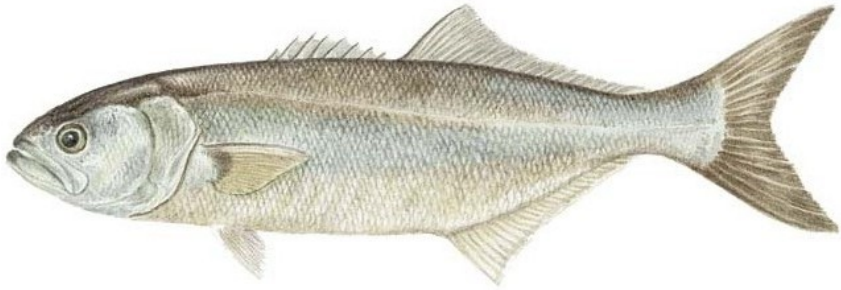
2008
Bluefish Specifications,
Draft Environmental Assessment,
Regulatory Impact Review,
and
Initial Regulatory Flexibility Analysis



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Prepared by the

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in cooperation with the

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1.0 EXECUTIVE SUMMARY

The purpose of this document is to analyze proposed annual management measures for fishing year 2008 to ensure that the annual fishing targets specified in the Fishery Management Plan for bluefish are attained. The 2008 measures include commercial quotas, recreational harvest limits, and other fishery management measures. These measures are necessary to achieve the annual target exploitation rates established under the bluefish rebuilding schedule.

In the final deliberations, the Council considered all the alternatives and comments and chose the total allowable landings limit under Alternative 1 and its allocation to the commercial and recreational components of the fishery as the preferred landings limit for 2008. The overall impacts of the alternatives evaluated in this document are briefly described below. Under all of the alternatives, it is recommended that the current recreational possession limit of 15 fish remain in place for 2008.

Alternative 1 (preferred) would specify a total allowable catch (TAC) of 31.887 million lb. The 2008 TAC was supported by the Bluefish Monitoring Committee and was based on projections from a June 2007 update to the bluefish stock assessment that would achieve the rebuilding target F in 2008 (0.15). Subtracting average discards for 2000-2006 (3.731 million lb) from the TAC generates total allowable landings (TAL) of 28.156 million lb. Under the preferred alternative, the commercial quota would be 8.875 million lb, and the recreational harvest limit (RHL) would be 19.281 million lb for 2008. Adjusting these initial values for the amount currently approved for research set-aside (RSA) project (50,000 lb) would lower the commercial quota to 8.859 million lb and the RHL to 19.246 million lb. The preferred commercial quota and RHL under this alternative are both greater than the status quo (2007) commercial quota/RHL.

The overall TAC/TAL under Alternative 2 is identical to the TAC/TAL under Alternative 1 and as such, is also consistent with achieving the rebuilding target F in 2008. The difference between the alternatives is that Alternative 2 does not include any transfer amount to the commercial fishery. Alternative 3 (status quo) would maintain the slightly lower 2007 TAL in 2008. Under Alternative 3, the commercial quota and RHL would both be lower than under Alternative 1. Compared to Alternative 2, the Alternative 3 commercial quota is greater and the RHL is lower.

Alternative 1 was chosen as the Preferred Alternative because it provides the best allocation to the commercial and recreational sectors considering recent fishing practices and recreational and commercial landings patterns. This alternative would provide commercial fishermen with greater fishing opportunities in 2008 when compared to the status quo alternative (Alternative 3). This alternative would also present no changes in biological, protected resources and Essential Fish Habitat (EFH) impacts in 2008 when compared to 2007.

Alternative 2 would specify a commercial quota of 4.787 million lb and an RHL of 23.370 million lb. Adjusting these initial values for RSA would yield an adjusted commercial quota of 4.658 million lb and an adjusted RHL of 22.741 million lb. The lower commercial quota under this alternative would result in lower overall bluefish landings compared to Alternatives 1 and 3,

which correspond to a lower-than-target fishing mortality rate, or a more "positive" biological impact. However, if bluefish commercial discarding increased significantly under the lower commercial quota, fishing mortality may exceed target F; which would be inconsistent with the rebuilding plan. This alternative is expected to generate greater economic and social losses compared to Alternatives 1 and 3 due to a reduction in ex-vessel revenues. The probability of fishery encounters with protected resources or potential damage to EFH is not significant under this alterative.

Alternative 3 (status quo) would specify a commercial quota of 8.689 million lb and an RHL of 19.073 million lb. Adjusting these initial values for RSA would yield an adjusted commercial quota of 8.673 million lb and an adjusted RHL of 19.039 million lb. This alternative is not associated with significant impacts to the biological, EFH, protected resource, or socio-economic components of the human environment.

Alternative 4.1 would not accommodate any RSA projects in 2008 through a deduction of the specified TAL. Alternative 4.2, however, would specify a maximum RSA of 3% of the bluefish TAL for 2008. Currently, the approved RSA projects are requesting a total of 50,000 lb of bluefish (0.18% of the TAL). Given the small amount requested for the approved projects short-term biological, economic, social, protected resource and EFH impacts of the alternatives are negligible under either alternative. Nevertheless, knowledge gained through the research may benefit resources and the fishery in the longer term.

Box ES-1 presents a qualitative summary of the impacts of the various alternatives. The environmental impacts of the proposed measures were analyzed and the anticipated level of significance of these impacts is discussed in accordance with the National Environmental Policy Act (NEPA) and National Oceanic and Atmospheric Administration Administrative Order (NAO) 216-6, “Environmental Review Procedures for Implementing the National Environmental Policy Act.” Because none of the preferred action alternatives are associated with significant impacts to the biological, social or economic, or physical environments, a “Finding of No Significant Impact” is determined.

Box ES-1. Overall qualitative summary of the expected impacts of various alternatives considered in this document as compared to status quo. A minus sign (-) signifies an expected negative impact, a plus sign (+) signifies a positive impact, a (+/-) sign signifies uncertainty as to the direction of the effects, and a zero is used for null impact.

	Environmental Dimension				
	Biological	**EFH**	**Protected Resources**	**Economic**	**Social**
Alternative 1 (Least Restrictive Commercial Quota / Preferred)	0	0	0	+	+
Alternative 2 (Most Restrictive Commercial Quota)	+/-[1]	+	+	-	-
Alternative 3 (No Action - Status Quo)	0	0	0	0	0
Alternative 4.1 (No Action - No RSA)	0	0	0	0	0
Alternative 4.2 (Preferred; RSA up to 3% of TAL)	0	0	0	+	+

[1] There is uncertainty in the directionality of this impact for the following reasons: The smaller commercial quota under this alternative will likely be positive to the species rebuilding plan and to non-target species since there will be less effort directed at harvesting bluefish, but that the decrease in the commercial TAC may increase bluefish discards and this is considered to be a negative impact.

2.0 LIST OF ACRONYMS

ACFCMA	Atlantic Coastal Fisheries Cooperative Management Act
ASMFC	Atlantic States Marine Fisheries Commission or Commission
B	Biomass
BDTRP	Bottlenose Dolphin Take Reduction Plan
CEQ	Council on Environmental Quality
CPUE	Catch Per Unit Effort
DPS	Distinct Population Segment
EA	Environmental Assessment
EEZ	Exclusive Economic Zone
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
EO	Executive Order
ESA	Endangered Species Act of 1973
F	Fishing Mortality Rate
FR	Federal Register
FMP	Fishery Management Plan
GRA	Gear Restricted Area
GRT	Gross Registered Tonnage
HPTRP	Harbor Porpoise Take Reduction Plan
IRFA	Initial Regulatory Flexibility Analysis
LOF	List of Fisheries
LTPC	Long-term Potential Catch
LWTRP	Large Whale Take Reduction Plan
M	Natural Mortality Rate
MA	Mid-Atlantic
MAFMC	Mid-Atlantic Fishery Management Council
MMPA	Marine Mammal Protection Act
MRFSS	Marine Recreational Fisheries Statistical Survey
MSFCMA	Magnuson-Stevens Fishery Conservation and Management Act
MSY	Maximum Sustainable Yield
mt	metric tons
MU	Management Unit
NAO	NOAA Administrative Order
NE	New England
NEFMC	New England Fishery Management Council
NEFSC	Northeast Fisheries Science Center
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
OY	Optimal Yield
PBR	Potential Biological Removal
PRA	Paperwork Reduction Act

PREE	Preliminary Regulatory Economic Evaluation
RHL	Recreational Harvest Limit
RIR	Regulatory Impact Review
RSA	Research Set-Aside
SAFMC	South Atlantic Fishery Management Council
SARC	Stock Assessment Review Committee
SAV	Submerged Aquatic Vegetation
SAW	Stock Assessment Workshop
SMA	Small Business Administration
SSB	Spawning Stock Biomass
SFA	Sustainable Fisheries Act
TAC	Total Allowable Catch
TAL	Total Allowable Landings
TED	Turtle Excluder Device
TL	Total Length
VECs	Valuable Environmental Components
VMS	Vessel Monitoring System
VPA	Virtual Population Analysis
VTR	Vessel Trip Report
WNA	Western North Atlantic

3.0 TABLE OF CONTENTS

ENVIRONMENTAL ASSESSMENT

4.0 INTRODUCTION AND BACKGROUND OF SPECIFICATION PROCESS

4.1 Purpose and Need of the Action

The purpose of this document is to analyze proposed annual management measures for fishing year 2008 to ensure that the annual fishing targets specified in the Fishery Management Plan (FMP) for bluefish are attained. The 2008 measures include commercial quotas, recreational harvest limits, and possession limits for the recreational fishery. The Council met jointly with the Atlantic Coast Marine Fisheries Commission's Bluefish Board and adopted measures at their August 2007 meeting.

The need for this action is to set the annual fishing control measures to maintain commercial and recreational fisheries while rebuilding the bluefish stock. Without these control measures, unregulated fishing for bluefish may increase to the point where it could threaten rebuilding of the stock.

The bluefish fisheries in U.S. waters of the western Atlantic Ocean are managed under the Bluefish FMP that was prepared cooperatively by the Mid-Atlantic Fishery Management Council (Council) and the Atlantic States Marine Fisheries Commission (Commission). The plan was approved by the National Marine Fisheries Service (NMFS) in March 1990 and adopted by the Commission in October 1989. The FMP was amended in 1999 to bring it into compliance with the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) of 1976 as amended by the Sustainable Fisheries Act (SFA) and the Atlantic Coastal Fisheries Cooperative Management Act (ACFCMA). The SFA requires that the management measures proposed in a FMP be consistent with ten national standards for fishery conservation and management. Under ACFCMA, if a state does not implement management measures required by an FMP or amendment, the Federal government may impose a moratorium on the landing of the species covered by the FMP in that state.

Comprehensive measures enacted by Amendment 1 to the Bluefish FMP (MAFMC 1999; the final rule became effective in August 2000; 50 CFR Part 902) were designed to rebuild the bluefish stock. Amendment 1 regulations require that a commercial quota and recreational harvest limit be based on projected stock size estimates as derived from the latest stock assessment information. Estimates of stock size coupled with the target fishing mortality rate allow for a calculation of total allowable landings (TAL). Based on the historic proportion of commercial and recreational landings for the period 1981 to 1989, 17% of the TAL is allocated to the commercial fishery. Amendment 1 stipulates that if 17% of the TAL is less than 10.500 million lb (4.762 million kg), then the commercial quota can be increased up to 10.500 million lb (4.762 million kg) if the recreational fishery is projected to land less than 83% of the TAL for the upcoming year and provided that the combination of the projected recreational landings and the commercial quota does not exceed the TAL. The RHL would then be adjusted downward so that the TAL would be unchanged.

The Amendment also established a Monitoring Committee which meets annually to review the best available data and make recommendations regarding the TAL and other management measures in the plan. The Committee's recommendations are intended to achieve the target fishing mortality rate established in the amendment to reduce overfishing. The Committee bases its review and recommendations on best available data including, but not limited to, commercial and recreational catch/landing statistics, current estimates of fishing mortality, stock abundance, discards for the recreational fishery, and juvenile recruitment.

Based on the recommendations of the Monitoring Committee, the Council's Bluefish Committee makes a recommendation to the Council which in turn makes a recommendation to the Regional Administrator. The Regional Administrator reviews the recommendation and may revise it if necessary to achieve FMP objectives. In addition, because the FMP is a joint plan with the Commission, the Commission's Bluefish Board (Board) adopts complementary measures.

Framework Adjustment 1 to the Bluefish FMP, which was approved by NMFS on August 10, 2001 (66 FR 42156), established a procedure through which research set-aside (RSA) amounts would be set annually as part of Council's quota-setting process. The research is to support the collection of new information that will benefit both the commercial and recreational fisheries for this species. The program encourages collaborative efforts among the public, research institutions, and the government subsidized by a percentage set-aside from the TAL of selected species, including bluefish, under management by the Council.

4.2 Management Objectives of the FMP

1) Increase understanding of the stock and of the fishery;
2) Provide the highest availability of bluefish to U.S. fishermen while maintaining, within limits, traditional uses of bluefish;
3) Provide for cooperation among the coastal states, the various regional marine fishery management councils, and Federal agencies involved along the coast to enhance the management of bluefish throughout its range;
4) Prevent recruitment overfishing; and
5) Reduce the waste in both the commercial and recreational fisheries.

To attain these management objectives, the FMP (as modified by Amendment 1) specifies the following measures that may be specified annually:

- Permit and reporting requirements for commercial fishermen, dealers, and party/charter boat operators.
- Commercial fish size limitations and minimum mesh requirements.
- Commercial quota with state allocations.
- *De minimus* specifications for the commercial quota.
- Recreational size, possession, and seasonal limits.
- A recreational harvest limit.

4.3 Methods of Analysis

The basic approach adopted in this analysis is an assessment of various management measures from the standpoint of determining the impacts upon the environment. This includes impacts with and without a deduction landings limits to accommodate the likely RSA allocation. The NMFS Quota Report as of the week ending September 12, 2007 indicates that bluefish commercial landings for 2007 are well within the coast-wide quota for 2007 (50% of quota landed). It is anticipated that the commercial quota will not be exceeded in 2007, and therefore; discussion of the 2008 commercial quotas in this document does not include an adjustment for overages. Impacts were examined relative to three commercial quota alternatives and their corresponding RHLs (Box 4.3.1).

The preferred alternative (Alternative 1) is based on achieving the TAC/TAL derived from updated projections of stock biomass for 2008. Based on projected biomass (322 million lb), the TAC (31.887 million lb) corresponds to the rebuilding target F (0.15) in 2008 that is specified in the FMP. The commercial quota/ RHL split proposed under this alternative is designed to maximize the commercial quota without risking overage of the resultant RHL. Under this or any alternative, adjusting the TAL for the currently approved RSA amount (50,000 lb) results in minimal impacts to both the commercial quota and RHL.

