2010 Summer Flounder, Scup, and Black Sea Bass Specifications Environmental Assessment Initial Regulatory Flexibility Analysis and Essential Fish Habitat Assessment

December 2009

Mid-Atlantic Fishery Management Council

in cooperation with the

National Marine Fisheries Service

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1.0 EXECUTIVE SUMMARY

This document was prepared by the Mid-Atlantic Fishery Management Council (Council) in consultation with the National Marine Fisheries Service (NMFS). The purpose of this action (specifications document) is to implement 2010 commercial quotas and recreational harvest limits for the summer flounder, scup, and black sea bass fisheries that are necessary to achieve, but not exceed the annual target exploitation rates established under the respective fishery management plan (FMP) or rebuilding schedule[1].

This specifications document was developed in accordance with the Magnuson-Stevens Fishery Conservation and Management Act[2] (MSA) and the National Environmental Policy Act (NEPA), the former being the primary domestic legislation governing fisheries management in the U.S. Exclusive Economic Zone (EEZ). Although this document has been prepared primarily in response to the requirements of the MSA and NEPA, it also addresses requirements of the Marine Mammal Protection Act (MMPA), Endangered Species Act (ESA), Regulatory Flexibility Act (RFA), Administrative Procedure Act (APA), Paperwork Reduction Act (PRA), Coastal Zone Management Act (CZMA), the Information Quality Act (IQA), and Executive Order 12866 (Regulatory Planning and Review). These applicable laws and executive orders help ensure that the Council considers the full range of alternatives and their expected impacts on the marine environment, living marine resources, and affected human communities. This integrated document contains all required elements of an environmental assessment including a socioeconomic analysis as required by NEPA.

This specifications document details all management alternatives for summer flounder, scup, and black sea bass fisheries evaluated for a one year period (2010). Under the FMP, the no action alternatives for summer flounder, scup, and black sea bass are not equivalent to the *status quo*. If the actions proposed in this document are not taken, some current management measures will remain in place, but the overall management program will not be identical to that of 2009. The "true" no action alternative for each fishery is infeasible and inconsistent with the MSA; therefore, the no action alternatives are presented in section 5.5 of this document but not analyzed further. For comparison purposes, the alternatives in this specifications document are compared to the *status quo* alternatives (base line) as opposed to the "true" no action alternatives. The base line condition is the adjusted quotas for 2009 (quotas adjusted for research set-aside (RSA) and/or overages/quotas restorations).

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[1] The Council and ASMFC Summer Flounder, Scup and Black Sea Bass Board (Board) will meet in December 2009 to adopt 2010 recreational management measures when more complete data regarding 2009 recreational landings are available. A comprehensive document which analyzes the impacts of recreational management measures for summer flounder, scup, and black sea bass (i.e., bag limits, size limits, and seasonal closures) will be prepared after the December Council meeting.

[2] Magnuson-Stevens Fishery Conservation and Management Act, portions retained plus revisions made by the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006.

Quota Alternatives

The proposed actions in this specifications document would only modify the 2010 commercial quotas and recreational harvest limits (Box ES-1). Changes to other commercial management measures (i.e., minimum fish size, mesh size, possession limits, and other gear regulations) are not recommended for 2010. Therefore, these other commercial management measures would remain *status quo* for the 2010 fishing year (see section 5.5 for additional discussion).

Box ES-1. Comparison of the summer flounder, scup, and black sea bass quota alternatives, in million lb, analyzed in this specifications document.

		Initial TAL	Research Set-Aside[b]	Council-adjusted Commercial Quota	Council-adjusted Recreational Harvest Limit
Summer Flounder[a]	**Alternative 1** (Council-Preferred)	22.13	0.66	12.88	8.59
	Alternative 2 (Non-Preferred: Most Restrictive / *Status quo* (No Action))	18.45	0.55	10.74	7.16
	Alternative 3 (Non-Preferred: Least Restrictive)	26.31	0.79	15.31	10.21
Scup[a]	**Alternative 1** (Council-Preferred)	14.11	0.42	10.68	3.01
	Alternative 2 (Non-Preferred: Most Restrictive / *Status quo* (No Action))	12.83	0.38	9.71	2.74
	Alternative 3 (Non-Preferred: Least Restrictive)	15.40	0.46	11.65	3.29
Black Sea Bass[a]	**Alternative 1** (Council-Preferred: *Status quo* (No Action))	2.30	0.07	1.09	1.14
	Alternative 2 (Non-Preferred: Most Restrictive)	2.07	0.06	0.98	1.02
	Alternative 3 (Non-Preferred: Least Restrictive)	4.80	0.14	2.28	2.37

[a] As discussed below, the no action alternative (no TAL specified for 2010) for each species is presented in section 5.5 but is not analyzed.
[b] For analysis of the alternatives in this specifications document, the RSA amount deducted from each TAL is 3 percent of the TAL.

Summary of Alternatives

The following section presents a qualitative summary of expected impacts, by species, research set-aside, and cumulatively, for the alternatives under consideration for 2010. For purposes of impact evaluation, status quo alternatives are compared to 2009 condition, while all other alternatives are compared to the status quo alternative. As previously discussed, the no action alternative for each species is presented in section 5.5 but is not analyzed.

Summer Flounder

The Council-preferred alternative 1 is expected to result in positive impacts on the managed resource in 2010, when compared to the *status quo* (alternative 2; Box ES-2). The stock is expected to increase under this alternative, the likelihood of overfishing is projected to be low, and it is consistent with the advice of the Council's scientific and technical advisors, the Science and Statistical Committee (SSC) and Summer Flounder Monitoring Committee. Even though alternative 1 represents an increase in overall TAL when compared to the *status quo*, it is consistent with the best scientific information available at the time of specifications that indicates fishing at a TAL at or below the level recommended under alternative 1 would result in positive stock growth towards rebuilding goals. These measures will likely result in no changes to the incidental catch rates of other species relative to the *status quo* alternative.

Non-preferred alternative 2 is expected to result in positive impacts on the managed resource in 2010, when compared to 2009. Although the TAL proposed under alternative 2 is the same TAL that was implemented in 2009, the biological impacts of that TAL on the managed resource are not the same across years. Stock demographics change and the relative biological impacts of that TAL also changes. Therefore, the best scientific information available suggests this alternative may be more restrictive than necessary to ensure sustainability of the stock and the impacts under this alternative would be more positive than under the Council-preferred alternative (alternative 1). Under this alternative, it may be less likely that overfishing will occur. Similar to alternative 1, alternative 2 is not expected to alter the incidental catch rates of other species.

Non-preferred alternative 3 is expected to have negative impacts on the managed resource in 2010, when compared to the *status quo*. The TAL associated with this alternative is not consistent with the rebuilding schedule and has a 50 percent probability of overfishing. Ranking these three TAL alternatives from more likely to less likely to achieve the target fishing mortality rate, they rank as alternative 2, alternative 1, and alternative 3.

Given the range of potential habitat impacts, depending upon whether fishing effort increases or decreases, these three alternatives are expected to have effects on habitat and EFH that range from the same to slightly negative through increased fishin effort (as expected under alternatives 1), neutral as expected under alternative 2, to impacts that are

the same to slightly negative, as expected under alternative 3, when compared to existing impacts.

Given the range of potential impacts on endangered and protected resources, depending upon whether fishing effort increases or decreases, alternative 2 is expected to have neutral effects on endangered and protected resources and alternatives 1 and 3 are expected to have neutral to slight negative impacts, when compared to existing impacts.

Under alternative 1, it is expected that short-term positive social and economic impacts may occur because of the increase in total landings (in 2010), relative to the *status quo*. There may be positive social and economic impacts that will be realized in the long-term, if the stock size continues to rebuild and if the target fishing mortality rates are not exceeded. Given that the commercial quotas and recreational harvest levels under alternative 2 (*status quo*) are similar to 2009, it is expected there will be neutral short-term social and economic impacts. However, positive social and economic impacts are expected in the long-term, if the stock size continues to grow. Under alternative 3, it is expected that short-term positive social and economic impacts may occur because of the increase in total landings (in 2010), relative to the *status quo*. However, due to the potential negative impact to the stock associated with these landings levels, including slowed or negative gains in rebuilding efforts, negative social and economic impacts in the long-term could occur.

Scup

The Council-preferred alternative 1 is expected to result in positive impacts on the managed resource in 2010, when compared to the *status quo* (Box ES-2). This TAL is consistent with the Council's scientific and technical advisors, the SSC and Scup Monitoring Committee. Even though alternative 1 represents an increase in overall TAL when compared to the *status quo*, it is consistent with the best scientific information available at the time of specifications that indicates fishing at a TAL at or below the level recommended under alternative 1 would be necessary to ensure the long-term sustainability of the stock. This alternative will likely result in no change in the incidental catch rates of other species relative to 2009.

Non-preferred alternative 2 (*status quo*) is expected to result in positive impacts on the managed resource in 2010, when compared to 2009. Although the TAL proposed under alternative 2 is similar to the TAL that was implemented in 2009 (slight increase due to updated discard estimates), the biological impacts of these TALs on the managed resource are not similar across years. Stock demographics change and the relative biological impacts of TALs also change. Therefore, the best scientific information available suggests this alternative may be more restrictive than necessary to ensure sustainability of the stock and the impacts under this alternative would be more positive than under the Council-preferred alternative (alternative 1).

Non-preferred alternative 3 is expected to result in negative impacts on the managed resource in 2010, when compared to the *status quo*. This least restrictive alternative is

inconsistent with the advice of scientific and technical advisors. Alternatives 2 and 3 are not expected to result in changes to the incidental catch rates of other species.

Given the range of potential habitat impacts, depending upon whether fishing effort increases or decreases, these three alternatives are expected to have effects on habitat and EFH that range from the same to slightly negative through increased fishing effort, when compared to existing impacts.
Given the range of potential impacts on endangered and protected resources, depending upon whether fishing effort increases or decreases, these three alternatives are expected to have effects that range from the same to slightly negative due to increased fishing effort, when compared to existing impacts.

It is expected that positive short-term social and economic impacts may occur under alternative 1 when compared to the *status quo*. Alternative 2 contains the *status quo* measures. Even though the scup quota under alternative 2 is the *status quo* measure, the 2010 Council-adjusted scup quota and recreational harvest limit are slightly different (higher) than the adjusted quota and recreational harvest limit implemented in 2009 due to lower discards projected for 2010. As such, alternative 2 would allow for positive social and economic impacts when compared to 2009. Given that the commercial quota and recreational harvest level are lower under alternative 2 than under alternatives 1 and 3, it is expected that the overall positive social and economic impacts under this alternative would be smaller than those derived when comparing the *status quo* alternative to measures in 2009. Alternative 3 (also least restrictive) will likely result in positive social and economic impacts on the scup fisheries compared to the *status quo* in the short-term. However, due to the potential negative impact to the stock associated with these landings levels, potential negative social and economic impacts in the long-term could occur.

Black Sea Bass

The Council-preferred alternative 1 (*status quo*) is expected to result in positive impacts on the managed resource in 2010, when compared to 2009 (Box ES-2). This TAL is consistent with the advice of the Council's scientific advisors, the SSC. Although the TAL proposed under alternative 1 is the same TAL that was implemented in 2009, the biological impacts of this TAL on the managed resource is not similar across years. Stock demographics change and the relative biological impacts of TALs also change. This TAL is consistent with the best scientific information available at the time of specifications that indicates fishing at a TAL at or below the level recommended under alternative 1 would be necessary to ensure the long-term sustainability of the stock. Alternative 1 will likely result in no change in the incidental catch rates of other species relative to 2009.

Non-preferred alternative 2 is expected to result in positive impacts on the managed resource in 2010, when compared to the *status quo*. The best scientific information available suggests this alternative may be more restrictive than necessary to ensure sustainability of the stock and the impacts under this alternative would be more positive than under the alternative 1.

Non-preferred alternative 3 is expected to result in negative impacts on the managed resource in 2010, when compared to 2009. Both alternatives 2 and 3 are not expected to change the incidental catch rates of other species compared to the *status quo*.

Given the range of potential habitat impacts, depending upon whether fishing effort increases or decreases, these three alternatives are expected to have effects on habitat and EFH that range from the same (as expected under alternatives 1 *status quo* and 2) to impacts that are the same to negative through increased fishing effort (as expected under alternative 3), when compared to existing impacts.

Given the range of potential impacts on endangered and protected resources, depending upon whether fishing effort increases or decreases, these three alternatives are expected to have effects that range from the same (as expected under alternatives 1 *status quo* and 2) to impacts that are the same to negative on endangered and protected resources through increased fishing effort (as expected under alternative 3), when compared to existing impacts.

Given that the commercial quotas and recreational harvest levels under alternative 1 (*status quo*) are similar to 2009, it is expected there will be neutral short-term social and economic impacts. However, positive social and economic impacts are expected in the long-term, if the stock size continues to grow. Alternative 2 (also most restrictive) will likely result in negative social and economic impacts on the black sea bass fishery compared to the *status quo* in the short-term with potential positive impacts in the long-term. Alternative 3 (also least restrictive) would allow for the largest positive social and economic impacts in the short-term when compared to *status quo*. However, due to the potential negative impact to the stock associated with these landings levels, potential negative social and economic impacts could occur in the long-term.

Box ES-2. Overall qualitative summary of the expected impacts of various summer flounder, scup, and black sea bass alternatives considered in this document (2010). A minus sign (-) signifies an expected negative impact, a plus sign (+) signifies an expected positive impact, and zero is used to indicate a null impact. A "sl" in front of a sign is used to convey a minor effect, such as slight positive (sl+). An 'S' indicates short-term, and an 'L' is indicates long-term impacts. A (u) is used when there is some uncertainty whether the impact will be null or as specified (+ or -).

		Biological	EFH	Protected Resources	Economic	Social
Summer Flounder	**Alternative 1** (Council-Preferred)	+	0/sl-(u)	0/sl-(u)	+S/+L(u)	+S/+L(u)
	Alternative 2 (Non-Preferred: Most Restrictive / *Status quo* (No Action))	+	0	0	+S/+L	+S/+L
	Alternative 3 (Non-Preferred: Least Restrictive)	-	0/sl-(u)	0/sl-(u)	+S/-L(u)	+S/-L(u)
Scup	**Alternative 1** (Council-Preferred)	+	0/sl-(u)	0/sl-(u)	+S/+L	+S/+L
	Alternative 2 (Non-Preferred: Most Restrictive / *Status quo* (No Action))	+	0/sl-(u)	0/sl-(u)	+S/+L	+S/+L
	Alternative 3 (Non-Preferred: Least Restrictive)	-	0/sl-(u)	0/sl-(u)	+S/-L(u)	+S/-L(u)
Black Sea Bass	**Alternative 1** (Council-Preferred: *Status quo* (No Action))	+	0	0	0S/+L	0S/+L
	Alternative 2 (Non-Preferred: Most Restrictive)	+	0	0	-S/+L	-S/+L
	Alternative 3 (Non-Preferred: Least Restrictive)	-	0/-(u)	0/-(u)	+S/-L(u)	+S/-L(u)

Research Set-aside

Under both RSA alternative 1 (No Action / No Research Set-Aside) and alternative 2 (Specify RSA/Status quo), all summer flounder, scup, and black sea bass landings count against the overall quotas regardless of whether or not an RSA is implemented; therefore, the biological impacts of alternatives 1 and 2 in 2010 would not change relative to 2009. However under alternative 2, which specifies RSA amounts for each FMP species, there could be indirect positive effects as new data or other information pertaining to these fisheries are obtained for management and/or stock assessment purposes.

The impacts of both alternative 1 and alternative 2 on protected and endangered resources and habitat are not expected to change relative to 2009. Because all landings count against the overall quota regardless of which alternative is implemented, neither alternative is expected to change the level of fishing effort, cause effort to be

redistributed by gear type, or change the manner in which these fisheries are prosecuted. Under non-preferred alternative 1, there will be no RSA deducted from the overall TALs for each FMP species. 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-RSA participants in the fishery. Since no RSA is implemented under this alternative, there are no direct economic or social costs as described above. Under Council-preferred alternative 2, specifying the RSA would result in indirect positive effects from the collaborative efforts among the public, research institutions, and government in broadening the scientific base upon which management decisions are made. Qualitative summaries of the impacts of the RSA alternatives under consideration are provided in Box ES-3.

Box ES-3. Overall qualitative summary of the expected impacts of summer flounder, scup, and black sea bass research set-aside measures considered in this document (2010). A minus sign (-) signifies an expected negative impact, a plus sign (+) signifies an expected positive impact, and a zero is used to indicate a null impact. A (u) is used when there is some uncertainty whether the impact will be null or as specified (+ or -).

	Environmental Dimensions				
	Biological	**EFH**	**Protected Resources**	**Economic**	**Social**
Alternative 1 (No Action / No Research Set-Aside)	0	0	0	0	0
Alternative 2 (Council-Preferred; Specify RSA/*Status quo*)	+ (u)	0	0	0/-(u)	+

Cumulative Impacts

For summer flounder, scup, and black sea bass, the Council analyzed the biological, habitat (EFH), protected resources, social, and economic impacts of the Council-considered alternatives. When the proposed action is considered in conjunction with all the other pressures placed on fisheries by past, present, and reasonably foreseeable future actions, it is not expected to result in any significant impacts, positive or negative; therefore, there are no significant cumulative effects associated with the action proposed in this document (see section 7.6).

Conclusions

A detailed description and discussion of the expected environmental impacts resulting from each of the alternatives, as well as any cumulative impacts, considered in this specifications document are provided in section 7.0. None of the Council-preferred action alternatives are associated with significant impacts to the biological, social or economic, or physical environment individually or in conjunction with other actions under NEPA; therefore, a “Finding of No Significant Impact” is determined.

2.0 LIST OF ACRONYMS

ABC	Annual Biological Catch
ACFCMA	Atlantic Coastal Fisheries Cooperative Management Act
ACL	Annual Catch Limit
ADAPT VPA	Adaptive Approach (age-structured) Virtual Population Analysis
AM	Accountability Measure
APA	Administrative Procedures Act
ASAP	Age Structured Assessment Program
ASMFC	Atlantic States Marine Fisheries Commission or Commission
B	Biomass
CEQ	Council on Environmental Quality
CPUE	Catch Per Unit Effort
CZMA	Coastal Zone Management Act
DPS	Distinct Population Segment
DPSWG	Data Poor Stocks Working Group
EA	Environmental Assessment
EEZ	Exclusive Economic Zone
EFH	Essential Fish Habitat
EFP	Exempted Fishing Permit
EIS	Environmental Impact Statement
EO	Executive Order
ESA	Endangered Species Act of 1973
F	Fishing Mortality Rate
FR	Federal Register
FMP	Fishery Management Plan
FONSI	Finding of No Significant Impact
GRA	Gear Restricted Area
HPTRP	Harbor Porpoise Take Reduction Plan
IQA	Information Quality Act
IRFA	Initial Regulatory Flexibility Analysis
LNG	Liquified Natural Gas
LOF	List of Fisheries
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
MFMT	Maximum Fishing Mortality Threshold
MRFSS	Marine Recreational Fisheries Statistical Survey
MSA	Magnuson-Stevens Fishery Conservation and Management Act
MSY	Maximum Sustainable Yield
mt	metric tons
NAO	National Oceanic and Atmospheric Administration Administrative Order
NE	New England
NEFMC	New England Fishery Management Council
NEFSC	Northeast Fisheries Science Center
NEPA	National Environmental Policy Act
NERO	Northeast Regional Office
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NRDC	Natural Resources Defense Council
OY	Optimal Yield
PBR	Potential Biological Removal
PRA	Paperwork Reduction Act
PREE	Preliminary Regulatory Economic Evaluation

RFA	Regulatory Flexibility Act
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
SFA	Sustainable Fisheries Act
SBA	Small Business Administration
SSB	Spawning Stock Biomass
SPR	Spawn Per Recruit
SSC	Science and Statistical Committee
TAL	Total Allowable Landings
TED	Turtle Excluder Device
VECs	Valued Ecosystem Components
VTR	Vessel Trip Report

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ENVIRONMENTAL ASSESSMENT

4.0 INTRODUCTION AND BACKGROUND OF SPECIFICATION PROCESS

4.1 PURPOSE AND NEED OF THE ACTION

The purpose of this action (specifications document) is to implement 2010 commercial quotas and 2010 recreational harvest limits for the summer flounder, scup, and black sea bass fisheries that are necessary to achieve, but not exceed the annual target exploitation rates established under the respective FMPs. These specifications are needed to prevent overfishing in 2010 and in the case of summer flounder allow continued stock rebuilding, such that these stocks can achieve optimum yield, which would provide the greatest overall benefit to the Nation in terms of food production and fishing opportunities. This specifications document was developed in accordance with the MSA and the National Environmental Policy Act (NEPA), the former being the primary domestic legislation governing fisheries management in the U.S. Exclusive Economic Zone (EEZ), and the FMP. Failure to specify annual quotas that are designed to constrain harvest to achieve fishing mortality objectives in the FMP and prevent overfishing for summer flounder, scup, and black sea bass in 2010 would therefore be inconsistent with the National Standards under the MSA.

The management regime is detailed in the FMP, including any subsequent amendments. A summary of the management actions taken since the establishment of the FMP, through amendments and framework adjustments is given in Box 4.1.

Box. 4.1 Summary of the history of the Summer Flounder, Scup, and Black Sea Bass FMP.

Year Approved	Document	Plan Species	Management Action(s)
1988	Original FMP	summer flounder	- Established management plan for summer flounder
1991	Amendment 1	summer flounder	- Established an overfishing definition for summer flounder
1993	Amendment 2	summer flounder	- Established rebuilding schedule, commercial quotas, recreational harvest limits, size limits, gear restrictions, permit and reporting requirements for summer flounder - Created the Summer Flounder Monitoring Committee
1993	Amendment 3	summer flounder	- Revised exempted fishery line - Increased large mesh net threshold - Otter trawl retentions requirements for large mesh use
1993	Amendment 4	summer flounder	- Revised state-specific shares for summer flounder quota allocation
1993	Amendment 5	summer flounder	- Allowed states to combine or transfer summer flounder quota
1994	Amendment 6	summer flounder	- Set criteria for allowance of multiple nets on board commercial vessels for summer flounder - Established deadline for publishing catch limits, commercial mgmt. measures for summer flounder

Box. 4.1 Cont. Summary of the history of the Summer Flounder, Scup, and Black Sea Bass FMP.			
Year Approved	**Document**	**Plan Species**	**Management Action**
1995	Amendment 7	summer flounder	- Revised the F reduction schedule for summer flounder
1996	Amendment 8	summer flounder and scup	- Incorporated Scup FMP into Summer Flounder FMP and established scup measures including commercial quotas, recreational harvest limits, size limits, gear restrictions, permits, and reporting requirements
1996	Amendment 9	summer flounder and black sea bass	- Incorporated Black Sea Bass FMP into Summer Flounder FMP and established black sea bass measures including commercial quotas, recreational harvest limits, size limits, gear restrictions, permits, and reporting requirements
1997	Amendment 10	summer flounder, scup, and black sea bass	- Modified commercial minimum mesh requirements, continued commercial vessel moratorium, prohibited transfer of fish at sea, established special permit for party/charter sector for summer flounder
1998	Amendment 11	summer flounder, scup, and black sea bass	- Modified certain provisions related to vessel replacement and upgrading, permit history transfer, splitting, and permit renewal regulations
1999	Amendment 12	summer flounder, scup, and black sea bass	- Revised FMP to comply with the SFA and established framework adjustment process
2001	Framework 1	summer flounder, scup, and black sea bass	-Established quota set-aside for research for all three species
2001	Framework 2	summer flounder	- Established state-specific conservation equivalency measures for summer flounder
2003	Framework 3	scup	- Allowed the rollover of scup quota - Revised start date for summer quota period for scup fishery
2003	Framework 4	scup	- Established system to transfer scup at sea
2003	Amendment 13	summer flounder, scup, and black sea bass	- Addressed disapproved sections of Amendment 12 and included new EIS
2004	Framework 5	summer flounder, scup, and black sea bass	- Established multi-year specification setting of quota for all three species
2006	Framework 6	summer flounder	- Established region-specific conservation equivalency measures for summer flounder
2007	Amendment 14	scup	- Established rebuilding schedule for scup
2007	Framework 7	summer flounder, scup, and black sea bass	- Built flexibility into process to define and update status determination criteria for each plan species - Scup GRAs made modifiable through framework adjustment process

Summer flounder is currently under a rebuilding schedule; therefore, annual specifications need to be set not only to ensure overfishing does not occur (as is the case with scup and black sea bass) but also to ensure the statutory rebuilding deadlines for summer flounder are met. Overfishing occurs when the threshold fishing mortality rate is exceeded and the stock is overfished when stock biomass falls below the minimum biomass threshold.

For summer flounder, the rebuilding deadline is January 1, 2013. Therefore, the specifications use a target fishing mortality rate (F), which is less than the threshold F to ensure overfishing does not occur and the stock achieves the spawning stock biomass rebuilding target of 132.4 million lb (60.07 million kg) by November 1, 2012. The threshold F in the FMP was defined as F35% = 0.31 (level of fishing that maintains 35% SPR; proxy for F_{MSY}; NEFSC 2008), and the minimum biomass threshold is defined as 66.2 million lb (30.04 million kg; NEFSC 2008). The target F is achieved by specification of a total allowable catch (TAC; landings + discards) and total allowable landings (TAL; landings only), which is 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.

Scup is not subject to a rebuilding schedule. Therefore, the specifications use a F, which is less than the threshold F to ensure overfishing does not occur. The threshold F in the FMP was defined as F40% = 0.18 (level of fishing that maintains 40% SPR; proxy for F_{MSY}; NEFSC 2009), and the minimum biomass threshold is defined as 101.5 million lb (46.02 million kg; NEFSC 2009). The F is achieved by specification of a TAC and a TAL, which are allocated to the commercial sector for three different periods (78 percent) and the recreational (22 percent) sector. The summer period, is managed state-by-state under the system adopted by the Atlantic States Marine Fisheries Commission (Commission).

Black sea bass is not subject to a rebuilding schedule. Therefore, the specifications use a F, which is less than the threshold F to ensure overfishing does not occur. The threshold F in the FMP was defined as F40% = 0.42 (level of fishing that maintains 40% SPR; proxy for F_{MSY}; NEFSC 2009), and the minimum biomass threshold is defined as 27.6 million lb (12.54 million kg; NEFSC 2009). The F is achieved by specification of a TAC and TAL, which are allocated to the commercial (49 percent) and the recreational (51 percent) sectors. The annual coastwide commercial quota is specified and then allocated state-by-state under the system adopted by the Commission for the commercial black sea bass fishery.

4.2 MANAGEMENT OBJECTIVES 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; and
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 size limits;
* gear regulations;
* recreational harvest limits; and
* recreational possession limits seasons, and no-sale provision.

4.3 MANAGEMENT UNITS

The management unit for summer flounder (*Paralichthys dentatus*) is the U.S. waters in the western Atlantic Ocean from the southern border of North Carolina northward to the U.S.-Canadian border. The management unit for both scup (*Stenotomus chrysops*) and black sea bass (*Centropristis striata*) is the U.S. waters in the western Atlantic Ocean from Cape Hatteras, North Carolina northward to the U.S.-Canadian border.

4.4 PROCESS AND METHODS OF ANALYSIS

The MSA requires each Council establish a Science and Statistical Committee (SSC) to assist it by providing it with, among other things, ongoing scientific advice for fishery management decisions, including recommendations for acceptable biological catch (ABC), preventing overfishing, and maximum sustainable yield. The FMP established Monitoring Committees which annually review the best available scientific information and provide recommendations regarding annual specifications for each species. The Monitoring Committee crafts recommendations and considers a broad range of relevant information which may include, but is not limited to, stock status updates from the most recent stock assessment; estimates of fishing mortality; recruitment, landings and catch information; and impacts of specific commercial fishery regulations (i.e., fish size, mesh size, possession limits, and seasonal closures), including non-compliance rates for those regulations.

Each Council must then develop annual catch limits (ACLs) that do not exceed the fishing level recommendations of its SSC or its peer review process. Based on SSC and Monitoring Committee's recommendations, the Council makes a recommendation to the NMFS Northeast Regional Administrator. The Regional Administrator reviews the recommendation forwarded through this specifications document and may revise it if necessary to achieve FMP objectives and statutory requirements. Because the FMP is cooperatively managed with the Commission, the Commission's Summer Flounder, Scup, and Black Sea Bass Board (Board) typically adopts complementary measures. The Council met jointly with the Board in August 2009 and recommended complementary management measures for the three species for 2010.

This specifications document serves a dual purpose, as it is a vehicle to convey the Council recommendations to the Regional Administrator. It also serves as a decision document for the Regional Administrator, who reviews the analysis of impacts of the various management alternatives presented here and determines which alternative achieves the FMP objectives as well as the objectives and statutory requirements under MSA and other applicable law.

This environmental assessment (EA) examines the impacts of each proposed action on the affected environment. The aspects of the affected environment that are likely to be directly or indirectly affected by the actions proposed in this document are described as *valued ecosystem components* (VECs; Beanlands and Duinker 1984). These VECs comprise the affected environment and are specifically defined as the managed resources (summer flounder, scup, and black sea bass) and any non-target species; habitat, including EFH for the managed resource and non-target species; endangered and protected resources; and any human communities (social and economic aspects of the environment). The impacts of the alternatives are evaluated with respect to these VECs.

To conduct a concise analysis of each of the quota alternatives research set-aside (RSA) amounts are deducted from the TALs for each species. Framework 1 to the FMP established a procedure through which research set-aside amounts up to 3 percent are set annually as part of the Council's quota-setting process, to support collaborative research projects among the public, research institutions, and NMFS. The actual RSA for fishing year 2010 will depend on the specific amounts requested by the approved research projects, but can not exceed 3 percent of the TAL. Therefore, the maximum 3 percent RSA was analyzed for each alternative and reduced impacts would be anticipated with RSA amounts less than the maximum allowable 3 percent. While the Council-adjusted TALs given in this document deduct RSA, they were not adjusted for 2009 partial-year overages and/or transfers of quota among states. NMFS will adjust quotas based on updated information on overages and/or transfers as part of the final rule that implements the 2010 specifications late in 2009 when the data are more complete.

All management alternatives under consideration for summer flounder, scup, and black sea bass were analyzed for 2010 only. A full description of each of these alternatives, including a discussion of a no action alternative, is given in section 5.0. Box 4.4.1 describes the suite of alternatives for each species which include a Council-preferred alternative (specified at the August 2009 Council meeting), a *status quo* alternative, and any additional alternatives under consideration. These recommendations and their impacts relative to 2008 landings are shown in Box 4.4.2.

Box 4.4.1. Comparison of the summer flounder, scup, and black sea bass alternatives of quota combinations reviewed for 2010 in million lb.

		Initial TAL	Research Set-Aside[a]	Council-adjusted Commercial Quota[b]	Council-adjusted Recreational Harvest Limit
Summer Flounder	**Alternative 1** (Council-Preferred)	22.13	0.66	12.88	8.59
	Alternative 2 (Non-Preferred: Most Restrictive / *Status quo* (No Action))	18.45	0.55	10.74	7.16
	Alternative 3 (Non-Preferred: Least Restrictive)	26.31	0.79	15.31	10.21
Scup	**Alternative 1** (Council-Preferred)	14.11	0.42	10.68	3.01
	Alternative 2 (Non-Preferred: Most Restrictive / *Status quo* (No Action))	12.83	0.38	9.71	2.74
	Alternative 3 (Non-Preferred: Least Restrictive)	15.40	0.46	11.65	3.29
Black Sea Bass	**Alternative 1** (Council-Preferred: *Status quo* (No Action))	2.30	0.07	1.09	1.14
	Alternative 2 (Non-Preferred: Most Restrictive)	2.07	0.06	0.98	1.02
	Alternative 3 (Non-Preferred: Least Restrictive)	4.80	0.14	2.28	2.37

[a]Note that this RSA amount represents 3 percent of the TAL associated with the respective alternative; therefore, the conditionally-approved project amounts may be less than or equal to this value.

[b]Note that the Council-adjusted quotas are provisional and may be modified in the NMFS final rule to account for 2009 overages and/or transfers when 2009 data are more complete.

Box 4.4.2. Comparison of the summer flounder, scup, and black sea bass alternatives of quota combinations reviewed for 2010 in million lb.

		Council-adjusted Commercial Quota[a]	2008 Commercial Landings	Percent Change from 2008 Landings
Summer Flounder	**Alternative 1** (Council-Preferred)	12.88	9.13	+41.1
	Alternative 2 (Non-Preferred: Most Restrictive / *Status quo* (No Action))	10.74	9.13	+17.6
	Alternative 3 (Non-Preferred: Least Restrictive)	15.31	9.13	+67.7
Scup	**Alternative 1** (Council-Preferred)	10.68	5.16	+107.0
	Alternative 2 (Non-Preferred: Most Restrictive / *Status quo* (No Action))	9.71	5.16	+88.2
	Alternative 3 (Non-Preferred: Least Restrictive)	11.65	5.16	+125.8
Black Sea Bass	**Alternative 1** (Council-Preferred: *Status quo* (No Action))	1.09	1.87	-41.7
	Alternative 2 (Non-Preferred: Most Restrictive)	0.98	1.87	-47.6
	Alternative 3 (Non-Preferred: Least Restrictive)	2.28	1.87	+21.9

[a] Note that the Council-adjusted quotas are provisional and may be modified in the NMFS final rule to account for 2009 overages and/or transfers when 2009 data are more complete.

5.0 MANAGEMENT ALTERNATIVES

Under the management programs for summer flounder, scup, and black sea bass, detailed in the FMP, the no action alternative is not equivalent to the *status quo* alternative (see section 5.5 for additional discussion). Therefore, for purposes of comparing impacts throughout this document, the proposed alternatives for each species (alternatives 1, 2, and 3) are compared to the *status quo* alternative (baseline) as opposed to the "true" no action alternative. Therefore, the alternatives for summer flounder, scup, and black sea bass are compared to summer flounder alternative 2, scup alternative 2, and black sea bass alternative 1, respectively.

It should be noted that for each of the proposed quota alternatives, commercial quotas and state shares listed are provisional and may be adjusted (i.e., by state for summer flounder, period for scup, or coastwide for black sea bass) by NMFS in the 2010 specifications final rule. Adjustments to the commercial quotas may be made to account for 2009 overages and/or transfers or to account for overages and/or transfers from the 2008 fishery that were not previously accounted for in the 2009 specifications final rule.

In addition, the RSA projects for fishing year 2010 have not yet been approved and awarded. The Council approved an RSA up to 3 percent of the TAL for each of the FMP species; therefore, the actual 2010 RSA amounts may be equal to or less than the 3 percent maximum allowable depending on which projects are approved and the specific RSA amounts requested.

5.1 Summer Flounder

The proposed summer flounder specification alternatives would only modify the 2010 commercial quotas and recreational harvest limits. Changes to other commercial management measures were not recommended for 2010 by the Council and Board. Therefore, other commercial management measures in place will remain unchanged (*status quo*) for the 2010 fishing year (see section 5.5 for additional discussion). For reference, the current regulations require a 14 inch-TL minimum fish size in the commercial fishery and a 5.5 inch diamond or 6 inch square minimum mesh in the entire net for vessels possessing more than the threshold amount of summer flounder, i.e., 200 lb in the winter and 100 lb in the summer. The summer flounder regulations in the Code of Federal Regulations (CFR) are available through the website for the Northeast Regional Office (NERO) of NMFS: http://www.nero.noaa.gov/nero/regs/.

In addition, a program (established in 1998 by the Council and Commission) by which states can allocate 15 percent of their quota to bycatch fisheries will continue; therefore, under this incidental catch allocation program it is recommended that: 1) state's implement possession limits such that summer flounder on board do not exceed 10 percent of total landings composition per trip and 2) possession limits be sufficiently restrictive to allow the incidental catch fishery to remain open for the entire year.

5.1.1 Alternative 1 (Council-Preferred TAL)

Alternative 1 includes the Council-recommended summer flounder TAL of 22.13 million lb (10.04 million kg) for 2010. The TAL selected by the Council has a 50 percent probability of achieving the target F=0.26 in 2010 and is projected to have a 5.4 percent probability of overfishing. This TAL is projected to rebuild the spawning stock biomass to SSB_{MSY} by January 1, 2013, and is consistent with the recommendations of the Council's scientific and technical advisors, the SSC and the Summer Flounder Monitoring Committee.

The Council approved a maximum 3 percent RSA for summer flounder in 2010 (663,900 lb; 301,140 kg). After the RSA is deducted from the TAL, the TAL is divided between the commercial and recreational components of the fishery in the same proportion required by the summer flounder regulations; 60 percent to the commercial fishery and 40 percent to the recreational fishery. In 2010, the Council-adjusted commercial quota is 12.88 million lb (5.84 million kg) and the adjusted recreational harvest limit is 8.59 million lb (3.90 million kg). The summer flounder commercial quota is allocated to each state based on 1980-1989 adjusted landings as detailed in Amendment 4 of the FMP. As indicated in Box 5.1.1, state commercial shares would range from 59 lb (27 kg) to 3.54 million lb (1.61 million kg) in 2010. Delaware has had an accrued overage of about 50,000 lb which has resulted in an allocation of 0 for the prior few years.

Box 5.1.1. 2010 Summer flounder commercial fishery state by state allocations for coastwide quota alternatives 1-3[a].

		Quota Allocation (lb)		
State	**Percent**	**Alternative 1**	**Alternative 2**	**Alternative 3**
ME	**0.04756**	6,126	5,107	7,283
NH	**0.00046**	59	49	70
MA	**6.82046**	878,452	732,374	1,044,377
RI	**15.68298**	2,019,915	1,684,023	2,401,444
CT	**2.25708**	290,704	242,363	345,614
NY	**7.64699**	984,906	821,126	1,170,939
NJ	**16.72499**	2,154,122	1,795,913	2,561,001
DE	**0.01779**	2,291	1,910	2,724
MD	**2.0391**	262,629	218,957	312,236
VA	**21.31676**	2,745,526	2,288,972	3,264,112
NC	**27.44584**	3,534,931	2,947,107	4,202,622
Total [a]	**100**	12,879,660	10,737,900	15,312,420

[a]Total quota is the summation of all states having allocation. Delaware had an allocation of zero (0) in 2009 due to an overage of about 50,000 lb.

