortality and injury of fin whales include ship strikes and entanglement in commercial fishing gear. However, many of the reports of mortality cannot be attributed to a particular source. Of 18 fin whale mortality records collected between 1991 and 1995, four were associated with vessel interactions, although the proximal cause of mortality was not known. The following injury/mortality events are those reported from 1996 to the present for which source was determined. These numbers should be viewed as absolute minimum numbers; the total number of mortalities and injuries cannot be estimated but is believed to be higher since it is unlikely that all carcasses will be observed. In general, known mortalities of fin whales are less than those recorded for right and humpback whales. This may be due in part to the more offshore distribution of fin whales where they are either less likely to encounter entangling gear, or are less likely to be noticed when gear entanglements or vessel strikes do occur. Fin whales may also be adversely affected by habitat degradation, habitat exclusion, acoustic trauma, harassment, or reduction in prey resources due to trophic effects resulting from a variety of activities including the operation of commercial fisheries. The fin whale was listed as endangered throughout it's range on June 2, 1970 under the ESA.
Hain *et al.* (1992) estimated that about 5,000 fin whales inhabit the northeastern United States continental shelf waters. Waring *et al.* 2002 present a more recent estimate of 2,814 (CV=0.21) fin whales based on aerial and shipboard surveys of the area from Georges Bank to the mouth of the Gulf of S. Lawrence in 1999.

Sei Whale

Sei whales are a widespread species in the world's temperate, subpolar and subtropical and even tropical marine waters. However, they appear to be more restricted to temperate waters than other balaenopterids (Perry *et al.* 1999). The IWC recognized three stocks in the North Atlantic based on past whaling operations as opposed to biological information: (1) Nova Scotia; (2) Iceland Denmark Strait; (3) Northeast Atlantic (Donovan 1991 *in* Perry *et al.* 1999). Mitchell and Chapman (1977) suggested that the sei whale population in the western North Atlantic consists of two stocks, a Nova Scotian Shelf stock and a Labrador Sea stock. The Nova Scotian Shelf stock includes the continental shelf waters of the northeastern United States, and extends northeastward to south of Newfoundland. The IWC boundaries for this stock are from the U.S. east coast to Cape Breton, Nova Scotia and east to longitude 42° (Waring *et al.* 2002). This is the only sei whale stock within the action area.

Sei whales became the target of modern commercial whalers primarily in the late 19th and early 20th century after stocks of other whales, including right, humpback, fin and blues, had already been depleted. Sei whales were taken in large numbers by Norway and Scotland from the beginning of modern whaling. More than 700 sei whales were killed off of Norway in 1885, alone. Small numbers were also taken off of Spain, Portugal and in the Strait of Gibraltar beginning in the 1920's, and by Norwegian and Danish whalers off of West Greenland from the 1920's to 1950's (Perry *et al.* 1999). In the western North Atlantic, sei whales were originally hunted off of Norway and Iceland, but from 1967-1972, sei whales were also taken off of Nova Scotia (Perry *et al.* 1999). A total of 825 sei whales were taken on the Scotian Shelf between 1966-1972, and an additional 16 were taken from the same area during the same time by a shore based Newfoundland whaling station (Perry *et al.* 1999). The species continued to be exploited in Iceland until 1986 even though measures to stop whaling of sei whales in other areas had been put into place in the 1970's (Perry *et al.* 1999). There is no estimate for the abundance of sei whales prior to commercial whaling. Based on whaling records, approximately14,295 sei whales were taken in the entire North Atlantic from 1885 to 1984 (Perry *et al.* 1999).

Sei whales winter in warm temperate or subtropical waters and summer in more northern latitudes. In the northern Atlantic, most births occur in November and December when the whales are on the wintering grounds. Conception is believed to occur in December and January. Gestation lasts for 12 months and the calf is weaned at 6-9 months when the whales are on the summer feeding grounds. Sei whales reach sexual maturity at 5-15 years of age. The calving interval is believed to be 2-3 years (Perry *et al.* 1999).

Sei whales occur in deep water throughout their range, typically over the continental slope or in basins situated between banks. In the northwest Atlantic, the whales travel along the eastern Canadian coast in autumn, June and July on their way to and from the Gulf of Maine and Georges Bank where they occur in winter and spring. Within the action area, the sei whale is most common on Georges Bank and into the Gulf of Maine/Bay of Fundy region during spring and summer, primarily in deeper waters. Individuals may range as far south as North Carolina. It is important to note that sei whales are known for inhabiting an area for weeks at a time then disappearing for year or even decades; this has been observed all over the world, including in the southwestern GOM in 1986. The basis for this phenomenon is not clear.

Although sei whales may prey upon small schooling fish and squid in the action area, available information suggests that calanoid copepods and euphausiids are the primary prey of this species. There are occasional influxes of sei whales further into Gulf of Maine waters, presumably in conjunction with years of high copepod abundance inshore. Sei whales are occasionally seen feeding in association with right whales in the southern Gulf of Maine and in the Bay of Fundy. However, there is no evidence to demonstrate interspecific competition between these species for food resources. There is very little information on natural mortality factors for sei whales. Possible causes of natural mortality, particularly for young, old or otherwise compromised individuals are shark attacks, killer whale attacks, and endoparasitic helminths. Baleen loss has been observed in California sei whales, presumably as a result of an unknown disease (Perry *et al.* 1999).

There are insufficient data to determine trends of the sei whale population. Because there are no abundance estimates within the last 10 years, a minimum population estimate cannot be determined for NMFS management purposes (Waring *et al.* 2002). Abundance surveys are problematic not only because this species is difficult to distinguish from the fin whale but more significant is that too little is known of the sei whale's distribution, population structure and patterns of movement; thus survey design and data interpretation are very difficult.

Few instances of injury or mortality of sei whales due to entanglement or vessel strikes have been recorded in U.S. waters. Entanglement is not known to impact this species in the U.S. Atlantic, possibly because sei whales typically inhabit waters further offshore than most commercial fishing operations, or perhaps entanglements do occur but are less likely to be observed. A small number of ship strikes of this species have been recorded. The most recent documented incident occurred in 1994 when a carcass was brought in on the bow of a container ship in Charlestown, Massachusetts. Other impacts noted above for other baleen whales may also occur. Due to the deep-water distribution of this species, interactions that do occur are less likely to be observed or reported than those involving right, humpback, and fin whales that often frequent areas within the continental shelf (Waring *et al.* 2002).

Blue Whale

Like the fin whale, blue whales occur worldwide and are believed to follow a similar migration pattern from northern summering grounds to more southern wintering areas (Perry *et al.* 1999). Three subspecies have been identified: *Balaenoptera musculus musculus, B.m. intermedia*, and *B.m. brevicauda* (Waring *et al.* 2002). Only *B. musculus* occurs in the northern hemisphere. Blue whales range in the North Atlantic extends from the subtropics to Baffin Bay and the Greenland Sea . The IWC currently recognizes these whales as one stock (Perry *et al.* 1999).