The second alternative (no transfer) is based on the same projections of stock biomass and fishery yield as the preferred alternative but does not include any transfer amount to the commercial fishery. This alternative contains the most restrictive commercial quota. The third alternative (status quo/no action) is based on the TAL, commercial quota, and RHL that were implemented in the final rule for the 2007 fishing year. Box 4.3.2 provides a comparison of the alternative 2008 commercial quotas with actual landings for the last complete year for which landings data are available (2005).

Box 4.3.1. Comparison of the alternatives under consideration in this specification package. All units are in pounds.

Alternative	2008 Initial TAL	2008 Initial Commercial Quota	2008 Initial Recreational Harvest Limit	2008 Research Set-Aside	2008 Adjusted Commercial Quota	2008 Adjusted Recreational Harvest Limit
Alternative 1 (Preferred)						
Least Restrictive Comm. Quota	28,156,182	8,875,000	19,281,182	50,000	8,859,240	19,246,942
Alternative 2 (No Transfer to Commercial Sector)						
Most Restrictive Comm. Quota	28,156,182	4,786,551	23,369,631	50,000	4,778,051	23,328,131
Alternative 3 (Status Quo/No Action)						
Based on 2007 Final Rule	27,762,000	8,688,760	19,073,240	50,000	8,673,111	19,038,889

Box 4.3.2. Commercial quotas under each alternative compared to actual 2006 landings.

	Adjusted 2008 Commercial Quota (lbs)	Percent Change compared to 2006 landings (6.985 million lb)
Quota Alternative 1 (Preferred)		
Least Restrictive	8,859,240	27% increase
Quota Alternative 2		
Most Restrictive	4,778,051	32% decrease
Quota Alternative 3 (Status Quo/No Action)		
Based on 2007 TAL	8,673,111	24% increase

5.0 MANAGEMENT ALTERNATIVES

5.1 Alternative 1 –Least Restrictive Commercial Quota (Preferred Alternative)

The rebuilding plan established through Amendment 1 to the Bluefish FMP stipulates that the target fishing mortality rate (F_{target}) in 2008 be set at F = 0.31 or the status quo fishing mortality rate, whichever is less. In a June 2007 update of the bluefish population model, the status quo fishing mortality rate (F_{2006}) was estimated to be approximately 0.15. A model projection of yield for 2008 using $F_{target} = F_{2006} = 0.15$ and projected biomass in 2008 of 145,990 mt generated a TAC of 14,464 mt (31.887 million lb). This was subsequently recommended as the coastwide TAC by the Monitoring Committee at its July 2007 meeting and by the Council at its August 2007 meeting.

Adjusting the TAC for projected bluefish discards (3.731 million lb) generates a total allowable landing (TAL) of 28.156 million lb for 2008. Projected discards are the average of estimated 2000-2006 recreational discards. Commercial discards are inestimable and considered likely to be insignificant according to SAW 41. In accordance with Amendment 1, the TAL is initially divided among the commercial and recreational components of the fishery using historic (1981 to 1989) proportions of commercial (17%) and recreational (83%) landings. Amendment 1 further stipulates that if 17% of the TAL is less than 10.500 million lb, then the commercial quota could be increased up to 10.500 million lb as long as the recreational fishery is projected to land less than 83% of the TAL in the upcoming year. For 2008, 17% of the TAL is 4.787 million lb and 83% of the TAL is 23.370 million lb. So, a transfer of 5.713 million lb to the commercial fishery could bring the commercial quota up to 10.500 million lb. This transfer amount would leave a remainder of 17.656 million lb to be used as the RHL which is less than 83% of the TAL (again, 23.370 million lb). However, recreational landings have been increasing steadily for the past five years (Table 1) and are projected to be about 18.864 million lb in 2008. Therefore, a lower transfer would be appropriate. The Bluefish Monitoring Committee reviewed a possible transfer of 4.088 million lb (resulting commercial quota of 8.875 million lb and RHL of 19.281 million lb) which would maximize the commercial quota while providing sufficient room for the recreational catch to exceed the projected amount. The Bluefish Monitoring Committee agreed that this allocation scenario would likely prevent overages in both the commercial and recreational fisheries in 2008, and the Council chose this as its preferred alternative.

The Council also approved a research set-aside (RSA) for bluefish of up to 3% of the TAL, however, as noted above, only 50,000 lbs of bluefish have been approved by the NMFS for RSA projects. In specifying the preferred alternative, it is assumed that all 50,000 lbs of RSA will be taken. A proportionally equitable adjustment of the 8.875 million lb commercial quota and 19.281 million lb RHL results in 8.859 million lb and 19.247 million lb, respectively. Both of these values would achieve the F_{target} while allowing commercial and recreational landings to increase to levels not observed since 1994 and 1993, respectively (Table 1). The entire allocation process is summarized in Box 5.1.1.

Box 5.1.1. Summary table of bluefish allocation process (Alternative 1)	
Bluefish TAL	28,156,182 lb (12,771,560 kg)
Commercial Quota (before transfer)	4,786,551 lb (2,171,165 kg)
Recreational Harvest Limit (before transfer)	23,369,631 lb (10,600,395 kg)
Commercial Quota (after transfer)	8,875,000 lb (4,025,674 kg)
Recreational Harvest Limit (after transfer)	19,281,182 lb (8,745,887 kg)
Adjusted Commercial Quota (after RSA)	8,859,240 (4,018,484 kg)
Adjusted Recreational Harvest Limit (after RSA)	19,246,942 (8,730,266 kg)

5.2 Alternative 2 - Most Restrictive Commercial Quota

The overall TAL under Alternative 2 is identical to that under Alternative 1; however, no transfer would be made to the commercial fishery. As such, the initial commercial quota for 2008 would be 4.787 million lb and the initial recreational harvest limit would be 23.370 million lb. After adjusting for the RSA, the commercial quota and RHL would be reduced to 4.658 million lb and 22.741 million lb, respectively (Box 4.3.1). This alternative contains the most restrictive quota for the commercial sector.

5.3 Alternative 3 - Status Quo/No Action

Under Alternative 3, the TAL, commercial quota, and RHL would be the same as those established in the final rule for the 2007 fishing year (71 FR 9471). In 2007, the Council recommended a TAL of 27.762 million lb, a commercial quota of 9.500 million lb, and an RHL of 18.262 million lb. Although the Council recommendation was based on the best information available at the time, new landing projections for the 2007 fishing year that were not available at the time of the Council's recommendation indicated that the recreational harvest limit would likely be exceeded. In response to this, NOAA Fisheries Service revised the recreational to commercial transfer amount resulting in a post-transfer commercial quota of 8.689 million pounds and a recreational harvest limit of 19.073 million pounds. After adjusting for the RSA quota, the resulting 2007 specifications were reduced to a commercial quota of 8.673 million pounds and an RHL of 19.039 million pounds. Although the Council-recommended TAL in 2007 would remain unchanged in 2008 under Alternative 3, the commercial quota and RHL adjusted by NOAA Fisheries Service in the final rule would also be implemented. Alternatives 1

and 2 would allow for lesser and greater restrictions on commercial harvest, respectively, relative to Alternative 3.

5.4 Research Set-Aside Alternatives

5.4.1 No Research Set-Aside (No Action)

Under this alternative, no RSA would be implemented for 2008.

5.4.2 Specify a Research Set-Aside for 2008 (Preferred/Status Quo Alternative)

As part of the RSA program, one research project was submitted to NMFS that could potentially require exemptions from bluefish regulations in 2008. The Council, in consultation with the NMFS Northeast Regional Administrator, supported this bluefish research project and its 50,000 lb set-aside request. This RSA amount would be deducted from the RHL and commercial quota in an amount proportional to the overall bluefish TAL (Box 4.3.1). A summary of the project is presented in Appendix A and includes the project name, description, duration, and the gear to be used to conduct the project. The impacts of the exemption to the human environment are considered in this specification package, but are expected to be negligible due to the minimal RSA amount requested. Procedurally, because the RSA proposal is part of a separate action (NEAMAP request to the NOAA Grants Office), formal evaluation of the impacts, including ESA and other regulatory consultations, will be documented as part of that action.

6.0 DESCRIPTION OF AFFECTED ENVIRONMENT

6.1 Description of the Managed Resource

6.1.1 Landings

The commercial and recreational fisheries for bluefish are fully described in section 2.3 of Amendment 1 to the Bluefish FMP. Among these two fishery sectors, the recreational fishery has consistently been the larger, ranging from 86% of total landings in 1986 to 54% in 1999 (Table 1). The absolute magnitude of landings has varied much more in the recreational fishery than in the commercial fishery. In 1981, estimated recreational landings were 95.288 million lb. A protracted decline reduced recreational harvest to less than one tenth that amount (8.253 million lb) by 1999 although no recreational harvest limits were in place during that period. Over the same time period, commercial landings decreased as well, but only by a factor of two (16.454 million lb in 1981; 7.307 million lb in 1999). In recent years (1999-2006), recreational landings have increased gradually; while commercial landings have remained more or less stable (Table 1).

6.1.2 Status of the Stock

The most recent stock assessment for bluefish was conducted in June 2005 and was peer-reviewed by the 41st SARC (NEFSC 2005). An "age-structured assessment program" (ASAP model) was used to estimate bluefish fishing mortality and biomass as well as update the biological reference points. According to the assessment, bluefish were not overfished ($B_{2004} \cong 104{,}136$ mt which is greater than the minimum biomass threshold or ½ B_{MSY} = 73,526 mt) and overfishing was not occurring ($F_{2004} \cong 0.15$ which is less than the maximum fishing mortality threshold or F_{MSY}= 0.19). Data updates in 2007 generated ASAP model estimates of fishing mortality ($F_{2006} \cong 0.15$) and biomass ($B_{2006} \cong$ 139,496 mt or 308 million lb).

6.1.3 Stock Characteristics and Ecological Relationships

A full description of stock characteristics and ecological relationships of bluefish are found in section 2.1.3 of Amendment 1. Additional information can be found in the 41st Stock Assessment Workshop (SAW 41) documents. The following excerpt is taken from the 41st SAW Summary Report, which is available via the internet at http://www.nefsc.noaa.gov/nefsc/publications/crd/crd0514/

"New biological reference points were developed for comparison to current stock status. The preferred ASAP model output estimated FMSY=0.19. The model also estimated F_{MAX} = 0.28, $F_{0.1}$ = 0.18 and $F_{30\%}$ as 0.28"

"F_{MULT} is the estimate of full F. The 2004 F_{MULT} value equals 0.149. The trend in F has steadily declined since 1991 when F reached 0.41. The time series of F from the VPA shows less variability since 1990, bounded between 0.1 and 0.23. If the average VPA F for ages 1-4 is

compared to ASAP average F for the same ages, the resulting F trends between the two models are very similar."

"January 1st population sizes show a general increase in overall abundance since 1997. Abundance estimates peaked in 1982 at 176 million fish, declined to 57 million in the mid-1990s and has since increased to 92 million fish. Biomass estimates peaked in 1982 at 229,000 mt, then declined to 65,000 mt by 1997 before increasing to the 2004 level of 104,000 mt. The magnitude of population estimates are similar to those produced in the VPA."

6.1.4 Non-target Species

Heretofore, problems with the bycatch of other species have not been documented in bluefish specification documents. 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. Bluefish are caught primarily through recreational hook and line fishing, however, the smaller commercial bluefish fishery typically operates as a mixed-species gillnets and otter trawl fishery with harvest including bonito, Atlantic croaker, weakfish, and spiny dogfish (MAFMC 2001).

6.2 Habitat (Including Essential Fish Habitat)

According to Section 600.815(a)(2)(i)(A), an initial inventory of available environmental and fisheries data sources relevant to the managed species should be used in describing and identifying essential fish habitat (EFH). This inventory on the physical and biological characteristics of the environment in the mid-Atlantic subregion is found in sections 2.2 and 2.2.1 of Amendment 1. An additional inventory of the physical and biological characteristics of specific habitats found within the jurisdiction of the Northeast Region can be found in "Characterization of Fishing Practices and the Marine Benthic Ecosystems of the Northeast U.S. Shelf, and an Evaluation of the Potential Effects of Fishing on Essential Fish Habitat" (Stevenson *et al*. 2003).

Bluefish spawning occurs in offshore areas principally from April to May in southern waters and June through August in the mid-Atlantic Bight. Eggs are pelagic and highly buoyant with hatching and early larval development occurring in oceanic waters. Larvae are strongly associated with the surface and have been sampled during every season of the year in offshore waters from Cape Cod, Massachusetts to Palm Beach, Florida. Young-of-year bluefish move inshore with estuaries serving as the chief habitat during the juvenile life stage. In general, adult bluefish travel northward in spring and summer, and southward in fall and winter. Tagging studies indicate that the southerly migration route may be closer to shore than the northerly migration in spring and both migration periods are characterized by some offshore-inshore

movement. Estuarine and near shore waters are important habitat for juvenile and adult bluefish from Florida to Maine.

Specific habitats that are designated as bluefish EFH are detailed in section 2.2.2 of Amendment 1. Bluefish are a predominantly pelagic species (Fahay 1998). Life history data show that there are only loose associations of bluefish with any particular substrate or submerged aquatic vegetation (SAV; Fahay 1998). Juveniles are the only life stage which spatially and temporally co-occur on a regular basis with SAV. Bluefish juveniles and adults commonly occur in estuarine areas during the period of the year when eelgrass is present and prey on species which are associated with SAV. Some degree of linkage with SAV is likely, but given the extent to which the life cycle of bluefish occurs offshore outside the range of SAV, it is probably less than for other species (Laney 1997).

6.2.1 Other Species Potentially Impacted by the Action

Any species that could potentially be impacted by these actions is considered part of the affected environment. Species that could be potentially impacted by the action include prey species (section 2.2.6 of Amendment 1), species with overlapping EFH (section 6.2.2 of this EA), bycatch species of this fishery (3.1.3.9 of Amendment 1), and protected species (section 5.1.3.1 of Amendment 1 and section 6.3 of this EA). Additionally, general faunal assemblages specific to North and Mid-Atlantic habitat types are identified in "Characterization of Fishing Practices and the Marine Benthic Ecosystems of the Northeast U.S. Shelf, and an Evaluation of the Potential Effects of Fishing on Essential Fish Habitat" (Stevenson *et al*. 2003).

6.2.2 Bluefish EFH

Bluefish EFH was defined in Amendment 1 to the bluefish FMP. The definitions for each lifestage are repeated below:

Eggs: 1) North of Cape Hatteras, pelagic waters found over the Continental Shelf (from the coast out to the limits of the EEZ) at mid-shelf depths, from Montauk Point, NY south to Cape Hatteras in the highest 90% of the area where bluefish eggs were collected in the MARMAP surveys; and 2) South of Cape Hatteras, 100% of the pelagic waters over the Continental Shelf (from the coast out to the eastern wall of the Gulf Stream) through Key West, Florida at mid-shelf depths. Bluefish eggs are generally not collected in estuarine waters and thus there is no EFH designation inshore. Generally, bluefish eggs are collected between April through August in temperatures greater than 64 °F (18 °C) and normal shelf salinities (>31 ppt).