5.1.2 Alternative 2 (Non-Preferred: Most Restrictive / *Status quo* (No Action) TAL)

The most restrictive alternative for summer flounder is a TAL of 18.45 million lb (8.37 million kg) for 2010. This non-preferred TAL would have just about a 95 percent probability of achieving the target F=0.26 in 2010 and is the same TAL that was implemented in fishing year 2009 (*status quo*). This TAL is projected to rebuild the spawning stock biomass to SSB_{MSY} by January 1, 2013. After deducting the maximum 3 percent RSA of 553,500 lb (251,063 kg) in 2010, the Council-adjusted commercial quota is 10.74 million lb (4.87 million kg) and the adjusted recreational harvest limit is 7.16 million lb (3.25 million kg). The state commercial shares for this alternative would range from 49 lb (22 kg) to 2.95 million lb (1.34 million kg) in 2010 (Box 5.1.1). Delaware has had an accrued overage of about 50,000 lb which has resulted in an allocation of 0 for the prior few years.

5.1.3 Alternative 3 (Non-Preferred: Least Restrictive TAL)

The least restrictive summer flounder alternative includes a TAL of 26.31 million lb (11.93 million kg) in 2010. The proposed TAL has a 50 percent probability of achieving the threshold F=0.31 in 2010, and conversely a 50 percent probability of overfishing. This TAL is not projected to rebuild the spawning stock biomass to SSB_{MSY} by January 1, 2013. After deducting the maximum 3 percent RSA for summer flounder of 789,300 lb (358,020 kg) in 2010, the Council-adjusted commercial quota is 15.31 million lb (6.94 million kg) and the adjusted recreational harvest limit is 10.21 million lb (4.63 million kg). The state commercial shares for this alternative would range from 70 lb (32 kg) to 4.20 million lb (1.91 million kg) in 2010 (Box 5.1.1). Delaware has had an accrued overage of about 50,000 lb which has resulted in an allocation of 0 for the prior few years.

5.2 Scup

The proposed scup alternatives would only modify the 2010 commercial quotas and recreational harvest limits. Changes to other commercial management measures were not recommended for 2010 by the Council, Board, or the Council's scientific and technical advisors, the SSC and the Scup Monitoring Committee. Therefore, other commercial management measures in place will remain unchanged (*status quo*) for the 2010 fishing year (see section 5.5 for additional discussion). For reference, the current regulations require a 9 inch-TL minimum fish size in the commercial fishery and a 5-inch minimum mesh size for the first 75 meshes from the terminus of the net and for codends constructed with fewer than 75 meshes, a minimum mesh size of 5 inch in the entire net for vessels possessing more than the threshold amount of scup, i.e., 500 lb of scup from November 1 through April 30 and 200 lb or more of scup from May 1 through October 31. The minimum vent sizes for scup pots/traps are 3 $^{1}/_{10}$ inch (7.9 cm) in diameter for circular vents, 2 $^{1}/_{4}$ inch (5.7 cm) square vent for each side, or an equivalent rectangular escape vent. The Winter I landings limit is a 30,000 lb possession limit until 80 percent of the landings is reached, and then the possession limit would drop to 1,000 lb; and the possession limit is 2,000 lb in the Winter II fishery. If transfer of quota occurs between Winter I and Winter II, then the Winter II possession limit increases at 1,500 pound intervals for every 500,000 lb of scup transferred. Comprehensive descriptions of scup regulations as detailed in the CFR are available through the website for the NERO of NMFS: http://www.nero.noaa.gov/nero/regs/.

5.2.1 Alternative 1 (Council-Preferred TAL)

The Council-preferred alternative for scup recommends a TAL of 14.11 million lb (6.40 million kg) for 2010. This TAL was recommended by the Council's scientific and technical advisors, the SSC and the Scup Monitoring Committee, and is based on a 10-percent increase in the TAC when compared to the 2009 TAC. Discards were then subtracted from the TAC to derive the initial TAL.

The TAC is allocated to the commercial and recreational fisheries based on the proportions of commercial and recreational catches (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.

Box 5.2.1.1. Derivation of the initial 2010 TALs for scup.

	Alternative 1	Alternative 2	Alternative 3
TAC	17.09	15.54	18.65
Discard Estimate	2.98	2.71	3.25
Initial TAL	14.11	12.83	15.40

The Council approved up to 3 percent of the scup TAL for RSA in 2010. The alternative 1 TAL results in a maximum RSA of 423,300 lb (192,006 kg), which after deducted from the initial TAL in Box 5.2.1.1 results in a Council-adjusted commercial quota of 10.68 million lb (4.84 million kg) and an adjusted recreational harvest limit of 3.01 million lb (1.37 million kg).

Framework Adjustment 3 to the FMP 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, the opportunities to land those scup are not lost for the fishing year. The current scup period allocation formula remains unchanged as detailed in Box 5.2.1.2.

Box 5.2.1.2. Comparison (in million lb) of the commercial scup quota alternatives, by period, for 2010.

		Adjusted Quota (million lb)		
Period	**Percent Allocation**	**Alternative 1**	**Alternative 2**	**Alternative 3**
Annual	100	10.68	9.71	11.65
Winter I (Jan-April)	45.11	4.82	4.38	5.26
Summer (May-Oct)	38.95	4.16	3.78	4.54
Winter II (Nov-Dec)	15.94	1.70	1.55	1.86

5.2.2 Alternative 2 (Non-Preferred: Most Restrictive / *Status quo* (No Action) TAL)

The most restrictive alternative considered for scup in 2010 is a TAL of 12.83 million lb (5.82 million kg). This non-preferred TAL is the same TAL that was implemented in fishing year 2009 (*status quo*). After deducting the maximum RSA for scup under this alternative of 384,900 lb (174,588 kg) from the initial TAL (Box 5.2.1.1), the Council-adjusted commercial quota is 9.71 million lb (4.40 million kg) and an adjusted recreational harvest is 2.74 million lb (1.24 million kg). The current scup period allocation formula remains unchanged as detailed in Box 5.2.1.2.

5.2.3 Alternative 3 (Non-Preferred: Least Restrictive TAL)

The least restrictive alternative considered for scup in 2010 includes a TAL of 15.40 million lb (6.99 million kg). This TAL is based on a 20 percent increase in the TAC when compared to the 2009 TAC. The approved maximum RSA for scup of 462,000 lb (209,560 kg) is then deducted from the initial TAL (Box 5.2.1.1) to result in a Council-adjusted commercial quota of 11.65 million lb (5.28 million kg) and an adjusted recreational harvest limit of 3.29 million lb (1.49 million kg). The current scup period allocation formula remains unchanged as detailed in Box 5.2.1.2.

5.3 Black Sea Bass

The proposed black sea bass alternatives would only modify the 2010 commercial quotas and recreational harvest limits. Changes to other commercial management measures were not recommended for 2010 by the Council and Board. Therefore, other commercial management measures in place will remain unchanged (*status quo*) for the 2010 fishing year (see section 5.5 for additional discussion). For reference, the current regulations require an 11 inch-TL minimum fish size in the commercial fishery and a minimum mesh size of 4.5 inch for the first 75 meshes from the terminus of the net in the codends for large nets, or 4.5 inch in the entire net for small nets of vessels possessing more than the threshold amount of black sea bass, i.e., 500 lb of black sea bass from January 1 through March 31 and 100 lb or more of black sea bass from April 1 through December 31. The minimum vent sizes for black sea bass pots/traps are 2 $^{1}/_{2}$ inch (6.4 cm) in diameter for circular vents, 2 inch (5.1 cm) square vents, or a 1 $^{3}/_{8}$ x 5 $^{3}/_{4}$ inch (3.5 x 14.6 cm) rectangular escape vent; with two additional vents required in the parlor portion of the trap. The black sea bass regulations in the CFR are available through the website for the NERO of NMFS: http://www.nero.noaa.gov/nero/regs/.

5.3.1 Alternative 1 (Council-Preferred: *Status quo* (No Action) TAL)

The Council-preferred alternative for black sea bass recommends a TAL of 2.30 million lb (1.04 million kg) for 2010. This TAL is consistent with the recommendations of the Council's SSC. This Council-preferred TAL is the same TAL that was implemented in fishing year 2009 (*status quo*). Based on landings data from 1983 to 1992, 49 percent of the TAL is allocated to the commercial fishery, and 51 percent is allocated to the recreational fishery. The Council approved a maximum of 3 percent of the 2010 TAL to be set-aside for research. Under Alternative 1, RSA

for black sea bass of 69,000 lb (31,298 kg) is then deducted from the initial TAL to result in a Council-adjusted commercial quota of 1.09 million lb (0.49 million kg), and an adjusted recreational harvest of 1.14 million lb (0.52 million kg).

5.3.2 Alternative 2 (Non-Preferred: Most Restrictive TAL)

The most restrictive alternative considered for black sea bass in 2010 is a TAL of 2.07 million lb (0.94 million kg). This TAL is based on a 10 percent decrease in the TAC compared to the 2009 TAC. After deducting the approved RSA for black sea bass of 62,100 lb (28,168 kg) from the initial TAL, the Council-adjusted commercial quota is 0.98 million lb (0.44 million kg), and the adjusted recreational harvest is 1.02 million lb (0.46 million kg).

5.3.3 Alternative 3 (Non-Preferred: Least Restrictive TAL)

The least restrictive TAL considered for black sea bass in 2010 is 4.80 million lb (2.18 million kg). This TAL is based on maintaining the most recent estimate of F for this stock (2008-F=0.28) in 2010. After the approved RSA for black sea bass of 144,000 lb (65,317 kg) is deducted, the Council-adjusted commercial quota is 2.28 million lb (1.03 million kg), and the adjusted recreational harvest is 2.37 million lb (1.08 million kg).

5.4 Research Set-Aside Measures

Framework Adjustment 1 to the Summer Flounder, Scup, and Black Sea Bass FMP established a program in which research projects can be funded through the sale of fish that have been set-aside from the total annual quota. Through the Mid-Atlantic RSA Program, the Council encourages collaborative efforts among the public, research institutions, and government agencies in broadening the scientific base upon which management decisions are made. Reserving a small portion of the annual harvest as research set-aside quota to subsidize the research costs of vessel operations and scientific expertise is considered an important investment in the future of the nation's fisheries.

In addition, the Mid-Atlantic RSA Program assures that research endeavors selected and funded under this program will receive the peer-review and analysis necessary to be utilized in improving the management of public fisheries resources. The annual research set-aside amount may vary between 0 and 3 percent of each species' quota. For those species that have both a commercial quota and a recreational harvest limit, the set-aside calculation shall be made from the combined TAL.

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

Under this alternative, no RSA will be implemented for summer flounder, scup, or black sea bass in 2010. Thus, the quotas would not be adjusted downward for the RSAs.

5.4.2 Alternative 2 (Council-Preferred: Specify Research Set-Asides/*Status quo*)

The Council has recommended that 3 percent of the 2010 summer flounder, scup, and black sea bass quotas be set-aside under the preferred alternatives. As such, 663,900 lb (301,140 kg), 423,300 lb (192,006 kg), and 69,000 lb (31,298 kg), respectively, will be set-aside to fund projects selected under the 2010 Mid-Atlantic RSA Program. Under this program, research projects may request up to 3 percent of the TAL for each species. If any portion of the research quota is not awarded, NMFS will publish a notice in the *Federal Register* notifying the public of a quota adjustment and will return any un-awarded set-aside amount to the commercial and recreational fisheries.

To expedite the implementation of the 2010 Mid-Atlantic RSA Program, the environmental impacts of the compensation fishing aspects of this program are analyzed in this document. For analysis of impacts for each of the TAL alternatives, the maximum potential RSA amount of 3 percent of the overall TAL was deducted to derive the Council-adjusted commercial quotas and Council-adjusted recreational harvest limits (see sections 5.1-5.3, and 7.4). To facilitate compensation fishing, exempted fishing permits are regularly issued to vessels conducting compensation fishing in support of projects funded under the Mid-Atlantic RSA Program. Exemptions may include exemption from Federal quota closures and summer flounder, scup, and black sea bass possession limits. MSA requires that interested parties are provided an opportunity to comment on all proposed exempted fishing permits. This document analyzes the potential impact of exempted fishing permits that are issued in support of compensation fishing activities with respect to the summer flounder, scup, and black sea bass FMP. Potential environmental impacts of this program on *Illex*, *Loligo*, butterfish, Atlantic mackerel, and bluefish are addressed in their respective specification documents. Additional consultation and analysis with respect to NEPA, ESA, MSA, and other applicable law may be necessary if additional exemptions are requested. Environmental impacts for research conducted with RSA funding and exempted fishing permits associated with said research will be analyzed and authorized in a separate rulemaking process.

5.5 "True" No-Action Alternatives – (Summer Flounder, Scup, and Black Sea Bass)

Section 5.03(b) of NOAA Administrative Order (NAO) 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; and the other interpretation is when a proposed project, such as building a railroad facility, does not take place. In the case of the proposed 2010 specifications for summer flounder, scup, and black sea bass, determining the no action alternative is slightly more complicated than either of these interpretations suggest.

The *status quo* management for the summer flounder, scup, and black sea bass fisheries each involve 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 TALs that are specific to the 2009 fishing year. In the case of scup, it is also required a TAC be specified. There are no "roll-over" provisions currently for these three fisheries provided for in the FMP. Thus, if the proposed 2010 summer flounder, scup, or black sea bass specifications are not implemented for one or all of these fisheries by January 1, 2010, that fishery/or fisheries will operate without an identified cap on allowable landings. Therefore, because of the subtleties in the management program for each FMP species the no action alternative is not equivalent to *status quo*. If the action that results in setting the proposed specifications for any/or all of these fisheries is not taken, some current measures will remain in place, but the overall management program for those fisheries will not be identical to that of 2009.

For the purposes of this EA, the no action alternative for summer flounder is defined as follows: (1) no proposed specifications for the 2010 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) no quota set-aside allocated to research in 2010; and (4) no specific cap on the allowable annual landings in this fishery (i.e., no quota). Under the no action alternative, the only regulatory controls on fishing effort and harvests would be the indefinite[3] 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 2010.

For the purposes of this EA, the no action alternative for scup is defined as follows: (1) no proposed specifications for the 2010 scup fishery will be published; (2) the indefinite management measures (minimum sizes, bag limits, possession limits, permit and reporting requirements, etc.) remain unchanged; (3) no quota set-aside allocated to research in 2010; and (4) no specific cap on the allowable annual landings in this fishery (i.e., no quota). Under the no action alternative, the only regulatory controls on fishing effort and harvests would be the indefinite[3] 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 2010.

For the purposes of this EA, the no action alternative for black sea bass is defined as follows: (1) no proposed specifications for the 2010 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) no quota set-aside allocated to research in

[3] A summary of the regulations for summer flounder, scup, and black sea bass is provided in sections 5.1, 5.2, and 5.3, respectively. Comprehensive descriptions of the regulations as detailed in the Code of Federal Regulations (CFR) are available through the website for the Northeast Regional Office (NERO) of NMFS: http://www.nero.noaa.gov/nero/regs/.

2010; and (4) no specific cap on the allowable annual landings in this fishery (i.e., no quota). Under the no action alternative, the only regulatory controls on fishing effort and harvests would be the indefinite[3] 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 2010.

The implications of the no action alternatives are substantial. These alternatives do not allow NMFS to specify and implement a TAL (also TAC in the case of scup) for these fisheries, 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 caps from being exceeded, as applicable, is essential for management of these fisheries and forms the backbone of the current quota-based management systems under the FMP. The no action alternative is inconsistent with the goals and objectives of the FMP, as well as its implementing regulations, and may result in overfishing or cause the level of acceptable biological catch (ABC) for summer flounder, scup, and/or black sea bass to be exceeded. By not preventing overfishing and/or allowing the ABC to be exceeeded, it is also inconsistent with the MSA. The no action alternatives are not considered reasonable; therefore, they are not analyzed further in the EA. Therefore, the alternatives for summer flounder, scup, and black sea bass are compared to summer flounder alternative 2, scup alternative 2, and black sea bass alternative 1, respectively, which are the *status quo* alternatives (base line) as opposed to the "true" no action alternatives described above.

6.0 DESCRIPTION OF THE AFFECTED ENVIRONMENT AND FISHERIES

6.1 Description of the Managed Resource

6.1.1 Description of the Fisheries

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 FMP (MAFMC 2002) and are also outlined by principal port in section 3.4.2 of that document. Otter trawls are utilized in the commercial fisheries for all three species. In addition, floating traps and pots/traps are utilized to capture scup and black sea bass, respectively. An overview of commercial and recreational fisheries trends in landings for each of the FMP species is provided below. The commercial landings are based on Dealer Weighout Data, as of June 1, 2009, and South Atlantic General Canvass Data as of June 8, 2009; recreational landings are based on Marine Recreational Fisheries Statistical Survey (MRFSS) data. As discussed in section 4.1, annual TALs are implemented through this specifications document to achieve fishing mortality targets to ensure overfishing does not occur and any rebuilding goals are met. These controls on fishery removals (i.e., output controls) result in landings trends that may or may not closely follow trends in stock abundance. In the summer flounder commercial fishery, any landings overages are subtracted from the initial quota for a given state the following year. For the scup and black sea bass commercial fisheries, landings overages are subtracted from the following year's initial quota by period for scup and coastwide for black sea bass. An exception to this requirement occurred when a court ruling added 3.05 million lb (1.38 million kg) to the summer flounder commercial fishery for 1995 (February 16, 1995, 60 FR 8958). In the recreational fishery, projected landings in a given year are used by the Council in recommending recreational management measures for the subsequent year. The recreational fishery has target harvest levels. Due to the lengthy time lag (i.e. months) in recreational data collection, when compared to the commercial landings information which is available in a more timely manner, in-season adjustment and closures of the recreational fisheries for summer flounder, scup, and black sea bass are typically not feasible.

6.1.1.1 Summer Flounder

Commercial and recreational summer flounder landings are graphed to show the relative contributions of each to total landings in Figure 1. Commercial landings peaked in 1984 at 37.77 million lb (17.13 million kg) and then declined rapidly to a low of 9.26 million lb (4.20 million kg) in 1990. In 2008, commercial landings were 9.13 million lb (4.14 million kg). The mean for the commercial time series, 1980 to 2008 is 18.07 million lb (8.20 million kg). Recreational landings peaked in 1980 at 38.22 million lb (17.34 million kg) and then declined rapidly to a time series low of 3.16 million lb (1.43 million kg) in 1989. In 2008, recreational landings were 7.90 million lb (3.58 million kg). The mean for the recreational time series, 1980 to 2008 is 12.36 million lb (5.61 million kg). Combined commercial and recreational landings were 17.04 million lb (7.73 million kg) in 2008.

The landings history for this stock, with respect to achieving the coastwide TALs (both recreational and commercial fisheries combined), is given in Box 6.1.1.1 below. This information indicates a pattern of exceeding the summer flounder coastwide TAL in 8 of the 10 most recent years.

Box 6.1.1.1. Summer Flounder TAL,[a] and any landings overages above the coastwide TAL (both sectors combined), in million lb.

Year	TAL	Total Landings	Overage
1999	18.52	18.99	0.47
2000	18.52	27.70	9.18
2001	17.91	22.58	4.67
2002	24.30	22.50	-
2003	23.30	25.93	2.63
2004	28.20	28.81	0.61
2005	30.30	27.86	-
2006	23.59	25.47	1.88
2007	17.11	19.83	2.72
2008[b]	15.77	17.04	1.27
2009	18.45	-	n/a

[a]Includes both commercial quotas and recreational harvest limits.
[b]Preliminary. Commercial landings based on Dealer Weighout Data, as of June 1, 2009; recreational landings based on MRFSS. Note: 2009 landings not yet available.

6.1.1.2 Scup

Commercial and recreational scup landings are graphed to show the relative contributions of each to total landings in Figure 2. Commercial landings peaked in 1981 at 21.73 million lb (9.86 million kg) and then declined rapidly to a time series low of 2.66 million lb (1.21 million kg) in 2000. In 2008, commercial landings were 5.17 million lb (2.35 million kg). The mean for the commercial time series, 1981 to 2008 is 10.43 million lb (4.73 million kg). Recreational landings peaked in 1986 at 11.61 million lb (5.27 million kg) and then declined rapidly to a time series low of 0.88 million lb (0.40 million kg) in 1998. In 2008, recreational landings were 4.04 million lb (1.83 million kg). The mean for the recreational time series, 1981 to 2008 is 4.38 million lb (1.99 million kg). Combined commercial and recreational landings were 9.21 million lb (4.18 million kg) in 2008.

The landings history for this stock, with respect to achieving the coastwide TALs (both recreational and commercial fisheries combined) is given in Box 6.1.1.2 below. This information indicates that since 1999, the scup coastwide TAL was exceeded from 1999 to 2003 and in 2007.

Box 6.1.1.2. Scup TAL,[a] and any landings overages above the coastwide TAL (both sectors combined), in million lb.

Year	TAL	Total Landings	Overage
1999	3.77	5.20	1.43
2000	3.77	8.10	4.33
2001	6.21	8.33	2.12
2002	10.77	10.91	0.14
2003	16.50	18.38	1.88
2004	16.50	13.57	-
2005	16.49	11.95	-
2006	16.27	11.92	-
2007	12.00	12.90	0.90
2008[b]	11.18	9.21	-
2009	14.11	-	n/a

[a]Includes both commercial quotas and recreational harvest limits.
[b]Preliminary. Commercial landings based on Dealer Weighout Data, as of June 1, 2009; recreational landings based on MRFSS. Note: 2009 landings not yet available.

6.1.1.3 Black Sea Bass

Commercial and recreational black sea bass landings are graphed to show the relative contributions of each to total landings in Figure 3. Commercial landings peaked in 1984 at 4.33 million lb (1.96 million kg) and then declined rapidly to a time series low of 2.07 million lb (0.93 million kg) in 1995. In 2008, commercial landings were 1.87 million lb (0.85 million kg). The mean for the commercial time series, 1981 to 2008 is 3.01 million lb (1.37 million kg). Recreational landings peaked in 1986 at 12.46 million lb (5.65 million kg) and then declined rapidly to a time series low of 1.29 million lb (0.59 million kg) in 1998. In 2008, recreational landings were 1.64 million lb (0.74 million kg). The mean for the recreational time series, 1981 to 2008 is 3.75 million lb (1.70 million kg). Combined commercial and recreational landings were 3.50 million lb (1.59 million kg) in 2008.

The landings history for this stock, with respect to achieving the coastwide TALs (both recreational and commercial fisheries combined), is given in Box 6.1.1.3 below. This information indicates that the black sea bass coastwide TAL was exceeded from 2000 to 2002; the TAL was not exceeded in 7 of the 10 most recent years.

Box 6.1.1.3. Black sea bass TAL,[a] and any landings overages above the coastwide TAL (both sectors combined), in million lb.			
Year	**TAL**	**Total Landings**	**Overage**
1999	6.17	4.61	-
2000	6.17	6.80	0.63
2001	6.17	6.45	0.28
2002	6.80	7.91	1.11
2003	6.80	6.45	-
2004	8.00	4.69	-
2005	8.20	4.95	-
2006	8.00	4.89	-
2007	5.00	4.62	-
2008[b]	4.22	3.50	-
2009	2.30	-	n/a

[a]Includes both commercial quotas and recreational harvest limits.
[b]Preliminary. Commercial landings based on Dealer Weighout Data, as of June 1, 2009, and South Atlantic General Canvass Data as of June 8, 2009; recreational landings based on MRFSS. Note: 2009 landings not yet available.

6.1.2 Description of the Stock (Including Status, Stock Characteristics, and Ecological Relationships)

Reports on "Stock Status," including annual assessment and reference point update reports, Stock Assessment Workshop (SAW) reports, Stock Assessment Review Committee (SARC) panelist reports, and Data Poor Stocks Working Group (DPSWG) reports and peer-review panelst reports are available online at the NEFSC website: http://www.nefsc.noaa.gov.

EFH Source Documents, which include details on stock characteristics and ecological relationships, are available at the following website:
http://www.nefsc.noaa.gov/nefsc/habitat/efh/.

6.1.2.1 Summer Flounder

The most recent peer-reviewed assessment of summer flounder was June 2008 during SAW 47 (NEFSC 2008). The model used to assess the stock changed from the ADAPT VPA model to a statistical catch at age model, called Age Structured Assessment Program (ASAP). An assessment update was conducted in June 2009, which utilized the most recent data and applied the exact same methods that were validated by the 2008 peer-review.

Using the updated stock status information, relative to the biological reference points, the stock is not overfished and overfishing was not occurring in the most recent year, 2008 (Box 6.1.2.1). The fishing mortality rate has declined to below 1.00 since 1997 and was estimated to be 0.25 in 2008, below the fishing mortality threshold of F=0.31. There is a 50 percent probability that the

fishing mortality rate in 2008 was between 0.23 and 0.27. Over the last 5 years, the annual retrospective pattern in fishing mortality has ranged from +13 percent in 2006 to -34 percent in 2003. Spawning stock biomass (SSB) has increased since the early 1990s to 101.5 million lb (46.0 million kg) on November 1, 2008, which is above the biomass threshold of one-half SSB_{MSY} = 66.2 million lb (30.0 million kg). There is a 50 percent chance that SSB in 2008 was between 102.8 million lb (46.6 million kg) and 108.8 million lb (49.4 million kg). Over the last 5 years, the annual retrospective pattern in SSB has ranged from -12 percent in 2006 to +41 percent in 2003. The arithmetic average year-class estimate from 1982 to 2008 is 41.8 million fish at age 0. The 2008 year-class is currently estimated to be about 57.9 million fish. Retrospective analysis shows no trend in estimation of year-class strength in the most recent years.

A full description of stock characteristics and ecological relationships of summer flounder is presented in section 3.1.1 of Amendment 13 to the FMP (MAFMC 2002). Additional information can be found in the document titled, "Essential Fish Habitat Source Document: Summer Flounder, *Paralichthys dentatus*, Life History and Habitat Characteristics" (Packer et al. 1999).

Box 6.1.2.1 Summer Flounder Stock Status Information[a], 2000-2008.

Year	Updated F Estimate	Overfishing? ($F_{threshold}$=0.31)	Spawning Stock Biomass (million lb)	Overfished? ($SSB_{threshold}$=66.2 million lb)	Year Class Estimate (millions of fish)
2000	0.68	Yes	67.5	No	39.8
2001	0.49	Yes	79.6	No	37.6
2002	0.43	Yes	90.8	No	43.0
2003	0.41	Yes	99.0	No	33.3
2004	0.44	Yes	101.6	No	52.6
2005	0.44	Yes	99.2	No	24.6
2006	0.34	Yes	98.8	No	23.3
2007	0.26	No	95.2	No	27.8
2008	0.25	No	101.4	No	57.9

[a] Based on SAW 47 (NEFSC 2008) and the June 2009 Assessment Update; therefore, values in this box may not match those in the prior year's specifications document.

6.1.2.2 Scup

The most recent assessment for scup was peer-reviewed and accepted in December 2008 by the Data Poor Stocks Workgroup (DPSWG) Peer Review Panel (NEFSC 2009). The model used to assess the stock changed from index-based methods to a statistical catch at age model, called Age Structured Assessment Program (ASAP). An assessment update was conducted in June 2009, which utilized the most recent data and applied the exact same methods that were validated by the 2008 peer-review.

Using the updated stock status information, relative to the biological reference points, the stock is not overfished and overfishing was not occurring in the most recent year, 2008 (Box 6.1.2.1). Fishing mortality varied between F=0.1 and F=0.3 during the 1960s and 1970s. Fishing mortality increased steadily during the 1980s and early 1990s, peaking at F=1.0 in 1994. Fishing mortality decreased after 1994, falling to less than F=0.1 since 2003, with F=0.048 in 2008. There is a 50 percent chance that F in 2008 was between 0.041 and 0.066. Spawning stock biomass (SSB) decreased from about 220 million lb (100 million kg) in 1963 to about 110 million lb (50 million kg) in 1969, then increased to about 165 million lb (75 million kg) during the mid 1970s. SSB declined through the 1980s and early 1990s to less than 11 million lb (5 million kg) in the mid-1990s. With greatly improved recruitment and low fishing mortality rates since 1998, SSB has steadily increased to about 414.5 million lb (188 million kg) in 2008. There is a 50 percent chance that SSB in 2008 was between 396.8 million lb (180 million kg) and 432.1 million lb (196 million kg). The arithmetic average year-class estimate from 1984 to 2008 is about 110 million fish at age 0. The 2008 year-class is currently estimated to be about 192.4 million fish. There is no consistent retrospective pattern in estimation of recruitment, fishing mortality, or SSB.

The stock characteristics and ecological relationships of scup are fully described in section 3.1.2 of Amendment 13 to the FMP (MAFMC 2002). Additional information can be found in the document titled, "Essential Fish Habitat Source Document: Scup, *Stenotomus chrysops*, Life History and Habitat Characteristics" (Steimle et al. 1999).

Box 6.1.2.2 Scup Stock Status Information[a], 2000-2008.

Year	Updated F Estimate	Overfishing? ($F_{threshold}$=0.18)	Spawning Stock Biomass (million lb)	Overfished? ($SSB_{threshold}$=101.5 million lb)	Year Class Estimate (millions of fish)
2000	0.15	No	55.6	Yes	266.9
2001	0.08	No	110.9	No	154.9
2002	0.12	No	177.5	No	118.1
2003	0.09	No	232.4	No	89.7
2004	0.06	No	261.0	No	157.9
2005	0.04	No	293.4	No	159.2
2006	0.05	No	314.2	No	199.3
2007	0.05	No	348.8	No	113.0
2008	0.05	No	414.5	No	192.4

[a]Based on DPSWG assessment (NEFSC 2009) and June 2009 Assessment Update; therefore, values in this box may not match those in the prior year's specifications document.

6.1.2.3 Black Sea Bass

The most recent assessment for black sea bass was peer-reviewed and accepted in December 2008 by the Data Poor Stocks Workgroup (DPSWG) Peer Review Panel (NEFSC 2009). The

model used to assess the stock changed from index-based methods to a length-structured assessment model, called Statistical Catch at Length (SCALE). An assessment update was conducted in June 2009, which utilized the most recent data and applied the exact same methods that were validated by the 2008 peer-review.

Using the updated stock status information, relative to the biological reference points, the stock is not overfished and overfishing was not occurring in the most recent year, 2008 (Box 6.1.2.1). Fishing mortality varied between F=0.20 and F=0.72 during the 1960s and 1970s. Fishing mortality increased steadily during the 1980s and early 1990s, peaking at F=1.27 in 1986. Fishing mortality remained high until after 2001 (F=1.09), falling steadily to F=0.28 in 2008, less than the threshold F=0.42. Spawning stock biomass (SSB) decreased from about 27.0 million lb (12.3 million kg) in 1975 to about 18.1 million lb (8.2 million kg) in 1979, then increased to about 25.4 million lb (11.5 million kg) during the mid-1980s. SSB declined through the 1980s and early 1990s to only 13.6 million lb (6.2 million kg) in 1996. With improved recruitment and low fishing mortality rates since 2001, SSB has steadily increased to about 28.4 million lb (12.9 million kg) in 2008. Recruitment averaged 26.4 million fish during 1968-1999 but increased to 56 million in 2000 followed by recruitment of 39 million fish in 2002. Although 2004 recruitment was the lowest in the time series, recent years have been near average. The black sea bass model presented no consistent retrospective pattern in F or recruitment but did show a potential over-estimation of total biomass in the terminal year (most recent year).

A full description of stock characteristics and ecological relationships is presented in section 3.1.1 of Amendment 13 to the FMP (MAFMC 2002). Additional information can be found in the documents titled, "Essential Fish Habitat Source Document: Black Sea Bass, *Centropristis striata*, Life History and Habitat Characteristics" (Steimle et al. 1999) and an update of that document, "Essential Fish Habitat Source Document: Black Sea Bass, *Centropristis striata*, Life History and Habitat Characteristics (Second Edition)" (Drohan et al. 2007).

Box 6.1.2.3 Black Sea Bass Stock Status Information[a], 2000-2008.

Year	Updated F Estimate	Overfishing? ($F_{threshold}$=0.42)	Spawning Stock Biomass (million lb)	Overfished? ($SSB_{threshold}$=13.8 million lb)	Year Class Estimate (millions of fish)
2000	0.93	Yes	18.7	No	56.0
2001	1.09	Yes	22.3	No	26.1
2002	0.98	Yes	28.2	No	39.3
2003	0.81	Yes	28.2	No	26.3
2004	0.56	Yes	28.0	No	20.2
2005	0.40	No	27.8	No	24.3
2006	0.39	No	27.6	No	23.5
2007	0.37	No	27.3	No	29.0
2008	0.28	No	28.4	No	27.8

[a]Based on DPSWG assessment (NEFSC 2009) and June 2009 Assessment Update; therefore, values in this box may not match those in the prior year's specifications document.

6.1.3 Non-target Species

The summer flounder, scup and black sea bass 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. Section 5.1.9 of Amendment 13 to the FMP (MAFMC 2002) provides a full description of bycatch and/or non-target species in these fisheries. The term "bycatch," as defined by the MSA, 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 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 fish released alive under a recreational catch-and-release fishery management program.

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 to the FMP (MAFMC 2002), and a brief summary of that information is given here. The impact of fishing on summer flounder, scup, and black sea bass on habitat (and EFH) and the impact of the summer flounder, scup, and black sea bass fisheries on other species' habitat and EFH can be found in Amendment 13 to the FMP (section 3.2; MAFMC 2002). Potential impacts associated with the measures proposed in this specifications document on habitat (including EFH) 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 continental 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 through North Carolina. Additional information on summer flounder habitat requirements can be found in the document titled, "Essential Fish Habitat Source Document: Summer Flounder, *Paralichthys dentatus*, Life History and Habitat Characteristics" (Packer et al. 1999). An electronic version of this source document is available at the following website: http://www.nefsc.noaa.gov/nefsc/habitat/efh/. The current EFH designation definitions by life history stage for summer flounder are available at the following website: http://www.nero.noaa.gov/hcd/list.htm.

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 (MAFMC 2002). Summer flounder are primarily landed by bottom otter trawls.

Amendment 13 included alternatives to minimize the adverse impacts of fishing gear on EFH (as required pursuant to section 303(a)(7) of the SFA). As stated in section 3.2 of Amendment 13, the Council determined that both mobile bottom tending and stationary gear have a potential to adversely impact EFH. The analysis in that document also indicated that no management measures were needed, because in Federal waters the fishery is conducted primarily in high energy mobile sand and bottom habitat, where gear impacts are minimal and/or temporary in nature. On that basis, the Council selected the no action alternative, from among the suite of alternatives to minimize fishing gear impacts on EFH in Amendment 13 to the FMP. There have be no significant changes to the manner in which the summer flounder fishery is prosecuted, and none of the alternatives being considered in this document would adversely affect EFH (see section 7.0); therefore, the effects of fishing on EFH have not been re-evaluated since Amendment 13 to the FMP, and no alternatives to minimize adverse effects on EFH are presented in this document.

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 includes demersal waters, sands, mud, mussel and seagrass beds, from the Gulf of Maine through Cape Hatteras, North Carolina. Additional information on scup habitat requirements can be found in the documents titled, "Essential Fish Habitat Source Document: Scup, *Centropristis striata*, Life History and Habitat Characteristics" (Steimle et al. 1999) and an update of that document, "Essential Fish Habitat Source Document: Scup, *Centropristis striata*, Life History and Habitat Characteristics (Second Edition)" (Drohan et al. 2007). An electronic version of the source documents is available at the following website: http://www.nefsc.noaa.gov/nefsc/habitat/efh/. The current EFH designation definitions by life history stage for scup are available at the following website:
http://www.nero.noaa.gov/hcd/list.htm.

Any actions implemented in the FMP that affect species with overlapping EFH were considered in the EFH assessment for Amendment 13 to the FMP (MAFMC 2002). Scup are primarily landed by fish pots/traps, bottom and midwater trawls, and lines. Amendment 13 included alternatives to minimize the adverse impacts of fishing gear on EFH (as required pursuant to section 303(a)(7) of the SFA). As stated in section 3.2 of Amendment 13, the Council determined that both mobile bottom tending and stationary gear have a potential to adversely impact EFH. The analysis in that document also indicated that no management measures were needed, because in Federal waters the fishery is conducted primarily in high energy mobile sand and bottom habitat, where gear impacts are minimal and/or temporary in nature. On that basis, the Council selected the no action alternative, from among the suite of alternatives to minimize fishing gear impacts on EFH in Amendment 13 to the FMP. There have be no significant changes to the manner in which the scup fishery is prosecuted, and none of the alternatives being considered in this document would adversely affect EFH (see section 7.0); therefore, the effects of fishing on EFH have not been re-evaluated since Amendment 13 to the FMP, and no alternatives to minimize adverse effects on EFH are presented in this document.

6.2.3 Black Sea Bass

The northern population of black sea bass spawns in the Middle Atlantic Bight continental shelf during the spring through fall. 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; these pelagic eggs are closely associated with spawning. Collections of ripe fish and egg distributions indicate that 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 for black sea bass is pelagic waters, structured habitat (e.g., sponge beds), rough bottom shellfish, sand and shell, from the Gulf of Maine through Cape Hatteras, North Carolina. Additional information on black sea bass habitat requirements can be found in the document titled, "Essential Fish Habitat Source Document: Black Sea Bass, *Centropristis striata*, Life History and Habitat Characteristics" (Steimle et al. 1999; 2007). An electronic version of this source document is available at the following website: http://www.nefsc.noaa.gov/nefsc/habitat/efh/. The current EFH designation definitions by life history stage for black sea bass are available at the following website: http://www.nero.noaa.gov/hcd/list.htm.

Any actions implemented in the FMP that affect species with overlapping EFH were considered in the EFH assessment for Amendment 13 to the FMP (MAFMC 2002). Black sea bass are primarily landed by fish pots/traps, bottom and midwater trawls, and lines. Amendment 13 included alternatives to minimize the adverse impacts of fishing gear on EFH (as required pursuant to section 303(a)(7) of the SFA). As stated in section 3.2 of Amendment 13, the Council determined that both mobile bottom tending and stationary gear have a potential to adversely impact EFH. The analysis in that document also indicated that no management measures were needed, because in Federal waters the fishery is conducted primarily in high energy mobile sand and bottom habitat, where gear impacts are minimal and/or temporary in nature. On that basis, the Council selected the no action alternative, from among the suite of alternatives to minimize fishing gear impacts on EFH in Amendment 13 to the FMP. There have be no significant changes to the manner in which the black sea bass fishery is prosecuted, and none of the alternatives being considered in this document would adversely affect EFH (see section 7.0); therefore, the effects of fishing on EFH have not been re-evaluated since Amendment 13 to the FMP, and no alternatives to minimize adverse effects on EFH are presented in this document.