Blue whales were intensively hunted in all of the world's oceans from the turn of the century to the mid-1960's. Blue whales were occasionally hunted by sailing vessel whalers in the 19^{th} century. However, development of steam-powered vessels and deck-mounted harpoon guns in the late 19^{th} century made it possible to exploit them on an industrial scale. Blue whale populations declined worldwide as the new technology spread and began to receive widespread use (Perry *et al.* 1999). Subsequently, the whaling industry shifted effort away from declining blue whale stocks and targeted other large species, such as fin whales, and then resumed hunting for blue whales when the species appeared to be more abundant (Perry *et al.* 1999). The result was a cyclical rise and fall, leading to severe depletion of blue whale stocks worldwide (Perry *et al.* 1999). In the North Atlantic, Norway shifted operations to fin whales as early as 1882 due to the scarcity of blue whales (Perry *et al.* 1999). In all, at least 11,000 blue whales were taken in the North Atlantic from the late 19^{th} century through the mid-20^{th} century. Blue whales were given complete protection in the North Atlantic in 1955 under the International Convention for the Regulation of Whaling. However, Iceland continued to hunt blue whales until 1960. There are no good estimates of the pre-exploitation size of the western North Atlantic blue whale stock but it is widely believed that this stock was severely depleted by the time legal protection was introduced in 1955 (Perry *et al.* 1999). Mitchell (1974) suggested that the stock numbered in the very low hundreds during the late 1960's through early 1970's (Perry *et al.* 1999). Photo-identification studies of blue whales in the Gulf of St. Lawrence from 1979 to 1995 identified 320 individual whales. The NMFS recognizes a minimum population estimate of 308 blue whales for the western North Atlantic (Waring *et al.* 2002).

Blue whales are only occasional visitors to east coast U.S. waters. They are more commonly found in Canadian waters, particularly the Gulf of St. Lawrence where they are present for most of the year, and other areas of the North Atlantic. It is assumed that blue whale distribution is governed largely by food requirements. In the Gulf of St. Lawrence, blue whales appear to predominantly feed on *Thysanoessa raschii* and *Meganytiphanes norvegica*. In the eastern North Atlantic, *T. inermis* and *M. norvegica* appear to be the predominant prey.

Compared to the other species of large whales, relatively little is known about this species. Sexual maturity is believed to occur in both sexes at 5-15 years of age. Gestation lasts 10-12 months and calves nurse for 6-7 months. The average calving interval is estimated to be 2-3 years. Birth and mating both take place in the winter season, but the location of wintering areas is speculative (Perry *et al.* 1999). In 1992 the U.S. Navy and contractors conducted an extensive blue whale acoustic survey of the North Atlantic and found concentrations of blue whales on the Grand Banks and west of the British Isles. One whale was tracked for 43 days during which time it traveled 1,400 nautical miles around the general area of Bermuda (Perry *et al.* 1999).

There is limited information on the factors affecting natural mortality of blue whales in the North Atlantic. Ice entrapment is known to kill and seriously injure some blue whales, particularly along the southwest coast of Newfoundland, during late winter and early spring. Habitat degradation has been suggested as possibly affecting blue whales such as in the St. Lawrence River and the Gulf of St. Lawrence where habitat has been degraded by acoustic and chemical pollution. However, there is no data to confirm that blue whales have been affected by such habitat changes (Perry *et al.* 1999).

Entanglement in fishing gear and ship strikes are believed to be the major sources of anthropogenic mortality and injury of blue whales. However, confirmed deaths or serious injuries from either are few. In 1987, concurrent with an unusual influx of blue whales into the Gulf of Maine, one report was received from a whale watch boat that spotted a blue whale in the southern Gulf of Maine entangled in gear described as probable lobster pot gear. A second animal found in the Gulf of St. Lawrence apparently died from the effects of an entanglement. In March 1998, a juvenile male blue whale was carried into Rhode Island waters on the bow of a tanker. The cause of death was determined to be due to a ship strike, although not necessarily caused by the tanker on which it was observed, and the strike may have occurred outside the U.S. EEZ (Waring *et al.* 2002). No recent entanglements of blue whales have been reported from the U.S. Atlantic. Other impacts noted above for other baleen whales may occur.

Sperm Whale

Sperm whales inhabit all ocean basins, from equatorial waters to the polar regions (Perry *et al.* 1999). In the western North Atlantic they range from Greenland to the Gulf of Mexico and the Caribbean. The sperm whales that occur in the western North Atlantic are believed to represent only a portion of the total stock (Blaylock *et al.* 1995). Total numbers of sperm whales off the USA or Canadian Atlantic coast are unknown, although eight estimates from selected regions of the habitat do exist for select time periods. The best estimate of abundance for the North Atlantic stock of sperm whales is 4,702 (CV=0.36) (Waring *et al.* 2002). The minimum population estimate for the western North Atlantic sperm whale is 3,505 (CV=0.36). Sperm whales present in the Gulf of Mexico are considered by some researchers to be endemic, and represent a separate stock from whales in other portions of the North Atlantic. However, NMFS currently uses the IWC stock structure guidance which recognizes one stock for the entire North Atlantic (Waring *et al.* 2002).

The International Whaling Commission estimates that nearly a quarter-million sperm whales were killed worldwide in whaling activities between 1800 and 1900 (IWC 1971). However, estimates of the number of sperm whales taken during this time are difficult to quantify since sperm whale catches from the early 19^{th} century through the early 20^{th} century were calculated on barrels of oil produced per whale rather than the actual number of whales caught (Perry *et al.* 1999). With the advent of modern whaling the larger rorqual whales were targeted. However as their numbers decreased, greater attention was paid to smaller rorquals and sperm whales. From 1910 to 1982 there were nearly 700,000 sperm whales killed worldwide from whaling activities (Clarke 1954). Whale catches for the southern hemisphere is 394,000 (including revised Soviet figures). Sperm whales were hunted in America from the 17th century through the early 20^{th} century. In the North Atlantic, hunting occurred off of Iceland, Norway, the Faroe Islands, coastal Britain, West Greenland, Nova Scotia, Newfoundland/Labrador, New England, the Azores, Madeira, Spain, and Spanish Morocco (Waring *et al.* 1998). Some whales were also taken off the U.S. Mid-Atlantic coast (Reeves and Mitchell 1988; Perry *et al.* 1999), and in the northern Gulf of Mexico (Perry *et al.* 1999). There are no catch estimates available for the number of sperm whales caught during U.S. operations (Perry *et al.* 1999). Recorded North Atlantic sperm whale catch numbers for Canada and Norway from 1904 to 1972 total 1,995. All killing of sperm whales was banned by the IWC in 1988. However, at the 2000 meetings of the IWC, Japan indicated it would include the take of sperm whales in its scientific research whaling operations. Although this action was disapproved of by the IWC, Japan has reported the take of 5 sperm whales from the North Pacific as a result of this research.

Sperm whales generally occur in waters greater than 180 meters in depth. While they may be encountered almost anywhere on the high seas, their distribution shows a preference for continental margins, sea mounts, and areas of upwelling, where food is abundant (Leatherwood and Reeves 1983). Sperm whales in both hemispheres migrate to higher latitudes in the summer for feeding and return to lower latitude waters in the winter where mating and calving occur. Mature males typically range to much higher latitudes than mature females and immature animals but return to the lower latitudes in the winter to breed (Perry *et al.* 1999). Waring *et al.* (2002) suggest sperm whale distribution is closely correlated with the Gulf Stream edge. Like swordfish, which feed on similar prey, sperm whales migrate to higher latitudes during summer months, when they are concentrated east and northeast of Cape Hatteras. In the U.S. EEZ, sperm whales occur on the continental shelf edge, over the continental slope, and into the mid-ocean regions , and are distributed in a distinct seasonal cycle; concentrated east-northeast of Cape Hatteras in winter and shifting northward in spring when whales are found throughout the mid-Atlantic Bight. Distribution extends further northward to areas north of Georges Bank and the Northeast Channel region in summer and then south of New England in fall, back to the mid-Atlantic Bight (Waring *et al.* 2002).