Larvae: 1) North of Cape Hatteras, pelagic waters found over the Continental Shelf (from the coast out to the limits of the EEZ) most commonly above 49 ft (15 m), from Montauk Point, New York south to Cape Hatteras, in the highest 90% of the area where bluefish larvae were collected during the MARMAP surveys; 2) South of Cape Hatteras, 100% of the pelagic waters greater than 15 meters over the Continental Shelf (from the coast out to the eastern wall of the Gulf Stream) through Key West, Florida; and 3) the "slope sea" and Gulf Stream between latitudes 29° 00 N and 40° 00 N. Bluefish larvae are not generally collected inshore so there is not EFH designation inshore for larvae. Generally, bluefish larvae are collected April through September in temperatures greater than 64 °F (18 °C) in normal shelf salinities (>30 ppt).

Juveniles: 1) North of Cape Hatteras, pelagic waters found over the Continental Shelf (from the coast out to the limits of the EEZ) from Nantucket Island, Massachusetts south to Cape Hatteras, in the highest 90% of the area where juvenile bluefish are collected in the NEFSC trawl survey; 2) South of Cape Hatteras, 100% of the pelagic waters over the Continental Shelf (from the coast out to the eastern wall of the Gulf Stream) through Key West, Florida; 3) the "slope sea" and Gulf Stream between latitudes 29° 00 N and 40° 00 N; and 4) all major estuaries between Penobscot Bay, Maine and St. Johns River, Florida. Generally juvenile bluefish occur in North Atlantic estuaries from June through October, Mid-Atlantic estuaries from May through October, and South Atlantic estuaries March through December, within the "mixing" and "seawater"

zones (Nelson et al. 1991, Jury et al. 1994, Stone et al. 1994). Distribution of juveniles by temperature, salinity, and depth over the continental shelf is undescribed (Fahay 1998).

Adults: 1) North of Cape Hatteras, over the Continental Shelf (from the coast out to the limits of the EEZ), from Cape Cod Bay, Massachusetts south to Cape Hatteras, in the highest 90% of the area where adult bluefish were collected in the NEFSC trawl survey; 2) South of Cape Hatteras, 100% of the pelagic waters over the Continental Shelf (from the coast out to the eastern wall of the Gulf Stream) through Key West, Florida; and 3) all major estuaries between Penobscot Bay, Maine and St. Johns River, Florida. Adult bluefish are found in North Atlantic estuaries from June through October, Mid-Atlantic estuaries from April through October, and in South Atlantic estuaries from May through January in the "mixing" and "seawater" zones (Nelson et al. 1991, Jury et al. 1994, Stone et al. 1994). Bluefish adults are highly migratory and distribution varies seasonally and according to the size of the individuals comprising the schools. Bluefish generally found in normal shelf salinities (> 25 ppt).

6.2.3 EFH for Species Overlapping With This FMP

All of the areas listed in Section 6.2.3 above overlap to some degree with EFH for other MAFMC managed species including surfclams and ocean quahogs, squid, mackerel, butterfish, and dogfish, as well as the New England Fishery Management Council (NEFMC) species of groundfish within the Northeast Multispecies FMP (Atlantic cod, haddock, monkfish, ocean pout, American plaice, pollock, redfish, white hake, windowpane flounder, winter flounder, witch flounder, yellowtail flounder, and Atlantic halibut), seven species of skates, and Atlantic sea scallops. Numerous species within the NMFS Highly Migratory Species Division and the South Atlantic Fishery Management Council (SAFMC) have EFH identified in areas also identified as EFH for bluefish.

6.2.4 Baseline Impact of the Bluefish Fishery on EFH

According to 50 CFR Section 600 (a)(2)(i):

“Each FMP must contain an evaluation of the potential adverse effects of fishing on EFH designated under the FMP, including effects of each fishing activity regulated under the FMP or other FMPs. This evaluation should consider the effects of each fishing activity on each type of habitat found within each FMP. FMPs must describe each fishing activity, review and discuss all available relevant information (such as information regarding the intensity, extent, and frequency of any adverse effect on EFH; the type of habitat within EFH that may be affected adversely; and the habitat functions that may be disturbed), and provide conclusions regarding whether and how each fishing activity adversely affects EFH.”

The EFH impact sections of Amendment 1 to the Bluefish FMP were considered by NOAA Fisheries Service to be insufficient. As such, the agency determined that further documentation of baseline impacts of the bluefish fishery had to be conducted in order to determine the impacts of the commercial fishery on bluefish EFH and EFH of other species. This baseline analysis is

provided in the Mid-Atlantic Council's specification of management measures for the 2004 fishing year, although this analysis considered 2001 as the baseline year (MAFMC 2003). Baseline conditions (i.e., the distribution and intensity of bottom otter trawling in the commercial bluefish fishery) have not changed significantly since 2001. As indicated in Table 1, commercial landings since 2001 have actually declined as recreational landings have increased. In short, the evaluation on the use of bottom otter trawls, gillnets, and handlines for the commercial catch of bluefish indicated that the baseline impact of the bluefish fishery is minimal and temporary in nature. Therefore, it was concluded that adverse effects of the bluefish fishery on EFH did not need to be minimized.

6.3 Endangered and Other Protected Species

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

Cetaceans

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

Seals

Species	*Status*
Harbor seal (*Phoca vitulina*)	Protected
Gray seal (*Halichoerus grypus*)	Protected

Harp seal (*Phoca groenlandica*)	Protected
Hooded seal (*Crystophora cristata*)	Protected

Sea Turtles

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

*Green turtles in U.S. waters are listed as threatened except for the Florida breeding population which is listed as endangered.

Fish

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

Birds

Species	*Status*
Roseate tern (*Sterna dougallii dougallii*)	Endangered

Critical Habitat Designations

Species	*Area*
Right whale	Cape Cod Bay
	Great South Channel
	Southeastern United States

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.* (2005). The most recent information on the stock assessment of various mammals can be found at: http://www.nmfs.noaa.gov/pr/sars/species.htm.

Three other useful websites on marine mammals are:

http://ww.nmfs.noaa.gov/prot_res/PR3/recovery. html
http://spo.nwr.noaa.gov/mfr611/mfr611.htm
http://www.nmfs.noaa.gov/pr/species/Cetaceans/cetaceans.html

Protected Species Interactions with the Bluefish Fishery – Includes Fishery Classification under Section 118 of Marine Mammal Protection Act

Species	Status
Bottlenose dolphin (*Tursiops truncatus*)	Protected
Leatherback sea turtle (*Dermochelys coriacea*)	Endangered

Under section 118 of the MMPA, NMFS must publish and annually update the List of Fisheries (LOF), which places all US commercial fisheries in one of three categories based on the level of incidental serious injury and mortality of marine mammals in each fishery (arranging them according to a two-tiered classification system). The categorization of a fishery in the LOF determines whether participants in that fishery may be required to comply with certain provisions of the MMPA, such as registration, observer coverage, and take reduction plan requirements. The classification criteria consist of a two-tiered, stock-specific approach that first addresses the total impact of all fisheries on each marine mammal stock (Tier 1) and then addresses the impact of the individual fisheries on each stock (Tier 2). If the total annual mortality and serious injury of all fisheries that interact with a stock is less than 10% of the Potential Biological Removal (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. Potential Biological Removal (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).

Under Tier 2, individual fisheries are subject to the following categorization:

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

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

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

In Category I, there is documented information indicating a "frequent" incidental mortality and injury of marine mammals in the fishery. In Category II, there is documented information indicating an "occasional" incidental mortality and injury of marine mammals in the fishery. In

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

The 2007 LOF indicates that gillnets that catch the majority of bluefish are listed as Category II or Category I fisheries, and trawls, handlines and inshore gillnets are listed as Category III fisheries. Bluefish are a component of the Mid-Atlantic coastal gillnet fishery and the Northeast sink gillnet fishery which are listed as Category I fisheries. NMFS believes the long-term survival of Atlantic coastal bottlenose dolphins could be compromised because of interactions with several types of commercial fishing gear, including: Mid-Atlantic coastal gillnet; North Carolina inshore gillnet; Southeast Atlantic gillnet; Mid-Atlantic haul/beach seine; North Carolina long haul seine; and Virginia pound net. Bluefish are taken in each of these fisheries. All fishing gears are required to meet gear restrictions under the Atlantic Large Whale Take Reduction Plan, Harbor Porpoise Take Reduction Plan, MMPA, and the ESA.

Prior to 2001, the North Carolina inshore gillnet fishery was classified as a Category III fishery. This change resulted from an evaluation of NMFS Sea Sampling data which demonstrated that the gillnet gear incidentally injured and killed Atlantic bottlenose dolphin (coastal WNA stock) during 1993 to 1997. Based on data presented in the proposed list of fisheries for 2001, of the 12 Atlantic bottlenose dolphins which died as a result of fishery interactions, 8 of those bore evidence of possible gill net interactions. Further evaluation of these data resulted in the conclusion that serious injury and mortality of bottlenose dolphin from the North Carolina inshore gillnet fishery is estimated to be between 1 and 50 percent of the PBR level. As such, this fishery was placed under Category II. In the 2007 List of Fisheries, bluefish were included in the Category III southeast inshore gillnet fishery. No marine mammal takes are associated with this fishery.

Description of species of concern that are protected under MMPA

Atlantic Bottlenose Dolphin (*Tursiops truncatus*)

Distribution and Abundance

The coastal morphotype of bottlenose dolphin is continuously distributed along the Atlantic coast south of Long Island, around the Florida peninsula and along the Gulf of Mexico coast. Scott et al. (1988) hypothesized a single coastal migratory stock ranging seasonally from as far north as Long Island, NY, to as far south as central Florida, citing stranding patterns during a high mortality event in 1987-88 and observed density patterns along the US Atlantic coast. More recent studies indicate that the single coastal migratory stock hypothesis is incorrect, and there is a complex mosaic of stocks (NMFS 2001; McLellan et al. 2003). Integration of the results from

genetic, photo-identification, satellite telemetry, and stable isotope studies confirms a complex mosaic of coastal bottlenose dolphin stocks. Therefore, seven management units within the range of the coastal morphotype of western North Atlantic bottlenose dolphin have been defined (Figure 1). The true population structure is likely more complex, and research efforts continue to identify that structure.

Abundance estimates for bottlenose dolphins in each management unit were calculated using line transect methods and distance analysis (Buckland et al. 2001). The independent and joint estimates from the two survey teams were used to quantify the probability that animals available to the survey on the trackline were missed by the observer teams, or perception bias, using the direct duplicate estimator (Palka, 1995). These estimates were further partitioned between the coastal and offshore morphotypes based upon the results of the logistic regression models and spatial analyses. A parametric bootstrap approach was used to incorporate the uncertainty in the logistic regression models into the overall uncertainty in the abundance estimates for each management unit (Garrison et al. 2003; Box 6.3.1).

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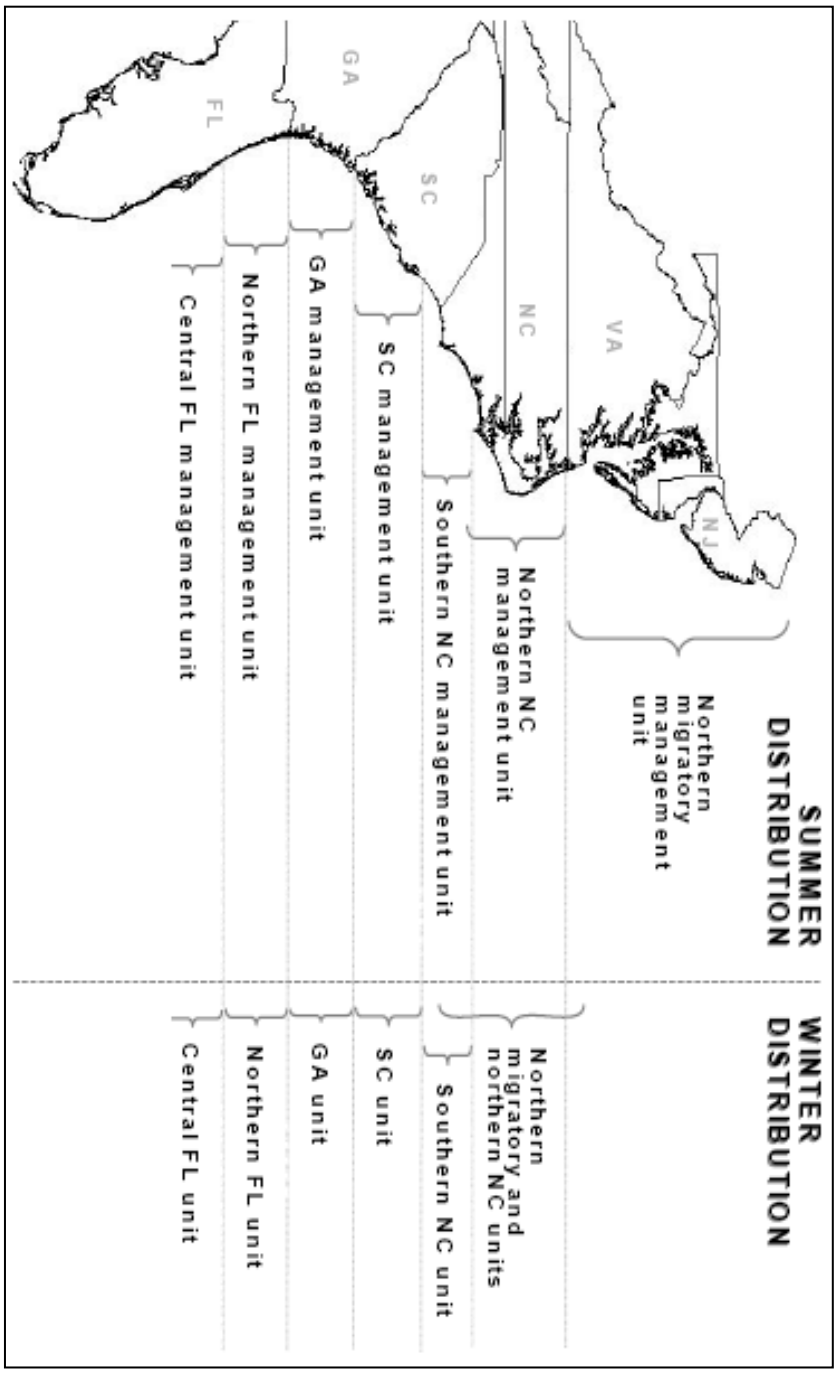


Figure 1. Management units of the coastal morphotype of bottlenose dolphin along the Atlantic coast of the US as defined from genetic, stable isotope ratio, photo-identification, and telemetry studies (taken from NMFS 2005).