6.3 Endangered and Protected Species

There are numerous species inhabiting the environment, within the management unit of the three species managed through this FMP, that are afforded protection under the Endangered Species Act (ESA) of 1973 (i.e., for those designated as threatened or endangered), the Marine Mammal Protection Act of 1972 (MMPA), and/or the Migratory Bird Act of 1918. Sixteen are classified as endangered or threatened under the ESA and are listed below in Box 6.3. A more detailed description of the species listed as endangered or threatened, including ecological relationships and life history information, is presented in Appendix A; however, information on protected species which have had documented encounters with the gear used to commercially harvest summer flounder, scup, and black sea bass are given in this section. The potential impacts to protected species associated with the proposed measures under this specifications document are discussed in section 7.0.

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. (2008). The most recent information on the stock assessment of various marine mammals through 2008 can be found at: http://www.nmfs.noaa.gov/pr/sars/.

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

Under section 118 of the MMPA of 1972, NMFS must publish, and annually update, the List of Fisheries (LOF), 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).

Box 6.3. Species protected by the ESA, MMPA, or the Migratory Bird Act that are found in the environment utilized by the summer flounder, scup, and black sea bass fisheries.			
Species	**Common name**	**Scientific Name**	**Status**
Whales	Northern right	*Eubalaena glacialis*	Endangered
	Humpback	*Megaptera novaeangliae*	Endangered
	Fin	*Balaenoptera physalus*	Endangered
	Blue	*Balaenoptera musculus*	Endangered
	Sei	*Balaenoptera borealis*	Endangered
	Sperm	*Physeter macrocephalus*	Endangered
Sea Turtles	Leatherback	*Dermochelys coriacea*	Endangered
	Kemp's ridley	*Lepidochelys kempii*	Endangered
	Green	*Chelonia mydas*	Endangered
	Hawksbill	*Eretmochelys imbricata*	Endangered
	Loggerhead	*Caretta caretta*	Threatened
Fish	Shortnose sturgeon	*Acipenser brevirostrum*	Endangered
	Atlantic salmon	*Salmo salar*	Endangered
Birds	Roseate tern	*Sterna dougallii dougallii*	Endangered
	Piping plover	*Charadrius melodus*	Endangered

If the total annual mortality and serious injury of all fisheries that interact with a stock is less than 10 percent of the Potential Biological Removal[4] (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

[4] 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).

Category III, there is information indicating no more than a "remote likelihood"[5] 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. All types of commercial fishing gear are required to meet the gear restrictions detailed in the Atlantic Large Whale Take Reduction Plan, the Harbor Porpoise Take Reduction Plan, the MMPA, and the ESA. These restrictions are intended to reduce fishery interactions and incidental injury or mortality of protected resources.

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 mixed fisheries (indiscriminate), where squid, Atlantic mackerel, silver hake, skates, and other species are harvested with summer flounder, scup, and/or black sea bass.

The 2009 LOF indicates that the Mid-Atlantic bottom trawl fishery is a Category II fishery, with potential to result in incidental injury and mortality of Western North Atlantic common dolphins, short-finned pilot whales, long-finned pilot whales, and white-sided dolphin. According to Waring et al. (2008), in 1999 there was one reported pilot whale taken in the Mid-Atlantic mixed species trawl fisheries fishery. The incidental take was observed on a trip that landed silver hake as the primary species. In 1997, there was one observed common dolphin incidentally taken in the Southern New England/Mid-Atlantic bottom trawl fishery reported (Waring et al. 2008); however, summer flounder, scup, and black sea bass were not the target species. One white-sided dolphin incidental take was observed in the Mid-Atlantic bottom trawl fishery in 1997; no takes were observed from 1998 through 2004 or in 2006, and one take was observed in 2005 (Waring et al., 2008). The Atlantic mixed species trap/pot fishery is listed as a Category II fishery in the 2009 LOF, with potential to result in incidental injury and mortality of North Atlantic fin whales and humpback whales in the Gulf of Maine. This fishery was classified by analogy. There have been no observed interactions of fin and humpback whales with the Atlantic mixed species trap/pot fishery; however, the lobster trap/pot fishery has been involved in entanglements with large cetaceans. Therefore, there are no documented marine mammal species or stocks with incidental injury and mortality resulting from the Atlantic mixed species trap/pot fishery where scup or black sea bass was the target species. Smaller quantities of summer flounder are caught by the Mid-Atlantic commercial sea scallop dredge fishery, the hook and line fishery, and the pound net fishery. All three of these fisheries are listed as Category III under the 2009 LOF, and none of them have documented marine mammal takes.

The NMFS observer data for the period of January 2000 to December 2008 indicate there were twenty-four sea turtle takes (2 green, 1 Kemp's ridley, 1 leatherback, 17 loggerhead, 3 unknown spp.) where summer flounder was the species being targeted. These twenty-two takes either involved bottom otter trawls for fish or gill nets; one green turtle was released alive and

[5] A commercial fishery with a "remote likelihood" of causing incidental mortality and serious injury of marine mammals is one that collectively with other fisheries is responsible for the annual removal of: (1) 10% or less of any marine mammal stock's potential biological removal level, or (2) More than 10% of any marine mammal stock's PBR level, yet that fishery by itself is responsible for the annual removal of 1 percent or less of that stock's PBR level.

uninjured (gill net) and one green was dead (fresh; gill net), one Kemp's ridley turtle was dead (fresh; trawl), one leatherback turtle was released alive and uninjured (trawl), fourteen loggerheads turtles were released alive and uninjured (12 trawl; 2 gill net), one loggerhead was released alive and resuscitated (trawl), one loggerhead was dead (trawl), and one loggerhead was dead and severely decomposed (trawl), and three unknown turtle species (trawl) were dead and severely decomposed and one with release condition unknown (NMFS, pers. comm. August 5, 2009).

Since 1992, all vessels using bottom trawls to fish for summer flounder in specific areas and times off VA and NC have been required to use NMFS-approved Turtle Excluder Devices (TEDs) in their nets (57 FR 57358, December 4, 1992; 50 CFR 223.206(d)(2)(iii)). NMFS announced in May 2009 (74 FR 21627, May 8, 2009) its intention to prepare an Environmental Impact Statement (EIS) and to conduct public scoping meetings to comply with NEPA by assessing potential impacts resulting from the proposed implementation of new sea turtle regulations in the Atlantic and Gulf of Mexico trawl fisheries. These requirements are proposed to protect threatened and endangered sea turtles in the western Atlantic Ocean and Gulf of Mexico from incidental capture, and would be implemented under the Endangered Species Act (ESA). NMFS announced consideration of rulemaking for these new sea turtle regulations in an Advance Notice of Public Rulemaking (72 FR 7382, February 15, 2007). NMFS will evaluate a range of alternatives in the Draft EIS to reduce sea turtle bycatch and mortality in trawl fisheries along the Atlantic Coast.

Murray (2008) evaluated fisheries observers documented interactions between bottom otter trawl gear and sea turtles in the U.S. Mid-Atlantic region (i.e. south of 41°30'N/66°W to approximately 35º00'N/75°30'W) during 1996-2004. Bycatch rates and total mortality were only estimated for loggerhead turtles, the species involved in the majority of interactions. Vessel Trip Reports (VTR) from fishermen operating bottom otter trawl gear in the Mid-Atlantic were used to expand predicted bycatch rates to total estimated bycatch. Predicted bycatch rates were stratified by a combination of significant variables, which included latitude zone, depth, sea surface temperature, and the use of a working TED. Estimated average annual bycatch of loggerhead turtles in Mid-Atlantic bottom otter trawl gear during 1996-2004 was 616 animals (C.V.=0.23, 95% C.I. over the 9 year period: 367-890).

Murray (2006) provided an estimate of loggerhead bycatch in all fisheries using bottom otter trawl fish gear in Mid-Atlantic waters; estimated bycatch in scallop trawl gear is reported separately in Murray (2007). In Murray (2006), there was not enough evidence to suggest that bycatch rates differed significantly among target species groups; thus, rates were not stratified, nor total mortality estimates reported in this manner. However, in Murray (2008) NERO requested this information by FMP group to support their ESA Section 7 consultations for various FMPs. This information, evaluated from 2000-2004, suggests that 47 percent of the loggerhead takes for that period were by the Mid-Atlantic bottom otter trawl fish gear targeting summer flounder, scup, and black sea bass (Murray 2008). It should be noted that Murray (2008) highlights extensive data and analysis caveats, which include but are not limited to, assumptions about byctach rates within expansion stratum, assumptions about bycatch rates across fisheries

and years, as well as the representativeness of VTR data. The original report should be consulted when interpreting these results.

The following provides more detailed descriptions of the four species of turtle with documented interaction with the summer flounder fishery; the literature cited in the following turtle descriptions can be found in Appendix A of this EA.

Leatherback Sea Turtle: Leatherback turtles (*Dermochelys coriacea*) were listed as endangered under the ESA on June 2, 1970. 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). It 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). Located in the northeastern waters during 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. 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. 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).

Leatherbacks are predominantly pelagic 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.

Anthropogenic impacts to the leatherback population are similar to those 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) recorded 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 due to fishery related mortality and the lack of recruitment (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, including incidental takes 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). 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. As such, NMFS has used several alternative measures to protect leatherback sea turtles from lethal interactions with the shrimp fishery including establishment of a Leatherback Conservation Zone (60 FR 25260) and emergency measures such as the implementation of area specific 30-day TED requirements (December 8, 1999 (64 FR 69416)) when warranted. 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.

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. The most recent 5-year ESA leatherback turtle status review was completed in 2007 (NMFS & USFWS 2007c) which included an analysis of the most recent population and demographic data available for the species. The most recent population size estimate for the North Atlantic Ocean is a range of 34,000- 94,000 adult leatherbacks where the species appears to be stable or increasing (NMFS & USFWS 2007c). However, the East Pacific and Malaysian leatherback populations appear to have collapsed. Given the best available information, NMFS & USFWS (2007) concluded that the leatherback turtle should not be reclassified under the ESA and should remain listed as endangered. In addition, the review also concluded that available information indicates that an analysis and review of the species should be conducted in the future to determine if application of the Distinct Population Segment policy under the ESA to the endangered leatherback turtle is warranted.

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 western 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 summer flounder bottom trawl fishery has recorded incidental takes of green turtles

The most recent 5-year ESA green sea turtle status review was completed in 2007 (NMFS & USFWS 2007a) which included an analysis of the most recent population and demographic data available for green sea turtles. Overall, of the 23 threatened population nesting sites for which data are available, 10 nesting populations are increasing, 9 are stable, and 4 are decreasing (NMFS & USFWS 2007a). Long term continuous data sets (i.e., ≥ 20 years) are available for nine sites, all of which are increasing. Despite the apparent global increase in numbers, NMFS & USFWS (2007a) noted that this positive overall trend should be viewed with caution because trend data are available for just over half of all sites examined. Within the Western Atlantic/Caribbean, there are five threatened breeding populations, all of which appear to be stable or increasing (NMFS & USFWS 2007a). The green turtle nesting population of Florida, which is listed as endangered, also appears to be increasing based on 18 years (1989-2006) of index nesting data collected throughout the state (NMFS & USFWS 2007a). While green turtle nest counts have generally increased, NMFS & USFWS (2007a) concluded that populations of both endangered and threatened green turtles should not be reclassified under the ESA. However, the review also concluded that available information indicates that an analysis and review of the species should be conducted in the future to determine if application of the Distinct Population Segment policy under the ESA to both endangered and threatened green turtle populations is warranted.

Kemp's ridley Sea Turtle: Kemp's ridley turtles (*Lepidochelys kempii*) were listed as endangered under the ESA on December 2, 1970. The only major nesting site for ridleys is a single stretch of beach near Rancho Nuevo, Tamaulipas, Mexico (Carr 1963). Juvenile Kemp's ridleys inhabit northeastern US coastal waters where they forage and grow in shallow coastal areas 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 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 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.

The Kemp's ridley population, as measured by number of nesting females, declined precipitously from the late 1940's through the mid-1980's. Due to intensive conservation actions, the Kemp's ridley began to slowly rebound during the 1990's and this increasing trend has continued to this day (NMFS & USFWS 2007d). Approximately 4,000 females are currently documented nesting annually, which is less than half of the downlisting criterion of 10,000 nests. As a result, the most recent five year review conducted by NMFS & USFWS 2007d concluded that the species should not be reclassified under the ESA and should remain listed as endangered. In addition, a full revision of the current Recovery Plan for the Kemp's ridley Sea Turtle (which was signed in 1992) is currently under way by the services.

Loggerhead Sea Turtle: The loggerhead sea turtle occurs throughout the temperate and tropical regions of the Atlantic, Pacific and Indian Oceans (Dodd 1998). The loggerhead turtle was listed as "threatened" under the ESA on July 28, 1978, but is considered endangered by the World Conservation Union (IUCN) and under the Convention on International Trade in Endangered Species of Flora and Fauna (CITES). Loggerhead sea turtles are found in a wide range of habitats throughout the temperate and tropical regions of the Atlantic. These habitats include open ocean, continental shelves, bays, lagoons, and estuaries (NMFS& USFWS 2007b).

Because they are limited by water temperatures, loggerhead sea turtles 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. They remain in these areas until as late as November and December in some cases, but the large majority leaves the Gulf of Maine by mid-September. Loggerheads are primarily benthic feeders, opportunistically foraging on crustaceans and mollusks (NMFS & USFWS 1995).

The most recent 5-year ESA loggerhead sea turtle status review was completed in 2007 (NMFS & USFWS 2007b) which included a review of the most recent research results for loggerhead sea turtles. Genetic analyses conducted since the last five-year review indicate there are five demographically independent groups in the Western North Atlantic, corresponding to nesting beaches found in Florida and Mexico. The primary metric used to evaluate trends in global loggerhead populations are counts of beach nests, many of which occur in areas outside U.S. waters. Given that loggerhead nest counts have generally declined during the period 1989-2005, NMFS & USFWS (2007b) concluded that loggerhead turtles should not be delisted or reclassified and should remain designated as threatened under the ESA. However, the review also concluded that available information indicates that an analysis and review of the species should be conducted in the future to determine if application of the Distinct Population Segment policy under the ESA is warranted for the species. Additionally, the Center for Biological Diversity and the Turtle Island Restoration Network filed a petition to reclassify loggerhead turtles in the North Pacific Ocean as a distinct population segment (DPS) with endangered status and designate critical habitat under the ESA (72 *Federal Register* 64585; November 16, 2007). NMFS has found that the petition presented substantial scientific information and in 2008, NMFS and FWS convened a biological review team (BRT), which recently completed a status

review on the loggerhead sea turtle. The BRT evaluated genetic data, tagging and telemetry data, demographics information, oceanographic features, and geographic barriers to determine whether population segments exist. The BRT submitted their independent report to NMFS and FWS on August 11, 2009, to review and determine what, if any, action is appropriate under the ESA.

6.4 Human Communities and Economic Environment

6.4.1 Fishery Descriptions

A detailed description of the economic aspects of the commercial and recreational fisheries for summer flounder, scup, and black sea bass was presented in section 3.3.1, 3.3.2, and 3.3.3, respectively, of Amendment 13 to the FMP (MAFMC 2002). Recent trends in landings and ex-vessel values are presented below.

6.4.1.1 Summer Flounder

The value of commercial landings of summer flounder from 2006 to 2008 averaged $23.55 million, with an average ex-vessel price of $2.14 per pound. The ex-vessel value of summer flounder landings in 2008 was $21.47 million resulting from commercial landings of 9.13 million lb (4.14 million kg), with an average ex-vessel price estimated at $2.35 per pound. In general, summer flounder landings for smaller tonnage vessels tend to be greater in the summer months, while landings for larger tonnage vessels tend to be greater in the winter months. On average, higher prices tend to occur during the summer months. This price fluctuation is likely in response to supply. Recent summer flounder, scup, and black sea bass landing patterns among ports are presented in section 6.4.3.

Summer flounder continues to be an important component of the recreational fishery. Estimates of primary species sought as reported by anglers in recent intercept surveys indicate that summer flounder recreational trips have shown an upward trend, ranging from 3.8 million in 1992 to 6.1 million in 2001. For the 2006 to 2008 period, summer flounder recreational fishing trips were estimated at 5.4, 5.8, and 6.4 million, respectively (section 8.11.3.1.2).

6.4.1.2 Scup

Commercial scup landings were approximately 5.17 million lb (2.35 million kg; from ME to Cape Hatteras, NC) and valued at $5.71 million in 2008 ($1.11 per pound). The value of commercial landings of scup from 2006 to 2008 averaged $7.10 million, with an average ex-vessel price of $0.91 per pound. Recent summer flounder, scup, and black sea bass landing patterns among ports are presented in section 6.4.3.

6.4.1.3 Black Sea Bass

Commercial black sea bass landings were approximately 1.87 million lb (0.85 million kg; from ME to Cape Hatteras, NC) and valued at $5.50 million in 2008. The value of commercial

landings of black sea bass from 2006 to 2008 averaged $6.67 million, with an average ex-vessel price of $2.91 per pound. Recent summer flounder, scup, and black sea bass landing patterns among ports are presented in section 6.4.3. 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

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 FMP (MAFMC 2002).

6.4.2.1 Summer Flounder

NMFS 2008 VTR data indicated that 15,678 trips, by five major gear types, caught a total of 8.06 million lb (3.66 million kg) of summer flounder; landing 7.73 million lb (3.51 million kg) and discarding 0.33 million lb (0.15 million kg). The majority of the trips and catch were made by bottom otter and beam trawls (73.8 percent of trips, 96.0 percent of catch), followed by gillnets (10.6 percent of trips, 1.7 percent of catch), handline “other” (9.8 percent of trips, 1.0 percent of catch), scallop dredges (4.3 percent of trips, 1.1 percent of catch), and pots and traps (1.4 percent of trips, 0.1 percent of catch). There were eight statistical areas, which individually accounted for greater than 5 percent of the summer flounder catch in 2008 (Table 1). Collectively, these eight areas accounted for 80 percent of the summer flounder catch. There were five statistical areas, which individually accounted for greater than 5 percent of the trips which caught summer flounder in 2008 (Table 2). Collectively, these five areas accounted for 75 percent of the trips that caught summer flounder and 36 percent of the 2008 summer flounder catch.

6.4.2.2 Scup

NMFS 2008 VTR data indicated that 5,040 trips, by five major gear types, caught a total of 4.06 million lb (1.84 million kg) of scup. Of these, 3.85 million lb (1.75 million kg) of scup 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 (75.2 percent of trips, 93.2 percent of catch), followed by hand line "other" (10.7 percent of trips, 0.8 percent of catch), pots and traps (8.3 percent of trips, 4.8 percent of catch), gillnets (5.7 percent of trips, 0.7 percent of catch), mid-water otter trawls (less than 0.1 percent of trips, 0.3 percent of catch), and scallop dredges (less than 0.1 percent of trips, 0.1 percent of catch). There were seven statistical areas, which individually accounted for greater than 5 percent of the scup catch in 2008 (Table 1). Collectively, these seven areas accounted for 93 percent of the scup catch. There were six statistical areas, which individually accounted for greater than 5 percent of the trips which caught scup in 2008 (Table 2). Collectively, these six areas accounted for 91 percent of the trips that caught scup and 82 percent of the 2008 scup catch.

6.4.2.3 Black Sea Bass

NMFS 2008 VTR data indicated that 6,878 trips, by four major gear types, caught a total of 1.51 million lb (0.68 million kg) of black sea bass. Of these, 1.43 million lb (0.65 million kg) of black sea bass were landed, and 0.07 million lb (0.03 million kg) were discarded. The majority of the trips and catch were made by bottom otter and beam trawls (56.8 percent of trips, 48.8 percent of catch), followed by pots and traps (28.1 percent of trips, 46.2 percent of catch), handline "other" (10.3 percent of trips, 4.4 percent of catch), and gillnets (4.3 percent of trips, 0.3 percent of catch). There were five statistical areas, which individually accounted for greater than 5 percent of the black sea bass catch in 2008 (Table 1). Collectively, these five areas accounted for 65 percent of the black sea bass catch. There were eight statistical areas, which individually accounted for greater than 5 percent of the trips which caught black sea bass in 2008 (Table 2). Collectively, these eight areas accounted for 86 percent of the trips that caught black sea bass and 53 percent of the 2008 black sea bass catch.

6.4.3 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 FMP (section 3.4; MAFMC 2002).

To examine recent landings patterns among ports, 2008 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 3. 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 (Marine Recreational Fisheries Statistical Survey), it is inappropriate to desegregate to less than state levels. The level of precision of annual harvest estimates from MRFSS data depend on the survey sample sizes, the frequency of sampled angler trips that caught the species, and the variability of numbers caught among those trips. Harvest estimates are always progressively less precise at lower levels of stratification; annual estimates are more precise than bimonthly estimates, coastal estimates are more precise than regional estimates, and regional estimates are more precise than state estimates. Thus port-level recreational data are not shown.

6.4.4 Analysis of Permit Data

Federally Permitted Vessels

This analysis estimates that in 2008, there were 2,213 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 939, 767, and 796 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 810, 719, and 784 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 2,213 vessels with at least one federal permit, there were 1,265 that held only commercial permits for summer flounder, scup, and/or black sea bass

while there were 849 vessels that held only a recreational permit. The remaining vessels (99) 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 315 vessels whose only commercial permit was for summer flounder. By contrast, there were 475 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 7 vessels whose only recreational permit was for scup, while 679 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 1 in row 2 column 2 indicates that there was 1 vessel 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, New York, Rhode Island, North Carolina, and Virginia (Table 7). The fewest permits are held by Delaware and Florida vessels. In terms of average tonnage, the largest commercial vessels are found in Pennsylvania, followed by Virginia, Connecticut, North Carolina, and Massachusetts. In terms of average length, the largest commercial vessels are found in Pennsylvania, Virginia, and North Carolina followed by Connecticut, New Jersey, Massachusetts, and Rhode Island. In terms of average horse power, the largest commercial vessels are found in Pennsylvania followed by Connecticut, Florida, Virginia, and New Jersey.

For party/charter vessels (Table 8), the largest numbers of permit holders are found in Massachusetts, followed by New Jersey and New York. The fewest permits are in Florida and North Carolina. 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 Connecticut, Florida, and New York, followed by Pennsylvania, Maryland, and North Carolina. In terms of average horse power, the largest recreational vessels are found in Florida, North Carolina, and Maryland.

For vessels that hold a combination of commercial and party/charter permits, most vessels operate out of ports in the state of New York followed by Massachusetts, Rhode Island, New Jersey, and Virginia (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. With the exception of the states of Florida and Pennsylvania, 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). 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, with the exception of Pennsylvania and Florida (Table 8). With the exception of the states of Connecticut 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 251 dealers who bought summer flounder, scup and/or black sea bass in 2008. They were distributed by state as indicated in Table 10. Employment data for these specific firms are not available. In 2008, these dealers bought approximately $21.5 million worth of summer flounder; $5.7 million worth of scup; and $5.5 million worth of black sea bass.

7.0 ENVIRONMENTAL CONSEQUENCES AND REGULATORY ECONOMIC EVALUATION OF ALTERNATIVES

This EA analyzes the impacts of the alternatives which specify 2010 commercial quotas and recreational harvest limits for the summer flounder, scup, and black sea bass fisheries that are necessary to achieve, but not exceed, the annual target exploitation rates established under the respective FMP or rebuilding schedule. Changes to other commercial management measures for summer flounder, scup, and black sea bass were not recommended for 2010 by the Council and Board. Therefore, it is recommended that other commercial management measures in place remain unchanged (*status quo*) for the 2010 fishing year (see section 5.0 for additional details). The Council and Commission's Board will meet in December 2009 to adopt 2010 recreational management measures when more complete data regarding 2009 recreational landings are available, which will be presented at that time to the Regional Administrator in a recreational specifications document. The nature and extent of the management programs for summer flounder, scup, and black sea bass fisheries have been examined in detail in the EAs and EISs prepared for the management actions and are detailed in section 4.0. The aspects of the environment (Valued Ecosystem Components - VECs) that could be affected by the proposed actions are detailed in section 6.0, and the analysis in this section focuses on impacts relative to those (managed resources and non-target species, habitat (including EFH), protected resources, and human communities).

To conduct a more complete socioeconomic analysis, the socioeconomic impacts of the Council-preferred alternatives are analyzed in combination in section 7.5 and in section 8.11.3. Combined impacts were examined because many of the vessels active in these fisheries participate in more than one, two, or all three of these fisheries.

7.1 Summer Flounder Alternatives

Section 5.1 fully described the summer flounder alternatives under consideration for 2010. In addition, section 4.4 details specific methods of analysis for this section. For reference, the summer flounder alternatives are:

- **Council-Preferred Alternative 1 - TAL of 22.13 million lb** (a 12.88 million lb adjusted commercial quota; a 8.59 million lb adjusted recreational harvest limit; 663,900 lb RSA)
- **Non-preferred Alternative 2 - Most Restrictive / *Status quo* (No Action) TAL of 18.45 million lb** (a 10.74 million lb adjusted commercial quota; a 7.16 million lb adjusted recreational harvest limit; 553,500 lb RSA)
- **Non-preferred Alternative 3 - Least Restrictive TAL of 26.31 million lb** (a 15.31 million lb adjusted commercial quota; a 10.21 million lb adjusted recreational harvest limit; 789,300 lb RSA)

Box 7.1 below provides the percent change in the 2010 overall TAL, Council-adjusted commercial quotas, and recreational harvest limits for each alternative, when compared to 2009.

Box 7.1 Comparison of the percentage change in 2010 overall TAL, Council-adjusted commercial quotas, and recreational harvest limits for each alternative, when compared to 2009.*				
		Alternative 1	**Alternative 2**	**Alternative 3**
Summer Flounder	**Change in overall TAL**	+19.9	0	+42.6
	Council-adjusted Commercial Quota	+20.3	+0.3	+43.0
	Council-adjusted Recreational Harvest Limit	+20.0	0	+42.6

*Note that Council-adjusted quotas are provisional and may be adjusted in the NMFS final rule, when more complete data on overages and/or transfers are available. The small percent change in *status quo* (alt. 2) Council-adjusted commercial quota, when compared to 2009, is due to a 2009 commercial overage adjustment.

7.1.1 Biological Impacts

This section details the impacts of the three summer flounder alternatives on the managed resource, as well as other non-target species. Alternative 1 is the Council-preferred alternative and specifies a TAL of 22.13 million lb. This alternative is 19.9 percent greater than the *status quo* TAL of 18.45 million lb (alternative 2; Box 7.1). Alternative 3 is the least restrictive alternative, of the three considered, and is 42.6 percent greater than the *status quo* alternative.

The TAL under Council-preferred alternative 1 has a 50 percent probability of achieving the target F=0.26 in 2010 and is projected to have a 5.4 percent probability of overfishing. This TAL is projected to rebuild the spawning stock biomass to SSB_{MSY} by January 1, 2013, and maintains better than a 50 percent probability of success as required by the judicial order resulting from the Natural Resources Defense Council (NRDC) versus Daley litigation[6] (i.e., at least 50 percent). Even though alternative 1 represents an increase in overall TAL when compared to the *status quo*, it is consistent with the best scientific information available at the time of specifications that indicates fishing at a TAL at or below the level recommended under alternative 1 would result in positive stock growth towards rebuilding goals. Under this alternative, the 2010 Council-adjusted commercial quota is approximately 20.3 percent higher than 2009. The commercial fishery for summer flounder is primarily prosecuted with otter trawls and is a mixed fishery (see section 6.1.3 for additional details).

Under alternatve 1, this larger commercial quota is not expected to result in negative impacts to other fisheries relative to the *status quo*. Several possibilities exist that influence fishing effort and thus the catch of other species. A larger quota could result in more, or longer fishing trips resulting in an increase in the incidental catch rates of other species relative to 2009. As such, a larger summer flounder Council-adjusted commercial quota could result in negative impacts on

[6] National Resources Defense Counsel v. Daley, Civil No. 1:99 CV 00221 (JGL)

other fisheries, relative to the *status quo* (alternative 2). Conversely, a larger quota may mean that states establish higher possession limits, which result in an equal or lower number of fishing trips landing a larger volume of fish. In addition, summer flounder is under a rebuilding schedule. As such, the overall stock size and age structure have the potential to increase in future years which could result in increased catch-per-unit-effort (i.e. fewer trips landing more or larger (heavier) fish). While it is not known with certainty how the proposed measures will affect fishing effort and catches of other species, it is likely that the proposed measures will not result in large increases in the incidental catch rates of other species relative to 2009 as the increase in quota associated with alternative 1 may not necessarily translate to more or longer fishing trips. The 2010 recreational limit under alternative 1 is 20.0 percent higher than the recreational harvest limit when compared to 2009. The adjusted recreational limits under this alternative allow for more recreational landings in 2010 compared to the *status quo* alternative. Overall, Council-preferred alternative 1 is expected to result in positive biological impacts, relative to the *status quo* measures for summer flounder (alternative 2).

The TAL under non-preferred alternative 2 (*status quo*) has just about a 95 percent probability of achieving the target F=0.26 in 2010 and is projected to rebuild the spawning stock biomass to SSB_{MSY} by January 1, 2013. Under this alternative, it may be more likely that when the 2009 F is estimated (in 2010 when complete 2009 landings data are available), it will not exceed the threshold F=0.31. The magnitude of the positive impacts associated with this alternative (alternative 2) is expected to be greater than those under alternative 1 because of the higher probability of achieving the target F, thus reducing the risk of exceeding the maximum fishing mortality threshold (MFMT). Although the TAL proposed under alternative 2 is the same TAL that was implemented in 2009, the biological impacts of that TAL on the managed resource are not the same across years. Stock demographics change and the relative biological impacts of that TAL also change. Therefore, the best scientific information available suggests this alternative may be more restrictive than necessary to ensure sustainability of the stock and the impacts under this alternative would be more positive than under the Council-preferred alternative (alternative 1). Under this alternative, the 2010 adjusted commercial quota is approximately 0.3 percent higher when compared to 2009. Given that the proposed commercial quota under alternative 2 is nearly identical to the commercial quota implemented in 2009, it is not expected that changes in fishing effort will occur as a consequence of this alternative. While it is not known with certainty how the proposed measures will affect fishing effort, it is likely the proposed measures will not result in an increase in the incidental catch rates of other species relative to 2009. The 2010 recreational limit under alternative 2 is identical to the limit in 2009; therefore, recreational landing opportunities will likely be similar. Overall, non-preferred alternative 2 is expected to result in positive biological impacts, when compared to the 2009 measures for summer flounder.

The proposed TAL under non-preferred alternative 3 has a 50 percent probability of achieving the threshold F= 0.31 in 2010 and is not projected to rebuild the spawning stock biomass to SSB_{MSY} by January 1, 2013. For those reasons discussed above, there is potential for negative impacts on the stock due to an increased risk that overfishing will occur, resulting in slowed or negative gains in rebuilding efforts. There is greater risk of overfishing associated with this alternative (alternative 3) relative to alternative 1 or 2. Under this alternative, the 2010 adjusted

commercial quota is approximately 43.0 percent higher when compared to 2009. The same discussion above for alternative 1 on the effects of larger quotas on catches of other species also applies here. While it is not known with certainty how the proposed measures will affect fishing effort, it is likely the proposed measures will not result in an increase in the incidental catch rates of other species relative to 2009. The 2010 recreational limit under alternative 3 is 42.6 percent higher than the recreational harvest limit when compared to 2009. The adjusted recreational limits under this alternative allows for greater recreational landings in 2010 compared to 2009. Overall, non-preferred alternative 3 is expected to result in negative impacts, when compared to the *status quo*.

7.1.2 Habitat Impacts

The principal commercial gear used to harvest summer flounder is the bottom otter trawl with lesser amounts in other gears, including scallop dredges, the hook and line fishery, and the pound net fishery. The nature of impacts by these gears on the ocean bottom habitat is described in Amendment 13 to the FMP (MAFMC 2002) and, more recently, in Stevenson et al. (2004) (see Appendix G to Amendment 1 to the tilefish FMP (MAFMC 2008)) Based on the fishing effects evaluation in Amendment 13, the Council determined that bottom trawls and scallop dredges can adversely impact EFH in a manner that is more than minimal and not temporary in nature, but not in high-energy, sandy habitats in the Mid-Atlantic region where summer flounder, scup, and black sea bass are caught. Table 11 describes the range of potential habitat impacts that could occur under each summer flounder quota alternative with more detailed discussion below.

The Council-preferred alternative 1 includes an increase in the summer flounder commercial quota by 20.3 percent compared to 2009 (Box 7.1). Alternative 2 (*status quo*) is the most restrictive alternative of the three considered, and the Council-adjusted commercial quota is 0.3 percent lower when compared to 2009. The commercial quota under alternative 3 is 43.0 percent higher than the 2009 commercial quota. Given the proposed commercial quota under alternative 2 is only slightly lower when compared to the commercial quota implemented in 2009, it is not expected that changes in fishing effort will occur as a consequence of this alternative. The increase in quota under alternatives 1 and 3 could potentially result in more, or longer fishing trips, with a corresponding increase in habitat impacts. Conversely, a larger quota may mean that states establish higher possession limits, which could result in an equal number of fishing trips landing a larger volume of fish. In addition, summer flounder is under a rebuilding schedule. As such, the overall stock size and age structure have the potential to increase under this schedule which could result in increased catch-per-unit-effort (i.e. fewer trips landing more or larger (heavier) fish). While it is not known with certainty how the proposed measures will affect fishing effort and catches of other species, it is likely that the proposed measures will not result in large increases in the incidental catch rates of other species relative to 2009 as the increase in quota associated with alternative 1 may not necessarily translate to more or longer fishing trips. In Federal waters the fishery is conducted primarily in high energy mobile sand and bottom habitat, where gear impacts are minimal and/or temporary in nature. Furthermore, the areas that would be subjected to increased disturbance from fishing are already fished by mobile, bottom-tending gear used in this and other fisheries.

Given the range of potential habitat impacts and depending upon whether fishing effort increases or decreases relative to changes in the commercial quota, alternatives 1 is expected to have effects on habitat and EFH that are neutral to slightly negative, alternative 2 is expected to result in neutral impacts, and alternative 3 impacts are expected to be neutral to slightly negative, when compared to existing impacts.

7.1.3 Impacts on Endangered and Other Protected Species

The principal commercial gear used to harvest summer flounder is the bottom otter trawl with lesser amounts in other gears, including scallop dredges, the hook and line fishery, and the pound net fishery. As discussed in section 6.3, the 2009 LOF indicates that the Mid-Atlantic bottom trawl fishery is a Category II fishery, and the three other fisheries which harvest summer flounder (sea scallop dredge, the hook and line, and pound net fishery) are listed as Category III. None of these fisheries have documented marine mammal takes where summer flounder was the target species. However, over the last few years there have been documented sea turtle takes where summer flounder was the target species (see section 6.3 for additional discussion). It is reasonable to assume that the extent of interactions between these commercial fishing gears and endangered and protected resources is related to fishing effort.

The Council-preferred alternative 1 includes an increase in the summer flounder commercial quota by 20.3 percent compared to 2009 (Box 7.1). Alternative 2 (*status quo*) is the most restrictive alternative, of the three considered, and the Council-adjusted commercial quota is 0.3 percent higher when compared to 2009, with the small difference due to a 2009 overages adjustment. The commercial quota under alternative 3 is 43.0 percent higher than the 2009 commercial quota. Given the proposed commercial quota under alternative 2 is only slightly higher when compared to the commercial quota implemented in 2009, it is not expected that changes in fishing effort will occur as a consequence of this alternative. The increase in quota under alternatives 1 and 3 could potentially result in more, or longer fishing trips, with a corresponding increase in protected resources impacts. Conversely, a slightly larger quota may mean that states establish higher possession limits, which could result in an equal or lower number of fishing trips landing a larger volume of fish. In addition, summer flounder is under a rebuilding schedule. As such, the overall stock size and age structure have the potential to increase under this schedule which could result in increased catch-per-unit-effort (i.e. fewer trips landing more or larger (heavier) fish). While it is not known with certainty how the proposed measures will affect fishing effort and catches endangered and protected resources, it is likely that the proposed measures will not result in large increases in interactions relative to 2009 as the increase in quota associated with alternative 1 may not necessarily translate to more or longer fishing trips. The availability of endangered and protected resources to summer flounder fishing gears is also affected by the stock status (i.e., increasing or decreasing stock size) and distribution of these protected species.

Given the range of potential impacts on endangered and protected resources and depending upon whether fishing effort increases or decreases relative to changes in the commercial quota, these three alternatives are expected to have effects on endangered and protected resources that are neutral (under alternative 2) to neutral to slightly negative as expected under alternatives 1 and 3

due to potentially increased effort, when compared to existing impacts. In addition, it should be noted that all fishing gears are required to meet gear restrictions as required under the Atlantic Large Whale Take Reduction Plan (ALWTRP), Harbor Porpoise Take Reduction Plan (HPTRP), MMPA, and the ESA. As such, each of these alternatives is not expected to affect endangered and threatened species in any manner not considered in a prior consultation on this fishery and will have no adverse impacts on protected resources, relative to 2009.

7.1.4 Socioeconomic Impacts

The proposed 2010 TAL of 22.13 million lb (Council-adjusted commercial quota and recreational harvest limit of 12.88 and 8.59 million lb, respectively) under Council-preferred alternative 1 is approximately 19.9 percent higher than the *status quo* TAL (non-preferred alternative 2). Under alternative 2, the 2010 TAL is identical to the TAL implemented in 2009. Alternative 3 is the least restrictive alternative, of the three considered, and its TAL is 42.6 percent greater than the *status quo* alternative. The corresponding Council-adjusted commercial quotas, adjusted recreational harvest limits, and RSA amounts associated with each evaluated summer flounder alternative are presented at the beginning of section 7.1 for reference purposes.

As a result of the higher Council-adjusted commercial quota under alternative 1 (20.3 percent increase), positive economic impacts on the summer flounder fishery are likely to occur, when compared to 2009. Each state's allocation will increase under these adjusted commercial quotas (Box 5.1.1 and section 8.11.1.6). Overall, the projected increase in landings in 2010 under alternative 1 will likely result in a revenue increase relative to the *status quo* alternative.

The proposed recreational harvest limit under alternative 1 (8.59 million lb) represents a 20.0 percent increase in harvest limit when compared to the adjusted recreational harvest limit implemented in 2009 (7.16 million lb). If recreational landings are the same in 2009 as in 2008 (7.90 million lb), the Council-adjusted recreational harvest limit is not expected to constrain recreational landings in 2010. As such, it is unlikely that more restrictive limits (i.e., lower possession limits, greater minimum size limits, and/or shorter seasons) will be required in 2010 when compared to 2009. Specific recreational management measures will be determined in December when more complete data regarding 2009 recreational landings are available. Alternative 1 will likely increase recreational satisfaction for the summer flounder recreational fishery, relative to 2009. Overall, it is expected that positive social and economic impacts may occur because of the increase in total landings (in 2010), relative to the 2009 measures for summer flounder. It is expected that positive social and economic impacts will continue to be realized in the long-term, once the stock is rebuilt to sustainable levels. As discussed in section 7.1.1, the TAL under this alternative is expected to result in positive biological impacts on the managed resource in 2010, when compared to the *status quo*.