Sperm whale distribution may be linked to their social structure as well as distribution of their prey (Waring *et al.* 2002). Sperm whale populations are organized into two types of groupings: breeding schools and bachelor schools. Older males are often solitary (Best 1979). Breeding schools consist of females of all ages, calves and juvenile males. In the Northern Hemisphere, mature females ovulate April through August. During this season one or more large mature bulls temporarily join each breeding school. A single calf is born after a 15-month gestation. A mature female will produce a calf every 4-6 years. Females attain sexual maturity at a mean age of nine years, while males have a prolonged puberty and attain sexual maturity at about age 20 (Waring *et al.* 2002). Bachelor schools consist of maturing males who leave the breeding school and aggregate in loose groups of about 40 animals. As the males grow older they separate from the bachelor schools and remain solitary most of the year (Best 1979). Male sperm whales may not reach physical maturity until they are 45 years old (Waring *et al.* 2002). The sperm whales prey consists of larger mesopelagic squid (e.g., *Architeuthis* and *Moroteuthis*) and fish species (Perry *et al.* 1999). Sperm whales, especially mature males in higher latitude waters, have been observed to take significant quantities of large demersal and mesopelagic sharks, skates, and bony fishes (Clarke 1962, 1980).

Few instances of injury or mortality of sperm whales due to human impacts have been recorded in U.S. waters. Because of their generally more offshore distribution and their benthic feeding habits, sperm whales are less subject to entanglement than are right or humpback whales.

Documented takes primarily involve offshore fisheries such as the offshore lobster pot fishery and pelagic driftnet and pelagic longline fisheries. The NMFS Sea Sampling program recorded three entanglements (in 1989, 1990, and 1995) of sperm whales in the swordfish drift gillnet fishery prior to permanent closure of the fishery in January 1999. All three animals were injured, found alive, and released. However, at least one was still carrying gear. Opportunistic reports of sperm whale entanglements for the years 1993-1997 include three records involving offshore lobster pot gear, heavy monofilament line, and fine mesh gillnet from an unknown source. Sperm whales may also interact opportunistically with fishing gear. Observers aboard Alaska sablefish and Pacific halibut longline vessels have documented sperm whales feeding on longline caught fish in the Gulf of Alaska (Perry *et al.* 1999). Behavior similar to that observed in the Alaskan longline fishery has also been documented during longline operations off South America where sperm whales have become entangled in longline gear, have been observed feeding on fish caught in the gear, and have been reported following longline vessels for days (Perry *et al.* 1999).

Sperm whales are also struck by ships. In May 1994 a ship struck sperm whale was observed south of Nova Scotia (Waring *et al.* 2002). A sperm whale was also seriously injured as a result of a ship strike in May 2000 in the western Atlantic. Due to the offshore distribution of this species, interactions that do occur are less likely to be reported than those involving right, humpback, and fin whales that more often occur in nearshore areas. Other impacts noted above for baleen whales may also occur.

Due to their offshore distribution, sperm whales tend to strand less often than, for example, right whales and humpbacks. Preliminary data for 2000 indicate that of ten sperm whales reported to the stranding network (nine dead and one injured) there was one possible fishery interaction, one ship strike (wounded with bleeding gash on side) and eight animals for which no signs of entanglement or injury were sighted or reported. No sperm whales have stranded or been reported to the stranding network as of February 2001.

Atlantic Bottlenose dolphin

Most of the information which follows concerning Atlantic bottlenose dolphin was excerpted from the most recent stock assessment for this species (Waring *et al.* 2002). The coastal morphotype of the Atlantic bottlenose dolphin is continuously distributed along the Atlantic coast south of Long Island, around peninsula Florida and along the Gulf of Mexico coast. Within the western North Atlantic, the stock structure of coastal bottlenose dolphins is complex. Scott *et al.* (1988) hypothesized a single coastal migratory stock ranging seasonally from as far north as Long Island, NY, to as far south as central Florida, citing stranding patterns during a high mortality event in 1987-88 and observed density patterns along the US Atlantic coast. The continuous distribution of dolphins along the coast seemed to support this hypothesis. It was recognized that bottlenose dolphins were resident in some estuaries; these were considered to be separate from the coastal migratory animals. However, recent studies suggest that the single coastal migratory stock hypothesis is incorrect and that there is likely a complex mosaic of stocks. For example, year-round resident populations have been reported at a variety of sites in the southern part of the range, from Charleston, South Carolina (Zolman 1996) to central Florida (Odell and Asper 1990); seasonal residents and migratory or transient animals also occur in these areas (summarized in Hohn 1997). In the northern part of the range the patterns reported include seasonal residency, year-round residency with large home ranges, and migratory or transient movements (Barco and Swingle 1996, Sayigh *et al.* 1997). Communities of dolphins have been recognized in embayments and coastal areas of the Gulf of Mexico (Wells *et al.* 1996; Scott *et al.* 1990; Weller 1998) so it is not surprising to find similar situations along the Atlantic coast (Waring *et al.* 2002).

Recent genetic analyses of samples from Jacksonville, FL, southern South Carolina (primarily the estuaries around Charleston), southern North Carolina, and coastal Virginia, using both mitochondrial DNA and nuclear microsatellite markers, indicate that a significant amount of the overall genetic variation can be explained by differences between the groups (NMFS 2001). These results indicate a minimum of four populations of coastal bottlenose dolphins in the Northwest Atlantic and reject the null hypothesis of one homogeneous population of bottlenose dolphins. Integration of the preliminary results from genetics, photo-identification, satellite telemetry, and stable isotope studies confirms a complex mosaic of stocks of coastal bottlenose dolphins in the western North Atlantic (Waring *et al.* 2002). As an interim measure, pending additional results, seven management units within the range of the "coastal migratory stock" have been defined. The true population structure is likely more than the seven units identified in Waring *et al.* (2002); research efforts continue in an attempt to identify that structure.

Earlier aerial (CETAP 1982) and shipboard (NMFS unpublished data) surveys north of Cape Hatteras identified two concentrations of bottlenose dolphins, one inshore of the 25 m isobath and the other offshore of the 25 m isobath. The lowest density of bottlenose dolphins was observed over the continental shelf, with higher densities along the coast and near the continental shelf edge. It was suggested that the coastal morphotype is restricted to waters < 25 m in depth north of Cape Hatteras (Kenney 1990). There was no apparent longitudinal discontinuity in bottlenose dolphin herd sightings during aerial surveys south of Cape Hatteras in the winter (Blaylock and Hoggard 1994). NMFS surveys conducted from 1992-1998 show a clustering of bottlenose dolphins nearshore and then additional bottlenose dolphins in the offshore areas. Unfortunately, the morphotype of bottlenose dolphins (WNA offshore or WNA coastal) cannot be determined from the air so attributing each sighting to a specific morphotype is not possible. There is also a potential for confusing immature spotted dolphins, with few or no spots dorsally, with bottlenose dolphins where the two species are co-occur. In 1995, NMFS conducted two aerial surveys along the Atlantic coast (Blaylock 1995; Garrison and Yeung 2001). One survey was conducted during summer 1995 between Cape Hatteras, NC, and Sandy Hook, NJ, and included three replicate surveys. The second survey was conducted during winter 1995 between Cape Hatteras, NC, and Ft. Pierce, FL. A distributional analysis identified a significant spatial pattern in bottlenose dolphin sightings as a function of distance from shore (Garrison 2001a). During the northern (summer) surveys, the significant spatial boundary occurred at 12 km from shore. During the southern (winter) survey, the significant spatial boundary occurred at 27 km from shore. The gap in sightings best defines, for the time being, the eastern extent of the coastal morphotype for purposes of habitat definition and abundance estimates. NMFS continues to collect biopsy samples from *Tursiops* throughout the possible range of the coastal morphotype so that stock boundaries can be confirmed or modified on the basis of a more comprehensive data set (Waring *et al.* 2002).