Box 6.3.1. Estimates of abundance and the associated CV, N_{min}, and PBR for each stock of WNA coastal bottlenose dolphins (Garrison et al. 2003). The PBR for the Northern Migratory, Northern NC, and Southern NC management units is applied semi-annually. South of NC, the PBR is applied annually. Except where noted, abundance estimates and PBR values do not include estuarine animals.

Unit		Best Abundance Estimate	CV	N_{min}	PBR	
					Annual	½ Yr
SUMMER (May - October)						
Northern migratory		17,466	0.19	14,621	(146.2)	73.1
Northern NC						
	oceanic	6,160	0.52	3,255	(32.6)	16.1
	estuary	919	0.13	828	(8.2)	4.2
	BOTH	7,079	0.45	4,083	(40.8)	20.3
Southern NC						
	oceanic	3,645	1.11	1,863	(18.6)	9.3
	Estuary[d]	141	0.15	124	(1.2)	0.6
	BOTH	3,786	1.07	1,987	(19.9)	9.9
WINTER (November - April)						
NC mixed[a]		16,913	0.23	13,558	(135.6)	67.8
ALL YEAR						
South Carolina		2,325	0.20	1,963	19.6	na
Georgia		2,195	0.30	1,716	17.2	na
Northern Florida[b,c]		448	0.38	328	na	na
Central Florida		10,652	0.46	na	na	na

a NC mixed = northern migratory, Northern NC, and Southern NC Northern Florida estimates are a weighted mean of
b abundance estimates from the winter 1995 survey and the summer 2002 survey.

Northern and Central Florida estimates include data from the winter 1995 survey and cannot be used to determine
c PBR due to their age.
d Read et al. 2003.

Fishery interactions

The Mid-Atlantic coastal gillnet fishery has the highest documented level of mortality of WNA coastal morphotype bottlenose dolphins, and the North Carolina sink gillnet fishery is its largest component in terms of fishing effort and observed takes. Of 12 observed mortalities from 1995 to 2000, five occurred in sets targeting spiny or smooth dogfish and another in a set targeting "shark" species, 2 occurred in striped bass sets, 2 occurred in Spanish mackerel sets, and the remainder were in sets targeting kingfish, weakfish, or finfish generically (Rossman and Palka 2001). Only two bottlenose dolphin mortalities were observed in 2001-2002, both occurring in the winter mixed North Carolina unit. The overall estimated level of mortality has declined during the past two years associated with reductions in fishery effort, reduced levels of observer coverage, and reduced bycatch rates (Rossman and Palka, unpublished manuscript). Due to

these significant changes in the behavior of the fishery, bycatch estimates for these fisheries are separated into two periods from 1996-2000 and 2001-2002 (Box 6.3.2).

Box 6.3.2. Summary of the 1996-2002 incidental mortality of bottlenose dolphins (Tursiops truncatus) by management unit in the commercial Mid-Atlantic coastal gillnet fisheries. Data include the years sampled (Years), the number of vessels active within the fishery (Vessels), type of data used (Data Type), observer coverage (Observer Coverage), mortalities recorded by on-board observers (Observed Mortality), estimated annual mortality (Estimated Mortality), estimated CV of the annual mortality (Estimated CVs), and mean annual mortality (CV in parentheses).

Seasonal Management Unit	Years	Vessels	Data Type[a]	Observer Coverage[b]	Observed Serious Injury	Observed Mortality	Estimated Mortality[c]	Estimated CVs[d]	Mean Annual Mortality
Summer Northern Migratory	1996-2000	NA	Obs. Data, NER Dealer Data	.05, .03, .02, .03, .03,	0, 0, 0, 0, 0	0, 0, 1, 1, 1,	33, 30, 37, 19, 30,	0.48, 0.48, 0.48, 0.48, 0.48	30 (0.22)
	2001-2002			.02, .01	0, 0	0, 0	11, 11	0.35, 0.35	11 (0.25)
Summer Northern NC	1996-2000	NA	Obs. Data, NCDMF Dealer Data	.01, .00, <.01, .01, .03,	0, 0, 0, 0, 0	1, 0, 0,0, 0,	27, 33, 17, 13, 26,	0.61, 0.61, 0.61, 0.61, 0.61	23 (0.29)
	2001-2002			.01, <.01	0, 0	0, 0	8, 8	1.06, 1.06	8 (0.75)
Summer Southern NC	1996-2000	NA	Obs. Data,NCDMF Dealer Data	.00, .00, .01, .03, .03,	0, 0, 0, 0, 0	0, 0, 0, 0, 0	0, 0, 0, 0, 0	NA	0 (NA)
	2001-2002			.02, <.01	0, 0	0, 0	0, 0	NA	0 (NA)
Winter NC mixed	1996-2000	NA	Obs. Data, NCDMF Dealer Data	.01, .01, .02, .02, .02,	0, 0, 0, 0, 0	1, 0, 1, 2, 2,	173, 211, 175, 196, 146,	0.46, 0.46, 0.46, 0.46, 0.46	180 (0.21)
	2001-2002			.01, .01	0, 0	0, 2	67, 50	0.45, 0.45	58 (0.32)
Total	2001-2002 Only								77 (0.26)
NA	Not Available								
a	Observer data (Obs. data) are used to measure bycatch rates; the data are collected within the Northeast Fisheries Observer Program. The NEFSC collects weighout landings data that are used as a measure of total effort for the sink gillnet fisheries.								
b	The observer coverage for the Mid-Atlantic coastal sink gillnet fishery is measured as a proportion of the tons of fish landed.								
c	The annual estimates of mortality from 2001-2002 were generated by applying the same method used in Palka and Rossman (2001). A new factor variable was added to the model to separate the time series of historical data (1996-2000) from data collected during the recent time period (2001-2002) (Rossman and Palka, unpublished manuscript).								
d	The annual estimates of mortality from 1998-2000 were generated by applying one bycatch rate per management unit as estimated by a generalized linear model (Palka and Rossman 2001). The CV does not account for variability that may exist in the unit of total landings (mt) from each year that are used to expand the bycatch rate. Therefore, the CV is the same for all five annual estimates.								

NMFS has developed a take reduction plan to reduce injuries and deaths to Atlantic bottlenose dolphins caused by fishing gear in Federal waters of the Mid- and South Atlantic. A team was convened in November of 2001 under authority of the MMPA in order to formulate a Bottlenose Dolphin Take Reduction Plan (BDTRP). Category II fisheries under the MMPA received a high priority with respect to observer coverage and consideration for measures under the Bottlenose Dolphin Take Reduction Plan. The resulting BDTRP implemented April 26, 2006 (71 CFR 24776), includes the regulatory management measures summarized in Box 6.3.3 for small, medium, and large mesh gillnets, which are organized by bottlenose dolphin Management unit (MU), specific location, as well as non-regulatory conservation measures.

Box 6.3.3 Summary of BDTRP Regulations.

Fishing Area	Management Unit	Gillnet Mesh Size Requirements (Stretched Mesh)		
		Small (≤5 inch)	Medium (>5 in to <7 in)	Large (≥7 inch)
NJ-VA	Summer Northern Migratory	None	Jun. 1–October 31: Anchored gillnets- fishermen must remain within 0.5 nmi (0.93 km) of the closest portion of each gear fished at night in State waters, and any gear fished at night must be removed from the water and stowed on board the vessel before the vessel returns to port.	Jun. 1–October 31: Anchored gillnets- fishermen must remain within 0.5 nmi (0.93 km) of the closest portion of each gear fished at night in State waters, and any gear fished at night must be removed from the water and stowed on board the vessel before the vessel returns to port.
Cape Charles Light, VA to VA/NC border	Winter Mixed - Virginia	None	None	November 1–December 31: No fishing at night in State waters, and, at night, gear must be removed from the water and stowed on board the vessel.
VA/NC border to Cape Lookout, NC	Summer Northern North Carolina AND Winter Mixed Northern North Carolina	May 1–October 31: In State waters, net length must be less than or equal to 1,000 feet (304.8 m).	November 1–April 30: No fishing at night in State waters; sunset clause of 3 years for this restriction.	April 15–December 15: No fishing in State waters[1]; December 16–April 14: No fishing at night in State waters without tie-downs.
Cape Lookout, NC to the North Carolina/South Carolina Border[2]	Summer Southern North Carolina AND Winter Mixed - Southern North Carolina	None	November 1–April 30: No fishing at night in State waters; sunset clause of 3 years for this restriction.	April 15–December 15: No fishing in State waters[1]; December 16–April 14: No fishing at night in State waters and, at night, gear must be removed from the water and stowed on board the vessel.
SC, GA, and FL	South Carolina, Georgia, Northern Florida, and Central Florida			Year-round for all gillnet gear: Fishermen must remain within 0.25 nautical mile (0.46 km) of the closest portion of their gear at all times in State and Federal waters within 14.6 nautical miles (27 km) from shore. Gear must be removed from the water and stowed on board the vessel before the vessel returns to port.

[1] The dates for the large mesh prohibition codify current North Carolina state regulations, and therefore, slightly deviate from the BDTRP summer and winter dates in which other regulatory measures are applied.
[2] These prohibitions stop at the North Carolina/South Carolina border rather than extending to Murrels Inlet, South Carolina as defined by the Southern North Carolina MU because gillnet fishing activity is limited in South Carolina.

Description of Sea Turtle Species with Documented Interactions with the Bluefish Fishery

Leatherback sea turtle

Leatherback turtles are widely distributed throughout the oceans of the world and are found in waters of the Atlantic, Pacific, Caribbean, and the Gulf of Mexico (Ernst and Barbour 1972). The leatherback sea turtle is the largest living turtle and ranges farther than any other sea turtle species, exhibiting broad thermal tolerances (NMFS and USFWS, 1995). Evidence from tag returns and strandings in the western Atlantic suggests that adults engage in routine migrations among boreal, temperate and tropical waters (NMFS and USFWS, 1992). In the U.S., leatherback turtles are found throughout the action area of this proposed action. Located in the northeastern waters during the warmer months, this species is found in coastal waters of the continental shelf and near the Gulf Stream edge but rarely in the inshore areas. However,

leatherbacks may migrate close to shore, as a leatherback was satellite-tracked along the mid-Atlantic coast and thought to be foraging in these waters. A 1979 aerial survey of the outer Continental Shelf from Cape Hatteras, North Carolina to Cape Sable, Nova Scotia showed leatherbacks to be present throughout the area with the most numerous sightings made from the Gulf of Maine south to Long Island. Shoop and Kenney (1992) also observed concentrations of leatherbacks during the summer off the south shore of Long Island and off New Jersey. Leatherbacks in these waters are thought to be following their preferred jellyfish prey. This aerial survey estimated the leatherback population for the northeastern U.S. at approximately 300-600 animals (from near Nova Scotia, Canada to Cape Hatteras, North Carolina).

Compared to the current knowledge regarding loggerhead populations, the genetic distinctness of leatherback populations is less clear. However, genetic analyses of leatherbacks to date indicate female turtles nesting in St. Croix/Puerto Rico and those nesting in Trinidad differ from each other and from turtles nesting in Florida, French Guiana/Suriname and along the South African Indian Ocean coast. Much of the genetic diversity is contained in the relatively small insular subpopulations. Although populations or subpopulations of leatherback sea turtles have not been formally recognized, based on the most recent reviews of the analysis of population trends of leatherback sea turtles and due to our limited understanding of the genetic structure of the entire species, the most conservative approach would be to treat leatherback nesting populations as distinct populations whose survival and recovery are critical to the survival and recovery of the species. Further, any action that appreciably reduced the likelihood for one or more of these nesting populations to survive and recover in the wild would appreciably reduce the species' likelihood of survival and recovery in the wild.

Leatherbacks are predominantly a pelagic species and feed on jellyfish (i.e., *Stomolophus, Chryaora*, and *Aurelia* (Rebel 1974)), cnidarians (medusae, siphonophores) and tunicates (salps, pyrosomas). Time-Depth-Recorder data recorded by Eckert *et al.* (1998b) indicate that leatherbacks are night feeders and are deep divers, with recorded dives to depths in excess of 1000 meters. However, leatherbacks may come into shallow waters if there is an abundance of jellyfish nearshore.

Although leatherbacks are a long-lived species (> 30 years), they are slightly faster to mature than loggerheads, with an estimated age at sexual maturity reported as about 13-14 years for females, and an estimated minimum age at sexual maturity of 5-6 years for males, with 9 years reported as a likely minimum (Zug and Parham 1996) and 19 years as a likely maximum (NMFS 2001). In the U.S. and Caribbean, female leatherbacks nest from March through July. They nest frequently (up to 7 nests per year) during a nesting season and nest about every 2-3 years. During each nesting, they produce 100 eggs or more in each clutch and thus, can produce 700 eggs or more per nesting season (Schultz 1975). The eggs will incubate for 55-75 days before hatching. The habitat requirements for post-hatchling leatherbacks are virtually unknown (NMFS and USFWS 1992).

Anthropogenic impacts to the leatherback population include fishery interactions as well as intense exploitation of the eggs (Ross 1979). Eckert (1996) and Spotila *et al.* (1996) record that

adult mortality has also increased significantly, particularly as a result of driftnet and longline fisheries. Zug and Parham (1996) attribute the sharp decline in leatherback populations to the combination of the loss of long-lived adults in fishery-related mortality, and the lack of recruitment stemming from elimination of annual influxes of hatchlings because of intense egg harvesting.

Poaching is not known to be a problem for U.S. nesting populations. However, numerous fisheries that occur in State and Federal waters are known to interact with juvenile and adult leatherback sea turtles. These include incidental take in several commercial and recreational fisheries. Fisheries known or suspected to incidentally capture leatherbacks include those deploying bottom trawls, off-bottom trawls, purse seines, bottom longlines, hook and line, gill nets, drift nets, traps, haul seines, pound nets, beach seines, and surface longlines (NMFS and USFWS 1992). At a workshop held in the Northeast in 1998 to develop a management plan for leatherbacks, experts expressed the opinion that incidental takes in fisheries were likely greater than is being reported.

Leatherback interactions with the southeast shrimp fishery are also common. Turtle Excluder Devices (TEDs), typically used in the southeast shrimp fishery to minimize sea turtle/fishery interactions, are less effective for the large-sized leatherbacks. Therefore, NMFS has used several alternative measures to protect leatherback sea turtles from lethal interactions with the shrimp fishery. These include establishment of a Leatherback Conservation Zone (60 FR 25260). NMFS established the zone to restrict, when necessary, shrimp trawl activities from off the coast of Cape Canaveral, Florida to the Virginia/North Carolina Border. Leatherbacks are also susceptible to entanglement in lobster and crab pot 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.