Non-preferred alternative 2 (*status quo*) contains the most restrictive measures for summer flounder. The summer flounder TAL under this alternative is 18.45 million lb for 2010 (Council-adjusted commercial quota and recreational harvest limit of 10.74 and 7.16 million lb, respectively), this TAL is identical to the TAL implemented in 2009. Note that even though the summer flounder quota under this alternative is the *status quo* measure, the 2010 Council-

adjusted summer flounder quota is slightly different (0.3 percent) than the adjusted quota implemented in 2009 due to a 2009 commercial overage adjustment. Even though the overall summer flounder commercial quota under this alternative 1 is only 0.3 percent higher than the adjusted quota implemented in 2009, the individual 2010 state summer flounder quota ranges from about the same for most states to 14 and 16 percent higher for Virginia and North Carolina, respectively, when compared to the state adjusted summer flounder quotas implemented in 2009 (section 8.11). This difference is due to 2009 commercial overage adjustments by individual states. Given that the overall potential change in commercial quota associated with this alternative when compared to 2009 is almost nil; it is expected that no adverse economic and social impacts will occur when compared to 2009.

The recreational harvest limit under alternative 2 (7.16 million lb) is identical to the limit implemented in 2009. If recreational landings are the same in 2009 as in 2008 (7.90 million lb), more restrictive measures (i.e., lower possession limits, greater minimum size limits, and/or shorter seasons) may be required to prevent anglers from exceeding the recreational harvest limit in 2010. As indicated before, specific recreational management measures will be determined in December when more complete data regarding 2009 recreational landings are available. However, it is likely that even though anglers may face slightly more restrictive recreational limits in 2010, they will likely be able to keep some of the fish they catch and could also engage in catch and release fishing. Anglers that choose to reduce their summer flounder effort in 2010 are likely to transfer this effort to alternative species (i.e., spot, bluefish, weakfish, striped bass, tautog, pelagics, etc.), resulting in very little change in overall fishing effort. However, recreational harvest restrictions for many of the alternative species in the Northeast are becoming more binding each year, resulting in fewer substitute landing opportunities, particularly for anglers fishing aboard headboats where passengers are primarily limited to bottom fishing. 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 through adjustments to the management measures. While it is likely that the proposed management measures may slightly restrict the recreational fishery for 2010 and that 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 will lead to a decline in the demand for party/charter boat trips. Currently, the market demand for this sector is relatively stable (see section 8.11.3.1.2). Non-preferred alternative 2 (*status quo*) is likely to result in a very small decrease in recreational satisfaction when compared to alternatives 1 and 3.

Given that the Council-adjusted commercial quota and recreational harvest level under alternative 2 are lower than under alternatives 1 and 3, it is expected that the overall negative social and economic impacts under this alternative would be higher than those derived when comparing to 2009. However, positive social and economic impacts will be realized in the long-term, once the stock is rebuilt to sustainable levels. This TAL has the greatest potential to reduce fishing pressure on the stock and enable rebuilding.

Non-preferred alternative 3 contains the least restrictive measures for summer flounder. The proposed 2010 TAL under this alternative is 26.31 million lb (Council-adjusted commercial quota and recreational harvest limit of 15.31 and 10.21 million lb, respectively). This alternative includes an increase in the Council-adjusted summer flounder commercial quota of approximately 43.0 and 42.6 percent in 2010 when compared to 2009. As a result of a higher adjusted commercial quota for summer flounder, overall positive economic impacts on the summer flounder fishery will probably occur, relative to preferred alternative 1.

The least restrictive measures for summer flounder implement a Council-adjusted recreational harvest limit that is higher (42.6 percent) than the limit implemented in 2009. If recreational landings are the same in 2009 as in 2008 (7.90 million lb), the Council-adjusted recreational harvest limit is not expected to constrain recreational landings in 2010. As indicated before, specific recreational management measures will be determined in December when more complete data regarding 2009 recreational landings are available. The discussion regarding the impacts of fishing regulations on the demand for recreational fishing trips presented above for alternative 1 also applies here. This alternative is expected to yield higher recreational satisfaction than both alternatives 1 and 2. It is unlikely that the limit under alternative 3 will negatively affect the demand for recreational fishing trips.

Overall, summer flounder measures under alternative 3 (also least restrictive) will likely result in positive social and economic impacts on the summer flounder fisheries compared to 2009. As indicated in section 7.1.1, there is potential for negative impacts on the stock due to an increased risk that overfishing will occur resulting in slowed or negative gains in rebuilding efforts under alternative 3; thus resulting in the potential for long-term social and economic negative impacts.

7.2 Scup Alternatives

Section 5.2 fully described the scup alternatives under consideration for 2010. In addition, section 4.4 details specific methods of analysis for this section. For reference, the scup alternatives are:

- **Council-Preferred Alternative 1 - TAL of 14.11 million lb** (a 10.68 million lb adjusted commercial quota; a 3.01 million lb adjusted recreational harvest limit; 423,300 lb RSA)
- **Non-preferred Alternative 2 - Most Restrictive / *Status quo* (No Action) TAL of 12.83 million lb** (a 9.71 million lb adjusted commercial quota; a 2.74 million lb adjusted recreational harvest limit; 384,900 lb RSA)
- **Non-preferred Alternative 3 – Least Restrictive TAL of 15.40 million lb** (a 11.65 million lb adjusted commercial quota; a 3.29 million lb adjusted recreational harvest limit; 462,000 lb RSA)

Box 7.2 below provides the percent change in the 2010 overall TAL, Council-adjusted commercial quotas and recreational harvest limits for each alternative, when compared to 2009.

Box 7.2 Comparison of the percentage change in 2010 overall TAL, Council-adjusted commercial quotas and recreational harvest limits for each alternative, when compared to 2009.*				
		Alternative 1	**Alternative 2**	**Alternative 3**
Scup	**Change in overall TAL**	+26.2	+14.8	+37.7
	Council-adjusted Commercial Quota	+27.6	+16.0	+39.2
	Council-adjusted Recreational Harvest Limit	+16.2	+5.8	+27.0

*Note that Council-adjusted quotas are provisional and may be adjusted in the NMFS final rule, when more complete data on overages is available. There are differences in the percent changes in *status quo* (alt. 2) Council-adjusted TAL, commercial quotas and recreational harvest limits, when compared to 2009 measures. This is due to differences in discard estimates (i.e., lower discards projected for 2010, when compared to 2009). Alternative 2 (*status quo*) was based on a 10-percent increase in the TAC when compared to the 2009 TAC. Discards were then subtracted from the proposed 2010 TAC to derive the 2010 TAL. The lower discards projected for 2010, when subtracted from the TAC, resulted in a higher TAL in 2010 when compared to 2009 (14.8 percent), as well as a higher commercial quota and recreational harvest limit in 2010.

7.2.1 Biological Impacts

This section details the impacts of the three scup alternatives on the managed resource, as well as other non-target species. Alternative 1 is the Council-preferred alternative and specifies a TAL of 14.11 million lb. This alternative is 26.2 percent greater than 2009 (TAL of 11.18 million lb; Box 7.2). Alternative 2 is the *status quo* with a proposed 2010 TAL of 12.83 million lb. This TAL is 14.8 percent higher than in 2009 due to lower discards projected for 2010. Alternative 3 is the least restrictive alternative, of the three considered, and is 37.7 percent when compared to 2009.

The TAL under Council-preferred alternative was recommended by the SSC and Scup Monitoring Committee. Even though alternative 1 represents an increase in overall TAL when compared to the *status quo*, it is consistent with the best scientific information available at the time of specifications that indicates fishing at a TAL at or below the level recommended under alternative 1 would be necessary to ensure the long-term sustainability of the stock.

Under this alternative, the 2010 Council-adjusted commercial quota is approximately 27.6 percent higher when compared to 2009. This higher commercial quota is not expected to result in negative impacts to other fisheries relative to 2009. The commercial fishery for scup is primarily prosecuted with otter trawls and floating traps and is a mixed fishery (see section 6.1.3 for additional details). A higher quota could result in increased effort and increased catches of other species. More specifically, catch-per-unit-effort could correspondingly increase with increased stock abundance, resulting in the same number of tows landing a greater volume of fish. While it is not known with certainty how the proposed measures will affect fishing effort, it is likely the

proposed measures will not result in an increase in the incidental catch rates of other species relative to 2009. The 2010 recreational limit under alternative 1 is 16.2 percent higher than the recreational harvest limit when compared to 2009. The adjusted recreational limits under this alternative allow for slightly higher recreational landings in 2010 compared to 2009. Overall, Council-preferred alternative 1 is expected to result in positive biological impacts, relative to 2009.

Non-preferred alternative 2 is based on a status quo TAL and is less than the TAL recommended by the SSC and Scup Monitoring Committee. Although the TAL proposed under alternative 2 is similar to the TAL that was implemented in 2009, the biological impacts of these TALs on the managed resource are not similar across years. Stock demographics change and the relative biological impacts of TALs also change. Therefore, the best scientific information available suggests this alternative may be more restrictive than necessary to ensure sustainability of the stock and the impacts under this alternative would be more positive than under the Council-preferred alternative (alternative 1). Under this alternative, the 2010 Council adjusted commercial quota is approximately 16.0 percent higher when compared to 2009. The same discussion above for alternative 1 on the effects of higher quotas on catches of other species also applies here. While it is not known with certainty how the proposed measures will affect fishing effort and catches of other species, it is likely the proposed measures will not result in increases in the incidental catch rates of other species relative to 2009. The 2010 recreational limit under alternative 1 is 5.8 percent higher than the recreational harvest limit when compared to 2009. The adjusted recreational harvest limit would allow for slightly higher recreational landings in 2010 compared to 2009. Overall, non-preferred alternative 1 is expected to result in positive biological impacts, relative to 2009.

Non-preferred alternative 3 would increase the TAC by 20 percent (relative to 2009) is inconsistent with the advice of the SSC and Scup Monitoring Committee. Under this alternative, the 2010 adjusted commercial quota is approximately 39.2 percent higher when compared to 2009. The same discussion above for alternative 1 on the effects of higher quotas on catches of other species also applies here. While it is not known with certainty how the proposed measures will affect fishing effort and catches of other species, it is likely that the proposed measures will not result in increases in the incidental catch rates of other species relative to 2009. The 2010 recreational limit under alternative 3 is 27.0 percent higher than the recreational harvest limit when compared to 2009. Overall, non-preferred alternative 3 is expected to result in negative biological impacts, when compared to *status quo* measures for scup (alternative 2).

7.2.2 Habitat Impacts

The principal commercial gears used to harvest scup are otter trawls and floating traps, and to a lesser extent bottom and midwater trawls, and lines. The nature of impacts by these gears on the ocean bottom habitat is described in Amendment 13 to the FMP (MAFMC 2002) and, more recently, in Stevenson et al. (2004) (see Appendix G to Amendment 1 to the tilefish FMP (MAFMC 2008)) Based on the fishing effects evaluation in Amendment 13, the Council determined that bottom trawls and scallop dredges can adversely impact EFH in a manner that is more than minimal and not temporary in nature, but not in high-energy, sandy habitats in the

Mid-Atlantic region where summer flounder, scup, and black sea bass are caughtTable 12 describes the range of potential habitat impacts that could occur under each scup quota alternative with more detailed discussion below.

The Council-preferred alternative 1 includes an increase in the scup commercial quota by 27.6 percent compared to 2009 (Box 7.2). Alternative 2 (*status quo*) is the most restrictive alternative of the three considered, and the adjusted commercial quota is 16.0 percent higher when compared to 2009. Alternative 3 is the least restrictive alternative, and its associated commercial quota is 39.2 percent higher than the 2009 commercial quota. The increase in quota under all three alternatives could potentially result in more, or longer fishing trips, with a corresponding increase in habitat impacts; with this effect being the lowest under alternative 2. Conversely, a larger quota may mean that states establish higher possession limits, which could 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 instances, the proposed quota results in the same or reduced gear impacts to bottom habitats. In addition, in Federal waters the fishery is conducted primarily in high energy mobile sand and bottom habitat, where gear impacts are minimal and/or temporary in nature. Furthermore, the areas that would be subjected to increased disturbance from fishing are already fished by mobile, bottom-tending gear used in this and other fisheries.

Given the range of potential habitat impacts and depending upon whether fishing effort increases or decreases relative to changes in the commercial quota, these three alternatives are expected to have effects on habitat and EFH that range from impacts that are the same to slightly negative, when compared to existing impacts.

7.2.3 Impacts on Endangered and Other Protected Species

The principal commercial gears used to harvest scup are otter trawls and floating traps, and to a lesser extent bottom and midwater trawls, and lines. As discussed in section 6.3, the 2009 LOF indicates that the Atlantic mixed species trap/pot fishery and the Mid-Atlantic bottom trawl fishery, the primary gears, are both listed as Category II fisheries. There are no documented marine mammal species or stocks with incidental injury and mortality resulting from these fisheries where scup was the target species.

The Council-preferred alternative 1 includes an increase in the scup commercial quota by 27.6 percent compared to 2009 (Box 7.2). Alternative 2 (*status quo*) is the most restrictive alternative of the three considered, and the Council-adjusted commercial quota is 16.0 percent higher when compared to 2009, with the differences due to discard estimation differences. Alternative 3 is the least restrictive alternative, and its associated commercial quota is 39.2 percent higher than the 2009 commercial quota. It is difficult to predict precisely whether the commercial quota increase under these three alternatives will increase encounters with endangered or protected resources. The increase in quotas could potentially result in more, or longer fishing trips, with a corresponding increase in protected resource impacts. Conversely, a larger quota may mean that states establish higher possession limits, which could 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 instances, the proposed quota results in the same or reduced gear impacts to endangered and protected species. In addition, the availability of endangered and protected resources to scup fishing gears is also affected by the stock status (i.e. increasing or decreasing stock size) and distribution of these protected species.

Given the range of potential impacts on endangered and protected resources and depending upon whether fishing effort increases or decreases relative to changes in the commercial quota, these three alternatives are expected to have effects that range from the same to slightly negative through increased fishing effort, when compared to existing impacts. In addition, it should be noted that all fishing gears are required to meet gear restrictions as required under the ALWTRP, HPTRP, MMPA, and the ESA. As such, each of these alternatives is not expected to affect endangered and threatened species in any manner not considered in a prior consultation on this fishery and will have no adverse impacts on protected resources, relative to 2009.

7.2.4 Socioeconomic Impacts

The scup TAL under Council preferred alternative 1 is 14.11 million lb for 2010 (Council-adjusted commercial quota and recreational harvest limit of 10.68 and 3.01 million lb, respectively). This alternative includes an increase in the adjusted scup commercial quota of 27.6 percent in 2010 when compared to 2009. Positive economic and social impacts are expected to be realized in 2010 when compared to 2009. Under non-preferred alternative 2 (*status quo*/most restrictive) and alternative 3 (least restrictive) a TAL of 12.83 and 15.40 million lb, respectively, is considered.

The preferred scup Council-adjusted recreational harvest limit for 2010 is higher (16.2 percent) than the limit implemented in 2009. If recreational landings are the same in 2009 as in 2008 (4.04 million lb), more restrictive measures (i.e., lower possession limits, greater minimum size limits, and/or shorter seasons) may be required to prevent anglers from exceeding the recreational harvest limit in 2010. As indicated before, specific recreational management measures will be determined in December when more complete data regarding 2009 recreational landings are available. Alternative 1 may decrease recreational satisfaction for the scup recreational fishery relative to 2009. However, it is likely that even though anglers may face more restrictive recreational limits in 2010, they will likely be able to keep some of the fish they catch and could also engage in catch and release fishing. Anglers that choose to reduce their scup effort in 2010 are likely to transfer this effort to alternative species (i.e., spot, bluefish, weakfish, striped bass, tautog, pelagics, etc.), resulting in very little change in overall fishing effort. However, recreational harvest restrictions for many of the alternative species in the Northeast are becoming more binding each year, resulting in fewer substitute landing opportunities, particularly for anglers fishing aboard headboats where passengers are primarily limited to bottom fishing. 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 through adjustments to the management measures. While it is likely that the proposed management measures may

restrict the recreational fishery for 2010 and that 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 will lead to a decline in the demand for party/charter boat trips when compared to 2009. Currently, the market demand for this sector is relatively stable (see section 8.11.3.1.2). The decrease in recreational satisfaction under this alternative is expected to be smaller than that under alternative 2 (*status quo*).

Overall, the scup measures under alternative 1 (also Council-preferred) will likely result in nil to positive social and economic impacts on the scup fisheries compared to 2009. The Council-preferred alternative 1 is expected to result in positive biological impacts on the managed resource in 2010, when compared to 2009 (section 7.2.1).

Non-preferred alternative 2 (*status quo*) contains the most restrictive measures for scup. The scup TAL under this alternative is 12.83 million lb for 2010 (Council-adjusted commercial quota and recreational harvest limit of 9.71 and 2.74 million lb, respectively). This TAL is 14.8 percent higher than the TAL implemented in 2009. The commercial quota under this alternative represents a 16.0 percent increase in quota relative to 2009 due to lower discards projected for 2010. As a result of higher Council-adjusted commercial quota for scup, positive economic impacts on the scup fishery are likely to occur, relative to 2009.

The recreational harvest limit under alternative 2 represents a 5.8 percent increase in harvest limit relative to 2009. If recreational landings are the same in 2009 as in 2008 (4.04 million lb), more restrictive measures (i.e., lower possession limits, greater minimum size limits, and/or shorter seasons) may be required to prevent anglers from exceeding the recreational harvest limit in 2010. As indicated before, specific recreational management measures will be determined in December when more complete data regarding 2009 recreational landings are available. Alternative 2 will likely decrease recreational satisfaction for the scup recreational fishery, relative to the Council-preferred alternative 1 and non-preferred alternative 3. The discussion regarding the impacts of fishing regulations on the demand for recreational fishing trips presented above also applies here.

Given that the commercial quota and recreational harvest level are substantially lower under alternative 2 relative to the Council-preferred alternative 1 and non-preferred alternative 3, it is expected that the overall negative social and economic impacts under this alternative would be higher than those derived when comparing the Council-preferred alternative 1 and Council non-preferred alternative 3 to 2009. However, positive social and economic impacts will be realized in the long-term, if the stock size continues to grow. As discussed under section 7.2.1, this TAL would be expected to have a lower risk of exceeding the MFMT (due to smaller TAL) when compared to alternatives 1 and 3.

Non-preferred alternative 3 contains the least restrictive measures for scup. The scup TAL under this alternative is 15.40 million lb for 2010 (Council-adjusted commercial quota and recreational harvest limit of 11.65 and 3.29 million lb, respectively). This alternative includes an increase in the Council-adjusted scup commercial quota of 39.2 percent in 2010 relative to 2009.

The scup Council-adjusted recreational harvest limit for 2010 under alternative 3 is 27.0 percent higher than the limit implemented in 2009. If recreational landings are the same in 2009 as in 2008 (4.04 million lb), more restrictive measures (i.e., lower possession limits, greater minimum size limits, and/or shorter seasons) may be required to prevent anglers from exceeding the recreational harvest limit in 2010. As indicated before, specific recreational management measures will be determined in December when more complete data regarding 2009 recreational landings are available. The discussion regarding the impacts of fishing regulations on the demand for recreational fishing trips presented above also applies here. The decrease in recreational satisfaction under this alternative is expected to be smaller than that under the Council-preferred alternative 1 and *status quo* alternative 2.

Overall, the scup measures under this alternative (also least restrictive) will likely result in positive social and economic impacts on the scup fisheries in the short-term compared to 2009. However, as indicated in section 7.2.1, is potential for negative impacts on the managed resource in 2010 when compared to 2009; therefore, negative social and economic impacts may occur in the long-term if stock condition declines.

7.3 Black Sea Bass Alternatives

Section 5.3 fully described the black sea bass alternatives under consideration for 2010. In addition, section 4.4 details specific methods of analysis for this section. For reference, the black sea bass alternatives are:

- **Council-Preferred Alternative 1 - *Status quo* (No Action) TAL of 2.30 million lb** (a 1.09 million lb adjusted commercial quota; a 1.14 million lb adjusted recreational harvest limit; 69,000 lb RSA)
- **Non-preferred Alternative 2 - Most Restrictive TAL of 2.07 million lb** (a 0.98 million lb adjusted commercial quota; a 1.02 million lb adjusted recreational harvest limit; 62,100 lb RSA)
- **Non-preferred Alternative 3 – Least Restrictive TAL of 4.80 million lb** (a 2.28 million lb adjusted commercial quota; a 2.37 million lb adjusted recreational harvest limit; 144,000 lb RSA)

Box 7.3 below provides the percent change in the 2010 overall TAL, Council-adjusted commercial quotas and recreational harvest limits for each alternative, when compared to 2009.

Box 7.3 Comparison of the percentage change in 2010 overall TAL, Council-adjusted commercial quotas and recreational harvest limits for each alternative, when compared to 2009.*				
		Alternative 1	**Alternative 2**	**Alternative 3**
Black Sea Bass	**Change in overall TAL**	0	-10.0	+108.7
	Council-adjusted Commercial Quota	0	-10.1	+109.2
	Council-adjusted Recreational Harvest Limit	0	-10.5	+107.9

*Note that Council-adjusted quotas are provisional and may be adjusted in the NMFS final rule, when more complete data on overages is available.

7.3.1 Biological Impacts

This section details the impacts of the three black sea bass alternatives on the managed resource, as well as other non-target species. Alternative 1 is the Council-preferred alternative and specifies a *status quo* TAL of 2.30 million lb (Box 7.3). Alternative 2 is the most restrictive alternative, of the three considered, and is 10.0 percent lower than the *status quo* alternative. Alternative 3 is the least restrictive alternative and is 108.7 percent higher when compared to alternative 1.

Council-preferred alternative 1 (*status quo*) was recommended by the SSC and has a low likelihood of exceeding the threshold F. Although the TAL proposed under alternative 1 is the same TAL that was implemented in 2009, the biological impacts of this TAL on the managed resource is not similar across years. Stock demographics change and the relative biological impacts of TALs also change. This TAL is consistent with the best scientific information available at the time of specifications that indicates fishing at a TAL at or below the level recommended under alternative 1 would be necessary to ensure the long-term sustainability of the stock. Under this alternative, the 2010 adjusted commercial quota and recreational harvest limit are identical to 2009. Therefore, Council-preferred alternative 1 is expected to result in neutral biological impacts on non-target species, when compared to 2009.

Non-preferred alternative 2 proposes a 2010 proposed TAL based on a 10 percent reduction in the TAL relative to 2009. This alternative is less than the TAL recommended by the SSC. Therefore, the best scientific information available suggests this alternative may be more restrictive than necessary to ensure sustainability of the stock and the impacts under this alternative would be more positive than under Council-preferred alternative 1. Under this alternative, the 2010 adjusted commercial quota is approximately 10.1 percent lower when compared to 2009. Several possibilities associated with decreased fishing effort exist. A smaller quota could result in fewer fishing trips, or shorter fishing trips, with a corresponding potential

for lesser habitat impacts. Similarly, with increased species abundance/availability, catch-per-unit-effort could increase resulting in a smaller number of tows landing a larger volume of fish and thus, reducing effort due to the smaller quota. Conversely, a smaller quota may mean that states establish lower possession limits, which could result in an equal number of fishing trips landing a smaller volume of fish. However, given proposed commercial quota under alternative 2 is only slightly lower when compared to the commercial quota implemented in 2009, it is not expected that changes in fishing effort will occur as a consequence of this alternative. The 2010 recreational limit under alternative 2 is 10.5 percent lower than the recreational harvest limit when compared to 2009. The adjusted recreational limits under this alternative allow for less recreational landings in 2010 compared to 2009. Overall, non-preferred alternative 2 is expected to result in positive biological impacts, relative to the *status quo* measures for black sea bass (alternative 1).

Non-preferred alternative 3 proposes a TAL based on the most recent estimate of F for this stock (2008-F=0.28). This alternative is inconsistent with the scientific advice of the SSC, which recommended a *status quo* TAL (alternative 1). For this reason, there is potential for negative impacts on the stock. Under this alternative, the 2010 adjusted commercial quota is approximately 109.2 percent higher when compared to 2009. A larger quota could result in more, or longer fishing trips resulting in an increase in the incidental catch rates of other species. As such, a larger black sea bass Council-adjusted commercial quota could result in negative impacts on other fisheries, relative to the *status quo* (alternative 2). Conversely, a larger quota may 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. While it is not known with certainty how the proposed measures will affect fishing effort and catches of other species, it is likely that the proposed measures will result in neutral to slight negative impacts on the incidental catch rates of other species relative to 2009 as the increase in quota associated with alternative 3 is only slightly higher. The 2010 recreational limit under alternative 3 is 107.9 percent higher than the recreational harvest limit when compared to 2009. The adjusted recreational limits under this alternative allow for higher recreational landings in 2010 compared to 2009. Overall, non-preferred alternative 3 is expected to result in negative biological impacts, when compared to those measures in 2009.

7.3.2 Habitat Impacts

The principal commercial gears used to harvest black sea bass are otter trawls and pots and traps. The nature of impacts by these gears on the ocean bottom habitat is described in Amendment 13 to the FMP (MAFMC 2002) and, more recently, in Stevenson et al. (2004) (see Appendix G to Amendment 1 to the tilefish FMP (MAFMC 2008)) Based on the fishing effects evaluation in Amendment 13, the Council determined that bottom trawls and scallop dredges can adversely impact EFH in a manner that is more than minimal and not temporary in nature, but not in high-energy, sandy habitats in the Mid-Atlantic region where summer flounder, scup, and black sea bass are caughtTable 13 describes the range of potential habitat impacts that could occur under each black sea bass quota alternative with more detailed discussion below.

The Council-preferred alternative 1 is the *status quo* alternative and measures are identical to 2009 (Box 7.3). Alternative 2 is the most restrictive alternative of the three considered, and the Council adjusted commercial quota is 10.1 percent lower when compared to 2009. Alternative 3 is the least restrictive alternative, and its associated commercial quota is 109.2 percent higher when compared to 2009. The proposed commercial quota under alternative 1 is identical to the commercial quota implemented in 2009; therefore, it is not expected that changes in fishing effort will occur as a consequence of this alternative. It is difficult to predict precisely whether the commercial quota decreases under alternative 2 will result in decreased fishing effort on EFH. Several possibilities associated with a decrease in the quota exist. A smaller quota could result in fewer fishing trips, or shorter fishing trips, with a corresponding potential for reduced habitat impacts. A smaller quota may also mean that states establish lower possession limits, which could result in an equal number of fishing trips landing a smaller volume of fish. In these instances, the proposed quota results in the same or reduced gear impacts to bottom habitats. The slight decrease in quota under alternative 2 could also potentially result in a decrease in habitat impacts. However, given that the proposed commercial quota under alternative 2 is slightly lower than the commercial quota implemented in 2009, it is not expected that changes in fishing effort will occur as a consequence of this alternative.

The two-fold increase in the commercial quota under alternative 3 is likely to result in more, or longer fishing trips, with a corresponding increase in habitat impacts associated with bottom trawling. A larger quota may also mean that states establish higher possession limits, which could reduce the amount of trawling required to achieve the quota to less than twice as much as in 2009, but a substantial increase in bottom contact time could be expected under this alternative. The Council-preferred alternative 1 is the *status quo* alternative and measures are identical to 2009 (Box 7.3). Alternative 2 is the most restrictive alternative of the three considered, and the Council-adjusted commercial quota is 10.1 percent lower when compared to 2009. Alternative 3 is the least restrictive alternative, and its associated commercial quota is 109.2 percent higher when compared to 2009. The proposed commercial quota under alternative 1 is identical to the commercial quota implemented in 2009; therefore, it is not expected that changes in fishing effort will occur as a consequence of this alternative. It is difficult to predict precisely whether the commercial quota decreases under alternatives 2 will result in decreased fishing effort on EFH. Several possibilities associated with decreased fishing effort exist. A smaller quota could result in fewer fishing trips, or shorter fishing trips, with a corresponding potential for lesser habitat impacts. However, in Federal waters the trawl fishery is conducted primarily in high energy mobile sand bottom habitats, where gear impacts are minimal and/or temporary in nature and the commercial trap fishery does not have any significant adverse habitat effects. Therefore, given the small decrease in quota under alertnative 2, it is not expected to result in habitat impacts. Furthermore, the areas that would be subjected to increased disturbance from fishing are already fished by mobile, bottom-tending gear used in this and other fisheries.

Therefore, given the range of potential changes in bottom trawling that are likely to occur under these three alternatives, the expected effects on habitat and EFH range from the same (alternative 1 *status quo* and alternative 2) to neutral to potentially negative (under alternative 3), when compared to existing impacts.

7.3.3 Impacts on Endangered and Other Protected Species

The principal commercial gears used to harvest black sea bass are otter trawls and pots and traps. As discussed in section 6.3, the 2009 LOF indicates that the Mid-Atlantic bottom trawl and the Atlantic mixed species trap/pot fishery are listed as Category II fisheries. There are no documented marine mammal species or stocks with incidental injury and mortality resulting from these fisheries where black sea bass was the target species.

The Council-preferred alternative 1 (*status quo*) includes a black sea bass commercial quota that is identical to 2009 (Box 7.3). Alternative 2 is the most restrictive alternative of the three considered, and the adjusted commercial quota is 10.1 percent lower when compared to 2009. Alternative 3 is the least restrictive and its associated commercial quota is 109.2 percent higher when compared to 2009. It is difficult to predict precisely whether the commercial quota decrease under alternative 2 will result in decreased fishing effort and thus, decreased encounters or interactions with endangered and protected resources. Several possibilities associated with decreased fishing effort exist. A smaller quota could result in fewer fishing trips, or shorter fishing trips, with a corresponding potential for lesser impacts on protected resources. Similarly, with increased species abundance/availability, catch-per-unit-effort could increase, resulting in a smaller number of tows landing a larger volume of fish and thus, reducing effort due to the smaller quota. Conversely, a smaller quota may mean that states establish lower possession limits, which could result in an equal number of fishing trips landing a smaller volume of fish. In these instances, the proposed quota results in the same or reduced impacts to endangered and protected resources. Given that the proposed commercial quota under alternative 2 is slightly lower than the commercial quota implemented in 2009, it is not expected that changes in fishing effort will occur as a consequence of this alternative.

The increase in quota under alternative 3 could potentially result in more, or longer fishing trips, with a corresponding increase in impacts to protected resources. Conversely, a larger quota may mean that states establish higher possession limits, which could 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 instances, the proposed quota results in the same or reduced impacts to endangered and protected resources. In addition, the availability of endangered and protected resources to black sea bass fishing gears is also affected by the stock status (i.e., increasing or decreasing stock size) and distribution of these protected species.

Given the range of potential impacts on endangered and protected resources, depending upon whether fishing effort increases or decreases relative to changes in the commercial quota, these three alternatives are expected to have effects that range from the same (as expected under alternative 1 *status quo* and 2) to impacts that are the same to negative on endangered and protected resources through reduced fishing effort (as expected under alternative 3), when compared to existing impacts. In addition, it should be noted that all fishing gears are required to meet gear restrictions as required under the ALWTRP, HPTRP, MMPA, and the ESA. As such, each of these alternatives is not expected to affect endangered and threatened species in any

manner not considered in a prior consultation on this fishery and will have no adverse impacts on protected resources, relative to 2009.

7.3.4 Socioeconomic Impacts

The proposed 2010 TAL of 2.30 million lb (Council-adjusted commercial quota and recreational harvest limit of 1.09 and 1.14 million lb, respectively) under Council-preferred alternative 1 (*status quo*) is identical to 2009. Alternative 1 would allow for similar commercial and recreational fishing opportunities in 2010 when compared to 2009. Under non-preferred alternative 2 (most restrictive) and alternative 3 (least restrictive) a TAL of 2.07 and 4.80 million lb, respectively, is considered.

The Council-adjusted commercial quota and recreational harvest limit under alternative 1 are identical to 2009. This alternative would allow for similar commercial fishing opportunities in 2010 when compared to 2009. This alternative would provide larger commercial fishing opportunities when compared to alternative 2 in 2010 and smaller commercial fishing opportunities when compared to alternative 3 in 2010.

The negative economic impacts under alternative 1 are expected to be smaller than those under the most restrictive alternative (non-preferred alternative 2), when compared to 2009.

The recreational harvest limit under alternative 1 would provide larger recreational fishing opportunities when compared to alternative 2 in 2010 and smaller recreational fishing opportunities when compared to alternative 3 in 2010. If recreational landings are the same in 2009 as in 2008 (1.64 million lb), more restrictive measures (i.e., lower possession limits, greater minimum size limits, and/or shorter seasons) may be required to prevent anglers from exceeding the recreational harvest limit in 2010. Specific recreational management measures will be determined in December when more complete data regarding 2009 recreational landings are available. Alternative 1 will not likely decrease recreational satisfaction for the black sea bass recreational fishery, relative to 2009. However, it is likely that even though anglers may face more restrictive recreational limits in 2010, they will likely be able to keep some of the fish they catch and could also engage in catch and release fishing. Anglers that choose to reduce their black sea bass effort in 2010 are likely to transfer this effort to alternative species (i.e., spot, bluefish, weakfish, striped bass, tautog, pelagics, etc.), resulting in very little change in overall fishing effort. However, recreational harvest restrictions for many of the alternative species in the Northeast are becoming more binding each year, resulting in fewer substitute landing opportunities, particularly for anglers fishing aboard headboats where passengers are primarily limited to bottom fishing. 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 through adjustments to the management measures. Currently, the market demand for this sector is relatively stable (see section 8.11.3.1.2). No change in recreational satisfaction is expected under alternative 1 when compared to 2009. However, alternative 1 is expected to increase recreational satisfaction when compared to the non-preferred most restrictive alternative 2.

Non-preferred alternative 2 contains the most restrictive measures for black sea bass. The black sea bass TAL under this alternative is 2.07 million lb for 2010 (Council-adjusted commercial quota and recreational harvest limit of 0.98 and 1.02 million lb, respectively). This TAL is 10.0 percent lower than the TAL under the *status quo* alternative. The commercial quota under this alternative represents a 10.1 percent decrease in quota relative to the Council-adjusted commercial quota under the *status quo* alternative. As a result of lower Council-adjusted commercial quota for black sea bass, negative economic impacts on the black sea bass fishery are likely to occur, relative to 2009. As a result of lower adjusted commercial quota for black sea bass, negative economic impacts on the black sea bass fishery are likely to occur, relative to the *status quo* alternative. However, it is possible that given the potential decrease in black sea bass landings, price for this species may increase if all other factors are held constant. If this occurs, an increase in the price for black sea bass may mitigate some of the revenue reductions associated with lower quantities of black sea bass quota availability under alternative 2.

The recreational harvest limit under alternative 2 represents a 10.5 percent decrease in harvest limit relative to the Council-adjusted recreational harvest limit under the *status quo* alternative for 2010 (alternative 1). If recreational landings are the same in 2009 as in 2008 (1.64 million lb), more restrictive measures (i.e., lower possession limits, greater minimum size limits, and/or shorter seasons) may be required to prevent anglers from exceeding the recreational harvest limit in 2010. Specific recreational management measures will be determined in December when more complete data regarding 2009 recreational landings are available. Alternative 2 will likely decrease recreational satisfaction for the black sea bass recreational fishery, relative to the *status quo* alternative. In addition, this alternative could also impact the demand of party/charter trips when compared to the *status quo* alternative. The discussion regarding the impacts of fishing regulations on the demand for recreational fishing trips presented above also applies here. The decrease in recreational satisfaction under this alternative is expected to be greater than that under the Council-preferred alternative 1, when compared to 2009.

Given that the commercial quotas and recreational harvest levels are substantially lower under alternative 2 than under alternative 1 when compared to 2009, it is expected that the overall negative social and economic impacts under this alternative would be higher than those derived when comparing the Council-preferred alternative 1 to 2009. Overall, it is expected that negative social and economic impacts may occur because of the decrease in commercial landings in 2010, relative to the *status quo* alternative. However, positive social and economic impacts will be realized in the long-term, if the stock size continues to grow. As discussed under section 7.3.1, this TAL is more restrictive than necessary to achieve positive managed resources impacts in 2010 compared to *status quo* alternative 1.

The black sea bass TAL under alternative 3 (least restrictive) is 4.80 million lb for 2010 (Council-adjusted commercial quota and recreational harvest limit of 2.28 and 2.37 million lb, respectively). This alternative includes a large increase in the Council-adjusted black sea bass commercial quota of 109.2 percent in 2010 as compared to 2009. Positive economic impacts on the black sea bass fishery are likely to occur, when compared to the *status quo* alternative.

This alternative would result in an increase in black sea bass recreational harvest limit of 107.9 percent in 2010 as compared to 2009. If recreational landings are the same in 2009 as in 2008 (1.64 million lb), the Council-adjusted recreational harvest limit is expected to constrain recreational landings in 2010. Specific recreational management measures will be determined in December when more complete data regarding 2009 recreational landings are available. Alternative 3 will likely increase recreational satisfaction for the black sea bass recreational fishery, relative to 2009. This alternative is not expected to impact the demand of party/charter trips, when compared to 2009.

Overall, non-preferred alternative 3 for black sea bass measures (also least restrictive) will likely result in positive social and economic impacts on the black sea bass fisheries compared to 2009. As indicated in section 7.3.1, there is potential for negative impacts on the managed resource under alternative 3 and long-term negative social and economic impacts could occur if stock condition declines.

7.4 Research Set-Aside Measures

Section 5.4 fully described the RSA alternatives under consideration for 2010. For reference, the research set-aside alternatives are:

- Non-preferred Alternative 1 – No research set-aside / No action
- Council-Preferred Alternative 2 - Specify Research Set-Asides / *Status quo*

The Council recommended a maximum summer flounder, scup, and black sea bass RSA of 3 percent of the implemented TAL for each species. Specifically, an RSA of 663,900 lb (301,140 kg), 423,300 lb (192,006 kg), and 69,000 lb (31,298 kg) have been recommended for summer flounder, scup, and black sea bass, respectively, under the Council-preferred alternative. For analysis of the impacts of each of the alternatives in this specifications document, the RSA amounts deducted from each initial TAL are 3 percent of the TAL (Table 14).