The 1995 aerial surveys were conducted to estimate population size of the hypothesized single coastal migratory stock (Blaylock 1995; Garrison and Yeung 2001). The summer aerial survey was conducted between July 1 and August 14, 1995, covering Cape Hatteras, NC, to Sandy Hook, NJ, (35.23°N-40.5°N), and from the mainland shore to the 25 m isobath. This survey provided coverage and abundance estimates for the Northern Migratory (NM) and Northern North Carolina (NNC) management units. However, coverage of the NNC unit was incomplete as the surveys did not cover the region south of Cape Hatteras, NC, to Cape Lookout, NC. Abundance was estimated for each stratum pooling across the three replicate surveys. The winter survey was conducted between January 27 and March 6, covering from Fort Pierce, FL, to Cape Hatteras, NC, from the mainland shore to 9.25 km (5 Nautical Miles) beyond the inshore edge of the Gulf Stream or <200 km offshore. This survey included coverage of the NNC, Southern North Carolina (SNC), South Carolina (SC), Georgia (GA), Northern Florida (NFL) and Central Florida (CFL) management units. However, the coverage of the NNC management unit was incomplete and did not include the region north of Cape Hatteras, NC. These abundance estimates also include NM unit animals that have migrated south of the NC/VA border during winter. Abundance for each management unit was estimated using line transect methods and the program DISTANCE (Buckland *et al.* 1993) for both the winter and summer surveys. There was no significant difference between the abundance estimates for the combined NM and NNC management units in summer and the combined NM, NNC, and SNC stocks in winter. Another set of aerial surveys was conducted parallel to the coastline from the North Carolina/South Carolina border to the Maryland/Delaware border during 1998 and 1999 to document the distribution of dolphins and fishing gear in nearshore waters (Hohn *et al.* unpubl. data). These strip transect surveys were conducted weekly, weather permitting, over 12 months in most of North Carolina and for six months (May to December) in Virginia and Maryland. In retrospect, they provide seasonal coverage of the Southern North Carolina, Northern North Carolina, and Northern Migratory management units. The strip transect surveys cannot be used directly for abundance estimation because they did not follow the design constraints of line transect survey methods and covered only a small proportion of the habitat of coastal bottlenose dolphin. The density of dolphins near the coastline is high relative to habitats further offshore, and the use of density estimates in this region to calculate overall abundance would likely result in significant positive bias. However, these surveys do provide information on the relative abundance of dolphins between regions that may be used to supplement the abundance estimates from the line transect surveys conducted in 1995 (Garrison and Hohn 2001). Both sets of aerial surveys covered ocean coasts only. An abundance estimate was generated for bottlenose dolphins in estuarine waters of North Carolina using mark-recapture methodology (Read *et al.* In review). It is possible to post-stratify the markrecapture estimates consistent with management unit definitions (Palka *et al.* 2001). Abundance estimates for each management unit are the sum of estimates, where appropriate, from the recent analyses. Estimated overall abundance was 9,206 from summer surveys and 19,459 from winter surveys. However, for consistency with achieving the goals of the MMPA, such as maintaining marine mammals as functioning components of their ecosystems, it is more appropriate to establish abundance estimates for each management unit. Abundance for each management unit was estimated by post-stratifying sightings and effort data consistent with geographic and seasonal management unit boundaries (Garrison and Yeung 2001; Palka *et al.* 2001). Although these estimates are improved relative to previous abundance estimates for coastal bottlenose dolphins, potential biases remain. The aerial survey estimates are not corrected for g(0), the probability of detecting a group on the track line as a function of perception bias and availability bias. The exclusion of g(0) from the abundance estimate results in a negative bias of unknown magnitude. A positive bias may occur if the longitudinal boundaries have been extended too far offshore resulting in offshore dolphins being included in the abundance estimates for the coastal morphotype or if estuarine dolphins were over-represented in coastal waters during the time of the survey. Further uncertainties in the abundance estimates result from incomplete coverage of some seasonal management units during the line transect surveys. While the strip transect surveys were used to supplement the survey coverage, uncertainties associated with that analysis also introduce uncertainty in the overall abundance estimate (Garrison and Hohn 2001).

The minimum population size (NMIN) for each management was calculated by Waring *et al.* (2002) according to he Potential Biological Removal (PBR) Guidelines (Wade and Angliss 1997): NMIN= N/exp(0.842×[ln(1+[CV(N)]2)]½). It was recognized that these estimates may be negatively biased because they do not include corrections for g(0) and, for some of the managements units, do not include the entire spatial range of the unit during that season. The strip transect surveys compensate for some of the abundance omitted during line-transect survey; nonetheless, for some management units the entire range was not covered. There are insufficient data to determine the population trend for this stock (Waring *et al.* 2002).

In addition, Current and maximum net productivity rates are not known for the WNA coastal morphotype. The maximum net productivity rate was assumed to be 0.04. This value is based on theoretical modeling showing that cetacean populations may not grow at rates much greater than 4% given the constraints of their reproductive life history (Barlow *et al.* 1995; Waring *et al.* 2002).

PBR is the product of the minimum population size, one-half the maximum productivity rate, and a “recovery” factor (Wade and Angliss 1997). The “recovery” factor is assumed to be 0.50, the default for depleted stocks and stocks of unknown status. At least part of the range-wide stock complex is depleted; for the remainder, status is unknown. For consistency with achieving the goals of the MMPA, such as maintaining marine mammals as functioning components of their ecosystems, it is more appropriate to establish separate PBRs for each management unit.

Total estimated average annual fishery-related mortality or serious injury resulting from observed fishing trips during 1996-2000 was 233 bottlenose dolphins (CV=0.16) in the mid-Atlantic coastal gillnet fishery (Waring et al. 2002). The management units affected by this fishery would be the NM, NNC, and SC. An estimated 24 (CV=0.89) were taken in the shark drift gillnet fishery off the coast of Florida during 1999-2000, affecting the Central and Northern Florida management units. No estimates of mortality from observed trips are available for any of the other fisheries that interact with WNA coastal bottlenose dolphins. Therefore, the total average annual mortality estimate is considered to be a lower bound of the actual annual human-caused mortality and serious injury (Waring *et al.* 2002).

Bottlenose dolphins are known to interact with commercial fisheries and occasionally are taken in various kinds of fishing gear including gillnets, seines, long-lines, shrimp trawls, and crab pots (Read 1994; Wang *et al.* 1994) especially in near-shore areas where dolphin densities and fishery efforts are greatest. There are nine Category II commercial fisheries that interact with WNA coastal bottlenose dolphins in the 2001 MMPA List of Fisheries (LOF), six of which occur in North Carolina waters. Category II fisheries include the mid-Atlantic coastal gillnet, NC inshore gillnet, mid-Atlantic haul/beach seine, NC long haul seine, NC stop net, Atlantic blue crab trap/pot, Southeast Atlantic gillnet, Southeastern U.S. Atlantic shark gillnet and the Virginia pound net (see 2001 List of Fisheries, 66 FR 42780, August 15, 2001; Waring *et al.* 2002). The mid-Atlantic haul/beach seine fishery also includes the haul seine and swipe net fisheries. There are five Category III fisheries that may interact with WNA coastal bottlenose dolphins. Three of these are inshore gillnet fisheries: the Delaware Bay inshore gillnet, the Long Island Sound inshore gillnet, and the Rhode Island, southern Massachusetts, and New York Bight inshore gillnet. The remaining two are the shrimp trawl and mid-Atlantic menhaden purse seine fisheries. There are have been no takes observed by the NMFS observer programs in any of these fisheries (Waring *et al.* 2002).