Spotila *et al.* (1996) recommended not only reducing mortalities resulting from fishery interactions, but also advocated protection of eggs during the incubation period and of hatchlings during their first day, and indicated that such practices could potentially double the chance for survival and help counteract population effects resulting from adult mortality. They conclude, "stable leatherback populations could not withstand an increase in adult mortality above natural background levels without decreasing . . . the Atlantic population is the most robust, but it is being exploited at a rate that cannot be sustained and if this rate of mortality continues, these populations will also decline."

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.

Spotila et al. (1996) provided the most recent summary of the status of the total population of nesting leatherback turtles in the Atlantic Ocean. The largest nesting colonies of leatherbacks occur on the coasts of French Guiana (4,500-7,500 females per year) and Suriname, South

America (600-2,000 females per year) and Gabon, West Africa (1,276-2,553 females per year). Smaller colonies occur among the Caribbean Islands but constitute a significant aggregation when considered collectively (1,437-1,780 females per year). For the Suriname nesting colony, Hilterman and Goverse (2004) estimated that the minimum annual number of nesting females is likely between 1,545 and 5,500.

Fishery Interactions

Two leatherback sea turtle captures have been documented on observed bluefish fishing trips according to the NMFS Observer Database. Both animals were caught in drift gill nets. One was captured in July 2004. The condition of the animal when captured was recorded as "unknown". No information is available on the subsequent survival of the turtle. The other recorded incident was in August 2003. The turtle was alive and in good condition upon release. There are no mortality estimates for leatherback turtles that are attributed to the bluefish fishery.

Bluefish fishery interaction with an unidentified sea turtle

The capture of an unidentified turtle species was recorded in June of 2004 in a bluefish drift net. The animal was captured alive and presumably released immediately. The capture condition was recorded as unknown. Brief descriptions of sea turtles other than the leatherback (only species with documented interactions) follow. Their inclusion in this document does not imply that the bluefish fishery has or is expected to interact with these species.

Loggerhead sea turtle

There are at least five western Atlantic loggerhead subpopulations (NMFS SEFSC 2001; TEWG 2000; Márquez 1990). Cohorts from all of these, are expected to occur within the bluefish management unit (Bass et al. 2004). The south Florida nesting group is the largest known loggerhead nesting assemblage in the Atlantic and one of only two loggerhead nesting assemblages worldwide that have greater than 10,000 females nesting per year (USFWS and NMFS 2003). The northern subpopulation is the second largest loggerhead nesting assemblage within the United States. The remaining three subpopulations (the Dry Tortugas, Florida Panhandle, and Yucatán) are much smaller subpopulations with nest counts ranging from roughly 100 - 1,000 nests per year.

Loggerheads are a long-lived species and reach sexual maturity relatively late; 20-38 years (NMFS SEFSC 2001). The INBS program helps to track loggerhead status through nesting beach surveys. However, given the cyclical nature of loggerhead nesting, and natural events that sometimes cause destruction of many nests in a nesting season, multiple years of nesting data are needed to detect relevant nesting trends in the population. The INBS program has not been in place long enough to provide statistically reliable information on the subpopulation trends for western Atlantic loggerheads. In addition, given the late age of maturity for loggerhead sea turtles, nesting data represents effects to female loggerheads that have occurred through the various life stages over the past couple of decades. Therefore, caution must be used when

interpreting nesting trend data since they may not be reflective of the current subpopulation trend if effects to the various life stages have changed.

NMFS SEFSC (2001) took an alternative approach for looking at trends in loggerhead subpopulations. Using multiple model scenarios that varied based on differences in starting growth rates, sex ratios, and age to maturity, the model looked at the relative change in the subpopulation trend when mortality of pelagic immature, benthic immature, and mature loggerhead sea turtles was reduced as a result of changes to the U.S. shrimp trawl fishery and the U.S. Atlantic pelagic longline fishery for swordfish.

The modeling work suggests that western Atlantic loggerhead subpopulations should increase as a result of implementation of the new TED regulations that substantially reduce mortality of large, benthic immature and sexually mature loggerheads combined with a reduction in mortality of pelagic immature loggerheads resulting from implementation of new measures for the U.S. pelagic longline fishery. Even in the absence of a reduction in pelagic immature mortality from changes to the pelagic longline fishery, the model work supports the conclusion that the trend for western Atlantic loggerhead subpopulations will move from declining to stable (with an initial growth rate of 0.97, average age to maturity of 39 years, and a sex ratio of 35% females) or from declining to increasing (with an initial growth rate of 0.97, average age to maturity of 39 years, and female sex ratio of 50%) (NMFS SEFSC 2001) given the reduction in mortality of large benthic immature and mature loggerheads as a result of changes to the TED requirements for the shrimp trawl fishery.

Kemp's Ridley sea turtle

The Kemp's ridley is one of the most endangered of the worlds sea turtle species. The only major nesting site for ridleys is a single stretch of beach near Rancho Nuevo, Tamaulipas, Mexico (Carr 1963). Estimates of the adult female nesting population reached a low of 300 in 1985. Conservation efforts by Mexican and U.S. agencies have aided this species by eliminating egg harvest, protecting eggs and hatchlings, and reducing at-sea mortality through fishing regulations. From 1985 to 1999, the number of nests observed at Rancho Nuevo, and nearby beaches increased at a mean rate of 11.3% (95% C.I. slope = 0.096-0.130) per year. Current totals exceed 3000 nests per year, allowing cautious optimism that the population is on its way to recovery (TEWG 2000). Nevertheless, the estimated 2,000 nesting females in the current population is still far below historical numbers (Stephens and Alvarado-Bremer 2003).

Although changes in the use of shrimp trawls and other trawl gear has helped to reduce mortality of Kemp's ridleys, this species is also affected by other sources of anthropogenic impacts similar to those discussed above. For example, in the spring of 2000, a total of five Kemp's ridley carcasses were recovered from the same North Carolina beaches where 275 loggerhead carcasses were found. Cause of death for most of the turtles recovered was unknown, but the mass mortality event was suspected to have been from a large-mesh gillnet fishery operating offshore in the preceding weeks. The five ridley carcasses that were found are likely to have been only a

minimum count of the number of Kemp's ridleys that were killed or seriously injured as a result of the fishery interaction since it is unlikely that all of the carcasses washed ashore.

The only major nesting site for ridleys is a single stretch of beach near Rancho Nuevo, Tamaulipas, Mexico (Carr 1963). From 1985 to 1999, the number of nests observed at Rancho Nuevo, and nearby beaches increased at a mean rate of 11.3% per year. Current totals exceed 3000 nests per year (TEWG 2000). Kemp's ridleys mature at an earlier age (7 - 15 years) than other chelonids, thus 'lag effects' as a result of unknown impacts to the non breeding life stages would likely have been seen in the increasing nest trend beginning in 1985 (USFWS and NMFS 1992). While there is cautious optimism that the Kemp's ridley sea turtle population is increasing, the estimated 2,000 nesting females in the current population is still far below historical numbers (Stephens and Alvarado-Bremer 2003). Anthropogenic impacts to the Kemp's ridley population are similar to those for loggerhead sea turtles.

Green sea turtle

Green turtles are distributed circumglobally in tropical and subtropical waters (NMFS and USFWS 1998). In the continental United States, green turtle nesting occurs on the Atlantic coast of Florida (Ehrhart 1979). Occasional nesting has been documented along the Gulf coast of Florida, at southwest Florida beaches, as well as the beaches on the Florida Panhandle (Meylan et al. 1995). More recently, green turtle nesting occurred on Bald Head Island, North Carolina just east of the mouth of the Cape Fear River, on Onslow Island, and on Cape Hatteras National Seashore. The summer developmental habitat for green turtles also encompasses estuarine and coastal waters of Chesapeake Bay and as far north as Long Island Sound (Musick and Limpus 1997).

Increased nesting has been observed along the Atlantic Coast of Florida, on beaches where only loggerhead nesting was observed in the past (Pritchard 1997). Certain Florida nesting beaches have been designated index beaches. Index beaches were established to standardize data collection methods and effort on key nesting beaches. The pattern of green turtle nesting shows biennial peaks in abundance, with a generally positive trend during the ten years of regular monitoring since establishment of the index beaches in 1989, perhaps due to increased protective legislation throughout the Caribbean (Meylan et al. 1995). Seminoff (2004) reviewed the population estimates for green sea turtles at five western Atlantic nesting sites. All of these showed increased nesting compared to prior estimates with the exception of nesting at Aves Island, Venezuela (Seminoff 2004). However, age at sexual maturity is estimated to be between 20 to 50 years (Balazs 1982; Frazer and Ehrhart 1985). Thus, caution is warranted about over interpreting nesting trend data collected for less than 15 years.

As with the other sea turtle species, fishery mortality accounts for a large proportion of annual human caused mortality outside the nesting beaches, while other activities like dredging, pollution, and habitat destruction account for an unknown level of other mortality. Sea sampling coverage in the pelagic driftnet, pelagic longline, southeast shrimp trawl, and summer flounder bottom trawl fisheries has recorded takes of green turtles.

Hawksbill sea turtle

Hawksbills are solitary nesters and, thus, determining population trends or estimates on nesting beaches is difficult. The largest populations of hawksbills are found in the Caribbean, the Republic of Seychelles, Indonesia, and Australia.

Hawksbills face threats on both nesting beaches and in the marine environment. The primary global threat to hawksbills is habitat loss of coral reef communities. Coral reefs are vulnerable to destruction and degradation caused by human activities. Humans can alter coral reefs either gradually (i.e., pollution can degrade habitat quality) or catastrophically (e.g., toxic spills and vessel groundings). Recent evidence suggests that global climate change is negatively impacting coral reefs by causing higher incidences of coral diseases, which can ultimately kill entire coral reef communities. Hawksbill turtles rely on coral reefs for food resources and habitat. As these communities continue to decline in quantity and quality, hawksbills will have reduced foraging opportunities and limited habitat options.

Historically, commercial exploitation was the primary cause of the decline of hawksbill sea turtles. There remains a continuing demand for the hawksbill's shell as well as other products, including leather, oil, perfume, and cosmetics. The British Virgin Islands, Cayman Islands, Cuba, Haiti, and the Turks and Caicos Islands (U.K.) all permit some form of legal take of hawksbill turtles. In the northern Caribbean, hawksbills are directly harvested primarily for their carapace, which is often carved into hair clips, combs, jewelry, and other trinkets. Additionally, hawksbills are harvested for their eggs and meat while whole stuffed turtles are sold as curios in the tourist trade. Hawksbill products are openly available in the Dominican Republic and Jamaica despite a prohibition on harvesting hawksbills and eggs (Fleming 2001).

The most significant nesting within the U.S. occurs in Puerto Rico and the U.S. Virgin Islands, specifically on Mona Island and Buck Island, respectively. Each year, about 500-1000 hawksbill nests are laid on Mona Island, Puerto Rico (Diez and van Dam 2006) and another 100-150 nests on Buck Island Reef National Monument off St. Croix in the U.S. Virgin Islands (Z. Hillis-Starr cited as pers. comm. at http://www.nmfs.noaa.gov/pr/species/turtles/hawksbill.htm). Nesting also occurs on other beaches in St. Croix and on St. John, St. Thomas, Culebra Island, Vieques Island, and mainland Puerto Rico. Within the continental U.S., nesting is restricted to the southeast coast of Florida and the Florida Keys, but nesting is rare in these areas. No nesting occurs on the west coast of the U.S. mainland.

Birds

According to the NEFSC, sea bird takes have been observed on bluefish drift gillnet trips. No data have been provided to indicate whether these takes include the endangered species listed above (roseate tern and piping plover).

6.4 Human Communities

A detailed description of historical fisheries for bluefish is presented in section 2.3 of Amendment 1. The information presented in this section is intended to briefly characterize recent fisheries trends. Landings trends are provided in Section 6.1 above.

6.4.1 Commercial Fishery

In 2006, the value of bluefish landings was approximately $2.5 million. Average coastwide ex-vessel price of bluefish was $0.36/lb in 2006. On average (1985-1994), the ex-vessel value of bluefish commercial landings from state waters was about twice that from the Exclusive Economic Zone (EEZ) waters.

Bluefish comprised 0.17% and 0.45% of the total ex-vessel value and pounds of all finfish and shellfish species landed along the Atlantic coast of the U.S. in 2006, respectively. The contribution of bluefish to the total value of all finfish and shellfish vary by state, ranging from less than 0.01% in Maine and Georgia to approximately 1% in New York. The contribution of bluefish to the total pounds landed of all finfish and shellfish vary by state, ranging from less than 0.01% in Maine and Georgia to approximately 4% in North Carolina and New York. There were no bluefish landings in Pennsylvania or North Carolina in 2006. Relative to total landings value, bluefish were most important in North Carolina and New York, contributing the largest percentage of ex-vessel value of all commercial landings in those states (Table 3). This contribution has not changed considerably from the previous fishing year (i.e., 2005), and it is not expected to change considerably in 2008.

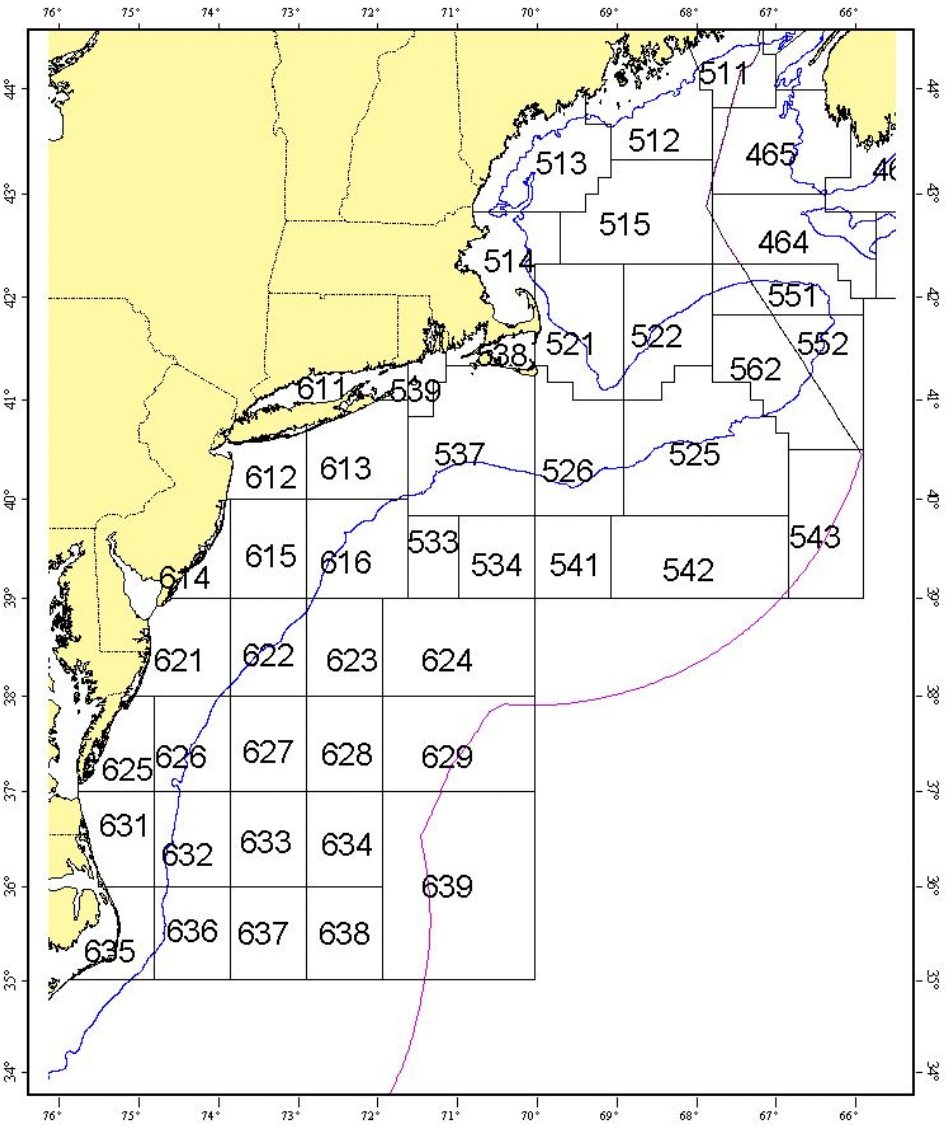
The economic impact of the commercial bluefish fishery relative to employment and wages is difficult to determine. According to NMFS, commercial fishermen in the western Atlantic landed approximately 1.56 billion lb of fish and shellfish in 2006. Those landings have been valued at approximately $1.48 billion. Total landed value ranged from approximately $37 thousand in Pennsylvania to $438 million in Massachusetts. However, it can be assumed that only a small amount of the region's fishing vessel employment, wages, and sales are dependent on bluefish since the relative contribution of bluefish to the total value and poundage of all finfish and shellfish is very small.