To facilitate compensation fishing, exempted fishing permits are regularly issued to vessels conducting compensation fishing in support of projects funded under the Mid-Atlantic RSA Program. Exemptions include exemption from Federal quota closures and summer flounder, scup, and black sea bass possession limits. MSA requires that interested parties are provided an opportunity to comment on all proposed exempted fishing permits. This document analyzes the potential impact of exempted fishing permits that are issued in support of compensation fishing activities with respect to the summer flounder, scup, and black sea bass FMP. Potential environmental impacts of this program on *Illex, Loligo*, butterfish, Atlantic mackerel, and bluefish are addressed in their respective specification documents. Additional consultation and analysis with respect to NEPA, ESA, MSA, and other applicable law may be necessary if additional exemptions are requested.

7.4.1 Biological Impacts

Under alternative 1, there would not be a summer flounder, scup, or black sea bass RSA implemented for 2010, and the RSA amounts would not be deducted from their respective commercial quotas and recreational harvest limits. Because all summer flounder, scup, and black

sea bass landings count against the overall quota regardless of whether or not an RSA is implemented, the biological impacts would not change if this alternative were adopted. Under this alternative, there would also be no indirect positive effects from broadening the scientific base upon which management decisions are made.

Under alternative 2, RSA quota would be awarded to selected projects and deducted from their respective commercial quotas and recreational harvest limits. Because the RSA quota is a part of the TAL, no additional mortality would occur if this alternative were adopted. In addition, this alternative is expected to indirectly benefit the resource as selected projects will likely provide information that will improve resource science and management.

Vessels harvesting research quota in support of approved research projects would be issued exempted fishing permits authorizing them to exceed Federal possession limits and to fish during Federal quota closures. These exemptions are necessary to allow project investigators to recover research expenses as well as adequately compensate fishing industry participants harvesting research quota. Vessels harvesting research quota would operate within all other regulations that govern the commercial fishery, unless otherwise exempted through a separate exempted fishing permit. Because quota closures may or may not occur during a given fishing year, exemption from these closures will have no additional environmental impact. Exemption from possession limits could result in compensation fishing vessels altering their normal fishing behavior; extending tow duration or fishing longer than they otherwise would for example. Changes in fishing behavior could result in changes to the encounter rates with other non-target/bycatch species (Table 15). However, this slight alteration in fishing behavior is expected to have negligible impacts beyond that of the commercial fishery operating within the full suite of fishery regulations.

7.4.2 Habitat Impacts

Because all summer flounder, scup, and black sea bass landings count against the overall quota regardless of whether or not an RSA is implemented, neither alternative is expected to change the level of fishing effort for these species. In addition, it is not expected that effort will be redistributed by gear type or change the manner in which these fisheries are prosecuted under either alternative.

Under Alternative 2 exemptions would be issued for compensation fishing that would exempt vessels from possession limits and quota closures. As such, compensation fishing vessels may alter their normal fishing behavior; extending tow duration or fishing longer than they otherwise would which could result in increased impacts on habitat. However, RSA quota represents a small proportion of overall landings and fishing activity; therefore, any changes in behavior resulting from RSA is expected to have negligible impacts on habitat relative to that of the commercial fishery operating within the full suite of fishery regulations.

As such, each of these alternatives will likely minimize the adverse effects of fishing on EFH to the extent practicable, pursuant to section 305 (a)(7) of the MSA.

7.4.3 Impacts on Endangered and Other Protected Species

Because all summer flounder, scup, and black sea bass landings count against the overall quota regardless of whether or not an RSA is implemented, neither alternative is expected to change the level of fishing effort for these species.

Vessels harvesting research quota in support of approved research projects would be issued exempted fishing permits authorizing them to exceed Federal possession limits and to fish during Federal quota closures. These exemptions are necessary to allow project investigators to recover research expenses as well as adequately compensate fishing industry participants harvesting research quota. Vessels harvesting research quota would operate within all other regulations that govern the commercial fishery, unless otherwise exempted through a separate exempted fishing permit. Because quota closures may or may not occur during a given fishing year, exemption from these closures will have no additional environmental impact. Exemption from possession limits could result in compensation fishing vessels altering their normal fishing behavior; extending tow duration or fishing longer than they otherwise would for example. However, this slight alteration in fishing behavior is not expected to have any impact on protected resources.

Therefore, neither alternative is expected to negatively affect endangered and threatened species or critical habitat in any manner not considered in prior consultations on these fisheries nor will have any adverse impacts on marine animals or other protected resources.

7.4.4 Socioeconomic Impacts

Under non-preferred alternative 1, there will be no RSA deducted from the overall TAL 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 an RSA 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-RSA 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 RSA quota. Since no RSA is implemented under this alternative, there are no direct economic or social costs as described above. Under non-preferred alternative 1, the collaborative efforts among the public, research institutions, and government in broadening the scientific base upon which management decisions are made will cease. In addition, the Nation will not receive the benefit derived from data or other information about these fisheries for management or stock assessment purposes.

Under Council-preferred alternative 2, RSAs for each species would be specified. Under the RSA program, successful applicants receive a share of the annual quota for the purpose of conducting scientific research. However, as describe above, the economic and social costs of the program are shared among the non-RSA participants in the fishery. The evaluation of the socioeconomic impacts of the commercial quotas in sections 7.1, 7.2, and 7.3 was based on adjusted commercial quotas that account for the RSA proposed under Council-preferred alternative 2.

The MAFMC recommended research set-aside quotas of up to 3 percent of the overall TAL for summer flounder, scup, and black sea bass for 2010. More specifically, for summer flounder alternative 1, a RSA of 663,900 lb (398,340 lb for commercial and 265,560 lb for recreational) was assumed, a RSA of 553,500 lb (332,100 lb for commercial and 221,400 lb for recreational) was assumed for alternative 2, and a RSA of 789,300 lb (473,580 lb for commercial and 315,720 lb for recreational) was assumed for alternative 3. For scup alternatives 1, 2, and 3, a RSA of 423,300 lb (330,174 lb for commercial and 93,126 lb for recreational), 384,900 lb (300,222 lb for commercial and 84,678 lb for recreational), 462,000 lb (360,360 lb for commercial and 101,640 lb for recreational) was assumed, respectively. Finally, for black sea bass alternatives 1, 2, and 3, a RSA of 69,000 lb (33,810 lb for commercial and 35,190 lb for recreational), 62,100 lb (30,429 lb for commercial and 31,671 lb for recreational), 144,000 lb (70,560 lb for commercial and 73,440 lb for recreational) was assumed, respectively.

NMFS dealer data from Maine to Virginia and NMFS general canvass data for North Carolina were used to derive the ex-vessel prices for summer flounder from Maine through North Carolina and for scup and black sea bass from Maine through Cape Hatteras, North Carolina. Assuming these 2008 ex-vessel prices (summer flounder -- $2.35/lb; scup -- $1.11/lb; and black sea bass -- $2.95/lb), the 2010 RSA for the commercial component of the fishery could be worth as much as $936,099, $780,435, and $1,112,913 under the evaluated summer flounder alternatives 1, 2, and 3, respectively. For scup, the commercial component of the RSA could be worth as much as $366,493, $333,246, and $400,000 under alternatives 1, 2, and 3, respectively. Lastly, for black sea bass, the commercial component of the RSA could be worth as much as $99,740, $89,766, and $208,152 under alternatives 1, 2, and 3, respectively.

As such, on a per vessel basis, the commercial RSAs could result in a potential decrease in summer flounder revenues of $1,436, $1,197, and $1,707 under evaluated alternatives 1, 2, and 3, respectively. The potential decrease in revenue for scup is $977, $889, and $1,067 per vessel under alternatives 1, 2, and 3, respectively. Lastly, the potential decrease in revenue for black sea bass is $203, $183, and $424 per vessel under alternatives 1, 2, and 3, respectively. The overall reduction in ex-vessel gross revenue associated with the three species combined under alternative 1 in 2010 as the result of the RSA is approximately $1.4 million when compared to commercial quotas without RSA in place. If the potential reduction in revenue associated with the RSA for the three species combined under alternative 1 is distributed among the 809 vessels that landed summer flounder, scup, and black sea bass in 2008, the average decrease in revenue is approximately $1,733/vessel. The overall reduction associated with the three species combined under alternatives 2 in 2010 as the result of the research set asides is $1.2 million ($1,488/vessel) compared to the commercial quotas without RSA in place. Lastly, the overall reduction associated with the three species combined under alternatives 3 in 2010 as the result of the research set asides is $1.7 million ($2,127/vessel) compared to the commercial quotas without RSA in place. The values estimated above assume an equal decrease in revenue among all active vessels in 2008, i.e., 652, 375, and 491 commercial vessels that landed summer flounder, scup, and black sea bass, respectively. The adjusted commercial quotas analyzed in sections 7.1, 7.2, and 7.3 account for the RSAs (as described in sections 4.4 and 5.0). If RSAs are not used, the landings would be included in the overall TAL for each fishery. As such, the

estimated economic impacts would be smaller than those estimated under each alternative discussed in sections 7.1 through 7.3.

Changes in the recreational harvest limit will be small; the limit changes from 8.85 to 8.59 million lb under summer flounder alternative 1, from 7.38 to 7.16 million lb under summer flounder alternative 2, and from 10.52 to 10.21 million lb under summer flounder alternative 3. For the analyzed scup alternatives, the changes in the recreational harvest limits are from 3.10 to 3.01 million lb under alternative 1, from 2.82 to 2.74 million lb under alternative 2, and from 3.39 to 3.29 million lb under alternative 3. Lastly, for the analyzed black sea bass alternatives, the changes in the recreational harvest limits are from 1.17 to 1.14 million lb under alternative 1, from 1.05 to 1.02 million lb under alternative 2, and from 2.45 to 2.37 million lb under alternative 3. Each of these changes in recreational harvest limits approximately represents a 3 percent decrease. It is unlikely that the possession, size or seasonal limits will change as the result of this RSA, and there will be no negative impacts.

Given the substantial decrease in the quota in 2010 relative to 2009 for scup under alternative 2 (most restrictive), the cost of any premature closure of the fishery (pounds scup allocated for set-aside) would be shared among the non-RSA participants in the fishery. In addition, it is possible that the vessels that will be used by researchers will not be vessels that have traditionally fished for scup. As such, permit holders that land this species during a period where the quota has been reached and the fishery closed could be disadvantaged. However, the extent of RSA activity under these three projects (e.g., fishing trips, no. of tows, landings) are negligible when compared to the overall activity of the directed fisheries for the managed resources; therefore, overall impacts of research trips and compensation trips are expected to be negligible. The impacts of the RSAs for other species are addressed in their respective species specifications packages, e.g., bluefish in the 2010 bluefish specifications package.

7.5 Impacts of the Combined Preferred Alternatives

In order to conduct a more thorough socioeconomic analysis, overall impacts on the managed resources were examined in combination. 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 some or all three of these fisheries. The 2010 Council-preferred alternatives, analyzed in combination, are presented below. For example, for 2010, 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. Detailed analysis of the combined impact of the Council-preferred as well as the non-preferred management measures for the three species combined is presented under section 8.11.3 of this document.

The analysis of the harvest levels under the combined Council-preferred alternative indicate that the economic impacts ranged from expected revenue increases for 721 vessels and no revenue change for 88 vessels. Furthermore, there were no vessels projected to incur revenue losses of 5 percent or higher. The number of vessels projected to be impacted with revenue reductions of 5 percent or more under combined alternative 2 was 136. Under combined alternative 3, there were no vessels projected to incur revenue reductions of 5 percent or more (see section 8.11.3).

Assuming 2008 ex-vessel prices and the effect of potential changes in fishing opportunities in 2010 versus 2009, the 2010 quotas in combined alternative 1 (after RSA have been applied) would increase summer flounder and scup revenues by approximately $5.10 and $2.56 million, respectively. No changes in black sea bass revenues are expected in 2010 relative to the quota implemented in 2009. On a per vessel level, the average increase in revenue associated with the increase in summer flounder and scup quotas under alternative 1 is $7,822 and $6,827, respectively. The overall increase in ex-vessel gross revenue associated with these species combined in 2010 relative to quotas implemented in 2009 is approximately $7.66 million or approximately $10,609/vessel; this is lower than under the overall combined increase under Council non-preferred alternative 3 ($22,200/vessel). The combined overall reduction in revenues under the Council non-preferred alternative 2 is $150/vessel (see section 8.11.3). The changes in ex-vessel gross revenues associated with the potential changes in quotas in 2010 versus 2009 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.

The summer flounder and scup recreational harvest limits under combined Council-preferred alternative are approximately 20 and 10 percent higher, respectively, than the limits implemented in 2009, and the black sea bass limit is identical to the limit implemented in 2009. However, given recent recreational landings for scup and black sea bass, it is likely that the proposed 2010 recreational harvest limits for scup and black sea bass may not constain landings that year (section 8.11.3). It is likely that more restrictive limits (i.e., lower possession limits, greater minimum size limits, and/or shorter seasons) will be required to prevent anglers from exceeding the recreational harvest limit in 2010. Specific recreational management measures will be determined in December when more complete data regarding 2009 recreational landings are available. 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 2010, 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 (see recreational fishing trends under section 8.11.3). It is unlikely that these measures will result in any substantive decreases in the demand for party/charter boat trips. However, it is likely that even though anglers may face more restrictive recreational limits in 2010, they will likely be able to keep some of the fish they catch and could also engage in catch and release fishing. Anglers that choose to reduce their effort in

2010 as a consequence of these recreational harvest limits are likely to transfer this effort to alternative species (i.e., spot, bluefish, weakfish, striped bass, tautog, pelagics, etc.), resulting in very little change in overall fishing effort. However, recreational harvest restrictions for many of the alternative species in the Northeast are becoming more binding each year, resulting in fewer substitute landing opportunities, particularly for anglers fishing aboard headboats where passengers are primarily limited to bottom fishing.

7.6 Cumulative Effects Analysis

A cumulative effects analysis (CEA) is required by the Council on Environmental Quality (CEQ) (40 CFR part 1508.7). The purpose of CEA is to consider the combined effects of many actions on the human environment over time that would be missed if each action were evaluated separately. CEQ guidelines recognize that it is not practical to analyze the cumulative effects of an action from every conceivable perspective, but rather, the intent is to focus on those effects that are truly meaningful. A formal cumulative impact assessment is not necessarily required as part of an EA under NEPA as long as the significance of cumulative impacts have been considered (U.S. EPA 1999). The following remarks address the significance of the expected cumulative impacts as they relate to the federally managed summer flounder, scup, and black sea bass fisheries.

7.6.1 Consideration of the VECs

In section 6.0 (Description of the Affected Environment), the valued ecosystem components (VECs) that exist within the summer flounder, scup, and black sea bass fishery environment are identified. Therefore, the significance of the cumulative effects will be discussed in relation to the VECs listed below.

1. Managed resources (summer flounder, scup, and black sea bass)
2. Non-target species
3. Habitat including EFH for the managed resource and non-target species
4. Endangered and protected species
5. Human communities

7.6.2 Geographic Boundaries

The analysis of impacts focuses on actions related to the harvest of summer flounder, scup, and black sea bass. The core geographic scope for each of the VECs is focused on the Western Atlantic Ocean (section 6.0). The core geographic scope for the managed resources is from Maine through North Carolina, as this represents the typical biological range for these stocks. For non-target species, those ranges may be expanded and would depend on the biological range of each individual non-target species in the Western Atlantic Ocean. For habitat, the core geographic scope is focused on EFH within the EEZ but includes all habitat utilized by summer flounder, scup, black sea bass and other non-target species in the Western Atlantic Ocean. The core geographic scope for endangered and protected resources can be considered the overall range of these VECs in the Western Atlantic Ocean. For human communities, the core geographic boundaries are defined as those U.S. fishing communities directly involved in the

harvest or processing of the managed resources, which were found to occur in coastal states from Maine through North Carolina (section 6.5).

7.6.3 Temporal Boundaries

The temporal scope of past and present actions for the managed resources, non-target species, habitat and human communities is primarily focused on actions that have occurred after FMP implementation (1988 for summer flounder; 1996 for scup and black sea bass). For endangered and other protected resources, the scope of past and present actions is on a species-by-species basis (section 6.4) and is largely focused on the 1980s and 1990s through the present, when NMFS began generating stock assessments for marine mammals and turtles that inhabit waters of the U.S. EEZ. The temporal scope of future actions for all five VECs extends about three years (2013) into the future. This period was chosen because summer flounder is to be rebuilt by January 1, 2013 (three years of specifications). In addition, the temporal scope does not extend beyond three years because the dynamic nature of resource management for these three species and lack of information on projects that may occur in the future make it very difficult to predict impacts beyond this timeframe with any certainty.

7.6.4 Actions Other Than Those Proposed in this Amendment

The impacts of each of the alternatives considered in this specifications document are given in section 7.1 through 7.5. Box 7.6.4 presents meaningful past (P), present (Pr), or reasonably foreseeable future (RFF) actions to be considered other than those actions being considered in this specifications document. These impacts are described in chronological order and qualitatively, as the actual impacts of these actions are too complex to be quantified in a meaningful way. When any of these abbreviations occur together (i.e., P, Pr, RFF), it indicates that some past actions are still relevant to the present and/or future actions.

Past and Present Actions

The historical management practices of the Council (described in section 4.2) have resulted in positive impacts on the health of the summer flounder, scup, and black sea bass stocks. Numerous actions have been taken to manage the commercial and recreational fisheries for these three species through amendment and framework adjustment actions. In addition, the annual specifications process is intended to provide the opportunity for the Council and NMFS to regularly assess 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. The statutory basis for federal fisheries management is the MSA. To the degree with which this regulatory regime is complied, the cumulative impacts of past, present, and reasonably foreseeable future federal fishery management actions on the VECs should generally be associated with positive long-term outcomes. Constraining fishing effort through regulatory actions can often have negative short-term socio-economic impacts. These impacts are usually necessary to bring about long-term sustainability of a given resource, and as such, should, in the long-term, promote positive effects on human communities, especially those that are economically dependent upon the summer flounder, scup, and black sea bass stocks.

Non-fishing activities that introduce chemical pollutants, sewage, changes in water temperature, salinity, dissolved oxygen, and suspended sediment into the marine environment pose a risk to all of the identified VECs. Human-induced non-fishing activities tend to be localized in nearshore areas and marine project areas where they occur. Examples of these activities include, but are not limited to agriculture, port maintenance, beach nourishment, coastal development, marine transportation, marine mining, dredging and the disposal of dredged material. Wherever these activities co-occur, they are likely to work additively or synergistically to decrease habitat quality and, as such, may indirectly constrain the sustainability of the managed resources, non-target species, and protected resources. Decreased habitat suitability would tend to reduce the tolerance of these VECs to the impacts of fishing effort. Mitigation of this outcome through regulations that would reduce fishing effort could then negatively impact human communities. The overall impact to the affected species and their habitats on a population level is unknown, but likely neutral to low negative, since a large portion of these species have a limited or minor exposure to these local non-fishing perturbations.

In addition to guidelines mandated by the MSA, NMFS reviews these types of effects through the review processes 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 authorities. The jurisdiction of these activities is in "waters of the U.S." and includes both riverine and marine habitats.

Reasonably Foreseeable Future Actions

In terms of Reasonably Foreseeable Future (RFF) Actions, guidance related to National Standard 1 of the MSA will require Council development of an Omnibus Amendment to address annual catch limits (ACLs) and accountability measures (AMs) for summer flounder, scup, and black sea bass (as well as other Council managed species) to ensure that ACLs are not exceeded and ensure the FMP is compliant with the MSA.

For many of the proposed non-fishing activities to be permitted under other federal agencies (such as beach nourishment, offshore wind facilities, etc.), those agencies would conduct examinations of potential impacts on the VECs. The MSA (50 CFR 600.930) imposes an obligation on other federal agencies to consult with the Secretary of Commerce on actions that may adversely affect EFH. The eight Fishery Management Councils are engaged in this review process by making comments and recommendations on any federal or state action that may affect habitat, including EFH, for their managed species and by commenting on actions likely to substantially affect habitat, including EFH.

In addition, under the Fish and Wildlife Coordination Act (Section 662), “whenever the waters of any stream or other body of water are proposed or authorized to be impounded, diverted, the channel deepened, or the stream or other body of water otherwise controlled or modified for any purpose whatever, including navigation and drainage, by any department or agency of the U.S., or by any public or private agency under federal permit or license, such department or agency first shall consult with the U.S. Fish and Wildlife Service (USFWS), Department of the Interior, and with the head of the agency exercising administration over the wildlife resources of the particular State wherein the” activity is taking place. This act provides another avenue for review

of actions by other federal and state agencies that may impact resources that NMFS manages in the reasonably foreseeable future.

In addition, NMFS and the USFWS share responsibility for implementing the ESA. ESA requires NMFS to designate "critical habitat" for any species it lists under the ESA (i.e., areas that contain physical or biological features essential to conservation, which may require special management considerations or protection) and to develop and implement recovery plans for threatened and endangered species. The ESA provides another avenue for NMFS to review actions by other entities that may impact endangered and protected resources whose management units are under NMFS' jurisdiction.

7.6.5 Magnitude and Significance of Cumulative Effects

In determining the magnitude and significance of the cumulative effects, the additive and synergistic effects of the proposed action, as well as past, present, and future actions, must be taken into account. The following section discusses the effects of these actions on each of the VECs.

Box 7.6.4. Impacts of Past (P), Present (Pr), and Reasonably Foreseeable Future (RFF) Actions on the five VECs (not including those actions considered in this specifications document).						
Action	**Description**	**Impacts on Managed Resource**	**Impacts on Non-target Species**	**Impacts on Habitat and EFH**	**Impacts on Protected Species**	**Impacts on Human Communities**
P, Pr Original FMP and subsequent Amendments and Frameworks to the FMP	Established commercial and recreational management measures	**Indirect Positive** Regulatory tool available to rebuild and manage stocks	**Indirect Positive** Reduced fishing effort	**Indirect Positive** Reduced fishing effort	**Indirect Positive** Reduced fishing effort	**Indirect Positive** Benefited domestic businesses
P, Pr Summer Flounder, Scup, and Black Sea Bass Specifications	Establish annual quotas, RHLs, other fishery regulations (commercial and recreational)	**Indirect Positive** Regulatory tool to specify annual quotas, RHLs, and other regulations; allows response to annual stock updates	**Indirect Positive** Reduced effort levels and gear requirements	**Indirect Positive** Reduced effort levels and gear requirements	**Indirect Positive** Reduced effort levels and gear requirements	**Indirect Positive** Benefited domestic businesses
P, Pr Developed and Applied Standardized Bycatch Reporting Methodology (2007)	Established acceptable level of precision and accuracy for monitoring of bycatch in fisheries	**Neutral** May improve data quality for monitoring total removals of managed resource	**Neutral** May improve data quality for monitoring removals of non-target species	**Neutral** Will not affect distribution of effort	**Neutral** May increase observer coverage and will not affect distribution of effort	**Potentially Indirect Negative** May impose an inconvenience on vessel operations
Pr, RFF Amendment to address ACLs/AMs (~2010)	Establish ACLs and AMs for all three plan species	**Potentially Indirect Positive** Pending full analysis	**Potentially Indirect Positive** Pending full analysis	**Potentially Indirect Positive** Pending full analysis	**Potentially Indirect Positive** Pending full analysis	**Potentially Indirect Positive** Pending full analysis
P, Pr, RFF Agricultural runoff	Nutrients applied to agricultural land are introduced into aquatic systems	**Indirect Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality	**Direct Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality negatively affects resource
P, Pr, RFF Port maintenance	Dredging of coastal, port and harbor areas for port maintenance	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Direct Negative** Dependent on mitigation effects	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Mixed** Dependent on mitigation effects

Box 7.6.4. Continued. Impacts of Past (P), Present (Pr), and Reasonably Foreseeable Future (RFF) Actions on the five VECs (not including those actions considered in this specifications document).

Action	Description	Impacts on Managed Resource	Impacts on Non-target Species	Impacts on Habitat and EFH	Impacts on Protected Species	Impacts on Human Communities
P, Pr, RFF Offshore disposal of dredged materials	Disposal of dredged materials	**Indirect Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality	**Direct Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality negatively affects resource viability
P, Pr, RFF Beach nourishment	Offshore mining of sand for beaches	**Indirect Negative** Localized decreases in habitat quality	**Indirect Negative** Localized decreases in habitat quality	**Direct Negative** Reduced habitat quality	**Indirect Negative** Localized decreases in habitat quality	**Mixed** Positive for mining companies, possibly negative for fishing industry
	Placement of sand to nourish beach shorelines	**Indirect Negative** Localized decreases in habitat quality	**Indirect Negative** Localized decreases in habitat quality	**Direct Negative** Reduced habitat quality	**Indirect Negative** Localized decreases in habitat quality	**Positive** Beachgoers like sand; positive for tourism
P, Pr, RFF Marine transportation	Expansion of port facilities, vessel operations and recreational marinas	**Indirect Negative** Localized decreases in habitat quality	**Indirect Negative** Localized decreases in habitat quality	**Direct Negative** Reduced habitat quality	**Indirect Negative** Localized decreases in habitat quality	**Mixed** Positive for some interests, potential displacement for others
P, Pr, RFF Installation of pipelines, utility lines and cables	Transportation of oil, gas and energy through pipelines, utility lines and cables	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Direct Negative** Reduced habitat quality	**Potentially Direct Negative** Dependent on mitigation effects	**Uncertain – Likely Mixed** Dependent on mitigation effects
P, Pr National Offshore Aquaculture Act of 2007	Bill that would grant DOC authority to issue permits for offshore aquaculture in federal waters	**Potentially Indirect Negative** Localized decreases in habitat quality possible	**Potentially Indirect Negative** Localized decreases in habitat quality possible	**Direct Negative** Localized decreases in habitat quality possible	**Potentially Indirect Negative** Localized decreases in habitat quality possible	**Uncertain – Likely Mixed** Costs/benefits remain unanalyzed

Box 7.6.4. Continued. Impacts of Past (P), Present (Pr), and Reasonably Foreseeable Future (RFF) Actions on the five VECs (not including those actions considered in this specifications document).						
Action	**Description**	**Impacts on Managed Resource**	**Impacts on Non-target Species**	**Impacts on Habitat and EFH**	**Impacts on Protected Species**	**Impacts on Human Communities**
RFF Offshore Wind Energy Facilities (within 3 years)	Construction of wind turbines to harness electrical power (Several proposed from ME through NC, including NY/NJ, DE, and VA)	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Potentially Direct Negative** Localized decreases in habitat quality possible	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Mixed** Dependent on mitigation effects
Pr, RFF Liquefied Natural Gas (LNG) terminals (1 built and others within 3 years)	Transport natural gas via tanker to terminals offshore and onshore (1 terminal built in MA; 1 under construction; proposed in RI, NY, NJ and DE)	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Potentially Direct Negative** Localized decreases in habitat quality possible	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Mixed** Dependent on mitigation effects
RFF Convening Gear Take Reduction Teams (within next 3 years)	Recommend measures to reduce mortality and injury to marine mammals	**Indirect Positive** Will improve data quality for monitoring total removals	**Indirect Positive** Reducing availability of gear could reduce bycatch	**Indirect Positive** Reducing availability of gear could reduce gear impacts	**Indirect Positive** Reducing availability of gear could reduce encounters	**Indirect Negative** Reducing availability of gear could reduce revenues
RFF Strategy for Sea Turtle Conservation for the Atlantic Ocean and the Gulf of Mexico Fisheries (w/in next 3 years)	May recommend strategies to prevent the bycatch of sea turtles in commercial fisheries operations	**Indirect Positive** Will improve data quality for monitoring total removals	**Indirect Positive** Reducing availability of gear could reduce bycatch	**Indirect Positive** Reducing availability of gear could reduce gear impacts	**Indirect Positive** Reducing availability of gear could reduce encounters	**Indirect Negative** Reducing availability of gear could reduce revenues

7.6.5.1 Managed Resources

Those past, present, and reasonably foreseeable future actions, whose effects may impact the managed resources and the direction of those potential impacts, are summarized in Box 7.6.5.1. The indirectly negative actions described in Box 7.6.5.1 are localized in nearshore areas and marine project areas where they occur. Therefore, the magnitude of those impacts on the managed resources is expected to be limited due to a lack of exposure to the population at large. Agricultural runoff may be much broader in scope, and the impacts of nutrient inputs to the coastal system may be of a larger magnitude, although the impact on productivity of the managed resources is unquantifiable. As described above (section 7.6.4), NMFS has several means under which it can review non-fishing actions of other federal or state agencies that may impact NMFS' managed resources prior to permitting or implementation of those projects. This serves to minimize the extent and magnitude of indirect negative impacts those actions could have on resources under NMFS' jurisdiction.

Past fishery management actions taken through the FMP and annual specification process have had a positive cumulative effect on the managed resources. It is anticipated that the future management actions, described in Box 7.6.5.1, will result in additional indirect positive effects on the managed resources through actions which reduce and monitor bycatch, protect habitat, and protect ecosystem services on which summer flounder, scup, and black sea bass productivity depends. In addition, a future Amendment to develop a mechanism for specification of annual catch limits (ACLs)/accountability measures (AMs) has the potential to implement changes to the current management program and lead to improvements in resource sustainability over the long-term. These impacts could be broad in scope. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to summer flounder, scup, and black sea bass have had a positive cumulative effect.

Annual TALs for each of the managed resources have been specified to ensure the rebuilding schedule for summer flounder is met, summer flounder, scup, and black sea bass stocks, are managed in a sustainable manner, and measures are consistent with the objectives of the FMP under the guidance of the MSA. The impacts from annual specification of management measures established in previous years on the managed resources are largely dependent on how effective those measures were in meeting their intended objectives (i.e., annual F targets are achieved and overfishing is prevented) and the extent to which mitigating measures were effective. Section 6.1.1 describes the history of overages for these fisheries and how overages are currently mitigated. The proposed action in this document would positively reinforce the past and anticipated positive cumulative effects on the summer flounder, scup, and black sea bass stock, by achieving the objectives specified in the FMP. Therefore, the proposed action would not have any significant effect on the managed resources individually or in conjunction with other anthropogenic activities (see Box 7.6.6).

Box 7.6.5.1. Summary of the effects of past, present, and reasonably foreseeable future actions on the managed resource.		
Action (see Box 7.6.4 for more detailed description)	**Past to the Present**	**Reasonably Foreseeable Future**
Original FMP and subsequent Amendments and Frameworks to the FMP	**Indirect Positive**	
Summer Flounder, Scup and Black Sea Bass Specifications	**Indirect Positive**	
Developed and Implement Standardized Bycatch Reporting Methodology	**Neutral**	
Amendment to address ACLs/AMs for the managed resources		**Potentially Indirect Positive**
Agricultural runoff	**Indirect Negative**	
Port maintenance	**Uncertain – Likely Indirect Negative**	
Offshore disposal of dredged materials	**Indirect Negative**	
Beach nourishment – Offshore mining	**Indirect Negative**	
Beach nourishment – Sand placement	**Indirect Negative**	
Marine transportation	**Indirect Negative**	
Installation of pipelines, utility lines and cables	**Uncertain – Likely Indirect Negative**	
National Offshore Aquaculture Act of 2007	**Potentially Indirect Negative**	
Offshore Wind Energy Facilities (within 3 years)		**Uncertain – Likely Indirect Negative**
Liquefied Natural Gas (LNG) terminals (within 3 years)		**Uncertain – Likely Indirect Negative**
Convening Gear Take Reduction Teams (within 3 years)		**Indirect Positive**
Strategy for Sea Turtle Conservation for the Atlantic Ocean and the Gulf of Mexico Fisheries (within next 3 years)		**Indirect Positive**
Summary of past, present, and future actions excluding those proposed in this specifications document	**Overall, actions have had, or will have, positive impacts on the managed resources * See section 7.6.5.1 for explanation.**	

7.6.5.2 Non-Target Species or Bycatch

Those past, present, and reasonably foreseeable future actions, whose effects may impact non-target species and the direction of those potential impacts, are summarized in Box 7.6.5.2. The effects of indirectly negative actions described in Box 7.6.5.2 are localized in nearshore areas and marine project areas where they occur. Therefore, the magnitude of those impacts on non-target species is expected to be limited due to a lack of exposure to the population at large. Agricultural runoff may be much broader in scope, and the impacts of nutrient inputs to the coastal system may be of a larger magnitude, although the impact on productivity of non-target resources and the oceanic ecosystem is unquantifiable. As described above (section 7.6.4), NMFS has several means under which it can review non-fishing actions of other federal or state agencies that may impact NMFS' managed resources prior to permitting or implementation of those projects. At this time, NMFS can consider impacts to non-target species (federally-managed or otherwise) and comment on potential impacts. This serves to minimize the extent and magnitude of indirect negative impacts those actions could have on resources within NMFS' jurisdiction.

Past fishery management actions taken through the FMP and annual specification process have had a positive cumulative effect on non-target species. Implementation and application of a standardized bycatch reporting methodology would have a particular impact on non-target species by improving the methods which can be used to assess the magnitude and extent of a potential bycatch problem. Better assessment of potential bycatch issues allows more effective and specific management measures to be developed to address a bycatch problem. It is anticipated that future management actions, described in Box 7.6.5.2, will result in additional indirect positive effects on non-target species through actions which reduce and monitor bycatch, protect habitat, and protect ecosystem services on which the productivity of many of these non-target resources depend. The impacts of these future actions could be broad in scope, and it should be noted the managed resource and non-target species are often coupled in that they utilize similar habitat areas and ecosystem resources on which they depend. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful have had a positive cumulative effect on non-target species.

Annual TALs for each of the managed resources have been specified to ensure the rebuilding schedule for summer flounder is met, summer flounder, scup, and black sea bass stocks, are managed in a sustainable manner, and measures are consistent with the objectives of the FMP under the guidance of the MSA. The proposed actions in this document have impacts that range from neutral to slight positive or negative impacts, and would not change the past and anticipated positive cumulative effects on non-target species and thus, would not have any significant effect on these species individually or in conjunction with other anthropogenic activities (see Box 7.6.6).

Box 7.6.5.2. Summary of the effects of past, present, and reasonably foreseeable future actions on the non-target species.		
Action (see Box 7.6.4 for more detailed description)	**Past to the Present**	**Reasonably Foreseeable Future**
Original FMP and subsequent Amendments and Frameworks to the FMP	**Indirect Positive**	
Summer Flounder, Scup and Black Sea Bass Specifications	**Indirect Positive**	
Developed and Implement Standardized Bycatch Reporting Methodology	**Neutral**	
Amendment to address ACLs/AMs for the managed resources		**Potentially Indirect Positive**
Agricultural runoff	**Indirect Negative**	
Port maintenance	**Uncertain – Likely Indirect Negative**	
Offshore disposal of dredged materials	**Indirect Negative**	
Beach nourishment – Offshore mining	**Indirect Negative**	
Beach nourishment – Sand placement	**Indirect Negative**	
Marine transportation	**Indirect Negative**	
Installation of pipelines, utility lines and cables	**Uncertain – Likely Indirect Negative**	
National Offshore Aquaculture Act of 2007	**Potentially Indirect Negative**	
Offshore Wind Energy Facilities (within 3 years)		**Uncertain – Likely Indirect Negative**
Liquefied Natural Gas (LNG) terminals (within 3 years)		**Uncertain – Likely Indirect Negative**
Convening Gear Take Reduction Teams (within 3 years)		**Indirect Positive**
Strategy for Sea Turtle Conservation for the Atlantic Ocean and the Gulf of Mexico Fisheries (within next 3 years)		**Indirect Positive**
Summary of past, present, and future actions excluding those proposed in this specifications document	**Overall, actions have had, or will have, positive impacts on the non-target species * See section 7.6.5.2 for explanation.**	

7.6.5.3 Habitat (Including EFH)

Those past, present, and reasonably foreseeable future actions, whose effects may impact habitat (including EFH) and the direction of those potential impacts, are summarized in Box 7.6.5.3. The direct and indirect negative actions described in Box 7.6.5.3 are localized in nearshore areas and marine project areas where they occur. Therefore, the magnitude of those impacts on habitat is expected to be limited due to a lack of exposure to habitat at large. Agricultural runoff may be much broader in scope, and the impacts of nutrient inputs to the coastal system may be of a larger magnitude, although the impact on habitat and EFH is unquantifiable. As described above (section 7.6.4), NMFS has several means under which it can review non-fishing actions of other federal or state agencies that may impact NMFS' managed resources and the habitat on which they rely prior to permitting or implementation of those projects. This serves to minimize the extent and magnitude of direct and indirect negative impacts those actions could have on habitat utilized by resources under NMFS' jurisdiction.

Past fishery management actions taken through the FMP and annual specification process have had a positive cumulative effect on habitat and EFH. The actions have constrained fishing effort at a large scale and locally, and have implemented gear requirements, which may reduce habitat impacts. As required under these FMP actions, EFH and HAPCs were designated for the managed resources. It is anticipated that the future management actions, described in Box 7.6.5.3, will result in additional direct or indirect positive effects on habitat through actions which protect EFH for federally-managed species and protect ecosystem services on which these species' productivity depends. These impacts could be broad in scope. All of the VECs are interrelated; therefore, the linkages among habitat quality and EFH, managed resources and non-target species productivity, and associated fishery yields should be considered. For habitat and EFH, there are direct and indirect negative effects from actions which may be localized or broad in scope; however, positive actions that have broad implications have been, and it is anticipated will continue to be, taken to improve the condition of habitat. There are some actions, which are beyond the scope of NMFS and Council management such as coastal population growth and climate changes, which may indirectly impact habitat and ecosystem productivity. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to habitat have had a neutral to positive cumulative effect.

Annual TALs for each of the managed resources have been specified to ensure the rebuilding schedule for summer flounder is met, summer flounder, scup, and black sea bass stocks, are managed in a sustainable manner, and measures are consistent with the objectives of the FMP under the guidance of the MSA. The proposed actions in this document would not change the past and anticipated cumulative effects on habitat and thus, would not have any significant effect on habitat individually or in conjunction with other anthropogenic activities (see Box 7.6.6).