The mid-Atlantic coastal gillnet fishery is actually a combination of small-vessel fisheries that target a variety of fish species, including bluefish, croaker, spiny and smooth dogfish, kingfish, Spanish mackerel, spot, striped bass, and weakfish (Steve *et al.* 2001). These fisheries operate in different seasons targeting different species in different states throughout the range of the coastal morphotype. Most nets are set gillnets without anchors and are fished close to shore. Anchored set gillnets or drift gillnets are used in some fisheries (e.g., monkfish or dogfish). A comprehensive description of coastal gillnet gear and fishing effort in North Carolina is available in Steve *et al.* (2001). This fishery has the highest documented level of mortality of WNA coastal bottlenose dolphins; the North Carolina sink gillnet fishery is its largest component in terms of fishing effort and observed takes. Bycatch estimates are available for the period 1996-2000 (Waring *et al.* 2002). Of 12 observed mortalities from 1995-2000, 5 occurred in sets targeting spiny or smooth dogfish and another in a set targeting “shark” species, 2 occurred in striped bass sets, 2 occurred in Spanish mackerel sets, and the remainder were in sets targeting kingfish, weakfish, or "finfish" (Rossman and Palka 2001; Waring *et al.* 2002).

The shark gillnet fishery operates in federal waters from southern Florida to southern Georgia. The fishery is defined by vessels using relatively large mesh nets (>10 inches) and net lengths typically greater than 1500 feet. The fishery primarily uses drifting nets that are set overnight, however recently it has been employing a small number of shorter duration “strike” sets that encircle targeted schools of sharks. Since 1999, the Atlantic Large Whale Take Reduction Plan restricted the activities of the fishery to waters south of 27˚ 51’ N latitude during the critical right whale season from 15 November – 31 March and mandated 100% observer coverage during this period. During the remainder of the year, these vessels generally operate north of Cape Canaveral, FL and there is little observer coverage of the fleet. The fishery potentially interacts with the Georgia, Northern Florida, and Central Florida management units of coastal bottlenose dolphin. During an observer program in 1993 and 1994 and limited observer coverage during summer 1998, no takes of bottlenose dolphin were observed (Trent *et al.* 1997; Carlson and Lee, 2000). However, takes resulting in mortality were observed in the central Florida management unit during 1999 and 2000. Total bycatch mortality for this management unit has been estimated for 1999 and 2000 (Garrison 2001b).

A beach seine fishery operates along northern North Carolina beaches targeting striped bass, mullet, spot, weakfish, sea trout, and bluefish. The fishery operates on the Outer Banks of North Carolina primarily in the spring (April through June) and fall (October through December). It uses two primary gear types: a "beach anchored gill net" and a "beach seine." Both systems utilize a small net anchored to the beach. The beach seine system also uses a bunt and a wash net that are attached to the beach and are in the surf (Steve *et al.* 2001). The North Carolina beach seine fishery has been observed since April 7, 1998 by the NMFS fisheries sampling program (observer program) based at the Northeast Fisheries Science Center. Through 2001, there were 101 sets observed during the winter season (Nov-Apr) and 65 sets observed during the summer season (May-Oct). There were no sets observed during the summer of 2001. A total of 2 coastal bottlenose dolphin takes were observed, 1 in May 1998 and 1 in December 2000. The beach seine observer data are currently being reviewed but estimates of mortality are not yet available (Waring *et al.* 2002).

Between 1994 and 1998, 22 bottlenose dolphin carcasses (4.4 dolphins per year on average) recovered by the Stranding Network between North Carolina and Florida's Atlantic coast displayed evidence of possible interaction with a trap/pot fishery (i.e., rope and/or pots attached, or rope marks). Additionally, at least 5 dolphins were reported to be released alive (condition unknown) from blue crab traps/pots during this time period. In recent years, reports of strandings with evidence of interactions between bottlenose dolphins and both recreational and commercial crab-pot fisheries have been increasing in the Southeast Region (McFee and Brooks 1998). The increased reporting may result from increased effort towards documenting these marks or increases in mortality (Waring *et al.* 2002).

Data from the Chesapeake Bay suggest that the likelihood of bottlenose dolphin entanglement in pound net leads may be affected by the mesh size of the lead net (Bellmund *et al.* 1997), but the information is not conclusive. Stranding data for 1993-1997 document interactions between WNA coastal bottlenose dolphins and pound nets in Virginia. Two bottlenose dolphin carcasses were found entangled in the leads of pound nets in Virginia during 1993-1997, for an average of 0.4 bottlenose dolphin strandings per year. A third record of an entangled bottlenose dolphin in Virginia in 1997 may have been applicable to this fishery. This entanglement involved a bottlenose dolphin carcass found near a pound net with twisted line marks consistent with the twine in the nearby pound net lead rather than with monofilament gillnet gear. Given that other sources of annual serious injury and mortality estimates (e.g., observer data) are not available, the stranding data (0.4 bottlenose dolphins per year) were used as a minimum estimate of annual serious injury and mortality and this fishery was classified as a Category II fishery in the 2001 List of Fisheries (Waring *et al.* 2002).

The shrimp trawl fishery operates from North Carolina through northern Florida virtually year around, moving seasonally up and down the coast. One bottlenose dolphin was recovered dead from a shrimp trawl in Georgia in 1995 (Southeast USA Marine Mammal Stranding Network unpublished data), and another was taken in 1996 near the mouth of Winyah Bay, SC, during a research survey. No other bottlenose dolphin mortality or serious injury has been previously reported to NMFS (Waring *et al.* 2002).

The Atlantic menhaden purse seine fishery targets the Atlantic menhaden in Atlantic coastal waters. Smith (1999) summarized menhaden fishing patterns by the Virginia-North Carolina vessels from 1985-1996. Most of the catch and sets during that time occurred within three miles of the shore. Between 1994 and 1997, menhaden were processed at only three facilities, two in Reedville Beach, VA, and one in Beaufort, NC. Each of the Virginia facilities had a fleet of 9-10 vessels while the Beaufort facility is supported by 2-6 vessels. Since 1998, only one plant has operated in Virginia and the number of vessels has been reduced to ten in Virginia and two in North Carolina (Vaughan *et al.* 2001). The fishery moves seasonally, with most effort occurring off of North Carolina from November-January and moving northward to southern New England during warmer months. Menhaden purse seiners have reported an annual incidental take of 1 to 5 bottlenose dolphins, although observer data are not available (Waring *et al.* 2002).

From 1997-1999, 995 bottlenose dolphins were reported stranded along the Atlantic coast from New York to Florida (Hohn and Martone 2001; Hohn *et al.* 2001; Palka *et al.* 2001). Of these, it was possible to determine whether a human interaction had occurred for 449 (45%); for the remainder it was not possible to make that determination. The proportion of carcasses determined to have been involved in a human interaction averaged 34%, but ranged widely from 11-12% in Delaware and Georgia to 49% and 53% in Virginia and North Carolina, respectively.

The nearshore habitat occupied by the coastal morphotype is adjacent to areas of high human population and in the northern portion of its range is highly industrialized. The blubber of stranded dolphins examined during the 1987-88 mortality event contained anthropogenic contaminants in levels among the highest recorded for a cetacean (Geraci 1989). There are no estimates of indirect human-caused mortality resulting from pollution or habitat degradation.