NMFS VTR data indicate that a total of 2,536 commercial trips targeting bluefish (bluefish $\geq$ 50% of total catch) resulted in landings of 3.398 million lb from Maine to North Carolina in 2006. Landings from directed trips are approximately 49% of total commercial landings for 2006 (i.e., 6.985 million lb in Table 1). Two major gear types accounted for over 92.4% of the total commercial catch: gillnets and bottom otter trawls. Gillnets comprised 32.4% of the total trips that landed bluefish and 72.0% of the catch, while bottom otter trawls comprised 44.0% of the trips and 20.4% of the catch (Table 2).

6.4.1.2 Description of the Areas Fished

The Northeast Region is divided into 46 statistical areas for Federal fisheries management (Figure 1). Seven of these areas comprised at least 5 percent of the total commercial bluefish catch in 2006, and collectively accounted for 73.2% of the commercial trips that caught bluefish and 68.3% of the bluefish catch. These seven areas include 6.36, 635, 613, 611, 612, 614, and 539; the percentages associated with each area are provided in Table 14. It may be noted that the vessel log database used to characterize the distribution of commercial harvest does not extend outside of the Northeast Region (i.e., to VA, SC, GA, FL).

Figure 1. NMFS Northeast statistical area**s.**



6.4.2 Recreational Fishery

During the 1980s, a significant portion of Mid-Atlantic recreational participants depended upon bluefish, particularly those fishing from party/charter vessels. For example, in 1985 party/charter boats in the Mid-Atlantic region landed a total of 22.2 million lb of fish, over half of which were bluefish (12.3 million lb). In 1990, a Council survey was conducted of party and charter boat owners between Maine and Virginia. The survey indicated that bluefish ranked first in the catch and was the second most desired species for party boat owners, while for charter boats, bluefish ranked third in terms of desirability and second in terms of success rate. No survey exists for the more recent time-frame; however, from 1996 – 2005, the proportion of party and charter trips that targeted bluefish has remained relatively constant.

MRFSS catch data by mode indicates that 51% of bluefish were caught by private and rental boats between 1997 and 2006 (Table 4). In addition to private and rental boats, 43% of bluefish were caught from shore and 6% from party and charter boats for the same time period (Table 4).

Trends in directed fishing for bluefish from 1991 to 2004 are provided in Table 5. The lowest annual estimate of directed trips was 1.3 million in 2000; the highest annual estimate of directed trips was 5.8 million trips in 1991. In 2004, anglers targeted bluefish in 1.9 million trips.

Because of the importance of bluefish to recreational anglers, a change in expenditures by bluefish anglers would be expected to impact the sales, service, and manufacturing sectors for the overall recreational fishing industry. The total value recreational anglers place on the opportunity to fish can be divided into actual expenditures and a non-monetary benefit associated with satisfaction. In other words, anglers incur expenses to fish (purchases of gear, bait, boats, fuel, etc.), but do not pay for the fish they catch or retain nor for the enjoyment of many other attributes of the fishing experience (socializing with friends, being out on the water, etc.). Despite the obvious value of these fish and other attributes of the experience to anglers, no direct expenditures are made for them, hence the term "non-monetary" benefits. In order to determine the magnitude of non-monetary benefits, a demand curve for recreational fishing must be estimated. In the case of bluefish, as with many recreationally sought species, a demand curve is not available. Part of the problem in estimating a demand curve is due to the many and diverse attributes of a recreational fishing experience: socializing, weather, ease of access and site development, catch rates, congestion, travel expenditures, and costs of equipment and supplies, among others. A recreational angler's willingness-to-pay for bluefish must be separated from the willingness-to-pay for other attributes of the experience. Holding all other factors constant (expenditures, weather, etc.), a decrease in the catch (or retention rate) of bluefish would decrease demand and an increase in the catch (or retention rate) should increase demand. Each change will have an associated decrease/increase in expenditures and non-monetary benefits.

Recreational fishing contributes to the general well being of participants by affording them with opportunities for relaxation, experiencing nature, and socializing with friends. The potential to catch and ultimately consume fish is an integral part of the recreational experience, though studies have shown that non-catch related aspects of the experience are often as highly regarded

by anglers as the number and size of fish caught. Since equipment purchase and travel-related expenditures by marine recreational anglers have a positive effect on local economies, the maintenance of healthy fish stocks is important to fishery managers.

6.4.2.1 Economic impact of the recreational fishery

Anglers' expenditures generate and sustain employment and personal income in the production and marketing of fishing-related goods and services. In 1998, saltwater anglers from Maine through Virginia spent an estimated $903.3 million on trip-related goods and services (Table 6; Steinback and Gentner 2001). Private/rental boat fishing comprised the majority of these expenditures ($561.8 million), followed by shore fishing ($259.8 million) and party/charter fishing ($81.7 million). Survey results indicate that the average trip expenditure in 1998 was $47.42 for anglers fishing from a private/rental boat, $32.48 for shore anglers, and $67.12 for anglers that fished from a party/charter boat. Adjusted average expenditures in 2006 dollars are $84.89 for party/charter boat trips, $59.97 for private/rental boat trips, and $41.08 for shore trips.[1] Trip-related goods and services included expenditures on private transportation, public transportation, food, lodging, boat fuel, private boat rental fees, party/charter fees, access/boat launching fees, equipment rental, bait, and ice. Unfortunately, estimates of trip expenditures specifically associated with bluefish were not provided in the study. However, if average trip expenditures are assumed to be constant across fishing modes, estimates of the expenditures associated with bluefish can be determined by multiplying the proportion of total trips that targeted bluefish by mode (expanded estimates; Table 7) by the total estimated trip expenditures from the Steinback and Gentner study. According to this procedure, anglers fishing for bluefish from Maine through Virginia spent an estimated $90.56 million on trip-related goods and services in 2006. Approximately $33.77 million was spent by anglers fishing aboard private/rental boats, $46.12 million by those fishing from shore, and $10.67 million by anglers fishing from party/charter boats. Apart from trip-related expenditures, anglers also purchase fishing equipment and other durable items that are used for many trips (i.e., rods, reels, clothing, boats, etc.). Although some of these items may be purchased with the intent of targeting/catching specific species, the fact that these items can be used for multiple trips creates difficulty when attempting to associate durable expenditures with particular species. Therefore, only trip-related expenditures were used in this assessment.

The bluefish expenditure estimates can be used to reveal how anglers' expenditures affect economic activity such as sales, income, and employment from Maine through Virginia. During the course of a fishing trip, anglers fishing for bluefish purchase a variety of goods and services, spending money on transportation, food, boat fuel, lodging, etc. The sales, employment, and income generated from these transactions are known as the direct effects of anglers' purchases. Indirect and induced effects also occur because businesses providing these goods and services also must purchase goods and services and hire employees, which in turn, generate more sales,

[1]The 1998 estimate of expenditures by mode were adjusted to its 2006 equivalent by using the Bureau of Labor Statistics Consumer Price Index.

income, and employment. These ripple effects (i.e., multiplier effects) continue until the amount remaining in a local economy is negligible. A variety of analytical approaches are available for determining these impacts, such as input-output modeling. Unfortunately, a model of this kind was not available. Nonetheless, the total sales impacts can be approximated by assuming a multiplier of 1.5 to 2.0 for the Northeast Region (Scott Steinback, pers. comm.). Given the large geographical area of the Northeast Region, it is likely that the sales multiplier falls within those values. As such, the total estimated sales, income and employment generated from anglers that targeted bluefish in 2006 was likely to be between $135.84 million ($90.56 million * 1.5) and $181.12 million ($90.56 million * 2.0) from Maine through Virginia. A similar procedure could be used to calculate the total personal income, value-added, and employment generated from bluefish anglers' expenditures, but since these multiplier values have been quite variable in past studies, no estimates were provided here.

6.4.2.2 Value of the fishery to anglers

Behavioral models that examine travel expenditure, catch rates, accessibility of fishing sites, and a variety of other factors affecting angler enjoyment can be used to estimate the "non-monetary" benefits associated with recreational fishing trips. Unfortunately, a model of this kind does not exist specifically for bluefish. Data constraints often preclude researchers from designing species-specific behavioral models. However, a recent study by Hicks, *et. al.* (1999) estimated the value of access across states in the Northeast region (that is, what people are willing to pay for the opportunity to go marine recreational fishing in a particular state in the Northeast) and the marginal value of catching fish (that is, what people are willing to pay to catch an additional fish). Table 8 shows, on average, the amount anglers in the Northeast states (except for North Carolina which was not included in the study) are willing to pay for a one-day fishing trip. The magnitudes of the values in Table 8 reflect both the relative fishing quality of a state and the ability of anglers to choose substitute sites. The willingness to pay is generally larger for larger states, since anglers residing in those states may need to travel significant distances to visit alternative sites. Several factors need to be considered when examining the values in Table 8. First, note that Virginia has relatively high willingness to pay estimates given its relative size and fishing quality characteristics. In this study, Virginia defines the southern geographic boundary for a person's choice set, a definition that is arbitrary in nature. For example, an angler in southern Virginia is likely to have a choice set that contains sites in North Carolina. The regional focus of the study ignores these potential substitutes and therefore the valuation estimates may be biased upward (Hicks, *et. al.* 1999). Second, the values cannot be added across states since they are contingent upon all of the other states being available to the angler. If it were desirable to know the willingness to pay for a fishing trip within Maryland and Virginia, for example, the welfare measure would need to be recalculated while simultaneously closing the states of Maryland and Virginia.

Assuming the average willingness to pay values shown in Table 8 are representative of trips that targeted bluefish, these values can be multiplied by the number of trips that targeted bluefish by state to derive welfare values for bluefish. Table 9 shows the aggregate estimated willingness to pay by state for anglers that targeted bluefish in 2006 (i.e., the value of the opportunity to go

recreational fishing for bluefish). New York, New Jersey, and Massachusetts were the states with the highest estimated aggregate willingness to pay for bluefish day trips. Once again, note that the values cannot be added across states since values are calculated contingent upon all of the other states being available to the angler.

In the Hicks *et. al.* (1999) study, the researchers also estimated welfare measures for a one fish change in catch rates for 4 different species groups by state. One of the species groups was "small game," of which bluefish is a component. Table 10 shows their estimate of the welfare change associated with a one fish increase in the catch rate of all small game by state. For example, in Massachusetts, it was estimated that all anglers would be willing to pay $4.28 (the 1994 value adjusted to its 2006 equivalent) extra per trip for a one fish increase in the expected catch rate of all small game. The drawback to this type of aggregation scheme is that the estimates relate to the marginal value of the entire set of species within the small game category, rather than for a particular species within the grouping. As such, it is not possible to estimate the marginal willingness to pay for a one fish increase in the expected catch rate of bluefish from the information provided in Table 10.

However, it is possible to calculate the aggregate willingness to pay for a 1 fish increase in the catch rate of small game across all anglers. Assuming that anglers will not adjust their trip taking behavior when small game catch rates at all sites increase by one fish, the estimated total aggregate willingness to pay for a one fish increase in the catch rate of small game in 2006 was $124.39 million (total trips (31.02 million) x average per trip value ($4.01). This is an estimate of the total estimated welfare gain (or loss) to fishermen of a one fish change in the average per trip catch rate of all small game. Although it is unclear how much of this welfare measure would be attributable to bluefish, the results show that small game in general, in the Northeast, are an extremely valuable resource.

Although not addressed here, recreational fishing participants and non-participants may also hold additional intrinsic value out of a desire to be altruistic to friends and relatives who fish or to bequeath a fishery resource to future generations. A properly constructed valuation assessment would include both use and intrinsic values in the estimation of total net economic value. Currently, however, there have been no attempts to determine the altruistic value (i.e., non-use value) of bluefish in the Northeast.

6.4.2.3 Marine recreational descriptive statistics

In 1994, sport-fishing surveys were conducted by NMFS in the Northeast Region (Maine through Virginia) to obtain demographic and economic information on marine recreational fishing participants from Maine through Virginia. Data from the surveys were then used to access socioeconomic characteristics of these participants, as well as to identify their marine recreational fishing preferences and their perceptions of current and prospective fishery management regulations. The information that follows is excerpted and paraphrased from Steinback *et al.* (1999).

"Marine recreational fishing is one of the most popular outdoor recreational activities in America. In 1992, the lowest level of participation during the last ten years, approximately 2.57 million residents of coastal states in the Northeast Region participated in marine recreational fishing in their own state. Participation increased approximately 5% in 1993 (2.7 million) and increased another 14% in 1994 (3.1 million), exceeding the ten-year average of 2.9 million. Although the total number of finfish caught in the Northeast Region has declined over the past ten years effort (trips) has remained relatively stable. An estimated 22.4 million fishing trips were taken in 1994, up from 19.3 million in 1993."