Box 7.6.5.3. Summary of the effects of past, present, and reasonably foreseeable future actions on the habitat.			
Action (see Box 7.6.4 for more detailed description)	**Past to the Present**		**Reasonably Foreseeable Future**
Original FMP and subsequent Amendments and Frameworks to the FMP	**Indirect Positive**		
Summer Flounder, Scup and Black Sea Bass Specifications	**Indirect Positive**		
Developed and Implement Standardized Bycatch Reporting Methodology	**Neutral**		
Amendment to address ACLs/AMs for the managed resources		**Potentially Indirect Positive**	
Agricultural runoff	**Direct Negative**		
Port maintenance	**Uncertain – Likely Direct Negative**		
Offshore disposal of dredged materials	**Direct Negative**		
Beach nourishment – Offshore mining	**Direct Negative**		
Beach nourishment – Sand placement	**Direct Negative**		
Marine transportation	**Direct Negative**		
Installation of pipelines, utility lines and cables	**Uncertain – Likely Direct Negative**		
National Offshore Aquaculture Act of 2007	**Direct Negative**		
Offshore Wind Energy Facilities (within 3 years)			**Potentially Direct Negative**
Liquefied Natural Gas (LNG) terminals (within 3 years)		**Potentially Direct Negative**	
Convening Gear Take Reduction Teams (within 3 years)			**Indirect Positive**
Strategy for Sea Turtle Conservation for the Atlantic Ocean and the Gulf of Mexico Fisheries (within next 3 years)			**Indirect Positive**
Summary of past, present, and future actions excluding those proposed in this specifications document	**Overall, actions have had, or will have, neutral to positive impacts on habitat, including EFH * See section 7.6.5.3 for explanation.**		

7.6.5.4 Protected and Endangered Species

Those past, present, and reasonably foreseeable future actions, whose effects may impact the protected resources and the direction of those potential impacts, are summarized in Box 7.6.5.4. The indirectly negative actions described in Box 7.6.5.4 are localized in nearshore areas and marine project areas where they occur. Therefore, the magnitude of those impacts on protected resources, relative to the range of many of the protected resources, is expected to be limited due to a lack of exposure to the population at large. Agricultural runoff may be much broader in scope, and the impacts of nutrient inputs to the coastal system may be of a larger magnitude, although the impact on protected resources either directly or indirectly is unquantifiable. As described above (section 7.6.4), NMFS has several means, including ESA, under which it can review non-fishing actions of other federal or state agencies that may impact NMFS' protected resources prior to permitting or implementation of those projects. This serves to minimize the extent and magnitude of indirect negative impacts those actions could have on protected resources under NMFS' jurisdiction.

Past fishery management actions taken through the FMP and annual specification process have had a positive cumulative effect on protected resources through the reduction of fishing effort (potential interactions) and implementation of gear requirements. It is anticipated that the future management actions, specifically those recommended by the Atlantic Trawl Gear Take Reduction Team and the development of strategies for sea turtle conservation described in Box 7.6.5.4, will result in additional indirect positive effects on the protected resources. These impacts could be broad in scope. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to protected resources have had a positive cumulative effect.

Annual TALs for each of the managed resources have been specified to ensure the rebuilding schedule for summer flounder is met, summer flounder, scup, and black sea bass stocks, are managed in a sustainable manner, and measures are consistent with the objectives of the FMP under the guidance of the MSA. The proposed actions in this document would not change the past and anticipated cumulative effects on protective resources and thus, would not have any significant effect on protected resources individually or in conjunction with other anthropogenic activities (see Box 7.6.6).

Box 7.6.5.4. Summary of the effects of past, present, and reasonably foreseeable future actions on the protected resources.		
Action (see Box 7.6.4 for more detailed description)	**Past to the Present**	**Reasonably Foreseeable Future**
Original FMP and subsequent Amendments and Frameworks to the FMP	**Indirect Positive**	
Summer Flounder, Scup and Black Sea Bass Specifications	**Indirect Positive**	
Developed and Implement Standardized Bycatch Reporting Methodology	**Neutral**	
Amendment to address ACLs/AMs for the managed resources		**Potentially Indirect Positive**
Agricultural runoff	**Indirect Negative**	
Port maintenance	**Uncertain – Likely Indirect Negative**	
Offshore disposal of dredged materials	**Indirect Negative**	
Beach nourishment – Offshore mining	**Indirect Negative**	
Beach nourishment – Sand placement	**Indirect Negative**	
Marine transportation	**Indirect Negative**	
Installation of pipelines, utility lines and cables	**Potentially Direct Negative**	
National Offshore Aquaculture Act of 2007	**Potentially Indirect Negative**	
Offshore Wind Energy Facilities (within 3 years)		**Uncertain – Likely Indirect Negative**
Liquefied Natural Gas (LNG) terminals (within 3 years)		**Uncertain – Likely Indirect Negative**
Convening Gear Take Reduction Teams (within 3 years)		**Indirect Positive**
Strategy for Sea Turtle Conservation for the Atlantic Ocean and the Gulf of Mexico Fisheries (within next 3 years)		**Indirect Positive**
Summary of past, present, and future actions excluding those proposed in this specifications document	**Overall, actions have had, or will have, positive impacts on protected resources * See section 7.6.5.4 for explanation.**	

7.6.5.5 Human Communities

Those past, present, and reasonably foreseeable future actions, whose effects may impact human communities and the direction of those potential impacts, are summarized in Box 7.6.5.5. The indirectly negative actions described in Box 7.6.5.5 are localized in nearshore areas and marine project areas where they occur. Therefore, the magnitude of those impacts on human communities is expected to be limited in scope. It may, however, displace fishermen from project areas. Agricultural runoff may be much broader in scope, and the impacts of nutrient inputs to the coastal system may be of a larger magnitude. This may result in indirect negative impacts on human communities by reducing resource availability; however, this effect is unquantifiable. As described above (section 7.6.4), NMFS has several means under which it can review non-fishing actions of other federal or state agencies prior to permitting or implementation of those projects. This serves to minimize the extent and magnitude of indirect negative impacts those actions could have on human communities.

Past fishery management actions taken through the FMP and annual specification process have had both positive and negative cumulative effects by benefiting domestic fisheries through sustainable fishery management practices, while at the same time potentially reducing the availability of the resource to all participants. Sustainable management practices are, however, expected to yield broad positive impacts to fishermen, their communities, businesses, and the nation as a whole. It is anticipated that the future management actions, described in Box 7.6.5.5, will result in positive effects for human communities due to sustainable management practices, although additional indirect negative effects on the human communities could occur through management actions that may implement gear requirements or area closures and thus, reduce revenues. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to human communities have had an overall positive cumulative effect.

Annual TALs for each of the managed resources have been specified to ensure the rebuilding schedule for summer flounder is met, summer flounder, scup, and black sea bass stocks, are managed in a sustainable manner, and measures are consistent with the objectives of the FMP under the guidance of the MSA. The impacts from annual specification measures established in previous years on the managed resources are largely dependent on how effective those measures were in meeting their intended objectives (i.e., annual F targets) and the extent to which mitigating measures were effective. Section 6.1.1 described the history of overages for these fisheries and how overages are currently mitigated for these managed resources. Overages may alter the timing of fishery revenues (revenues realized a year earlier), and there may be impacts on some fishermen caused by unexpected reductions in their opportunities to earn revenues in the commercial fisheries in the year during which the overages are deducted. Recreational fisheries may have decreased harvest opportunities due to more restrictive recreational management measures that must be implemented (i.e., minimum fish size, possession limits, fishing seasons).

Despite the potential for slight negative short-term effects on human communities, the expectation is that there would be a positive long-term effect on human communities due to the long-term sustainability of summer flounder, scup, and black sea bass. Overall, the proposed actions in this document would not change the past and anticipated cumulative effects on human communities and thus, would not have any significant effect on human communities individually, or in conjunction with other anthropogenic activities (see Box 7.6.6).

Box 7.6.5.5. Summary of the effects of past, present, and reasonably foreseeable future actions on human communities.			
Action (see Box 7.6.4 for more detailed description)	**Past to the Present**		**Reasonably Foreseeable Future**
Original FMP and subsequent Amendments and Frameworks to the FMP	**Indirect Positive**		
Summer Flounder, Scup and Black Sea Bass Specifications	**Indirect Positive**		
Developed and Implement Standardized Bycatch Reporting Methodology	**Potentially Indirect Negative**		
Amendment to address ACL/AMs for the managed resources		**Potentially Indirect Positive**	
Agricultural runoff	**Indirect Negative**		
Port maintenance	**Uncertain – Likely Mixed**		
Offshore disposal of dredged materials	**Indirect Negative**		
Beach nourishment – Offshore mining	**Mixed**		
Beach nourishment – Sand placement	**Positive**		
Marine transportation	**Mixed**		
Installation of pipelines, utility lines and cables	**Uncertain – Likely Mixed**		
National Offshore Aquaculture Act of 2007	**Uncertain – Likely Mixed**		
Offshore Wind Energy Facilities (within 3 years)			**Uncertain – Likely Mixed**
Liquefied Natural Gas (LNG) terminals (within 3 years)		**Uncertain – Likely Mixed**	
Convening Gear Take Reduction Teams (within 3 years)			**Indirect Negative**
Strategy for Sea Turtle Conservation for the Atlantic Ocean and the Gulf of Mexico Fisheries (within next 3 years)			**Indirect Negative**
Summary of past, present, and future actions excluding those proposed in this specifications document	**Overall, actions have had, or will have, positive impacts on human communities * See section 7.6.5.5 for explanation.**		

7.6.6 Preferred Action on all the VECS

The Council has identified its preferred action alternatives in section 5.0. The cumulative effects of the range of actions considered in this document can be considered to make a determination if significant cumulative effects are anticipated from the preferred action.

Box 7.6.6. Magnitude and significance of the cumulative effects; the additive and synergistic effects of the proposed action, as well as past, present, and future actions

VEC	Status in 2008	Net Impact of P, Pr, and RFF Actions	Impact of the Proposed Action	Significant Cumulative Effects
Managed Resource	Complex and variable (Section 6.1)	Positive (Sections 7.6.4 and 7.6.5.1)	Negative to positive (Sections 7.1-7.5)	**None**
Non-target Species	Complex and variable (Section 6.1)	Positive (Sections 7.6.4 and 7.6.5.2)	Negative to positive (Sections 7.1-7.5)	**None**
Habitat	Complex and variable (Section 6.2)	Neutral to positive (Sections 7.6.4 and 7.6.5.3)	Neutral to slight negative (Sections 7.1-7.5)	**None**
Protected Resources	Complex and variable (Section 6.3)	Positive (Sections 7.6.4 and 7.6.5.4)	Neutral to slight negative (Sections 7.1-7.5)	**None**
Human Communities	Complex and variable (Section 6.4)	Positive (Sections 7.6.4 and 7.6.5.5)	Short-term-Negative to positive; Long-term-Negative to Positive (Sections 7.1-7.5)	**None**

The direct and indirect impacts of the proposed action on the VECs are described in sections 7.1 through 7.5. The magnitude and significance of the cumulative effects, which include the additive and synergistic effects of the proposed action, as well as past, present, and future actions, have been taken into account throughout this section 7.6. The action proposed in this annual specifications document builds off action taken in the original FMP and subsequent amendments and framework documents. When this action is considered in conjunction with all the other pressures placed on fisheries by past, present, and reasonably foreseeable future actions, it is not expected to result in any significant impacts, positive or negative. Based on the information and analyses presented in these past FMP documents and this document, there are no significant cumulative effects associated with the action proposed in this document.

8.0 APPLICABLE LAWS

8.1 Magnuson-Stevens Fishery Conservation and Management Act (MSA)

8.1.1 National Standards

Section 301 of the MSA requires that FMPs contain conservation and management measures that are consistent with the ten National Standards. The most recent FMP amendments 12, 13, and 14 (MAFMC 1998, 2002, 2007, respectively) address how the management actions implemented comply with the National Standards. First and foremost, the Council continues to meet the obligations of National Standard 1 by adopting and implementing conservation and management measures that will continue to prevent overfishing, while achieving, on a continuing basis, the optimum yield for summer flounder, scup, and black sea bass and the U.S. fishing industry. The Council uses the best scientific information available (National Standard 2) and manages all three species throughout their range (National Standard 3). These management measures do not discriminate among 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 these fisheries (National Standard 6), they avoid unnecessary duplication (National Standard 7), they take into account the fishing communities (National Standard 8) and they promote safety at sea (National Standard 10). Finally, actions taken are consistent with National Standard 9, which addresses bycatch in fisheries. 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 MSA through future FMP amendments, framework actions, and the annual specification setting process, the Council will insure that cumulative impacts of these actions will remain positive overall for the ports and communities that depend on these fisheries, the Nation as a whole, and certainly for the resources.

8.2 NEPA (FONSI)

National Oceanic and Atmospheric Administration Administrative Order 216-6 (May 20, 1999) contains criteria for determining the significance of the impacts of a proposed action. In addition, the Council on Environmental Quality regulations at 40 C.F.R. §1508.27 state that the significance of an action should be analyzed both in terms of "context" and "intensity." Each criterion listed below is relevant to making a finding of no significant impact and has been considered individually, as well as in combination with the others. The significance of this action is analyzed based on the NAO 216-6 criteria and CEQ's context and intensity criteria. These include:

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

None of the proposed specifications or RSA program presented in this document is expected to jeopardize the sustainability of any target species affected by the action. The preferred quota specifications for each species are consistent with the FMP objectives. The proposed summer flounder quota has about a 50 percent probability of achieving the target F. The proposed scup

and black sea bass quotas are consistent with the FMP overfishing definitions and may achieve the target fishing mortality levels, which are sustainable in the long-term. The proposed actions will ensure the long-term sustainability of harvests from the summer flounder, scup, and black sea bass stocks.

2) Can the proposed action reasonably be expected to jeopardize the sustainability of any non-target species?

None of the proposed specifications or RSA program presented in this document is expected to jeopardize the sustainability of any non-target species. The proposed measures are not expected to alter fishing methods or activities.

3) Can the proposed action reasonably be expected to cause substantial damage to the ocean and coastal habitats and/or essential fish habitat as defined under the Magnuson-Stevens Act and identified in FMPs?

The proposed action as described in section 7.0 of the EA is not expected to cause substantial 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, has the potential to adversely affect EFH for the species detailed in section 6.2 of the EA. The quota-setting measures proposed in this action could, under certain conditions, increase to a small degree the amount of time that bottom trawling vessels spend fishing for summer flounder or scup, but the adverse impacts of this increased level of fishing on benthic habitats would not be significant. The proposed quota for black sea bass is the same as in 2009, so fishing effort for black sea bass is not expected to increase. Neither these, nor any of the other measures included in the proposed action will have any adverse habitat impact.

4) Can the proposed action be reasonably expected to have a substantial adverse impact on public health or safety?

None of the measures alters the manner in which the industry conducts fishing activities for the target species. Therefore, no changes in fishing behavior that would affect safety are anticipated. 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.

5) Can the proposed action reasonably be expected to adversely affect endangered or threatened species, marine mammals, or critical habitat of these species?

None of the proposed specifications or RSA program is expected to alter fishing methods or activities. None of the proposed specifications or RSA program is expected to substantially increase fishing effort or the spatial and/or temporal distribution of current fishing effort (see section 7.0). 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.

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

The 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 recreational harvest limits in 2010 for the summer flounder, scup, and black sea bass fisheries. None of the proposed specifications or RSA program is expected to alter fishing methods or activities. None of the proposed specifications or RSA program is expected to substantially increase fishing effort or the spatial and/or temporal distribution of current fishing effort.

7) Are significant social or economic impacts interrelated with natural or physical environmental effects?

The proposed action is not expected to have a substantial impact on the natural or physical environment. Commercial capture of summer flounder occurs predominately in the Mid-Atlantic mixed trawl fishery; in the Mid-Atlantic mixed trawl, pot/trap, and hook and line fisheries for scup; and in the pot/trap, Mid-Atlantic mixed trawl, and hook and line fisheries for black sea bass. Bottom otter trawls have a potential to impact bottom habitat. In addition, a number of non-target species are taken incidentally in the prosecution of these fisheries. However, none of the proposed specifications or RSA program is expected to alter fishing methods or activities or is expected to substantially increase fishing effort or the spatial and/or temporal distribution of current fishing effort. Therefore, there are no social or economic impacts interrelated with significant natural or physical environmental effects.

8) Are the effects on the quality of the human environment likely 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 annual commercial quotas and recreational harvest limits in 2010 for the summer flounder, scup, and black sea bass fisheries. The proposed action is based on measures contained in the FMP, which have been in place for many years. In addition, the scientific information upon which the annual quotas are based has been peer reviewed and is the most recent information available. Thus, the measures contained in this action are not expected to be highly controversial.

9) Can the proposed action reasonably be expected to result in substantial impacts to unique areas, such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers or ecologically critical areas?

This action merely revises the annual commercial quotas and recreational harvest limits in 2010 for the summer flounder, scup, and black sea bass fisheries. These fisheries are not known to be prosecuted in any unique areas such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers or ecologically critical areas. Therefore, the proposed action is not expected to have a substantial impact on any of these areas.

10) Are the effects on the human environment likely to be highly uncertain or involve unique or unknown risks?

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 annual commercial quota and recreational harvest limits in 2010 for the summer flounder, scup, and black sea bass fisheries. None of the proposed specifications or RSA program is expected to alter fishing methods or activities or is expected to substantially increase fishing effort or the spatial and/or temporal distribution of current fishing effort. The measures contained in this action are not expected to have highly uncertain effects or to involve unique or unknown risks on the human environment.

11) Is the proposed action related to other actions with individually insignificant, but cumulatively significant impacts?

As discussed in section 7.6, the proposed action is not expected to have individually insignificant, but cumulatively significant impacts. The synergistic interaction of improvements in the efficiency of the fishery is expected to generate positive impacts overall. The proposed actions, together with past, present, and future actions, are not expected to result in significant cumulative impacts on the biological, physical, and human components of the environment.

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

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 annual commercial quota and recreational harvest limits in 2010 for the summer flounder, scup, and black sea bass fisheries. These summer flounder, scup, and black sea bass fisheries are not known to be prosecuted in any areas that might affect districts, sites, highways, structures, or objects listed in, or eligible for listing in, the National Register of Historic Places or cause the loss or destruction of significant scientific, cultural or historical resources. Therefore, the proposed action is not expected to affect any of these areas.

13) Can the proposed action reasonably be expected to result in the introduction or spread of a nonindigenous species?

This action proposes commercial quotas and recreational harvest limits in 2010 for the summer flounder, scup, and black sea bass fisheries. There is no evidence or indication that these fisheries have ever resulted in the introduction or spread of nonindigenous species. None of the proposed specifications or RSA program is expected to alter fishing methods or activities. None of the proposed specifications or RSA program is expected to substantially increase fishing effort or the spatial and/or temporal distribution of current fishing effort. Therefore, it is highly unlikely that the proposed action would be expected to result in the introduction or spread of a non-indigenous species.

14) Is the proposed action likely to establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration?

This action merely revises the proposed annual commercial quotas and recreational harvest limits in 2010 for the summer flounder, scup, and black sea bass fisheries. None of the proposed specifications or RSA program is expected to substantially increase fishing effort or the spatial and/or temporal distribution of current fishing effort. When new stock assessment or other biological information about these species becomes available in the future, then the annual specifications will be adjusted according to the overfishing definitions contained in the FMP. None of these specifications or RSA program results in significant effects, nor do they represent a decision in principle about a future consideration.

15) Can the proposed action reasonably be expected to threaten a violation of federal, State, or local law or requirements imposed for the protection of the environment?

This action proposes annual commercial quotas and recreational harvest limits in 2010 for the summer flounder, scup, and black sea bass fisheries. None of the proposed specifications or RSA program is expected to alter fishing methods or activities such that they threaten a violation of federal, State, or local law or requirements imposed for the protection of the environment. In fact, the proposed measures have been found to be consistent with other applicable laws (see sections 8.2-8.11 below).

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

The impacts of the proposed alternatives on the biological, physical, and human environment are described in section 7.0. The cumulative effects of the proposed action on target and non-target species are detailed in section 7.6 of the EA. None of the proposed specifications or RSA program is expected to substantially increase fishing effort or the spatial and/or temporal distribution of current fishing effort. The synergistic interaction of improvements in the efficiency of the fishery through implementation of annual quotas based on the overfishing definitions contained in the FMP and consistent with scientific advice is expected to generate positive impacts overall.

DETERMINATION

In view of the information presented in this document and the analysis contained in the supporting Environmental Assessment prepared for the 2010 summer flounder, scup, and black sea bass fisheries specifications, it is hereby determined that the proposed actions in this specification package will not significantly impact the quality of the human environment as described above and in the Environmental Assessment. In addition, all beneficial and adverse impacts of the proposed action have been addressed to reach the conclusion of no significant impacts. Accordingly, preparation of an EIS for this action is not necessary.

Regional Administrator for NERO, NMFS, NOAA

DEC 7, 2009
Date

8.3 Endangered Species Act

Sections 6.3 and 7.0 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.

8.4 Marine Mammal Protection Act

Sections 6.3 and 7.0 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.

8.5 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 has developed this specifications document and will submit it to NMFS; NMFS must determine whether this action is consistent to the maximum extent practicable with the CZM programs for each state (Maine through North Carolina).

8.6 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 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 an FMP 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 action and the proposed specifications document was developed through a multi-stage process that was open to review by affected members of the public. The public had the opportunity to review and comment on management measures during the SSC meeting held on July 16, 2009, the Summer Flounder, Scup, and Black Sea Bass Monitoring Committee Meetings held on July 17, 2009, held in Philadelphia, Pennslyvania, and during the MAFMC meeting held on August 4-6, 2009 in Alexandria, Virginia. In addition, the public will have further opportunity to comment on this specifications document once NMFS publishes a request for comments notice in the Federal Register (FR).

8.7 Section 515 (Data Quality Act)

Utility of Information Product

This action proposes annual commercial quotas and recreational harvest limits in 2010 for the summer flounder, scup, and black sea bass fisheries. This document includes: A description of the alternatives considered, the Council-preferred action and rationale for selection, and any changes to the implementing regulations of the FMP. As such, this document enables the implementing agency (NMFS) to make a decision on implementation of annual specifications (i.e., management measures) and this document serves as a supporting document for the proposed rule.

The action contained within this specifications document was developed to be consistent with the FMP, MSA, and other applicable laws, through a multi-stage process that was open to review by affected members of the public. The public had the opportunity to review and comment on management measures during the SSC meeting held on July 16, 2009, the Summer Flounder, Scup, and Black Sea Bass Monitoring Committee Meetings held on July 17, 2009, held in Philadelphia, Pennsylvania, and during the MAFMC meeting held on August 4-6, 2009 in Alexandria, Virginia. The public will have further opportunity to comment once NMFS publishes a request for comments on the proposed regulations in the FR.

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 MSA; 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 here is "Natural Resource Plans." This section (section 8.0) describes how this document was developed to be consistent with any applicable laws, including MSA with any of the applicable National Standards. The analyses used to develop the alternatives (i.e., policy choices) are based upon the best scientific information available and the most up to date information is used to develop the EA which evaluates the impacts of those alternatives (see sections 4.4 and 7.0 of this document for additional details). The specialists who worked with these core data sets and population assessment models are familiar with the most recent analytical techniques and are familiar with the available data and information relevant to the summer flounder, scup, and black sea bass fisheries.

The review process for this specifications document involves MAFMC, NEFSC, NERO, and NMFS headquarters. The NEFSC technical review is conducted by senior level scientists with specialties in fisheries ecology, population dynamics and biology, as well as economics and social anthropology. The MAFMC review process involves public meetings at which affected stakeholders have the opportunity to comments on proposed management measures. Review by

NERO is conducted by those with expertise in fisheries management and policy, habitat conservation, protected resources, 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.

8.8 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 PRA.

8.9 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.

8.10 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 changes relative to the current levels of participation in these fisheries, no negative economic or social effects in the context of EO 12898 are anticipated as a result. Therefore, the proposed action is not expected to cause disproportionately high and adverse human health, environmental or economic effects on minority populations, low-income populations, or Indian tribes.

8.11 Regulatory Flexibility Analysis

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. Positive economic impacts are anticipated as a result of this action due to quota increase in summer flounder (20 percent) and scup (27.6 percent) when compared to 2009. Furthermore, the black sea bass Council-adjusted quota for 2010 is identical to the quota implemented in 2009. An IRFA was prepared to further evaluate the economic impacts of the three alternatives on small business entities. This analysis is undertaken in support of a more thorough analysis for the 2010 commercial specifications for fishing for summer flounder, scup, and black sea bass.

8.11.1 Initial Regulatory Flexibility Analysis

An Initial Regulatory Flexibility Analysis (IRFA) which evaluates the economic impacts of the alternatives on small business entities is provided in this section. This analysis supports a more thorough analysis (RFA) which will be completed for the commercial specifications for the FMP species in 2010. The economic analyses presented for the various alternatives are principally for the commercial fishery. General statements on 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; however, the effects of specific recreational management measures (i.e., bag limits, size limits, and seasonal closures) will be analyzed and submitted along with the Council and Boards recommendations in a recreational specifications document after the December Council meeting.

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

8.11.1.2 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. 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.

8.11.1.3 Estimate of the Number of Small Entities

The potential number of small entities that may be affected by the proposed rule is presented below.

8.11.1.4 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.

8.11.1.5 Conflict with Other Federal Rules

This action does not duplicate, overlap, or conflict with other Federal rules.

8.11.1.6 Analysis of Economic Impacts

A description of the summer flounder, scup, and black sea bass fisheries is presented in section 6.0 of this document and section 3.0 of Amendment 13 to the FMP (MAFMC 2002). 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 FMP (MAFMC 2002). Recent landing patterns among ports are presented in section 6.4.3 and an analysis of permit data is found in section 6.4.4. A full description of the alternatives analyzed in this section and the TAC/TAL derivation process is presented in sections 4.4 and 5.0. 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 $4.0 and $6.5 million, respectively. The proposed measures regarding the 2010 summer flounder, scup, and black sea bass quotas 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 2008 there were 2,213 vessels that were permitted to take part in the summer flounder, scup, and/or black sea bass fisheries (both commercial and party/charter sectors). These permitted vessels may be further categorized depending upon which permits or combinations of permits that were held (see section 6.4.4). Table 5 reports the number of vessels by possible combination of permits. For example, the proposed quota 2010 could potentially affect all 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 be actively fishing and land any of the three species, the more immediate impact of the rule may be felt by the 809 commercial vessels that are active participants (Table 16). The impacts of specific recreational management measures (i.e., bag limits, size limits, and seasonal closures) on “active” party/charter vessels will be analyzed and submitted along with the Council and Boards recommendations in a recreational specifications document after the December Council meeting. 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 2008. 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 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 16, 255 commercial vessels did not hold a valid Federal permit for summer flounder, scup, or black sea bass during calendar year 2008.

In this IRFA, the primary unit of observation when 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 2008, 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. Therefore, these vessels cannot be included in the threshold analysis, unless each state was 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 in combination. For example, for 2010, 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 least 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.

Procedurally, the economic effects of the quota alternatives were estimated using four 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 2008. 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 16) 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 2008. This estimate provides the base from which subsequent quota changes and their associated effects on vessel revenues were compared. Since 2008 is the last full year of data available (partial year data from 2009 could miss seasonal fisheries), it was chosen as the base year for the analysis. As such, 2008 data were used as a proxy for 2009.

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 2010 for all three species versus the base quota year 2009. RSA estimates were employed to adjust the 2010 quotas. For the purpose of estimating the 2010 quotas and revenue changes, the following assumptions were made: a) the industry will fully harvest, and not exceed the 2009 quotas; and b) the entire summer flounder, scup, and black sea bass quota allocations will be taken in 2010. Detailed description of the 2010 quota derivation process is presented in sections 4.4 and 5.0.

The fourth step was to compare the estimated 2010 revenues from all species to the 2009 base revenues for every vessel in each of the seven 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 when 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 where owners of impacted vessels reside, selected county profiles are typically constructed. Each profile is based on impacts under the most restrictive possible 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: a) the number of vessels with revenue losses exceeding 5 percent per county was either greater than 4, or b) 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 15 counties were identified to be impacted in 2010: Sussex, DE; Worcester, MD; Bristol, Dukes, and Suffolk, MA; Atlantic, Cape May, and Ocean, NJ; Nassau, New York, and Suffolk, NY; Washington, RI; Accomack, City of Norfolk, and Virginia Beach City, VA. Counties not included in this analysis (e.g., Barnstable and Essex, MA; Dare and Poquison City Area, VA; Hyde, NC; Monmouth, NJ; and Newport, RI) 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. The target counties were identified based on the county associated with the vessels homeport as listed in the owner's 2008 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.

8.11.2 Description of Quota Alternatives

8.11.2.1 Quota and Non-Quota Alternatives

Alternative 1 includes the harvest levels recommended for summer flounder, scup, and black sea bass on vessels that are permitted to catch any of these three species. Harvest levels were recommended to achieve, but not exceed the annual target exploitation rates established under the respective FMP. This alternative contains summer flounder and scup recommended TALs consistent with the advice of the Council's scientific and technical advisors. The black sea bass TAL under this alternative is consistent with the advice of the Council's scientific advisors. The black sea bass quota under this alternative is the *status quo* quota. A detailed description of all of these measures for the three species was presented under section 5.0. A brief discussion and impact of these measures is presented below.

Alternative 2 includes the most restrictive harvest levels, i.e., those that would result in the greatest reductions in landings (relative to 2009) for summer flounder, scup, and black sea bass. This alternative includes non-preferred alternatives for all three species. The summer flounder and scup quotas under this alternative are the *status quo* quotas.

Alternative 3 includes the least restrictive harvest levels, i.e., those that would result in the least reductions (or greatest increases) in landings (relative to 2009) for all species. This alternative includes non-preferred alternatives for all three species. These limits resulted in the highest possible landings for 2010, regardless of their probability of achieving the biological targets.

8.11.3 Analyses of Impacts of Alternatives

In the analysis of the following alternatives, several assumptions were made. First, average revenue changes noted in this analysis were evaluated using 2008 dealer data and participation. In addition to this, 2008 permit files were used to describe permit holders in these fisheries. It is important to mention that revenue changes for 2010 are dependent upon previous landings and overages. As indicated in section 4.4, the Council recommended and RSA adjusted TALs, were not adjusted for 2009 partial-year overages and/or transfers of quota among states. NMFS will adjust quotas based on updated information on overages and/or transfers as part of the final rule that implements the 2010 specifications late in 2009 when the data are more complete.

For the analyses themselves, reductions are estimated by examining the total revenue earned by an individual vessel in 2008 (as a proxy for 2009), and comparing it to its potential revenue in 2010, given the changes in fishing opportunity (harvest levels) from 2009 to 2010. 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.

8.11.3.1 Quota Alternative 1 (Council-Preferred)

This alternative examines the impacts on industry that would result from the preferred 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 5.0 were employed. Alternative 1 contains Council-adjusted commercial quotas of 12.88, 10.68, 1.09 million lb for summer flounder, scup, and black sea bass, respectively. This alternative also specifies Council-adjusted recreational landings limits of 8.59, 3.01, and 1.14 million lb for flounder, scup, and black sea bass, respectively. The black sea bass specifications under this alternative are *status quo* alternative under this

Under this alternative, the summer flounder specifications would result in an aggregate of approximately 20 percent increase in both allowable commercial landings and recreational harvest limit relative to the 2009 allocations (Tables 17 and 18). The scup specifications would result in a 28 percent increase allowable commercial landings and a 16 percent increase in the recreational harvest limit relative to the 2009 allocations (Tables 17 and 19). The black sea bass specifications would result in the same allowable commercial landings and recreational harvest limit relative to the 2009 allocations (Tables 17 and 20).

8.11.3.1.1 Commercial Impacts

The results of the threshold analysis are presented in Table 21. The analysis of the harvest levels under this alternative indicate that across all vessel classes, a total of 88 vessels were projected to incur no revenue change and 721 vessels were projected to incur in revenue increase relative to

2009. The bulk of the vessel projected to have no change in revenues in 2010 compared to 2009 landed black sea bass only.

Impacts of the quotas provisions were examined relative to a vessel's home state as reported on the vessel's permit application (Table 22). "Home state" indicates the state where a vessel is based and primarily ported, and is presumed to reflect 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 increase by home state ranged from 2 in Delaware to 102 in Massachussetts. The number of vessels with no change in revenue, ranged from 1 vessel in both Maryland and North Carolina to 14 vessels in New Jersey.

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.

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. The profile is 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 8.11.4 below. 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 FMP (MAFMC 2002). Recent landings patterns among ports are examined in section 6.4.3.

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. 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 through North Carolina, and for scup and black sea bass from Maine through Cape Hatteras, North Carolina. Assuming 2008 ex-vessel prices (summer flounder -- $2.35/lb; scup -- $1.11/lb; and black sea bass -- $2.95/lb), the 2010 quotas associated with the preferred alternative would increase summer flounder and scup revenues by approximately $5.10 and $2.56 million, respectively, relative to the quota implemented in 2009. No changes in black sea bass revenues are expected in 2010 relative to the quota implemented 2009.

Assuming the increase in summer flounder total ex-vessel gross revenues associated with the preferred alternative is distributed equally among the 652 vessels that landed summer flounder in 2008, the average increase in revenue associated with the increase in summer flounder quota is approximately $7,822/vessel. Assuming the increase in scup total ex-vessel gross revenues associated with this alternative is distributed equally among the 375 vessels that landed scup in 2008, the average increase in revenue associated with the increase in scup quota is approximately $6,827/vessel.

The overall increase in ex-vessel gross revenue associated with summer flounder and scup combined in 2010 relative to quotas implemented in 2009 is approximately $7.66 million (assuming 2008 ex-vessel prices) under the preferred alternative. If this is distributed among the 722 vessels that landed summer flounder and scup in 2008, the average increase in revenue is approximately $10,609/vessel. The changes in ex-vessel gross revenues associated with the potential changes in quotas in 2010 versus 2009 assumed static prices for summer flounder and scup. Overall, the projected increase in summer flounder and scup landings in 2010 under this alternative will likely result in revenue increase for vessels participating in those fisheries. However, it is possible that given the potential increase in summer flounder and scup landings, price for these species may decrease holding all other factors constant. If this occurs, a decrease in the price for these species may mitigate some of the revenue increases associated with higher quantity of quota availability for summer flounder and scup under this alternative.

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 other potential reductions in 2010 not accounted for here (section 4.4).

8.11.3.1.2 Recreational Impacts

As indicated in the executive summary, the management measures addressed in this specifications document 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 Council and Board submit recommendations for 2010 recreational measures. The Council and the Board will meet in December 2009 to adopt 2010 recreational management measures, when more complete data regarding 2009 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.

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 1994-1995, summer flounder landings were below the recreational harvest limit by approximately 20 percent for both years combined. In 2002, 2004, and 2005, recreational landings were 1.71 (18 percent), 0.34 (3 percent) and 1.40 million lb (12 percent) below the limits for those years, respectively. For 2008, recreational landings were 1.69 million lb (27 percent) above the limit for that year (Table 18).

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 indicate that summer flounder has shown an upward trend in importance in the U.S. from Maine through North Carolina combined. The number of trips for which recreational anglers targeted summer flounder has shown an upward trend from the early 1990s to the early/mid 2000s. Summer flounder recreational trips averaged 5.2 million for the 1991 to 2008 period, ranging from 3.8 million in 1992 to 6.4 million in 2008. For the 2004 to 2007 period, summer flounder recreational fishing trips were estimated at 5.1, 5.6, 5.4, and 5.8 million, respectively (Table 18).

Under this alternative, the summer flounder 2010 Council-adjusted recreational harvest limit (adjusted for RSA) is 8.59 million lb. Thus, the harvest limit in 2010 would represent an increase of approximately 20 percent (1.43 million lb) from the 2009 limit. If recreational landings are the same in 2009 as in 2008 (7.90 million lb), the adjusted recreational harvest limit is expected to constraint recreational landings in 2010. As such, it is unlikely that more restrictive limits (i.e., lower possession limits, greater minimum size limits, and/or shorter seasons) be required in 2010 when compared to 2009. Specific recreational management measures will be determined in December when more complete data regarding 2009 recreational landings are available. Alternative 1 will likely increase recreational satisfaction for the summer flounder recreational fishery, relative to 2009.

Scup recreational landings have declined over 89 percent for the period 1991 to 1998, then increased by 518 percent from 1998 to 2000 (Table 19). The number of fishing trips has also declined over 73 percent from 1991 to 1998, and then increased by 127 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 have 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 (33 percent decrease). In 2003, recreational landings increased to 8.48 million lb (134 percent), these landings were the highest for the 1991 to 2008 period. Recreational landings decreased in 2005 and 2006 to 2.5 and 3.0 million lb respectively. In 2007 and 2008, scup recreational landings increased to 3.7 and 4.0 million lb, respectively. The number of trips for which recreational anglers targeted scup have shown a slight upward trend from the early 1990s to the early/mid 2000s. Scup recreational trips averaged 478 thousand for the 1991 to 2008 period, ranging from 199 thousand in 1997 to 972 thousand in 2003. For 2006-2008, scup recreational fishing trips were estimated at 467, 581, and 729 thousand, respectively (Table 19).

Under this alternative, the scup 2010 Council-adjusted recreational harvest limit (adjusted for RSA) is 3.01 million lb. The scup harvest limit in 2010 would represent an increase of approximately 16 percent from the 2009 recreational limit. If recreational landings are the same in 2009 as in 2008 (4.04 million lb), the adjusted recreational harvest limit is not expected to constrain recreational landings in 2010. 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 2010. As indicated before, specific recreational management measures will be determined in December when more complete data regarding 2009 recreational landings are available. Alternative 1 may decrease recreational satisfaction for the scup recreational fishery relative to 2009. However, it is likely that even though anglers may face more restrictive recreational limits in 2010, they will likely be able to keep some of the fish they catch and could also engage in catch and release fishing. Anglers that choose to reduce their scup effort in 2010 are likely to transfer this effort to alternative species (i.e., spot, bluefish, weakfish, striped bass, tautog, pelagics, etc.), resulting in very little change in overall fishing effort. However, recreational harvest restrictions for many of the alternative species in the Northeast are becoming more binding each year, resulting in fewer substitute landing opportunities, particularly for anglers fishing aboard headboats where passengers are primarily limited to bottom fishing. 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 through adjustments to the management measures. While it is likely that the proposed management measures may restrict the recreational fishery for 2010 and that 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 will lead to a decline in the demand for party/charter boat trips when compared to 2009. Currently, the market demand for this sector is relatively stable (see recreational fishing trends below).

Black sea bass recreational fishing trips have shown a slight downward trend from the early to Mid-1990's (Table 20). However, for the last 10 years black sea bass recreational trips have leveled. Black sea bass recreational landings have shown a slight upward trend from 1991 to 1997. Black sea bass landings decreased considerably from 1995-1996 to 1998-1999, but then substantially increased in 2002 to 4.44 million lb. In 2003-2008, recreational landings ranged from 1.95 to 1.64 million lb. For the 2005 and 2006 period combined, recreational landings were close to 4 million lb (48 percent) below the harvest limit. In 2007, recreational landings were near identical (2.41 million lb) to the limit implemented that year. In 2008, recreational landings were 1.64 million lb or 22 percent below the recreational limit implemented that year. Black sea bass recreational fishing trips have averaged 255 thousand for the 1991 to 2008 period, ranging from approximately 136 thousand in 1999 to 375 thousand in 2007 (Table 20).