The coastal migratory stock is designated as depleted under the MMPA. From 1995-2001, NMFS recognized only a single migratory stock of coastal bottlenose dolphins in the WNA and, therefore, the entire stock was listed as depleted. The management units in this report now replace the single coastal migratory stock. A re-analysis of the depletion designation on a management unit basis needs to be undertaken. In the interim, because one or more of the management units may be depleted, all management units retain the depleted designation. In addition, mortality in multiple units exceed PBR (Waring *et al.* 2002). There are no rigorous results that would provide reliable information on current abundance relative to historical abundance. All prior estimates cover only part of the range of management units spatially or temporally, include the offshore morphotype, or are otherwise compromised. Population trends cannot be determined due to insufficient data. Over the past five years, estimated average annual mortality exceeded PBR in the mid-Atlantic gillnet fisheries for the northern migratory and northern NC management units during summer and for the NC mixed management units in winter (Waring *et al.* 2002).

The species is not listed as threatened or endangered under the Endangered Species Act, but because, as noted above, the stock is listed as depleted under the MMPA it is a strategic stock. This stock is also considered strategic under the MMPA because fishery-related mortality and serious injury exceed the potential biological removal level.

Leatherback Sea Turtle

Leatherback turtles are widely distributed throughout the oceans of the world, and are found in waters of the Atlantic, Pacific, Caribbean, and the Gulf of Mexico (Ernst and Barbour 1972). The leatherback sea turtle is the largest living turtle and ranges farther than any other sea turtle species, exhibiting broad thermal tolerances (NMFS and USFWS, 1995). Evidence from tag returns and strandings in the western Atlantic suggests that adults engage in routine migrations between boreal, temperate and tropical waters (NMFS and USFWS, 1992). In the U.S., leatherback turtles are found throughout the action area of this consultation. Located in the northeastern waters during the warmer months, this species is found in coastal waters of the continental shelf and near the Gulf Stream edge, but rarely in the inshore areas. However, leatherbacks may migrate close to shore, as a leatherback was satellite tracked along the mid-Atlantic coast, thought to be foraging in these waters. A 1979 aerial survey of the outer Continental Shelf from Cape Hatteras, North Carolina to Cape Sable, Nova Scotia showed leatherbacks to be present throughout the area with the most numerous sightings made from the Gulf of Maine south to Long Island. Shoop and Kenney (1992) also observed concentrations of leatherbacks during the summer off the south shore of Long Island and off New Jersey. Leatherbacks in these waters are thought to be following their preferred jellyfish prey. This aerial survey estimated the leatherback population for the northeastern U.S. at approximately 300-600 animals (from near Nova Scotia, Canada to Cape Hatteras, North Carolina).

Compared to the current knowledge regarding loggerhead populations, the genetic distinctness of leatherback populations is less clear. However, genetic analyses of leatherbacks to date indicate female turtles nesting in St. Croix/Puerto Rico and those nesting in Trinidad differ from each other and from turtles nesting in Florida, French Guiana/Suriname and along the South African Indian Ocean coast. Much of the genetic diversity is contained in the relatively small insular subpopulations. Although populations or subpopulations of leatherback sea turtles have not been formally recognized, based on the most recent reviews of the analysis of population trends of leatherback sea turtles, and due to our limited understanding of the genetic structure of the entire species, the most conservative approach would be to treat leatherback nesting populations as distinct populations whose survival and recovery is critical to the survival and recovery of the species. Further, any action that appreciably reduced the likelihood for one or more of these nesting populations to survive and recover in the wild, would appreciably reduce the species’ likelihood of survival and recovery in the wild.

Leatherbacks are predominantly a pelagic species and feed on jellyfish (i.e., *Stomolophus, Chryaora*, and *Aurelia* (Rebel 1974)), cnidarians (medusae, siphonophores) and tunicates (salps, pyrosomas). Time-Depth-Recorder data recorded by Eckert *et al.* (1998b) indicate that leatherbacks are night feeders and are deep divers, with recorded dives to depths in excess of 1000 meters. However, leatherbacks may come into shallow waters if there is an abundance of jellyfish nearshore. Leary (1957) reported a large group of up to 100 leatherbacks just offshore of Port Aransas, Texas associated with a dense aggregation of Stomolophus. Leatherbacks also occur annually in places such as Cape Cod and Narragansett Bays during certain times of the year, particularly the fall.

Although leatherbacks are a long lived species (> 30 years), they are somewhat faster to mature than loggerheads, with an estimated age at sexual maturity reported as about 13-14 years for females, and an estimated minimum age at sexual maturity of 5-6 years, with 9 years reported as a likely minimum (Zug and Parham 1996) and 19 years as a likely maximum (NMFS 2001). In the U.S. and Caribbean, female leatherbacks nest from March through July. They nest frequently (up to 7 nests per year) during a nesting season and nest about every 2-3 years. During each nesting, they produce 100 eggs or more in each clutch and thus, can produce 700 eggs or more per nesting season (Schultz 1975). The eggs will incubate for 55-75 days before hatching. The habitat requirements for post-hatchling leatherbacks are virtually unknown (NMFS and USFWS 1992).

Anthropogenic impacts to the leatherback population are similar to those discussed above for the loggerhead sea turtle, including fishery interactions as well as intense exploitation of the eggs (Ross 1979). Eckert (1996) and Spotila *et al.* (1996) record that adult mortality has also increased significantly, particularly as a result of driftnet and longline fisheries. Zug and Parham (1996) attribute the sharp decline in leatherback populations to the combination of the loss of long-lived adults in fishery related mortality, and the lack of recruitment stemming from elimination of annual influxes of hatchlings because of intense egg harvesting.

Poaching is not known to be a problem for U.S. nesting populations. However, numerous fisheries that occur in both U.S. state and Federal waters are known to negatively impact juvenile and adult leatherback sea turtles. These include incidental take in several commercial and recreational fisheries. Fisheries known or suspected to incidentally capture leatherbacks include those deploying bottom trawls, off-bottom trawls, purse seines, bottom longlines, hook and line, gill nets, drift nets, traps, haul seines, pound nets, beach seines, and surface longlines (NMFS and USFWS 1992). At a workshop held in the Northeast in 1998 to develop a management plan for leatherbacks, experts expressed the opinion that incidental takes in fisheries were likely higher than is being reported.

Leatherback interactions with the southeast shrimp fishery are also common. Turtle Excluder Devices (TEDs), typically used in the southeast shrimp fishery to minimize sea turtle/fishery interactions, are less effective for the large-sized leatherbacks. Therefore, the NMFS has used several alternative measures to protect leatherback sea turtles from lethal interactions with the shrimp fishery. These include establishment of a Leatherback Conservation Zone (60 FR 25260). NMFS established the zone to restrict, when necessary, shrimp trawl activities from off the coast of Cape Canaveral, Florida to the Virginia/North Carolina Border. It allows the NMFS to quickly close the area or portions of the area to the shrimp fleet on a short-term basis when high concentrations of normally pelagic leatherbacks are recorded in more coastal waters where the shrimp fleet operates. Other emergency measures may also be used to minimize the interactions between leatherbacks and the shrimp fishery. For example, in November 1999 parts of Florida experienced an unusually high number of leatherback strandings. In response, the NMFS required shrimp vessels operating in a specified area to use TEDs with a larger opening for a 30-day period beginning December 8, 1999 (64 FR 69416) so that leatherback sea turtles could escape if caught in the gear.