The following discussion contains demographic and socioeconomic characteristics of anglers, as well as their preferences, attitudes, and opinions, toward recreational fishing activities and regulations. There was little or no difference in mean age across subregions. "The largest proportion of anglers in both sub-regions were 36-45 years old (NE=28%, MA=25%). However, New England anglers were younger than Mid-Atlantic anglers. Results show that participation in marine recreational fishing increased with age, peaked between ages of 36 to 45, and subsequently declined thereafter. The resultant age distribution is similar to the findings of other marine recreational studies. However, the distribution is not reflective of the general population in these subregions. Bureau of the Census estimates indicated population peaks between the ages of 25 to 34 in both subregions, declines until the age of 64 and then increases substantially." The complete distribution of recreational anglers by age for both subregions is as follows: less than 18, 25.2% in NE and 25.6% in MA; between the ages of 18-24, 9.8% in NE and 9.7% in MA; between 25-34, 16.4% in NE and 17.0% in MA; between 35-44, 16.3% in NE and 16.2% in MA; between 45-54, 11.5% in NE and 11.8% in MA; between 55-64, 8.2% in NE and 8.4% in MA; and 65 and over, 12.6% in NE and 11.3% in MA. In this survey, anglers under the age of 16 were not interviewed and are not included in the analysis.

In both subregions, at least 88% of the anglers (age 25 and over) had obtained at least a high school degree (NE=91%, MA=88%). "While the educational background is similar across subregions, a greater portion of the anglers in New England earned college or post graduate/professional degrees (NE=29%, MA=23%). The shape of the educational distribution essentially mirrored the general population in both subregions. However, the average number of anglers without a high school degree was considerably lower than Bureau of the Census estimates (age 25 and over) for the general population. On the other hand, it appears that anglers in New England and the Mid-Atlantic earned less post graduate/professional degrees than Bureau of Census estimates."

When anglers were asked to describe their racial or ethnic origin, almost all of the anglers interviewed in both subregions considered themselves to be white (NE=95%, MA=90%). "In the Mid-Atlantic, most of the remaining individuals were black (7%), leaving 3% to be of other ethnic origins. In New England, the remaining anglers were evenly distributed across other ethnic origins. The high occurrence of white fishermen is representative of the general population of the coastal states in New England. Approximately 94% of the population in 1993 was estimated to be white. However, in the Mid-Atlantic, the percentage of white anglers was

considerable higher than Bureau of Census populations estimates, and the percentage of black fishermen was 12% lower."

When anglers were asked to indicate from a range of categories what their total annual household income was, only minor differences between subregions were found. "The largest percentage of household incomes fell between $30,001 and $45,000 for both subregions (NE=27%, MA=26%). In comparison to the general population, anglers' annual household incomes are relatively higher in both subregions...Results are consistent with previous studies which showed that angler household incomes are generally higher than the population estimates."

If it is assumed that "years fished" is a proxy for "experience," the survey data shows that anglers in New England are relatively less experienced than anglers in the Mid-Atlantic. The distribution of recreational anglers years' of experience is as follows: 0-5 years of experience, 22% in NE and 16% in MA; 6-10 years of experience, 10% in NE and 10% in MA; 11-15 years of experience, 13% in NE and 14% in MA; 16-20 years of experience, 9% in NE and 9% in MA; 21-25 years of experience, 12% in NE and 12% in MA; 26-30 years of experience, 13% in NE and 12% in MA; and 30 or more years of experience, 21% NE and 26% in MA.

On average, it was found that New England anglers spent more on boat fees, lodging, and travel expenses than Mid-Atlantic anglers. "During the follow-up telephone portion of the survey, anglers that fished from a party/charter boat or a private/rental boat were asked how much they personally spent on boat fees for the trip in which they were interviewed. Boat fees averaged $61.00 per trip in New England and $51.00 in the Mid-Atlantic." Two categories of lodging expenses were obtained. "The first category (Lodging (>0)) is an estimate of the mean lodging expense per night for those anglers who indicated they spent at least one night away from their residence and personally incurred a lodging cost. Subsequently, the second category (Lodging (all)) is an estimate of mean lodging expenses across all overnight anglers, regardless of whether an angler incurred a lodging expense. Per night costs were estimated by dividing total lodging costs for the trip by the number of days the angler was away from his/her residence on the trip." Anglers that personally incurred lodging expenses spent $58.00 on average per night in New England and $47.00 per night in the Mid-Atlantic. "Across all overnight anglers, per night lodging expenses in New England averaged $29.00 and in the Mid-Atlantic, $21.00." Anglers' expenditures also included money spent on gas, travel fares, tolls, and ferry and parking fees. "One-way travel expenditures averaged $11.00 in New England and $8.00 in the Mid-Atlantic per trip. Therefore, if arrival costs are tantamount to departure costs, average round-trip travel expenses would approximate $22.00 in New England and $16.00 in the Mid-Atlantic."

Survey results show that over 50% of the anglers in both subregions indicated boat ownership (NE=51%, MA=53%). These results were obtained when anglers were asked if anyone living in their household owns a boat that is used for recreational saltwater fishing.

Regarding the duration of the interviewed trip, "at least 80% of the anglers in both subregions indicated they were on a one-day fishing trip (NE=80%, MA=84%). One-day fishing trips were

defined to be trips in which an angler departs and returns on the same day. Less than one fourth of the respondents indicated the day fishing was part of a longer trip which they spent at least one night away from their residence (NE=20%, MA=16%)."

"Respondents were asked why they chose to fish at the site they were interviewed... 'Convenience' and 'better catch rates' were the main reasons why anglers chose fishing sites in both subregions. Forty-nine percent of the anglers in New England and 57% of the anglers in the Mid-Atlantic indicated 'convenience' as either first or second reason for site choice. 'Better catch rates' was the first or second stated reason for site choice by 51% of the anglers in New England and 50% of the anglers in the Mid-Atlantic. Other notable responses were 'always go there,' 'boat ramp,' 'access to pier,' and 'scenic beauty.'...Results indicate that although anglers chose fishing sites for many different reasons, sites that offered good catch rates and were convenient attracted the most anglers."

Recreational anglers were asked to rate recreational fishing against their other outdoor activities during the last two months. Specifically, they were asked if fishing was their most important outdoor activity, their second most important outdoor activity, or only one of many outdoor activities? "Over 60% of the respondents in both subregions (NE=61%, MA=68%) reported marine recreational fishing was their most important outdoor activity during the past two months. Less than 30% in both subregions (NE=27%, MA=20%) said recreational fishing was only one of many outdoor activities." This is consistent with national outdoor recreation surveys carried over the past three decades indicating that fishing is consistently one of the top outdoor recreational activities in terms of number of people who participate.

Recreational anglers' ratings of reasons (7 pre-established reasons) for marine fishing are presented in Table 11. More than 65% of the anglers in both subregions said that it was very important to go marine fishing because it allowed them to: spend quality time with friends and family (NE=81%, MA=85%); enjoy nature and the outdoors (NE=89%, MA=87%); experience or challenge of sport fishing (NE=69%, MA=66%); and relax and escape from my daily routine (NE=83%, MA=86%). "The reasons that were rated as not important by the largest proportion of anglers consisted of: catch fish to eat (NE=42%), to be alone (NE=55%, MA=58%), and to fish in a tournament or when awards were available (NE=79%, MA=73%). In the Mid-Atlantic, although to catch fish to eat was rated as being somewhat important by the largest proportion of anglers (40%), approximately 31% felt that catching fish to eat was very important. However, in New England, only 20% concurred. It is clear from these responses that marine recreational fishing offers much more than just catching fish to anglers. Over 80% of the respondents in both subregions perceived recreational fishing as a time to spend with friends and family, a time to escape from their daily routine, and time to enjoy nature and outdoors. While catching fish to eat is somewhat important to anglers, findings of this survey generally concur with previous studies that found non-catch reasons are rated highly by almost all respondents while catch is very important for about a third and catching to eat fish is moderately important for about another third."

"The economic survey sought to solicit anglers opinions regarding four widely applied regulatory methods used to restrict total recreational catch of the species of fish for which they typically fish: (1) limits on the minimum size of the fish they can keep; (2) limits on the number of fish they can keep; (3) limits on the times of the year when they can keep the fish they catch; and (4) limits on the areas they fish. Anglers were asked whether or not they support or opposed the regulations." As indicated in Table 12, strong support existed for all regulatory methods in both subregions. Limits on the minimum size of fish anglers could keep generated the highest support in both regions (NE=93%, MA=93%), while limits on the area anglers can fish, although still high, generated relatively lower support (NE=68%, MA=66%).

Regulations which limit the number of fish anglers can keep ranked second (NE=91%, MA=88%). The results from this solicitation indicate that recreational anglers in the Northeast Region appear to be conservation oriented and generally support regulations employed to restrict total catch. Not surprisingly, when analyzing anglers' opinions regarding the four widely applied regulatory methods, it was found that anglers in all modes indicated strong support for the regulatory measures, with minimum size limits generating the strongest support, followed by catch limits, seasonal closures, and lastly, area closures (Table 13). "Although party/charter, private/rental, and shore respondents did offer varying degrees of support for each of a selection of regulatory measures, similar support existed across all modes. Support was highest for common regulatory methods currently being implemented in New England and the Mid-Atlantic (e.g., size and bag limits), than for area and seasonal closures."

6.4.3 Port and Community Description

Ports and communities that are dependent on bluefish are fully described in the 2002 Bluefish Specification Document (section 4.3; MAFMC 2001) and are available via the internet at http://www.nero.noaa.gov/ro/doc/nr02.htm. This information has not been updated since 2001.

NMFS dealer data from 2006 were used to rank fishing ports in order of importance for bluefish commercial landings. Eleven ports qualified as "top bluefish ports", i.e., those ports where 100,000 pounds or more of bluefish were landed (Table 15). Wanchese, NC was by far the most important commercial bluefish port with over 2.2 million lb landed, which is more than four times the landings from the second ranked port (Long Beach/Barnegat Light, NJ; 516 thousand lb).

The ranking of recreational fisheries landings (numbers of fish and pounds of fish) by state in 2006 is provided in Table 16.

6.4.4 Permit Data

Federally Permitted Vessels

NMFS Federal permit data indicate that a total of 3,365 commercial and 924 recreational (party/charter) bluefish permits were issued in 2006. Among these, 476 vessels had both commercial and recreational bluefish permits.

A subset of federally-permitted vessels was active in 2006. Dealer reports indicate that 666 vessels with commercial bluefish permits actually landed bluefish (19.8% of the permitted fleet); and VTR data show 245 party/charter vessels catching bluefish (51.5% of the permitted fleet).

Dealers

According to NMFS permit data, 448 dealers had Federal bluefish permits in 2006. Dealer reports, however, indicate that only 157 of these dealers (35%) actually bought bluefish. The distribution of permitted and active dealers by state is provided in Table 17. While employment data for these dealers are not available, dealer reports indicate that gross revenues from the purchase of bluefish in 2006 were $2.36 million.

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7.0 ANALYSIS OF (DIRECT AND INDIRECT) IMPACTS

7.1 Impacts of Alternative 1 (Preferred Alternative)

7.1.1 Biological Impacts

Because the TAC (includes TAL and projected discards) associated with the preferred alternative is based on achieving the 2006 fishing mortality in 2008 (0.15), this alternative is not by definition, expected to increase fishing mortality for bluefish. Additionally, in achieving target F, this alternative is consistent with the rebuilding plan for bluefish which is expected, as of the last assessment update, to be rebuilt in 2009 (rebuilding deadline is 2010). With regard to impacts on other federally managed species, bluefish are caught primarily through recreational hook and line fishing, however, the smaller commercial bluefish fishery typically operates as a mixed-species gillnets and otter trawl fishery with harvest including bonito, Atlantic croaker, weakfish, and spiny dogfish (MAFMC 2001). An increase in commercial bluefish fishery effort is possible under the preferred alternative; however, given the increased biomass, a change in the catch efficiency of the fleet could also occur. This would tend to reduce the need for effort to expand, and consequently, reduce the likelihood that fishing mortality on non-target species would increase compared to the status quo (Alternative 3). Heretofore, problems with the incidental catch of other species have not been documented in bluefish specification documents.

7.1.2 Habitat Impacts

Table 18 presents a range of potential habitat impacts that could occur under each of the alternatives. Bluefish are caught primarily through hook and line recreational fishing, which has not been implicated in having effects on EFH for any federally-managed species. In the commercial fishery, impacts to benthic EFH are greatest for bottom trawls, lowest for hook and line, and intermediate for bottom gillnets. The preferred alternative would allow for a minor (186,000 lb; 2% increase) in the commercial quota, commercial landings have remained very stable over the long term (Section 6.1) and are not expected to increase considerably in 2008. The baseline impacts of the bluefish fishery on EFH have been characterized, and, as stated in Section 6.2.3, are minimal and temporary in nature. The preferred bluefish alternative should not result in a significant change in the distribution or intensity of commercial bluefish fishing relative to the status quo alternative or the baseline, and as such, is expected to maintain minimal and temporary impacts to EFH. Because bluefish fishing impacts on bottom habitats are not expected to change under this alternative, this action would continue to minimize the adverse effects of fishing on EFH to the extent practicable, pursuant to section 305 (a)(7) of the MSFCMA.

7.1.3 Impacts on Endangered and Other Protected Species

Endangered and other protected species are addressed in section 6.3 of this document. The range of these species overlaps with bluefish, and as such, a potential for incidental catch always exists. Except in unique situations, such incidental catches should have a negligible impact on marine

mammals or abundances of endangered species. NMFS completed a formal section 7 consultation on the implementation of the bluefish FMP in 1999. The accompanying opinion concluded that the fishery would not jeopardize but may adversely affect some ESA-listed species.

The measures under this alternative do not contain major changes to existing management measures. As such, overall fishing effort is not expected to change substantially (Table 18), and this alternative is not expected to increase the likelihood of interactions between the bluefish fishery, marine mammals, sea turtles, or other protected resources or their respective habitats.

7.1.4 Socioeconomic Impacts

Alternative 1 would set the TAL at 28.156 million lb. The preferred alternative includes an adjusted commercial quota of 8.859 million lb, an adjusted RHL of 19.247 million lb, and an RSA of 50,000 lb for 2008. Under this alternative, the allocations to the commercial and recreational fisheries are approximately 2% and 1% greater than the commercial quota and recreational harvest limit under the status quo alternative, respectively (Alternative 3).

Because of the increased commercial quota, the preferred alternative would provide commercial fishermen with about the same fishing opportunities in 2008 compared to 2007. Stable or increased landings from one year to the next are desirable from an industry perspective. Increased fishing opportunity provides fishermen, processors, party/charter boat operators, equipment and bait suppliers with expanded income potential. Likewise, the adjusted RHL for 2008 is expected to allow for about the same recreational fishing opportunities in 2008 compared to 2007. The derivation of the commercial quota and recreational harvest limit is described in detail in sections 4.3 and 5.0.