Under this alternative, the black sea bass 2010 recreational harvest limit (adjusted for RSA) is 1.14 million lb. The black sea bass recreational limit under this alternative is identical to the limit implemented in 2009 (*status quo*). If recreational landings are the same in 2009 as in 2008 (1.64 million lb), the adjusted recreational harvest limit is not expected to constrain recreational landings in 2010. As such, 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 2010. It is likely that this would result in decrease recreational satisfaction for the black sea bass recreational fishery relative to 2009. However, it is not expected that this will result in any substantive decreases in the demand for party/charter boat trips. As indicated above, the market demand for this sector is relatively stable (see recreational fishing trends below).

General Effort Trends

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 (Tables 18-20). In the aggregate, total number of recreational trips (all modes combined) in the North Atlantic and Mid-Atlantic subregions combined has remained relatively stable with an upward trend for the 1990 to 2008 time period. On average, for the 1990-2008 period, approximately 25 million marine recreational fishing trips (all modes combined) were taken in the North Atlantic and Mid-Atlantic subregions combined. For that period, marine recreational trips ranged from 18 million trips in 1992 to over 32 million trips in 2007 in the two regions combined.

The number of party/charter boat trips taken in the North Atlantic and Mid-Atlantic subregions combined has fluctuated throughout the 1990-2008 period showing a downward trend for the 1990 to 2008 period. On average, for the 1990-2008 period, 1.7 million party/charter marine fishing trips were taken in the North Atlantic and Mid-Atlantic sub-regions combined, ranging from 1.1 million trips in 1999 to 2.6 million trips in 1993. For the last 10 years (1999-2008), a slight upward trend in the number of party/charter marine fishing trips is evident. Party/charter trips in both regions have ranged from 1.1 in 1999 to 1.9 million in 2007. The average number of party/charter marine fishing trips is 1.7 million for the 1999 to 2008 period. In 2005-2008, 1.6, 1.8, 1.9, and 1.4 million party/charter boat trips, respectively, were taken in the North Atlantic and Mid-Atlantic subregions combined.

The number of anglers participating in marine recreational trips in the North Atlantic and Mid-Atlantic subregions combined has shown an upward trend for the 1990 to 2008 period. On average, for the 1990 to 2007 period, 3.4 million anglers fished in the North Atlantic and Mid-Atlantic sub-regions combined, ranging from 2.6 million anglers in 1999 to 5.1 million anglers in 2007 (the highest value in time series). In 2008, 4.6 million anglers fished in both sub-regions combined

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 possible that proposed summer flounder, scup, and black sea bass management measures may restrict the recreational fishery for 2010, 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. Given the number of party/charter trips taken during the last five to ten

years, 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, scup, and black sea bass that they are allowed to catch. Anglers that choose to reduce their effort in 2010 as a consequence of these recreational harvest limits are likely to transfer this effort to alternative species (i.e., spot, bluefish, weakfish, striped bass, tautog, pelagics, etc.) resulting in very little change in overall fishing effort. However, recreational harvest restrictions for many of the alternative species in the Northeast are becoming more binding each year, resulting in fewer substitute landing opportunities, particularly for anglers fishing aboard headboats where passengers are primarily limited to bottom fishing.

8.11.3.1.3 Other Impacts

Effects of Commercial Possession Limits, Minimum Mesh, Minimum Fish Size and Gear restrictions

The proposed summer flounder, scup, and black sea bass alternatives would only modify the 2010 commercial quotas and recreational harvest limits. Changes to other commercial management measures were not recommended for 2010 by the Council, Board, or the Summer Flounder, Scup, and Black Sea Bass Monitoring Committees. Therefore, other commercial management measures in place will remain unchanged (*status quo*) for the 2010 fishing year (see section 5.1 thought 5.3 for additional discussion).

Effects of the RSA

A detailed discussion regarding the socioeconomic impacts of the RSA for summer flounder, scup, and black sea bass is presented in section 7.4.4.

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

The social and economic impacts of this research should be minimal. The commercial set-aside could be worth as much as $366,498 and $99,740 for scup and black sea bass based on 2008 prices, respectively, under alternative 1. Assuming an equal reduction among all active vessels (i.e., 375 and 491 commercial vessels that landed scup and black sea bass in 2008, respectively), this may mean a reduction of $973 and $203 per individual vessel for scup and black sea bass, 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 RSAs 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. The maximum 3 percent RSA was used to assess potential impacts; however the actual RSA may be less than 3 percent. As such, the monetary worth of the RSA for scup and black sea bass are associated with the upper limit of impacts.

8.11.3.1.4 Summary of Impacts

In sum, the proposed 2010 Council-adjusted commercial quotas in preferred alternative 1 for summer flounder and scup are 20 percent higher (2.17 million lb) and 28 percent higher (2.31 million lb), respectively, relative to the adjusted quotas for year 2009. The black sea bass Council-adjusted commercial quota would result in the same allowable commercial landings relative to 2009. The Council-adjusted recreational harvest limits for summer flounder and scup for the year 2010 are 20 percent higher (1.43 million lb) and 16 percent higher (0.42 million lb), respectively, relative to the adjusted recreational harvest limits for year 2009. The black sea bass Council-adjusted recreational harvest limit would result in the same allowable commercial landings relative to 2009.

These alternatives are consistent with advice of the Council's scientific and/or technical advisors. Furthermore, the Council-adjusted commercial quotas and recreational harvest limits chosen under this alternative were selected by the Council because they maximize commercial and recreational landings to the extent practicable.

The analysis of the harvest levels under this alternative indicate that the economic impacts ranged from expected revenue increase for 721 vessels and no change in revenue for 88 vessels relative to 2009. Furthermore, there were no vessels projected to incur revenue losses of 5 percent or higher.

Assuming 2008 ex-vessel prices and the effect of potential changes in fishing opportunities in 2010 versus 2009, the 2010 Council-adjusted quotas in alternative 1 would increase summer flounder and scup revenues by approximately $5.10 and $2.56 million, respectively, relative to the quota implemented in 2009. No changes in black sea bass revenues are expected in 2010 relative to the quota implemented 2009.

On a per vessel level, the average increase in revenue associated with the increase in summer flounder and scup quotas is $7,822 and $6,827, respectively. The overall increase in ex-vessel gross revenue associated with these species combined in 2010 relative to quotas implemented in 2009 is approximately $7.66 million or approximately $10,609/vessel.

The changes in gross revenues indicate that alternative 1 will likely provide a net large benefit gain; while alternative 3 would provide the largest benefit gain and alternative 2 would provide the largest benefit loss in 2010. While alternative 3 provides the largest net benefits among all the evaluated alternatives, it was not chosen as the preferred alternative because the summer flounder specifications have less than 50 percent probability of achieving the threshold F and the scup/black sea bass specifications are inconsistent with the advice of the SSC and/or monitoring committee. Alternative 1 (preferred) on the other hand establishes required commercial landings limits that address the objectives 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 it was assumed in the derivation that all available commercial TALs would be harvested and 2008 ex-vessel prices are constant.

It is important to stress that these are potential changes, i.e., based on available data and assumptions made in order to conduct this analysis. 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 other reductions in 2010 (i.e., overages) that were not accounted for here.

Recreational landings for all three fisheries have fluctuated over the past several years. However, it appears that the market demand for this sector is relatively stable. While it is possible that lower recreational trip limits may affect angler satisfaction, it is unlikely that these measures will result in any substantive decreases in the demand for party/charter boat trips.

Alternative 1 is projected to minimize the negative economic impacts upon small entities when compared to alternative 2 while meeting the rebuilding requirements for summer flounder and the sustainability of the summer flounder, scup, and black sea bass stocks.

8.11.3.2 Quota Alternative 2 (Most Restrictive - Non-preferred)

This alternative examines the impacts on industry that would result from the most 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 5.0 were employed. Alternative 2 contains Council-adjusted commercial quotas of 10.74, 9.71, and 0.98 million lb for summer flounder, scup, and black sea bass, respectively. This alternative also specifies Council-adjusted recreational landings limits of 7.16, 2.74, and 1.02 million lb for flounder, scup, and black sea bass, respectively.

Under this alternative, the summer flounder quota would result in a small (0.3 percent) increase in commercial landings and no change in the recreational harvest limit relative to the 2009 allocations (Tables 17 and 18). The scup specifications would result in an aggregate 16 percent increase in allowable commercial landings and a 6 percent increase in the recreational harvest limit relative to the 2009 allocations (Tables 17 and 19). The black sea bass specifications would result in approximately 10 and 11 percent decrease in both commercial landings and recreational harvest limit, respectively, relative to the 2009 allocations (Tables 17 and 20). Note that even though the summer flounder quota under this alternative is the *status quo* measure, the 2010 Council-adjusted summer flounder quota is slightly different (0.3 percent) than the adjusted quota implemented in 2009 due to a 2009 commercial overage adjustment. In addition, even though the scup quota under this alternative is the *status quo* measure, the 2010 Council-adjusted scup quota and recreational harvest limit are slightly different than the adjusted quota and recreational harvest limit implemented in 2009 due to lower discards projected for 2010. Again, this alternative makes the same assumptions about landings as are made in the previous analyses.

8.11.3.2.1 Commercial Impacts

The results of the threshold analysis are presented in Table 23. The analysis of the harvest levels under this alternative indicate that the economic impacts ranged from expected revenue losses on

the order of < 5 percent for 85 vessels (relative to 2009) to revenue losses of 10-19 percent for 41 vessels. In total, 136 vessels are projected to incur revenue reduction of ≥ 5 percent. More specifically, the economic impacts ranged from expected revenue losses in the order of 5-9 percent for 95 vessels and 10-19 percent for 41. In addition, 458 vessels (57 percent) were projected to be impacted by revenue increase and 130 vessels (16 percent) were projected to have no revenue change (Table 23).

It is important to mention that while the overall Council commercial quota for summer flounder (*status quo*) is only slightly higher (0.3 percent) in 2010 when compared to the adjusted quotas implemented in 2009; the commercial fishing opportunities for some states are greater, ranging from 1 percent increase in New Hampshire to 16 percent increase in North Carolina (Table 7). In addition, on aggregate, the 2010 scup quota (*status quo*) allows for 16 percent increase in landings when compared to 2009 (Table 17). As such, the threshold analysis shows that 458 vessels are projected to incur in a revenue increase in 2010 when compared to 2009. The projected increase in revenue for these vessels ranged from a few hundred dollars for most vessels to a few thousands dollars for a very small number of vessels.

Given that a large number of vessels are projected to incur large revenue reduction, Council staff further examined the level of ex-vessel revenues for the impacted vessel to assess further impacts. For example, according to dealer data, it was estimated that 44 percent of the vessels (42 out of 95 vessels) projected to incur revenue reductions of 5-9 percent had total gross sales (all possible species combined not just summer flounder, scup, and black sea bass in 2008) of $1,000 or less and 71 percent (67 vessels) had total gross sales of $10,000 or less. Furthermore, 56 percent of the vessels (23 out of 41 vessels) projected to incur revenue losses of 10-19 percent had total gross sales of approximately $1,000 or less and 83 percent (34 vessels) had total gross sales of $10,000 or less.

While the analysis presented above indicates that in relative terms a large number of vessels (136) are likely to be impacted with revenue reductions of 5 percent or more, 49 percent of these vessels (65 vessels) had gross sales of $1,000 or less and 74 percent of the impacted vessels (101 vessels) had gross sales of $10,000 or less, thus likely indicating that the dependence on fishing for some of these vessels is very small. 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 24). "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 ≥ 5 percent by home state ranged from 5 or less in four states to 19 in New Jersey.

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.

Of the 136 vessels showing revenue reduction of ≥ 5 percent, 80 are identified as holders of federal summer flounder, scup, or black sea bass permits. The 80 vessels holding various combinations of summer flounder, scup, and black sea bass permits are described in Table 25. It is most common for vessels to have permits black sea bass only, and scup and black sea bass combined.

Many of the vessels projected to have revenue reductions of ≥ 5 percent hold permits in other fisheries (Table 26). In particular, most vessels have bluefish, dogfish, skate, squid-mackerel-butterfish, lobster (trap), and tilefish incidental. As a result, they have access to some alternative fisheries, although some like multispecies, dogfish, and scallops, are already under heavy regulation and likely to have increasingly stringent catch limits for the near future.

The majority of the impacted vessels (with revenue reductions of 5 percent or more) with federal permits for summer flounder, scup and/or black sea bass have home ports in New Jersey, Massachusetts, Virginia, New York, Rhode Island. The principal ports of landing for these vessels are mainly located in New Jersey, Rhode Island, Virginia, Massachusetts, and New York, (Table 27).

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 various states home-porting vessels projected to have revenue reductions in the ≥ 5 percent range, vessels in those states are likely to land in their home port state (69-100 percent; Table 27). 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 Rhode Island, Maryland, New Jersey, and Delaware (Table 27). 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 percent range are concentrated in New Jersey, Virginia, Rhode Island, New York and Massachusetts (Table 28). Within these states, the most impacted counties (largest number of impacted vessels) are: Washington in Rhode Island; Cape May in New Jersey; Virginia beach in Virginia; and Worcester in Maryland. Some individual ports with 5 or more impacted vessels in these counties are: Point Judith (Washington county); Cape May (Cape May county); and Virginia Beach (Virginia Beach City county). 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 based on the impacts of this alternative (see section 8.11.4). 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. The 2010 quotas associated with non-preferred alternative 2 would increase summer flounder and scup revenues by approximately $0.07 and $1.49 million, respectively, and decrease black sea bass revenues by $0.35 million relative to the quota implemented in 2009 (assuming the same ex-vessel prices presented above).

Assuming the increase in summer flounder total ex-vessel gross revenues associated with this alternative is distributed equally among the 652 vessels that landed summer flounder in 2008, the average increase in revenue associated with the decrease in summer flounder quota is approximately $108/vessel. Assuming the increase in scup total ex-vessel gross revenues associated with this alternative is distributed equally among the 375 vessels that landed scup in 2008, the average increase in revenue associated with the increase in scup quota is approximately $397/vessel. Finally, assuming the decrease in black sea bass total ex-vessel gross revenues associated with this alternative is distributed equally among the 491 vessels that landed black sea bass in 2008, the average decrease in revenue associated with the decrease in black sea bass quota is approximately $721/vessel.

The overall increase in ex-vessel gross revenue associated with summer flounder, scup, and black sea bass combined in 2010 relative to quotas implemented in 2009 is approximately $1.21 million under the most restrictive alternative. If this is distributed among the 809 vessels that landed summer flounder, scup, and black sea bass in 2008, the average increase in revenue is approximately $150/vessel. The changes in ex-vessel gross revenues associated with the potential changes in quotas in 2010 versus 2009 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.

8.11.3.2.2 Recreational Impacts

The information regarding trends in recreational participation (trends in effort) presented under section 8.11.3.1.2 also apply here.

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. It is likely that proposed management measures for black sea bass may restrict the recreational fishery for 2010, and these measures may cause some decrease in recreational satisfaction (i.e., low bag limit, larger fish size or closed season).

There is no information regarding how the potential decrease in the recreational harvest limits for these species will affect the demand for party/charter boat trips. Currently, the market demand for this sector is relatively stable; however, it is likely that given the proposed recreational harvest limits associated with this alternative, the demand for party/charter boat trips may be negatively impacted. Some anglers may that choose to reduce their effort in 2010 as a consequence of these recreational harvest limits are likely to transfer this effort to alternative species (i.e., spot, bluefish, weakfish, striped bass, tautog, pelagics, etc.) resulting in very little change in overall fishing effort. However, recreational harvest restrictions for many of the alternative species in the Northeast are becoming more binding each year, resulting in fewer substitute landing opportunities, particularly for anglers fishing aboard headboats where passengers are primarily limited to bottom fishing.

8.11.3.2.3 Other Impacts

Effects of Commercial Possession Limits, Minimum Mesh, Minimum Fish Size and Gear restrictions

The impacts of these non-quota management measures described in alternative 1 above (section 8.11.3.1.3) also apply here.

Effects of the RSA

A detailed discussion regarding the socioeconomic impacts of the RSA for summer flounder, scup, and black sea bass is presented in section 7.4.4.

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

The impacts of this non-quota management measure described in alternative 1 above (see section 8.11.3.1.3) also apply here. However, under this alternative, the commercial RSA component for scup could be worth as much as $333,246 or $889 per individual vessel and for black sea bass could be worth as much as $89,766 or $183 per individual vessel (see section 7.4.4).

8.11.3.2.4 Summary of Impacts

Alternative 2 allows commercial fishermen to land lower quantities of black sea bass, higher quantities of scup, and near identical quantities of summer flounder in 2010 relative to 2009. Recreational harvest limits would also follow the same directional pattern described under commercial landings.

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 Council-adjusted commercial summer flounder, scup, and black sea bass harvest levels (after RSA have been applied) under this alternative are approximately 2.14, 0.97, and 0.11 million lb higher than the limits specified under alternative 1, respectively. Recreational

harvest limits under this alternative are 1.43, 0.27, and 0.12 million lb lower than the limits specified under alternative 1, respectively.

The analysis of the harvest levels under this alternative indicates that 136 vessels (17 percent) will incur in revenue losses of ≥ 5 percent and 85 vessels (11 percent) of less than 5 percent. In addition, 458 vessels (57 percent) were projected to be impacted by revenue increase and 130 vessels (16 percent) were projected to have no revenue change.

Assuming 2008 ex-vessel prices, and the effect of the potential changes in fishing opportunities in 2010 versus 2009, the 2010 quotas associated with alternative 2 (after RSAs have been applied) would increase summer flounder and scup by approximately $0.07 and $1.49 million, respectively, and decrease black sea bass revenues by $0.35 million relative to the quota implemented in 2009.

On a per vessel level, the average change in revenue associated with the changes in quota (increase for summer flounder and scup and decrease for black sea bass) is an increase of approximately $108 and $397, for summer flounder and scup, respectively; and a decrease of $721 for black sea bass. The overall reduction in ex-vessel gross revenue associated with summer flounder, scup, and black sea bass combined in 2010 relative to quotas implemented in 2009 is approximately $1.21 million or approximately $150/vessel.

Recreational landings for black sea bass under this alternative are substantially lower than those implemented in 2009 It is likely that the proposed limit under this alternative will restrict the fishery for 2010 and these measures may cause some decrease in recreational satisfaction (i.e., low bag limit, larger fish size or closed season) compared alternative 1.

The social and economic impacts of RSAs should be minimal. The RSAs are, conceptually, available for commercial vessels to participate in research, as well as for other vessels. Also, the RSAs are expected to yield important long-term benefits associated with improved data upon which to base management decisions. However, given the decrease in the commercial quota in 2010 relative to 2009 for black sea bass, the cost of any premature closure of the fishery (pounds of black sea bass allocated for set-aside) would be shared among the non RSA participants in the fishery.

The economic changes presented in this section 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 other potential reductions in 2010 not accounted for here (section 4.4).

While the quota and recreational harvest limits under this alternative 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 because of the potential adverse economic impacts associated with it.

8.11.3.3 Quota Alternative 3 (Least Restrictive - Non-preferred)

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 5.0 were employed. Alternative 3 contains Council-adjusted commercial quotas of 15.31, 11.65, and 2.28 million lb for summer flounder, scup, and black sea bass, respectively. This alternative also specifies Council-adjusted recreational landings limits of 10.21, 3.29, and 2.37 million lb for flounder, scup, and black sea bass, respectively.

Under this alternative, the summer flounder specifications would result in approximately 43 percent increase in both allowable commercial landings and recreational harvest limit relative to 2009 (Tables 17 and 18). The scup specifications would result in an aggregate 39 percent increase in allowable commercial landings and a 27 percent increase in recreational harvest relative to 2009 (Tables 17 and 19). The black sea bass specifications would result in a 109 percent increase in allowable commercial landings and a 108 percent increase in recreational harvest relative to 2009 (Tables 17 and 20). Again, this alternative makes the same assumptions about landings as are made in the previous analyses.

8.11.3.3.1 Commercial Impacts

The result of the analysis for this alternative indicates that across all vessel classes, a total of 809 vessels were projected to be impacted by revenue increase (relative to 2009). There were no vessels projected to incur in revenue losses under this alternative (Table 29)

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. The 2010 quotas associated with this non-preferred alternative would increase summer flounder, scup, and black sea bass revenues by approximately $10.81, $3.64, and $3.51 million, respectively, relative to the quota implemented in 2009 (assuming the ex-vessel prices presented above).

Assuming the increase in summer flounder, scup, and black sea bass total ex-vessel gross revenues associated with alternative 3 is distributed equally between the vessels that landed summer flounder (652), scup (375), and black sea bass (491) in 2008, the average increase in revenue associated with the increase in quotas is $16,580/vessel, $9,707/vessel, and $7,149/vessel, respectively.

The overall increase in ex-vessel gross revenue associated with the three species combined in 2010, relative to 2009, is approximately $17.96 million (assuming 2008 ex-vessel prices) under alternative 3. If this is distributed among the 809 vessels that landed summer flounder, scup, and black sea bass in 2008, the average increase in revenue is approximately $22,200/vessel. However, if prices for these species decrease as a consequence of changes in landings, then the associated revenue increase could be different than those estimated above.

The projected increase in ex-vessel gross revenues associated with this alternative is higher than under alternative 1 (preferred). This alternative is projected to minimize the negative economic impacts upon small entities when compared to alternatives 1 and 2. The summer flounder harvest levels under this alternative have a 50 percent probability of exceeding the fishing mortality threshold in 2010 and it is not projected to rebuild the spawning stock biomass to SSB_{MSY} by the end of January 1, 2013 (section 7.1).

8.11.3.3.2 Recreational Impacts

As indicated above, the summer flounder, scup, and black sea bass recreational limits for 2010 are substantially higher for summer flounder, scup, and black sea bass when compared to the limits implemented in 2009. 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.

8.11.3.3.3 Other Impacts

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

The impacts of these non-quota management measures described in alternative 1 above (section 8.11.3.1.3) also apply here.

<u>Effects of the RSA</u>

A detailed discussion regarding the socioeconomic impacts of the RSA for summer flounder, scup, and black sea bass is presented in section 7.4.4.

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

The impacts of this non-quota management measure described in alternative 1 above (see section 8.11.3.1.3) also apply here. However, under this alternative, the commercial RSA component for scup could be worth as much as $400,000 or $1,067 per individual vessel and for black sea bass could be worth as much as $208,152 or $423 per individual vessel (see section 7.4.4).

8.11.3.3.4 Summary of Impacts

Alternative 3 allows commercial fishermen to land more summer flounder, scup, and black sea bass than alternatives 1 (preferred) and 2 (most restrictive). Recreational harvest limits for summer flounder, scup, and black sea bass are higher than the limits under alternative 1.

The threshold analysis indicates that a total of 809 vessels were projected to be impacted by revenue increase (relative to 2009). There were no vessels projected to incur in revenue losses under this alternative. Assuming 2008 ex-vessel prices, and the effect of the potential changes in fishing opportunities in 2010 versus 2009, the 2010 Council-adjusted quotas associated with alternative 3 (after RSAs have been applied) would increase summer flounder ($10.81 million),

scup ($3.64 million), and black sea bass revenues ($3.51 million) relative to the quota implemented in 2009.

On a per vessel level, the average increase in revenue associated with the increase in summer flounder, scup, and black sea bass is approximately $16,580, $9,707, and $7,149, respectively. 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 larger overall harvest levels for summer flounder, scup, and black sea bass when compared to alternatives 1 (preferred) and 2 (most restrictive). The scup and black sea bass harvest levels are inconsistent with the advice of the SSC and/or monitoring committee. While the economic benefits associated from this alternative are higher than those described under the preferred alternative, it was not chosen because it is expected to result in negative impacts on the managed resources in 2010.

Recreational harvest limits under this alternative are higher than those implemented in 2009 for all three species. It is not expected that the proposed limits under this alternative will restrict the fishery for 2010. As such, it is not expected that recreational satisfaction would be negatively affected.

The social and economic impacts of RSAs should be minimal. The RSAs are, conceptually, available for commercial vessels to participate in research, as well as for other vessels. Also, the RSAs 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 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 other potential reductions in 2010 not accounted for here (section 4.4).

The proposed TALs under this alternative would result in the greatest short-term economic benefic relative to alternatives 1 and 2. However, the TALs under this alternative are not consistent with the advice of the Council's scientific advisors, the SSC.

8.11.4 Other Impacts

<u>County Impacts</u>

For the reasons specified in section 8.11.2 of this document, the economic impacts on vessels of a specified home port were analyzed on a county wide basis. Counties included in the profile had to meet the following criteria: a) the number of vessels with revenue loss exceeding 5 percent per

county was either greater than 4, or b) 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 2010 was used to assess impacted counties. The most restrictive alternative was chosen to identify impacted counties because it provides the maximum number possible, thus the broadest possible range of counties was included in the analysis. A total of 15 counties were identified to be impacted in 2010: Sussex, DE; Worcester, MD; Bristol, Dukes, and Suffolk, MA; Atlantic, Cape May, and Ocean, NJ; Nassau, New York, and Suffolk, NY; Washington, RI; Accomack, City of Norfolk, and Virginia Beach City, VA. Counties not included in this analysis (e.g., Barnstable and Essex, MA; Dare and Poquison City Area, VA; Hyde, NC; Monmouth, NJ; and Newport, RI) 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. The target counties were identified based on the county associated with the vessels homeport as listed in the owner's 2008 permit application.

Table 30 details population sizes, employment, personal income, and the contribution of commercial fishing and sea food processing to total personal income for selected counties. Counties presented in Table 30 correspond to the counties identified as impacted due to the management measures evaluated (i.e., as described in the above paragraph). Data presented in Table 30 were obtained from data bases supplied by the Minnesota IMPLAN Group for the calendar year 2001.

Of the counties identified in Table 30, the percentage of total personal income derived from commercial fishing sales and from seafood processing was less than 1 percent for all counties. These data indicate that each of the identified counties in Table 30 is not substantially dependent upon sales of commercial fishing products to sustain the county economies. Population in these counties ranged from 15 thousand in Dukes County to 1.5 million in New York County.

9.0 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, New England Fishery Management Council, South Atlantic Fishery Management Council, and NMFS Highly Migratory Species Division managed species. The specific identification and description of summer flounder, scup, and black sea bass EFH is detailed in section 3.2 of Amendment 13 to the FMP (MAFMC 2002). A brief description of habitats that are important to summer flounder, scup, and black sea bass are described in section 6.2 of this document.

9.1 Description of Action

The purpose of the proposed action is to implement 2010 commercial quotas and recreational harvest limits for the summer flounder, scup, and black sea bass fisheries that are necessary to achieve the annual target exploitation rates or in the case of summer flounder, to meet the stock rebuilding schedule. It would increase the TAL for summer flounder by 19.9 percent (compared

to 2009), maintain the *status quo* TAC for scup, and maintain the *status quo* TAL for black sea bass. The commercial quotas and recreational harvest limits would be adjusted for any overages in 2009, but would change by approximately the same amount. Changes to other commercial management measures (i.e., minimum fish size, mesh size, possession limits, and other gear regulations) are not recommended for 2010. (A full description of the action proposed in this annual specifications document is provided in section 5.0). 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..." Because of the narrow scope of this annual specifications document, and the fact that any action taken (annual management measures) is consistent with the current regulations implementing the FMP, the effects of fishing on EFH have not been re-evaluated since they were analyzed in Amendment 13, and no alternatives to minimize adverse effects on EFH are presented.

9.2 Analysis of Potential Adverse Effects on EFH

Bottom trawls are used in the commercial fishery to harvest all three species. Because trawls can adversely impact EFH for federally-managed species within the affected environment for this action, the increased commercial quotas for summer flounder and scup have the potential to increase bottom trawling activity and increase adverse impacts to benthic EFH. A larger quota may mean that states establish higher possession limits, which could 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 instances, the proposed quota could result in the same or reduced gear impacts to bottom habitats. It is unlikely the proportion of increase in quotas will result in the same proportion increase in gear contact time with the ocean bottom given the possible variables described above, although some increase in gear contact time would be expected. Assuming that bottom trawling for summer flounder and scup does increase in 2010, the areas which would be subjected to increased disturbance are already fished by mobile, bottom-tending gear used in this and other fisheries, so the additional impact that could result from an increase in summer flounder or scup trawling activity would be minimal and not require any mitigation. The proposed commercial quotas for black sea bass are not expected to cause any increased impacts to EFH.

10.0 LITERATURE CITED

(Literature cited in the appendices only can be found in their respective appendix).

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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 document was prepared by the following members of the MAFMC staff: Jessica Coakley and Dr. José L. Montañez. Dr. Eric Thunberg (NEFSC) assisted in documenting the analysis of permit data. Scott Steinback (NEFSC) assisted in documenting demographic/economic information presented in Table 35.

12.0 LIST OF AGENCIES AND PERSONS CONSULTED

In preparing this specifications document, the Council consulted with 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. To ensure compliance with NMFS formatting requirements, the advice of NMFS NERO personnel was sought.

TABLES

Table 1. Statistical areas that accounted for at least 5 percent of the summer flounder, scup, or black sea bass catch in 2008, NMFS VTR data (A map showing the location of these statistical areas is presented in Figure 4).

Statistical Area	Summer Flounder (percent)	Scup (percent)	Black Sea Bass (percent)
616	18.58	25.93	8.10
626	10.73	1.06	6.27
622	10.73	7.29	17.28
537	10.63	12.26	3.59
612	10.16	0.61	1.37
621	7.18	1.65	24.72
613	6.36	16.24	4.83
539	6.09	17.64	2.83
611	3.09	8.29	2.59
615	2.12	5.67	8.21
538	1.95	1.31	4.72

Table 2. Statistical areas that accounted for at least 5 percent of the summer flounder, scup, or black sea bass trips in 2008, NMFS VTR data (A map showing the location of these statistical areas is presented in Figure 4).

Statistical Area	Summer Flounder (percent)	Scup (percent)	Black Sea Bass (percent)
539	20.39	20.04	20.06
611	16.59	26.79	12.84
613	14.53	18.41	12.68
612	13.24	4.78	9.83
537	9.77	8.57	9.04
538	4.98	8.23	6.64
616	3.99	8.81	6.82
621	3.81	0.34	8.32

Table 3. Top ports of landing (in lb) for summer flounder (FLK), scup (SCP), and black sea bass (BSB), based on NMFS 2008 dealer data. Since this table includes only the "top ports," it may not include all of the landings for the year. Note: C = Confidential

Port	Landings of FLK (lb)	# FLK Vessels	Landings of SCP (lb)	# SCP Vessels	Landings of BSB (lb)	# BSB Vessels
PT. JUDITH, RI	1,082,665	100	1,306,100	91	129,909	116
4 NORTH CAROLINA PORTS*	C	C	C	C	C	C
HAMPTON, VA	715,786	44	28,626	12	43,292	20
PT. PLEASANT, NJ	584,582	37	339,469	21	64,560	23
NEWPORT NEWS, VA	565,183	36	30,596	4	57,630	12
CAPE MAY, NJ	441,534	63	363,307	21	219,935	34
BELFORD, NJ	415,432	24	68,907	20	9,781	21
MONTAUK, NY	372,214	77	517,024	46	86,233	57
NEW BEDFORD, MA	360,205	105	273,210	42	101,497	33
CHINCOTEAGUE, VA	315,828	36	29,005	10	63,777	10
HAMPTON BAY, NY	200,903	41	270,610	38	33,173	35
STONINGTON, CT	188,128	25	156,934	21	7,804	18
OCEAN CITY, MD	166,336	17	C	C	158,404	15
NEWPORT, RI	117,807	22	391,969	19	21,559	26
MATTITUCK, NY	92,044	4	103,218	5	53,807	4
LITTLE COMPTON, RI	89,631	21	338,285	19	51,719	15
CHATHAM, MA	2,706	7	102,125	5	13,300	9

*Top Ports within the state of North Carolina were reported under unknown permits, and as such, are reported as confidential.

Table 4. MRFSS preliminary estimates of 2008 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	1,039	1,246	0	0	0	0
MA	150,031	330,984	660,095	1,837,576	192,574	501,281
CT	115,821	907,937	671,690	1,802,954	27,498	148,160
RI	206,501	1,174,723	586,960	1,854,975	50,966	218,717
NY	565,456	6,689,280	1,616,742	4,898,577	244,570	2,073,430
NJ	851,447	10,200,297	132,116	686,391	455,533	4,676,090
DE	32,953	755,399	1,049	3,278	24,695	501,281
MD	87,729	1,396,157	130	11,563	33,853	1,161,833
VA	228,898	2,986,870	2,757	14,328	58,225	1,385,680
NC	53,090	56,221	20,797	30,552	68,774	922,643

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), 2008.

Comm. Permit Combinations	Recreational Permit Combinations								
	No Rec. Permit	FLK Only	SCP Only	BSB Only	FLK/ SCP	FLK/ BSB	SCP/ BSB	FLK/ SCP/ BSB	Row Total
No Comm. Permit	0	41	7	16	17	73	16	679	849
FLK Only	315	1	0	0	0	0	3	5	324
SCP Only	54	0	0	1	0	1	0	8	64
BSB Only	134	3	0	2	2	4	0	10	155
FLK/ SCP	100	0	0	0	0	0	0	4	104
FLK/ BSB	49	1	0	0	0	1	0	2	53
SCP/ BSB	138	4	0	0	0	1	0	26	169
FLK/ SCP/ BSB	475	3	0	0	1	0	0	16	495
Column Total	1,265	53	7	19	20	80	19	750	2,213

Table 6. Federal northeast region permits held by summer flounder, scup, and black sea bass commercial and recreational vessels, 2008.

	Commercial Only (n= 1,265)		Party/Charter Only (n= 849)		Commercial and Party/Charter (n= 99)	
Northeast Permits	**Vessels (No.)**	**Percent of Total**	**Vessels (No.)**	**Percent of Total**	**Vessels (No.)**	**Percent of Total**
Surfclam	541	43	17	2	6	6
Ocean Quahog	528	42	17	2	6	6
Scallop	311	25	0	0	0	0
Non-trap Lobster	734	58	18	2	21	21
Lobster Trap	373	29	61	7	27	27
Party/ Charter Lobster	0	0	24	3	6	6
Party/ Charter Multi-Species	402	32	654	77	44	44
Comm. Multi-species	657	52	60	7	36	36
Party/ Charter Squid/ Mackerel/ Butterfish	0	0	720	85	73	74
Comm. Squid/ Mackerel/ Butterfish	1,140	90	323	38	75	76
Comm. Bluefish	1,180	93	393	46	93	94
Party/ Charter Bluefish	8	1	786	93	86	87
Tier 1 Tilefish	2	<1	0	0	0	0
Tier 2 Tilefish	2	<1	0	0	0	0

Table 6 (Continued). Federal northeast region permits held by summer flounder, scup, and black sea bass commercial and recreational vessels, 2008.

	Commercial Only (n= 1,265)		Party/Charter Only (n= 849)		Commercial and Party/Charter (n= 99)	
Northeast Permits	**Vessels (No.)**	**Percent of Total**	**Vessels (No.)**	**Percent of Total**	**Vessels (No.)**	**Percent of Total**
Part-time Tilefish	12	1	0	0	1	1
Incidental Tilefish	963	76	439	52	71	72
Herring VMS	0	0	0	0	0	0
Herring Non-VMS	0	0	0	0	0	0
Spiny Dogfish	1,119	88	494	58	79	80
Monkfish	543	43	5	1	8	8
Incidental Monkfish	608	48	412	49	70	71
Skate	1,066	84	352	41	72	73
Red Crab Incidental	771	61	142	17	41	41
Red Crab 75,000 lb trip limit	0	0	0	0	0	0
Red Crab 125,000 lb trip limit	0	0	0	0	0	0

Table 7. Descriptive data from northeast region permit files for commercial vessels, 2008.

	CT	DE	FL	MA	MD	ME	NC	NH	NJ	NY	PA	RI	VA	Other
No. of Permits by Mailing Address State	26	8	4	413	19	60	118	23	223	132	0	138	99	2
No. of Permits by Home Port State	28	8	5	435	17	48	117	20	214	144	8	131	89	1
No. of Permits by Principal Port State	30	6	1	425	18	50	106	22	219	139	1	141	106	1
Average Length by Principal Port	62	43	41	56	46	34	64	40	59	44	64	54	64	NA
Average Tonnage by Principal Port	91	22	26	81	28	27	84	27	76	38	109	64	95	NA
Average Horse Power by Principal Port	569	428	535	480	351	228	495	272	506	343	850	441	534	NA
Percent Home Port Equal Principal Port	93	75	20	96	89	94	84	91	92	94	0	89	76	NA

Table 8. Descriptive data from northeast region permit files for party/charter vessels, 2008.

	CT	DE	FL	MA	MD	ME	NC	NH	NJ	NY	PA	RI	VA	Other
No. of Permits by Mailing Address State	31	42	12	206	41	33	19	39	175	117	28	56	44	6
No. of Permits by Home Port State	22	50	8	209	45	35	23	36	171	124	18	63	43	2
No. of Permits by Principal Port State	25	48	4	208	44	37	22	34	187	119	4	67	48	2
Average Length by Principal Port	46	36	46	36	43	32	42	36	43	46	44	33	40	NA
Average Tonnage by Principal Port	28	16	40	18	28	12	25	17	28	32	28	16	22	NA
Average Horse Power by Principal Port	675	540	954	443	730	361	817	394	631	592	670	437	600	NA
Percent Home Port Equals Principal Port	88	92	50	98	87	92	96	92	89	91	11	93	88	NA

Table 9. Descriptive data from northeast region permit files for combination commercial/recreational vessels, 2008.

	CT	DE	FL	MA	NC	NH	NJ	NY	PA	RI	VA
No. of Permits By Mailing Address State	2	5	1	15	8	1	10	36	1	12	8
No. of Permits By Home Port State	0	5	1	20	8	1	9	38	1	8	8
No. of Permits by Principal Port State	1	5	1	15	8	1	11	36	-	13	8
Average Length by Principal Port	42	41	34	32	46	18	52	40	-	39	42
Average Tonnage by Principal Port	13	34	7	12	36	1	34	27	-	27	23
Average Horse Power by Principal Port	700	677	500	308	432	15	580	429	-	502	568
Percent Home Port Equal Principal Port	0	100	100	75	100	100	82	95	-	62	100

Table 10. Dealers reporting buying summer flounder, scup, and/or black sea bass, by state (from NMFS commercial landings database) in 2008.

	MA	RI	CT	NY	NJ	DE	MD	VA	NC	Other
Number of Dealers	50	37	8	58	32	5	7	28	25	1

Table 11. Comparison of habitat impacts and considerations for selecting summer flounder alternatives.