Leatherbacks are also susceptible to entanglement in lobster and crab gear, possibly as a result of attraction to gelatinous organisms and algae that collect on buoys and buoy lines at or near the surface, attraction to the buoys which could appear as prey, or the gear configuration which may be more likely to wrap around flippers. The total number of leatherbacks reported entangled from New York through Maine from all sources for the years 1980 - 2000 is 119; out of this total, 92 of these records occurred from1990-2000. Entanglements are also common in Canadian waters where Goff and Lien (1988) reported that 14 of 20 leatherbacks encountered off the coast of Newfoundland/Labrador were entangled in fishing gear including salmon net, herring net, gillnet, trawl line and crab pot line. It is unclear how leatherbacks become entangled in such gear. Prescott (1988) reviewed stranding data for Cape Cod Bay and concluded that for those turtles where cause of death could be determined (the minority), entanglement in fishing gear is the leading cause of death followed by capture by dragger, cold stunning, or collision with boats.

Spotila *et al.* (1996) describe a hypothetical life table model based on estimated ages of sexual maturity at both ends of the species' natural range (5 and 15 years). The model concluded that leatherbacks maturing in 5 years would exhibit much greater population fluctuations in response to external factors than would turtles that mature in 15 years. Furthermore, the simulations indicated that leatherbacks could maintain a stable population only if both juvenile and adult survivorship remained high, and that if other life history stages (i.e., egg, hatchling, and juvenile) remained static. Model simulations indicated that an increase in adult mortality of more than 1% above background levels in a stable population was unsustainable. As noted, there are many human-related sources of mortality to leatherbacks; a tally of all leatherback takes anticipated annually under current biological opinions completed for the NMFS June 30, 2000, biological opinion on the pelagic longline fishery projected a potential for up to 801 leatherback takes, although this sum includes many takes expected to be nonlethal. Leatherbacks have a number of pressures on their populations, including injury or mortality in fisheries, other Federal activities (e.g., military activities, oil and gas development, etc.), degradation of nesting habitats, direct harvest of eggs, juvenile and adult turtles, the effects of ocean pollutants and debris, lethal collisions, and natural disturbances such as hurricanes (which may wipe out nesting beaches).

Spotila *et al.* (1996) recommended not only reducing mortalities resulting from fishery interactions, but also advocated protection of eggs during the incubation period and of hatchlings during their first day, and indicated that such practices could potentially double the chance for survival and help counteract population effects resulting from adult mortality. They conclude, "stable leatherback populations could not withstand an increase in adult mortality above natural background levels without decreasing . . . the Atlantic population is the most robust, but it is being exploited at a rate that cannot be sustained and if this rate of mortality continues, these populations will also decline. "

Estimated to number approximately 115,000 adult females globally in 1980 (Pritchard 1982) and only 34,500 by 1995 (Spotila *et al.* 1996), leatherback populations have been decimated worldwide, not only by fishery related mortality but, at least historically, primarily due to intense exploitation of the eggs (Ross 1979). On some beaches nearly 100% of the eggs laid have been harvested (Eckert 1996). Eckert (1996) and Spotila *et al.* (1996) record that adult mortality has also increased significantly, particularly as a result of driftnet and longline fisheries. Spotila (2000) states that a conservative estimate of annual leatherback fishery-related mortality (from longlines, trawls and gillnets) in the Pacific during the 1990s is 1,500 animals. He estimates that this represented about a 23% mortality rate (or 33% if most mortality was focused on the East Pacific population).

Nest counts are currently the only reliable indicator of population status available for leatherback turtles. The status of the leatherback population in the Atlantic is difficult to assess since major nesting beaches occur over broad areas within tropical waters outside the United States. Recent information suggests that Western Atlantic populations declined from 18,800 nesting females in 1996 (Spotila *et al.* 1996) to 15,000 nesting females by 2000. Eastern Atlantic (i.e., off Africa, numbering ~ 4,700) and Caribbean (4,000) populations appear to be stable, but there is conflicting information for some sites and it is certain that some populations (e.g., St. John and St. Thomas, U.S. Virgin Islands) have been extirpated (NMFS and USFWS 1995). It does appear, however, that the Western Atlantic population is being subjected to mortality beyond sustainable levels, resulting in a continued decline in numbers of nesting females.

Kemp's Ridley Sea Turtle

The Kemp's ridley is probably the most endangered of the world's sea turtle species. The only major nesting site for ridleys is a single stretch of beach near Rancho Nuevo, Tamaulipas, Mexico (Carr 1963). Estimates of the adult population reached a low of 1,050 in 1985, but increased to 3,000 individuals in 1997. First-time nesting adults have increased from 6% to 28% from 1981 to 1989, and from 23% to 41% from 1990 to 1994, indicating that the ridley population may be in the early stages of growth (TEWG 1998). More recently the TEWG (2000) concluded that the Kemp's Ridley population appears to be in the early stages of exponential expansion. While the number of females nesting annually is estimated to be orders of magnitude less than historical levels, the mean rate of increase in the annual number of nests has accelerated over the period 1987-1999. Preliminary analyses suggest that the intermediate recovery goal of 10,000 nesting females by 2020 may be achievable (TEWG 2000).

Juvenile Kemp's ridleys inhabit northeastern US coastal waters where they forage and grow in shallow coastal during the summer months. Juvenile ridleys migrate southward with autumnal cooling and are found predominantly in shallow coastal embayments along the Gulf Coast during the late fall and winter months.

Ridleys found in mid-Atlantic waters are primarily post-pelagic juveniles averaging 40 cm in carapace length, and weighing less than 20 kg. After loggerheads, they are the second most abundant sea turtle in Virginia and Maryland waters, arriving in there during May and June and then emigrating to more southerly waters from September to November. In the Chesapeake Bay, ridleys frequently forage in shallow embayments, particularly in areas supporting submerged aquatic vegetation (Lutcavage and Musick 1985). The juvenile population in Chesapeake Bay is estimated to be 211 to 1,083 turtles.

The model presented by Crouse *et al.* (1987) illustrates the importance of subadults to the stability of loggerhead populations and may have important implications for Kemp's ridleys. The vast majority of ridleys identified along the Atlantic Coast have been juveniles and subadults. Sources of mortality in this area include incidental takes in fishing gear, pollution and marine habitat degradation, and other man-induced and natural causes. Loss of individuals in the Atlantic, therefore, may impede recovery of the Kemp's ridley sea turtle population. Sea sampling data from the northeast otter trawl fishery and southeast shrimp and summer flounder bottom trawl fisheries has recorded takes of Kemp's ridley turtles.

Green Sea Turtle

Green sea turtles are more tropical in distribution than loggerheads, and are generally found in waters between the northern and southern 20°C isotherms. In the wester Atlantic region, the summer developmental habitat encompasses estuarine and coastal waters as far north as Long Island Sound, Chesapeake Bay, and the North Carolina sounds, and south throughout the tropics (NMFS 1998). Most of the individuals reported in U.S. waters are immature (NMFS 1998). Green sea turtles found north of Florida during the summer must return to southern waters in autumn or risk the adverse effects of cold temperatures.

There is evidence that green turtle nesting has been on the increase during the past decade. For example, increased nesting has been observed along the Atlantic coast of Florida on beaches where only loggerhead nesting was observed in the past (NMFS 1998). Recent population estimates for the western Atlantic area are not available. Green turtles are threatened by incidental captures in fisheries, pollution and marine habitat degradation, destruction/disturbance of nesting beaches, and other sources of man-induced and natural mortality.