Alternative	TAL in mil lb	Potential Change in CPUE and Habitat Impacts	Considerations for Selecting Alternative
Alternative 1 (Council-Preferred)	**22.13**	Based upon species abundance, impacts associated with effort may remain the same as existing. There are no adverse impact habitats expected under this alternative.	Does not maximize landings; lesser risk of overfishing (compared to alternative 3). Slightly increased short-term yields, similar habitat impacts compared to 2009, potential for positive short-term financial impacts, and long-term financial benefits to industry.
Alternative 2 (Non-Preferred: Most Restrictive / *Status quo* (No Action))	**18.45**	Based upon species abundance, impacts associated with effort may remain the same as existing. There are no adverse impact habitats expected under this alternative.	Does not maximize landings; this alternative has the lowest risk of overfishing (compared to alternatives 1 and 3). Similar short-term yields, similar habitat impacts compared to 2009, positive short-term financial impacts to industry, and long-term financial benefits to industry.
Alternative 3 (Non-Preferred: Least Restrictive)	**26.31**	Based upon species abundance, impacts associated with effort may remain the same as existing or increase slightly. There is potential for slightly increased impacts with this alternative.	Maximizes landings to greatest extent, highest risk of overfishing (compared to alternatives 1 and 2), similar to slightly negative habitat impacts compared to 2009, short-term benefit to industry, but possible long-term negative financial impacts to industry.

Table 12. Comparison of habitat impacts and considerations for selecting scup alternatives.

Alternative	TAL in mil lb	Potential Change in CPUE and Habitat Impacts	Considerations for Selecting Alternative
Alternative 1 (Council-Preferred)	**14.11**	Based upon species abundance, impacts associated with effort may remain the same as existing. There are no adverse impact habitats expected under this alternative.	Does not maximize landings; lesser risk of overfishing (compared to alternative 3). Slightly increased short-term yields, similar habitat impacts compared to 2009, potential for positive short-term financial impacts, and long-term financial benefits to industry.
Alternative 2 (Non-Preferred: Most restrictive / *Status quo* (No Action))	**12.83**	Based upon species abundance, impacts associated with effort may remain the same as existing. There are no adverse impact habitats expected under this alternative.	Does not maximize landings; this alternative has the lowest risk of overfishing (compared to alternatives 1 and 3). Similar short-term yields, similar habitat impacts compared to 2009, positive short-term financial impacts to industry, and long-term financial benefits to industry.
Alternative 3 (Non-Preferred: Least Restrictive)	**15.40**	Based upon species abundance, impacts associated with effort may remain the same as existing or increase slightly. There is potential for slightly increased impacts with this alternative.	Maximizes landings to greatest extent, highest risk of overfishing (compared to alternative 1 and 2), similar to slightly negative habitat impacts compared to 2009, short-term benefit to industry, but possible long-term negative financial impacts to industry.

Table 13. Comparison of habitat impacts and considerations for selecting black sea bass alternatives.

Alternative	TAL in mil lb	Potential Change in CPUE and Habitat Impacts	Considerations for Selecting Alternative
Alternative 1 (Council-Preferred: *Status quo* (No Action))	**2.30**	Based upon species abundance, impacts associated with effort may remain the same as existing. There are no adverse impact habitats expected under this alternative.	Does not maximize landings; lesser risk of overfishing (compared to alternative 3). Slightly increased short-term yields, similar habitat impacts compared to 2009, potential for neutral short-term financial impacts, and long-term financial benefits to industry.
Alternative 2 (Non-Preferred: Most restrictive)	**2.07**	Based upon species abundance, impacts associated with effort may remain the same as existing. There are no adverse impact habitats expected under this alternative.	Does not maximize landings; this alternative has the lowest risk of overfishing (compared to alternatives 1 and 3). Decreased short-term yields, similar habitat impacts compared to 2009, negative short-term financial impacts to industry, and positive long-term financial impacts to industry.
Alternative 3 (Non-Preferred: Least Restrictive)	**4.80**	Based upon species abundance, impacts associated with effort may remain the same as existing or increase slightly. There is potential for slightly increased impacts with this alternative.	Maximizes landings to greatest extent, highest risk of overfishing (compared to alternatives 1 and 2), similar to negative habitat impacts compared to 2009, short-term benefit to industry, but possible long-term negative financial impacts to industry.

Table 14. The research set-aside amounts that were analyzed for 2010. Note: Actual approved RSA amounts may be less than or equal to the maximum 3 percent depending on the specific project requests.

Table values (million lb)		Initial TAL	Research Set-Aside Requested	Value Analyzed 3 percent of TAL
Summer Flounder	**Alternative 1 (Council-Preferred)**	22.13	3% of TAL or less	0.66
	Alternative 2 (Non-Preferred: Most Restrictive / *Status quo* (No Action))	18.45		0.55
	Alternative 3 (Non-Preferred: Least Restrictive)	26.31		0.79
Scup	**Alternative 1 (Council-Preferred)**	14.11	3% of TAL or less	0.42
	Alternative 2 (Non-Preferred: Most Restrictive / *Status quo*(No Action))	12.83		0.38
	Alternative 3 (Non-Preferred: Least Restrictive)	15.40		0.46
Black Sea Bass	**Alternative 1 (Council-Preferred: *Status quo* (No Action))**	2.30	3% of TAL or less	0.07
	Alternative 2 (Non-Preferred: Most Restrictive)	2.07		0.06
	Alternative 3 (Non-Preferred: Least Restrictive)	4.80		0.14

Table 15. Status of stock for potential non-target species for all proposed 2010 Mid-Atlantic research set-aside projects as of May 2009 (Table provided by Sarah Thompson of NMFS/NERO).

Species	Status of Stock
American Lobster	SNE-Overfishing, Depleted
Atlantic Cod	GOM-Overfishing, Overfished; GB-Overfishing, Overfished
Atlantic Herring	-
Atlantic Mackerel	-
Barndoor Skate	-
Butterfish	Overfished
Clearnose Skate	-
Haddock	GOM-Overfished; GB-Overfished
Illex	-
Little Skate	-
Monkfish	-
Offshore Hake	-
Rosette Skate	-
Silver Hake	-
Smooth Skate	GOM - Overfished
Spiny Dogfish	-
Thorny Skate	GOM – Overfishing, Overfished
Weakfish	Unknown
Winter Flounder	GB-Overfishing; SNE/MA-Overfishing, Overfished
Winter Skate	GB/SNE - Overfished
Yellowtail Flounder	GB-Overfishing, Overfished; SNE/MA-Overfishing, Overfished; CC/GOM-Overfishing, Overfished

CC – Cape Cod; GB – Georges Bank; GOM – Gulf of Maine; MA – Mid-Atlantic;
SNE – Southern New England

Table 16. Numbers of vessels landing scup, black sea bass and/or summer flounder in 2008.

Landings Class	Landings Combinations	Commercial Vessels (#)
1	Scup Only	15
2	Black Sea Bass Only	87
3	Summer Flounder Only	275
4	Scup/Black Sea Bass	55
5	Scup/Summer Flounder	28
6	Black Sea Bass/Summer Flounder	72
7	Scup/Black Sea Bass/Summer Flounder	277
	Total	809

Data from Northeast Region dealer data.

Table 17. Percentage changes associated with allowable commercial landings for various alternatives in 2010 (adjusted for overages and RSA) relative to the adjusted quotas for 2009[a].

	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	
New Hampshire	+21%	+1%	+44%
Massachusetts	+25%	+4%	+49%
Delaware[b]	-100%	-100%	-100%
Virginia	+36%	+14%	+62%
North Carolina	+39%	+16%	+66%
States other than NH, MA, DE, VA, and NC	+20%	0%	+43%
Aggregate Change	+20%	< +1%	+43%
		Scup	
Winter I	+27%	+16%	+39%
Summer	+42%	+29%	+55%
Winter II	+27%	+16%	+39%
Aggregate Change	+28%	+16%	+39%
		Black Sea Bass	
Aggregate Change	0%	-10%	+109 %

[*]Denotes *status quo* management measures.
[a]2009 quotas adjusted for research set-aside and other adjustments due to transfers, overages, and/or quota restorations.
[b]Delaware has no quota allocation in 2010.

Table 18. Number of summer flounder recreational fishing trips, recreational harvest limit, and recreational landings from 1991 to 2010.

Year	Number of Fishing Trips[a]	Recreational Harvest Limit (million lb)	Recreational Landings of Summer Flounder (million lb)[b]
1991	4,536,651	None	7.96
1992	3,820,071	None	7.15
1993	4,671,638	8.38	8.83
1994	5,769,037	10.67	9.33
1995	4,683,754	7.76	5.42
1996	4,885,179	7.41	9.82
1997	5,595,636	7.41	11.87
1998	5,268,926	7.41	12.48
1999	4,219,909	7.41	8.37
2000	5,802,215	7.41	16.47
2001	6,130,383	7.16	11.64
2002	4,564,011	9.72	8.01
2003	5,624,387	9.28[c]	11.64
2004	5,129,166	11.21[c]	10.87
2005	5,560,041	11.98[c]	10.58
2006	5,447,976	9.29[c]	11.55
2007	5,783,706	6.68[c]	9.86
2008	6,388,664	6.21[c]	7.90
2009	NA	7.16[c]	NA
2010	NA	8.59[c,d]	NA

[a]Estimated number of recreational fishing trips (expanded) where the primary target species was summer flounder, Maine through North Carolina. Source: Scott Steinback, NMFS/NER/NEFSC.
[b]From Maine through North Carolina.
[c]Adjusted for research set-aside.
[d]Recreational harvest limit under Council-preferred alternative 1.
NA = Data not available.

Table 19. Number of scup recreational fishing trips, recreational harvest limit, and recreational landings from 1991 to 2010.

Year	Number of Fishing Trips[a]	Recreational Harvest Limit (million lb)	Recreational Landings of Scup (million lb)[b]
1991	793,593	None	8.09
1992	499,780	None	4.41
1993	499,703	None	3.20
1994	435,625	None	2.63
1995	242,956	None	1.34
1996	241,322	None	2.16
1997	198,754	1.95	1.20
1998	213,842	1.55	0.88
1999	231,596	1.24	1.89
2000	485,039	1.24	5.44
2001	484,604	1.77	4.26
2002	481,716	2.71[c]	3.62
2003	971,770	4.01[c]	8.48
2004	567,518	4.01[c]	4.24
2005	478,810	3.96[c]	2.54
2006	466,977	4.15[c]	2.95
2007	580,753	2.74[c]	3.65
2008	729,197	1.83[c]	4.04
2009	NA	2.59[c]	NA
2010	NA	3.01[c,d]	NA

[a]Estimated number of recreational fishing trips (expanded) where the primary target species was scup, Maine through North Carolina. Source: Scott Steinback, NMFS/NEFSC.
[b]From Maine through North Carolina.
[c]Adjusted for research set-aside.
[d]Recreational harvest limit under Council-preferred alternative 1.
NA = Data not available.

Table 20. Number of black sea bass recreational fishing trips, recreational harvest limit, and recreational landings from 1991 to 2010.

Year	Number of Fishing Trips[a]	Recreational Harvest Limit (million lb)	Recreational Landings of BSB (million lb)[b]
1991	288,691	None	4.32
1992	263,957	None	2.91
1993	299,404	None	4.99
1994	253,888	None	3.05
1995	313,537	None	6.34
1996	231,090	None	4.13
1997	310,898	None	4.40
1998	137,734	3.15	1.29
1999	136,452	3.15	1.70
2000	255,789	3.15	4.12
2001	293,191	3.15	3.60
2002	283,537	3.43[c]	4.44
2003	285,861	3.43[c]	3.45
2004	186,038	4.01[c]	1.95
2005	163,418	4.13[c]	2.10
2006	251,945	3.99[c]	2.11
2007	375,398	2.47[c]	2.41
2008	272,300	2.11[c]	1.64
2009	NA	1.14[c]	NA
2010	NA	1.14[c,d]	NA

[a]Estimated number of recreational fishing trips (expanded) where the primary target species was black sea bass, Maine through North Carolina. Source: Scott Steinback, NMFS/NEFSC.
[b]From Maine through Cape Hatteras, North Carolina.
[c]Adjusted for research set-aside.
[d]Recreational harvest limit under Council-preferred alternative 1.
NA = Data not available.

Table 21. Threshold analysis of revenue impacts for participating vessels associated with the 2010 combined summer flounder, scup, and black sea bass quota under alternative 1 (preferred). "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	5-9	10-19	20-29	30-39	40-49	≥50
1	SCP Only	15	0	15	0	0	0	0	0	0	0	0
2	BSB Only	87	0	0	87	0	0	0	0	0	0	0
3	FLK Only	275	0	275	0	0	0	0	0	0	0	0
4	SCP/BSB	55	0	54	1	0	0	0	0	0	0	0
5	SCP/FLK	28	0	28	0	0	0	0	0	0	0	0
6	BSB/FLK	72	0	72	0	0	0	0	0	0	0	0
7	SCP/BSB/FLK	277	0	277	0	0	0	0	0	0	0	0
	Totals	809	0	721	88	0	0	0	0	0	0	0

Table 22. Review of revenue impacts under quota alternative 1 (preferred; associated with the 2010 combined summer flounder, scup, and black sea bass quotas), by home port state.

State	Participating Vessels	Number of Vessels Impacted ≥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	14	0	14	0	0	0	0	0	0	0	0
DE	5	0	2	3	0	0	0	0	0	0	0
MA	111	0	102	9	0	0	0	0	0	0	0
MD	8	0	7	1	0	0	0	0	0	0	0
NC	62	0	61	1	0	0	0	0	0	0	0
NJ	115	0	101	14	0	0	0	0	0	0	0
NY	106	29	66	0	0	0	0	0	0	0	0
PA	5	2	3	0	0	0	0	0	0	0	0
RI	102	18	83	0	0	0	0	0	0	0	0
VA	39	14	24	0	0	0	0	0	0	0	0
OTHER[a]	2	0	2	0	0	0	0	0	0	0	0
NOT KNOWN[b]	281	94	183	0	0	0	0	0	0	0	0
Total	891	224	647	0	0	0	0	0	0	0	0

[a]States with fewer than 3 vessels were aggregated.
[b]Vessels have shown landings of either of those three species in 2008, but did not hold any of the requisite Federal permits in 2008. 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.

able 23. Threshold analysis of revenue impacts for participating vessels associated with the 2010 combined summer flounder, scup, and black sea bass quota under alternative 2 (most restrictive). "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	15	0	15	0	0	0	0	0	0	0	0
2	BSB Only	87	87	0	0	0	46	41	0	0	0	0
3	FLK Only	275	0	147	128	0	0	0	0	0	0	0
4	SCP/BSB	55	28	21	0	6	28	0	0	0	0	0
5	SCP/FLK	28	0	28	0	0	0	0	0	0	0	0
6	BSB/FLK	72	17	19	2	34	17	0	0	0	0	0
7	SCP/BSB/FLK	277	4	228	0	45	4	0	0	0	0	0
	Totals	809	136	458	130	85	95	41	0	0	0	0

Table 24. Review of revenue impacts under quota alternative 2 (most restrictive; associated with the 2010 combined summer flounder, scup, and black sea bass quotas), by home port state.

State	Participating Vessels	Number of Vessels Impacted ≥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	14	0	11	3	0	0	0	0	0	0	0
DE	5	4	0	0	1	3	1	0	0	0	0
MA	111	13	94	1	3	9	4	0	0	0	0
MD	8	5	0	0	3	4	1	0	0	0	0
NC	62	1	56	1	4	0	1	0	0	0	0
NJ	115	19	40	41	15	10	9	0	0	0	0
NY	102	12	49	18	23	7	5	0	0	0	0
RI	96	12	62	7	15	10	2	0	0	0	0
VA	34	13	21	0	0	11	2	0	0	0	0
OTHER[a]	7	1	1	4	1	0	1	0	0	0	0
NOT KNOWN[b]	255	56	124	55	20	41	15	0	0	0	0
Total	809	136	458	130	85	95	41	0	0	0	0

[a]States with fewer than 3 vessels were aggregated.
[b]Vessels have shown landings of either of those three species in 2008, but did not hold any of the requisite Federal permits in 2008. 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 25. Combinations of 2008 summer flounder (FLK), scup (SCP), and black sea bass (BSB) permits held by commercial vessels projected to have revenue reductions in the 5 percent or more range under alternative 2 (most restrictive).

	All 3	FLK only	BSB only	SCP only	SCP/ BSB	SCP/ FLK	BSB/ FLK	None*
Commercial	10	0	32	2	33	1	2	56

* "None" indicates no summer flounder, scup, or black sea bass permit held, and not necessarily no commercial permits held.

Table 26. Other 2008 permits held by the 280 vessels holding summer flounder, scup and/or black sea bass permits projected to have revenue reductions in the 5 percent or more range under alternative 2 (most restrictive) in 2010.

	Northeast Region Permit Status	Number of Vessels	Percent of Permitted Vessels
Commercial	Multispecies	20	25
	Surfclam	5	6
	Scallop	2	3
	Lobster, trap gear	55	69
	Lobster, non-trap gear	9	11
	Squid/Mackerel/Butterfish	56	70
	Quahog	5	6
	Bluefish	76	95
	Dogfish	65	81
	Tilefish Incidental	51	64
	Atl. Deep-Sea Red Crab (Incidental)	41	51
	Skate	61	76
	Monkfish (Limited Access)	7	9
Recreational	Multispecies	31	39
	Squid/Mackerel/Butterfish	5	6
	Bluefish	7	9

Table 27. Descriptive information for the commercial vessels showing revenue reductions in the 5 percent or more range (in 2010) based on 2008 descriptive data from NMFS permit files under alternative 2 (most restrictive). No vessel characteristics data are reported for states with fewer than 3 permits.

	DE	MA	MD	NJ	NY	RI	VA	Other
# Permits by Home Port State	4	13	5	19	12	12	13	2
# Permits by Principal Port State	4	11	5	20	11	15	13	1
# Permits by Mailing Address State	4	10	5	20	11	16	13	1
Avg. Length in Feet by Principal Port	41	34	44	42	31	49	38	NA
Avg. GRT by Principal Port	20	14	27	29	10	50	23	NA
Avg. Vessel Horsepower	426	285	354	283	260	458	457	NA
% of Vessels where Home Port State = Principal Port State	100	77	100	95	92	69	92	NA

Table 28. Distribution of commercial vessels showing revenue reductions in the 5 percent or more range under alternative 2 (most restrictive; in 2010; holding permits for summer flounder, scup, and black sea bass) by state, county and home port, from 2008 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
Delaware	Sussex	Other	4
Maryland	Worcester	Ocean City	4
		Other	1
Massachusetts	Bristol	Other	3
	Dukes	Other	3
	Suffolk	Boston	4
New Jersey	Atlantic	Atlantic City	3
		Other	1
	Cape May	Cape May	7
		Sea Isle City	3
	Ocean	Point Pleasant	3
		Other	1
New York	Nassau	Other	3
	New York	New York	4
	Suffolk	Montauk	3
		Other	2
Rhode Island	Washington	Point Judith	9
		Other	2
Virginia	Accomack	Other	3
	City of Norfolk	Norfolk	3
	Virginia Beach City	Virginia Beach	5
		Other	1

Table 29. Threshold analysis of revenue impacts for participating vessels associated with the 2010 combined summer flounder, scup, and black sea bass quota under alternative 3 (least restrictive). "FLK" is summer flounder, "BSB" is black sea bass, and "SCP" is scup.

Quota Alternative 3 (Least Restrictive/*Status quo*)				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	15	0	15	0	0	0	0	0	0	0	0
2	BSB Only	87	0	87	0	0	0	0	0	0	0	0
3	FLK Only	275	0	275	0	0	0	0	0	0	0	0
4	SCP/BSB	55	0	55	0	0	0	0	0	0	0	0
5	SCP/FLK	28	0	28	0	0	0	0	0	0	0	0
6	BSB/FLK	72	0	72	0	0	0	0	0	0	0	0
7	SCP/BSB/FLK	277	0	277	0	0	0	0	0	0	0	0
	Totals	809	0	809	0	0	0	0	0	0	0	0

Table 30. Counties identified as having >= 4 commercial vessels showing revenue reductions of 5 percent or more as a consequence of the most restrictive 2010 alternative (alternative 2) evaluated in this document (sections 8.11.2 and 8.11.4 of the RIR/FRFA).

State	County[a]	Population[b]	Employment[c]	Total Personal Income[d] (million of $'s)	Commercial Fishing Employment	Percent of Personal Income Derived From Comm. Fishing	Fresh and Frozen Seafood Processing Employment	Percent of Personal Income derived From Seafood Processing
DE	Sussex	161,270	85,726	3,733.21	*	*	248	.20%
MA	Bristol	540,360	269,977	15,730.40	3,232	.64%	917	.19%
MD	Worcester	48,084	32,443	1,306.08	405	.14%	46	.09%
MA	Dukes	15,402	12,349	560.503	15	.05%	0	0%
MA	Suffolk	682,062	703,540	29,633.35	447	.07%	494	.09%
NJ	Atlantic	255,479	166,252	8,063.50	79	.02%	0	0%
NJ	Cape May	102,352	55,562	3,209.74	796	.34%	294	.30%
NJ	Ocean	527,207	187,627	15,742.25	166	.04%	0	0%
NY	Nassau	1,334,648	761,530	63,524.34	198	.0039%	84	.0029%
NY	New York	1,541,150	2,768,774	144,033.30	0	0%	23	.0013%
NY	Suffolk	1,438,973	752,834	52,116.44	1,111	.01%	0	0%
RI	Washington	125,991	62,870	4,212.16	793	.46%	96	.11%
VA	Accomack	34,414	18,444	708.07	93	.18%	281	.93%
VA	Virginia Beach City	426,931	245,384	13,767.66	157	.03%	*	*
VA	City of Norfolk	233,147	236,953	5,479.15	0	0%	52	.04%

* = < 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).

Source: Scott Steinback (NEFSC).

Note: The PA module was not available to conduct the county profile for that state. However, it is expected that overall commercial fishing employment; percent of personal income derived from commercial fishing; fresh and frozen seafood processing employment percent of personal; and income derived from seafood processing are expected to be low and not higher than the highest values presented in this table due to the small amount of marine commercial fishing activity in that state.

FIGURES

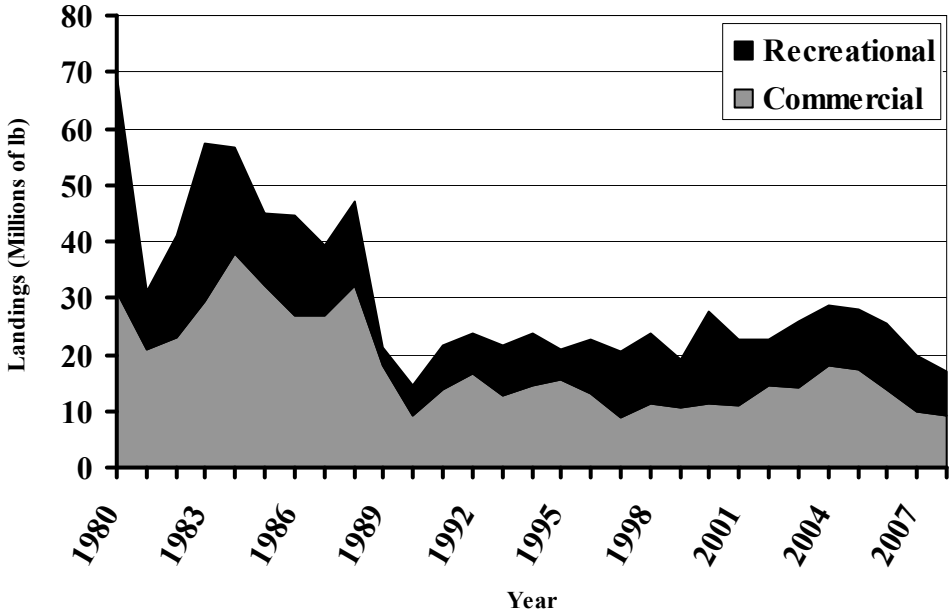

Figure 1. Summer flounder commercial and recreational landings, 1980-2008.

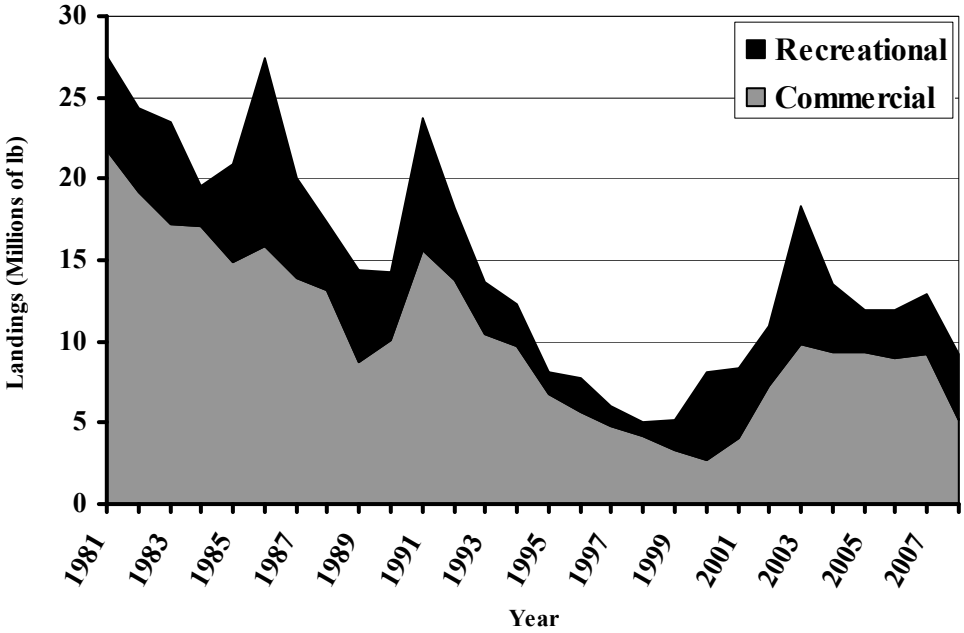

Figure 2. Scup commercial and recreational landings, 1981-2008.

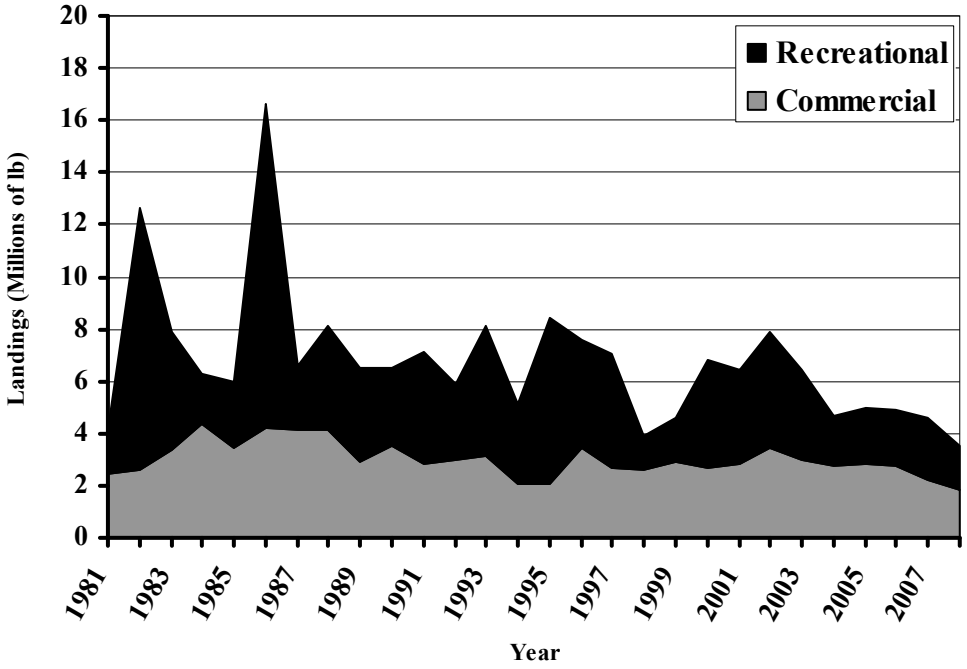

Figure 3. Black sea bass commercial and recreational landings, 1981-2008.

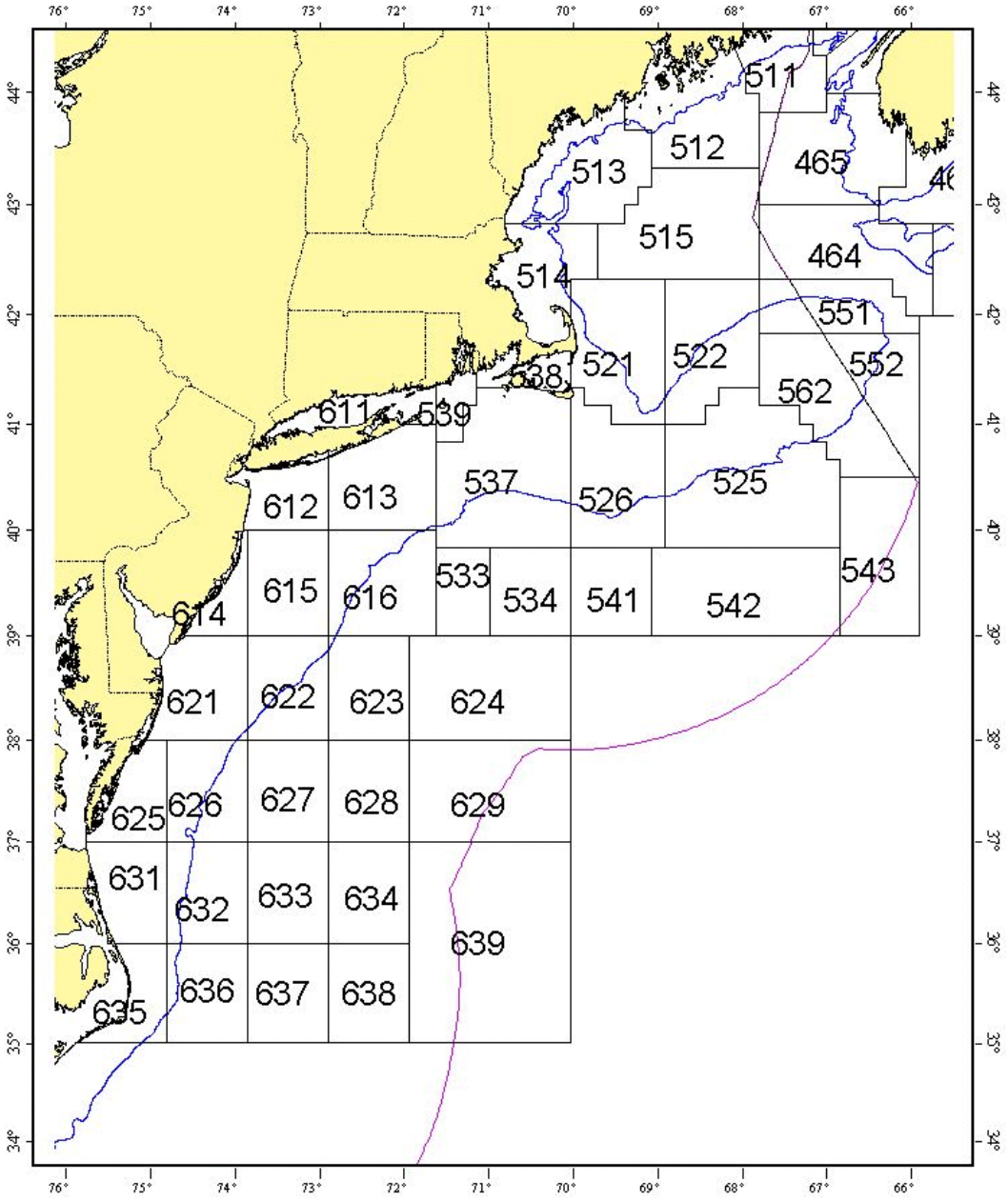

Figure 4. NMFS Northeast statistical areas.

APPENDIX A. Description of Species Listed as Endangered and Threatened which inhabit the management unit of the FMP

Species which have documented interactions with the summer flounder, scup, and black sea bass fisheries: Descriptions are provided in section 6.3 of this EA.

Other Endangered and Threatened Species within the Management Unit

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 world's 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 (21º 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. 2002). 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 its 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. 2008). 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 295 individuals in 1998 (Waring et al. 2008). An updated analysis using the same method gave an updated estimate of 299 animals in 1998. A review of the photo-id recapture database on June 15, 2006, indicated that 313 individually recognized whales were known to be alive in 2002 (Waring et al. 2008). PBR for this stock is zero.

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. (2008) provide a detailed description of the annual human related mortalities of right whales.

Humpback Whale

The humpback whale was listed as endangered throughout its range on June 2, 1970. 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 FMP. 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 41º N and 43º

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 comprised 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 Gulf of Maine stock has been steadily increasing (Waring et al. 2008). 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 847 (CV=0.55). The minimum population estimate for this stock is 549 animals (Waring et al. 2008).

PBR is the product of minimum population size (549 animals), one-half the maximum productivity rate, and a "recovery" factor (MMPA Sec. 3. 16 U.S.C. 1362; Wade and Angliss 1997). 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 1.1 whales (Waring et al. 2008).

The major known sources of anthropogenic mortality and injury of humpback whales include entanglement in commercial fishing gear and ship strikes. Waring et al. (2008) provide a detailed description of the annual human related mortalities of humpback whales. 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).

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. 2008). 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.

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).

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. 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 its 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. (2008) present a more recent abundance estimate of 2,269 (CV=0.37) and minimum population estimate of 1,678 for fin whales in the western North Atlantic. PBR for the western North Atlantic fin whale is 3.4 animals. For the period 2001-2005, Waring et al. (2008) report that the average annual rate of human-caused mortality and serious injury to fin whales was 2.4 animals per year.

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 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.

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.

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 FMP management area.

Sei whales winter in warm temperate or subtropical waters and summer in more northern latitudes. The species occurs 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.

There are insufficient data to determine trends of the sei whale population. Waring et al. (2008) present a minimum population estimate of 128 fin whales in the western North Atlantic. PBR for the Nova Scotia stock of sei whales is 0.3 animals. 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. Waring et al. (2008) reported that there were no fishery-related mortalities or serious injuries to fin whales observed by NMFS for the period 2001-2005. 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.

Sperm Whale

Sperm whales inhabit all ocean basins, from equatorial waters to 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). 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. (2008) 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. 2008).

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 4,804 (CV=0.38). The

minimum population estimate for the western North Atlantic sperm whale is 3,539 (Waring et al. 2008).

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 right or humpback whales. 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.

Hawksbill Sea Turtle

The following is a summary of information on the Hawksbill sea turtle made available by NMFS at the following website: http://www.nmfs.noaa.gov/pr/species/turtles/hawksbill.html

The hawksbill occurs in tropical and subtropical seas of the Atlantic, Pacific and Indian Oceans. The species is widely distributed in the Caribbean Sea and western Atlantic Ocean, with representatives of at least some life history stages regularly occurring in southern Florida and the northern Gulf of Mexico (especially Texas); in the Greater and Lesser Antilles; and along the Central American mainland south to Brazil. Within the United States, hawksbills are most common in Puerto Rico and its associated islands, and in the U.S. Virgin Islands. In the continental U.S., the species is recorded from all the gulf states and from along the eastern seaboard as far north as Massachusetts, with the exception of Connecticut, but sightings north of Florida are rare.

The hawksbill is a small to medium-sized sea turtle. In the U.S. Caribbean, nesting females average about 62-94cm in straight carapace length. Weight is typically to 80 kg in the wider Caribbean, with a record weight of 127 kg. Hatchlings average about 42 mm straight carapace length and range in weight from 13.5-19.5 g. The following characteristics distinguish the hawksbill from other sea turtles: two pairs of prefrontal scales; thick, posteriorly overlapping scutes on the carapace; four pairs of coastal scutes; two claws on each flipper; and a beak-like mouth. The carapace is heart-shaped in very young turtles, and becomes more elongate or subovate with maturity. Its lateral and posterior margins are sharply serrated in all but very old individuals.

Hawksbills utilize different habitats at different stages of their life cycle. Posthatchling hawksbills occupy the pelagic environment, taking shelter in weedlines that accumulate at convergence points. Hawksbills reenter coastal waters when they reach approximately 20-25 cm carapace length. Coral reefs are widely recognized as the resident foraging habitat of juveniles, subadults and adults. This habitat association is undoubtedly related to their diet of sponges, which need solid substrate for attachment. The ledges and caves of the reef provide shelter for

resting both during the day and night. Hawksbills are also found around rocky outcrops and high energy shoals, which are also optimum sites for sponge growth. Hawksbills are also known to inhabit mangrove-fringed bays and estuaries, particularly along the eastern shore of continents where coral reefs are absent. In Texas, juvenile hawksbills are associated with stone jetties.

Hawksbills utilize both low- and high-energy nesting beaches in tropical oceans of the world. Both insular and mainland nesting sites are known. Hawksbills will nest on small pocket beaches, and, because of their small body size and great agility, can traverse fringing reefs that limit access by other species. They exhibit a wide tolerance for nesting substrate type. Nests are typically placed under vegetation.

Incidental catch of hawksbill turtles during fishing operations is an unquantified and potentially significant source of mortality. Gill nets, longlines and shrimp trawls all take turtles in Gulf of Mexico waters. The extent to which hawksbills are killed or debilitated after becoming entangled in marine debris are unknown, but it is believed to be a serious and growing problem. Hawksbills have been reported entangled in monofilament gill nets, "fish nets", fishing line and rope. Hawksbill turtles eat a wide variety of debris such as plastic bags, plastic and styrofoam pieces, tar balls, balloons and plastic pellets. Effects of consumption include interference in metabolism or gut function, even at low levels of ingestion, as well as absorption of toxic byproducts.

The most recent 5-year hawksbill turtle status review was completed in 2007 (NMFS & USFWS 2007e) which included an examination of both recent and historic information on 83 hawksbill nesting sites distributed among 10 ocean regions around the world. Historic trends were determined for 58 of the 83 sites and all 58 (100%) showed a decrease in nesting abundance over time. Recent trends determined for 42 sites were more optimistic, with 10 (24%) increasing, 3 (7%) stable, and 29 (69%) in decline. Based on the best available information, NMFS & USFWS (2007e) concluded that the hawksbill turtle should not be delisted or reclassified under the ESA. The review also concluded that available information indicates that an analysis and review of the species should be conducted in the future to determine if the application of the Distinct Population Segment policy under the ESA to the hawksbill turtle is warranted.

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 mollusks, crustaceans (amphipods, 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. Piping plover are listed as threatened and their critical habitat includes prairie alkali wetlands and surrounding shoreline; river channels and associated sandbars and islands; and reservoirs and inland lakes and their sparsely vegetated shorelines, peninsulas, and islands. These areas provide primary courtship, nesting, foraging, sheltering, brood-rearing and dispersal habitat for piping plovers.

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.

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