Juvenile green sea turtles occupy pelagic habitats after leaving the nesting beach. At approximately 20 to 25 cm carapace length, juveniles leave pelagic habitats, and enter benthic foraging areas, shifting to a chiefly herbivorous diet (NMFS 1998). Post-pelagic green turtles feed primarily on sea grasses and benthic algae, but also consume jellyfish, salps, and sponges. Known feeding habitats along U.S. coasts of the western Atlantic include shallow lagoons and embayments in Florida, and similar shallow inshore areas elsewhere (NMFS 1998).

Sea sampling data from the scallop dredge fishery and southeast shrimp and summer flounder bottom trawl fisheries have recorded incidental takes of green turtles

Shortnose Sturgeon

Shortnose sturgeon occur in large rivers along the western Atlantic coast from the St. Johns River, Florida (possibly extirpated from this system), to the Saint John River in New Brunswick, Canada. The species is anadromous in the southern portion of its range *(i.e.,* south of Chesapeake Bay), while northern populations are amphidromous (NMFS 1998). Population sizes vary across the species' range with the smallest populations occurring in the Cape Fear and Merrimack Rivers and the largest populations in the Saint John and Hudson Rivers (Dadswell 1979; NMFS 1998).

Shortnose sturgeon are benthic and mainly inhabit the deep channel sections of large rivers. They feed on a variety of benthic and epibenthic invertebrates including molluscs, crustaceans (arnphipods, chironomids, isopods), and oligochaete worms (Vladykov and Greeley 1963; Dadswell 1979). Shortnose sturgeon are long-lived (30 years) and mature at relatively old ages. In northern areas, males reach maturity at 5-10 years, while females reach sexual maturity between 7 and 13 years.

In the northern part of their range, shortnose sturgeon exhibit three distinct movement patterns that are associated with spawning, feeding, and overwintering periods. In spring, as water temperatures rise above 8° C, pre-spawning shortnose sturgeon move from overwintering grounds to spawning areas. Spawning occurs from mid/late April to mid/late May. Post-spawned sturgeon migrate downstream to feed throughout the summer.

As water temperatures decline below 8° C again in the fall, shortnose sturgeon move to overwintering concentration areas and exhibit little movement until water temperatures rise again in spring (NMFS 1998). Young-of-the-year shortnose sturgeon are believed to move downstream after hatching (NMFS 1998) but remain within freshwater habitats. Older juveniles tend to move downstream in fall and winter as water temperatures decline and the salt wedge recedes. Juveniles move upstream in spring and feed mostly in freshwater reaches during summer.

Shortnose sturgeon spawn in freshwater sections of rivers, typically below the first impassable barrier on the river *(e.g.,* dam). Spawning occurs over channel habitats containing gravel, rubble, or rock-cobble substrates (NMFS 1998). Environmental conditions associated with spawning activity include decreasing river discharge following the peak spring freshet, water temperatures ranging from 9 -12 C, and bottom water velocities of 0.4 - 0.7 m/sec (NMFS 1998).

Atlantic salmon

The recent ESA-listing for Atlantic salmon covers the wild population of Atlantic salmon found in rivers and streams from the lower Kennebec River north to the U.S.-Canada border. These include the Dennys, East Machias, Machias, Pleasant, Narraguagus, Ducktrap, and Sheepscot Rivers and Cove Brook. Atlantic salmon are an anadromous species with spawning and juvenile rearing occurring in freshwater rivers followed by migration to the marine environment. Juvenile salmon in New England rivers typically migrate to sea in May after a two to three year period of development in freshwater streams, and remain at sea for two winters before returning to their U.S. natal rivers to spawn from mid October through early November. While at sea, salmon generally undergo an extensive northward migration to waters off Canada and Greenland. Data from past commercial harvest indicate that post-smolts overwinter in the southern Labrador Sea and in the Bay of Fundy. The numbers of returning wild Atlantic salmon within the Gulf of Maine Distinct Population Segment (DPS) are perilously small with total run sizes of approximately 150 spawners occurring in 1999 (Baum 2000). Although capture of Atlantic salmon has occurred in commercial fisheries (usually otter trawl or gillnet gear) or by research/survey, no salmon have been reported captured in the Atlantic surfclam and ocean quahog fisheries.

Smalltooth sawfish

NMFS issued a final rule to list the DPS of smalltooth sawfish in the United States as an endangered species on April 1, 2003. Smalltooth sawfish are tropical marine and estuarine fish that have the northwestern terminus of their Atlantic range in the waters of the eastern United States. In the United States, smalltooth sawfish are generally a shallow water fish of inshore bars, mangrove edges, and seagrass beds, but larger animals can be found in deeper coastal waters. In order to assess both the historic and the current distribution and abundance of the smalltooth sawfish, a status review team collected and compiled literature accounts, museum collection specimens, and other records on the species. This information indicated that prior to around 1960, smalltooth sawfish occurred commonly in shallow waters of the Gulf of Mexico and eastern seaboard up to North Carolina, and more rarely as far north as New York. Subsequently their distribution has contracted to peninsular Florida and, within that area, they can only be found with any regularity off the extreme southern portion of the state. The current distribution is centered in the Everglades National Park, including Florida Bay (NMFS 2003).

Smalltooth sawfish have declined dramatically in U.S. waters over the last century, as indicated by publication and museum records, negative scientific survey results, anecdotal fishermen observations, and limited landings per unit effort (NMFS 2003). The fact that documented smalltooth sawfish catch records have declined during the twentieth century despite tremendous increases in fishing effort underscores the population reduction in the species. While NMFS lacks time-series abundance data to quantify the extent of the DPS's decline, the best available information indicates that the abundance of the U.S. DPS of smalltooth sawfish is at an extremely low level relative to historic levels.

The smalltooth sawfish continues to face threats from: (1) loss of wetlands, (2) eutrophication, (3) point and non point sources of pollution, (4) increased sedimentation and turbidity, (5) hydrologic modifications, and (6) incidental catch in fisheries (NMFS 2003). Commercial bycatch has played the primary role in the decline of this species. While Federal, state, and interjurisdictional laws, regulations, and policies lead to overall environmental enhancements indirectly aiding smalltooth sawfish, very few have been applied specifically for the protection of smalltooth sawfish. Based on the species' low intrinsic rate of increase resulting from their slow growth, late maturation, and low fecundity, population recovery potential for the species is limited and the species is at risk of extinction. Current protective measures and conservation efforts underway to protect the smalltooth sawfish are confined to: actions directed at increasing general awareness of this species and the risks it faces; possession prohibitions in the state waters of Florida and Louisiana; and research being pursued by the Mote Marine Laboratory's Center for Shark Research. There are no Federal or state conservation plans for the smalltooth sawfish.

Seabirds

Most of the following information about seabirds is taken from the Mid-Atlantic Regional Marine Research Program (1994) and Peterson (1963). Fulmars occur as far south as Virginia in late winter and early spring. Shearwaters, storm petrels (both Leach's and Wilson's), jaegers, skuas, and some terns pass through this region in their annual migrations. Gannets and phalaropes occur in the Mid-Atlantic during winter months. Nine species of gulls breed in eastern North America and occur in shelf waters off the northeastern US. These gulls include: glaucous, Iceland, great black-backed, herring, laughing, ring-billed, Bonaparte's and Sabine's gulls, and black-legged caduceus. Royal and sandwich terns are coastal inhabitants from Chesapeake Bay south to the Gulf of Mexico. The Roseate tern is listed as endangered under the ESA, while the Least tern is considered threatened (Safina pers. comm.). In addition, the bald eagle is listed as threatened under the ESA and is a bird of aquatic ecosystems.

Like marine mammals, seabirds are vulnerable to entanglement in commercial fishing gear. Human activities such as coastal development, habitat degradation, and the presence of organochlorine contaminants are considered the major threats to some seabird populations.