New quotas alone have relatively limited social impacts. The changes in social structure and cultural fabric that may have occurred under implementation of limited access are already largely in place. The major impact of quota reductions is on profitability. Only where there are significant reductions in net revenues or in the ability to meet costs are substantial social impacts likely. The 2008 commercial quota under the preferred alternative will be allocated as indicated in Table 19.

A description of ports and communities is found in the 2002 Bluefish Specifications Document (MAFMC 2001; available via the internet at http://www.nero.noaa.gov/ro/doc/nr02.htm). Additionally, the “top bluefish ports” that landed bluefish in 2006 are identified in section 6.4 of this document.

Commercial Impacts

Vessels affected by the preferred alternative

The analysis of the harvest levels under this alternative indicates that the economic impacts ranged from no change in revenues for 481 vessels to revenue losses of ≥ 5% for 6 vessels. More specifically, 2 vessels were projected to incur revenue losses of 5-9%, 3 vessels of 10-19%, and 1 vessel of 20-29%. In addition, 238 vessels were projected to incur revenue losses of less than 5% (Table 20). Additional analysis regarding these vessels is presented below (e.g., evaluation of permit status, geographic distribution of permitted vessel). A detailed description of how economic impacts were estimated is presented in sections 3.1 and 5.0 of the RIR/IRFA.

All of the 6 vessels projected to have revenue reductions of more than 5% hold some combination of Federal permits (Table 21). Many of these vessels hold permits in various fisheries (Table 22) -- especially commercial permits for squid-mackerel-butterfish, skate, monkfish, and tilefish. As a result, they have access to some alternative fisheries, although some like multi-species and dogfish are already under heavy regulation and are likely to have increasingly stringent catch limits in the near future.

All of the 6 impacted vessels under this alternative with Federal permits are home ported in New York and the principal port of landing is also located in New York (100%; Table 23). Although the bluefish 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. Table 23 indicates that most of these vessels are likely to land in their home port state. 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 average length of these vessels by principal port is 33 feet (Table 23). 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 of product to remain profitable.

The commercial vessels showing revenue reductions of more than 5% in New York are mostly distributed among one county (among three different ports). In addition, two other vessels are distributed among two other counties in New York. Therefore, detailed information is not reported due to confidentiality requirements (Table 24). If communities having larger numbers of impacted vessels also have a larger total number of vessels, the proportion that may be impacted may be lower. This effect may mitigate the impacts on the community as a whole.

In addition to the economic analysis presented above, South Atlantic Trip Ticket Report data were evaluated to further assess the economic impacts associated with the change in revenue due to the proposed quota level in 2008 compared to landings in 2006. No revenue reduction is expected for vessels that land bluefish in North Carolina or Florida as a consequence of the

proposed 2008 quota compared to 2006 landings in those states.[1] A detailed analysis of the potential impacts to bluefish participants is presented in section 5.1 of the RIR/IRFA.

The changes described above are based on the potential changes in landings associated with the 2008 quotas versus 2006 landings (section 5.1 of the RIR/IRFA,). Amendment 1 implemented a transfer provision as a tool to mitigate the adverse economic impacts of prematurely closing a fishery when surplus quota exists. In fact, under the Interstate Management Plan for Atlantic Bluefish, states have been very cooperative in transferring commercial bluefish quota when needed to states that are running a deficit. If quota allocations were to be transferred from a state or states that do not need to land their entire bluefish quota allocation for 2008 then the number of affected entities described in this threshold analysis could potentially decrease and thus, decrease economic burden.

Recreational Impacts

Under Alternative 1, the adjusted 2008 recreational harvest limit would be 19.247 million lb. This limit would be approximately 14% above the recreational landings for 2006 (16.894 million lb) and 2% above the recreational harvest limit for 2007 (18.823 million lb). The possession limit would remain at 15 fish. Given recent trends in recreational landings, it is expected that the recreational sector will land less than the recreational harvest limit for 2008 (section 2.5 of the RIR/IRFA).

There is very little information available to empirically estimate how sensitive the affected party/charter boat anglers might be to the fishing regulations. However, given the level of the recreational harvest limit for 2008 and recreational landings in recent years, it is not anticipated that this management measure will have any negative effects on recreational fishermen or affect the demand for party/charter boat trips. This alternative is not expected to affect angler satisfaction nor expected to result in landings in excess of the recreational harvest limit. As such, the transfer is not expected to affect recreational landings in 2008.

Other Impacts

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

The economic analysis regarding changes in the commercial TALs for the bluefish fishery conducted under this alternative, as well as the other alternatives analyzed, incorporated adjustments for the quota specifications for 2008 (Alternative 7.4.2). That is, the RSA for bluefish was deducted from the RHL and commercial quota in an amount proportional to the overall bluefish TAL for 2008 to derive adjusted 2008 quotas and limits on recreational harvest. Therefore, the threshold analyses conducted under each alternative have accounted for overall

[1] Bluefish landings in Georgia were almost nil in 2006, representing a negligible proportion of the total bluefish landings along the Atlantic coast. In addition, there were no landings of bluefish in South Carolina in 2006. As such, it was assumed that no vessel activity for those two states took place in 2006 (section 3.0 of the IRFA).

reductions in fishing opportunities in 2008 available to all vessels typically participating in this fishery due to RSA. This methodology would overestimate potential revenue losses for vessels participating in these fisheries, as the overall TAL for the fishery was adjusted downward due to RSA that will be available only to vessels participating in RSA projects (i.e., specifically for vessels fishing in states where the quota have constrained landings in the last few years). Since the bluefish RSA is made available to vessels participating in the RSA projects only, and these vessels have the opportunity to harvest bluefish under the RSA projects as well as under the normal TALs for this species as well, it is possible that the projected revenue losses under the alternatives evaluated could potentially be smaller for some vessels participating in the 2008 RSA projects. This would be particularly true under the assumption that 2008 allocations to a particular state represent harvest constraints to the commercial fishery.

Overall Impacts

The proper management of the bluefish stock through implementation of the management measures described in this specification package will be beneficial to the commercial and recreational fishing communities of the Atlantic coast. By preventing overfishing and allowing stock rebuilding, benefits to the fishing communities will be realized through increased bluefish abundance and subsequent harvests. Although overall there is little port reliance on bluefish commercially, it can be expected that the regulatory measures will have a positive long-term impact on the communities and local economies of these ports. The measures will reduce the chance that the bluefish fishery will be overfished. This will provide long-term benefits to the ports and communities who depend in part on bluefish for employment and income. While some individual fishermen and their families may find the final management measures for 2008 to have meaningful impacts, the larger communities and towns in which they live will not.

7.2 Impacts of Alternative 2 (No Recreational Transfer)

7.2.1 Biological Impacts

The TAC and TAL (31.887 and 28.156 million lb, respectively) under this alternative are identical to those under Alternative 1 except that no transfer would be made from the recreational to the commercial sector. As with Alternative 1, overall removals under the TAC are consistent with maintaining the F_{target} in 2008 which should allow for expansion of bluefish biomass within the rebuilding timeline. For reasons stated in Section 7.1.1, the TAC/TAL under Alternative 2 is not expected to increase fishing mortality for other managed resources. Relative to the preferred alternative, a decrease in directed commercial effort is expected under Alternative 2. This would tend to reduce encounters with non-target species compared to the status quo (Alternative 3) and consequently reduce fishing mortality on non-target species. However, because Alternative 2 would allow commercial fishermen to retain fewer bluefish, large quantities of bluefish are likely to be discarded by the commercial fishery. Avoidance of bluefish by commercial fishing operations would be expected, but a substantial change in discarding patterns could affect assumptions made about the importance of commercial discards relative to overall removals.

7.2.2 Habitat Impacts

Table 18 presents the range of potential habitat impacts that could occur under each of the alternatives. Because harvest of the commercial quota under Alternative 2 would correspond to a 33.7 % decrease relative to the status quo (Alt 3), impacts on EFH related to the commercial harvest of bluefish should also decrease. The baseline impacts of the bluefish fishery on EFH have been characterized and, as stated in Section 6.2.3, are minimal and temporary in nature. Because bluefish fishing impacts on bottom habitats are expected to be reduced under this alternative, it would continue to minimize the adverse effects of fishing on EFH to the extent practicable, pursuant to section 305 (a)(7) of the MSFCMA.

7.2.3 Impacts on Endangered and Other Protected Species

Endangered and other protected species are addressed in section 6.3 of this document. The range of these species overlaps with bluefish, and as such, a potential for incidental catch always exists. Except in unique situations, such incidental catches should have a negligible impact on marine mammals or abundances of endangered species, and NMFS has concluded in previous consultations that implementation of this FMP will not have an adverse impact upon these populations.

The measures under this alternative would reduce commercial bluefish fishing effort and, as such, are expected to decrease the likelihood of interactions between the bluefish fishery, marine mammals, sea turtles, or other protected resources or their respective habitats.

7.2.4 Socioeconomic Impacts

The same overall discussion regarding the social impacts of quotas and characterization of the bluefish fisheries by port and community presented under Alternative 1 (section 7.1.4 of the EA) also apply here. The overall TAL under this alternative is identical to the TAL under Alternative 1 except that no transfer is made to the commercial fishery.

Alternative 2 would set the TAL at 28.156 million lb. This TAL includes a preliminary adjusted commercial quota of 4.778 million lb, a preliminary adjusted recreational harvest limit of 23.328 million lb, and an RSA of 50,000 lb for 2008. Under this alternative, the allocations to the commercial and recreational fisheries are approximately 45% lower and 23% higher, respectively, than the commercial quota and recreational harvest limit under the status quo alternative, respectively (Alternative 3).

The state-by-state quota allocation for 2008 under Alternative 2 is shown in Table 19. The commercial quota allocation under this alternative would provide commercial fishermen with substantially lower (i.e., 45%) fishing opportunities in 2008 compared to the status quo alternative (Alternative 3).

Commercial Impacts

Vessels affected under the most restrictive alternative (Alternative 2)

The analysis of the harvest levels under this alternative indicates that the economic impacts ranged from small to large revenue losses. According to Northeast dealer data, 53 vessels were projected to incur revenue losses of more than 5%. More specifically, 15 vessels were projected to incur revenue losses of 5-9%, 12 vessels of 10-19%, 4 vessels of 20-29%, 20 vessels of 30-39%, 1 vessel of 40-49%, and 1 vessel of 50% or more. In addition, 610 vessels were projected to incur revenue losses of less than 5%, and 62 vessels were projected to have no change in revenue (Tables 25 and 26). Since there are a number of vessels that could experience substantial revenue reductions under this alternative, additional analysis regarding these vessels is presented below (e.g., evaluation of permit status, geographic distribution of permitted vessel). Since Alternative 2 is the most restrictive alternative, impacts of other alternatives will be less than the impacts under this alternative. A detailed description of how economic impacts were estimated is presented in sections 3.1 and 5.0 of the RIR/IRFA.

Of the 53 vessels projected to have revenue reductions of more than 5%, 50 (94%) hold permits in other fisheries (Table 27). It is possible that the remaining 3 vessels that do not show having any Federal permits in 2006 have opted for fishing in state waters only and as such, did not renew Federal permits in 2006, or have ceased business. In particular, most vessels have squid-mackerel-butterfish, dogfish, tilefish (incidental), hearing (VMS), monkfish, and skate (Table 27). As a result, they have access to some alternative fisheries, although some like multispecies, dogfish, and scallops are already under heavy regulation and are likely to have increasingly stringent catch limits in the near future.

The majority of the 53 vessels with Federal permits for bluefish have home ports in New Jersey, followed by New York, and North Carolina. The principal ports of landing for these vessels are mainly located in New Jersey, followed by New York and North Carolina as well (Table 28).

Although the bluefish 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 three states home-porting the greatest number of vessels projected to have revenue reductions of more than 5% (New Jersey, New York, and North Carolina), vessels in those states are likely to land in their home port state (75 to 100%; Table 28). This information is important because impacts will occur both in the community of residence and in the community where the vessel's catch is landed and sold. The largest vessels are found in New Jersey. 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 of product to remain profitable.

As indicated above, most commercial vessels showing revenue reductions of more than 5% are concentrated in New Jersey, New York, and North Carolina (Table 29). Within these states, the

most impacted counties are: Ocean (NJ), Dare (NC), and Suffolk (NY). Within these counties, some individual ports have concentrations of vessels; in other cases only one or three vessels may be found per port, but the overall number in some of the counties (Ocean, NJ; Dare, NC; and Suffolk, NY) is relatively large. Some individual ports with large numbers of impacted vessels are: Barnegat Light and Point Pleasant, New Jersey. Counties not included in this analysis (e.g., Essex, Barnstable, and Suffolk, MA; Cape May and Monmouth, NJ; Queens, NY) 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. In fact, most of these counties only had one or two affected vessels. If communities having larger numbers of impacted vessels also have a larger total number of vessels, the proportion that may be impacted may be lower. This effect may mitigate the impacts on the community as a whole.

To further characterize the potential impacts on indirectly impacted entities and the larger communities within which owners of impacted vessels reside, selected county profiles were constructed. Each profile 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 are presented in section 6.1 of the RIR/IRFA. In addition, a description of important ports and communities are fully described in the 2002 Bluefish Specifications Document (MAFMC 2001; available via the internet at http://www.nero.noaa.gov/ro/doc/nr02.htm). Additionally, the "top bluefish ports" that landed bluefish in 2006 are identified in section 6.4 of this document.

In addition to the economic analysis presented above, South Atlantic Trip Ticket Report data were evaluated to further assess the economic impacts associated with the change in revenue due to the proposed quota level in 2008 compared to landings in 2006. This evaluation indicated that on average, reduction in revenues due to potential change in the landings level is expected to be small for fishermen that land bluefish in North Carolina (4%). No revenue reduction is expected for vessels that land bluefish in Florida as a consequence of the proposed 2008 quota compared to 2006 landings in that state. A detailed analysis of the potential impacts to bluefish participants is presented in section 5.2 of the RIR/IRFA.

These economic changes presented here are based on the potential changes in landings associated with the 2008 quotas versus 2006 landings (section 5.2 of the RIR/IRFA). Amendment 1 implemented a transfer provision as a tool to mitigate the adverse economic impacts of prematurely closing a fishery when surplus quota exists. In fact, under the Interstate Management Plan for Atlantic Bluefish, states have been very cooperative in transferring commercial bluefish quota when needed to states that are running a deficit. If quota allocations were to be transferred from a state or states that do not need to land their entire bluefish quota allocation for 2008, then the number of affected entities described in this threshold analysis could potentially decrease and thus, decrease economic burden. However, given that under this alternative the overall commercial quota in 2008 is substantially lower than the 2007 quota and

the 2006 landings, the amount of bluefish that could potentially be transferred among states would be lower than under Alternatives 1 and 3, thus potentially allowing for less economic relief.

Recreational Impacts

Under Alternative 2, the bluefish 2008 recreational harvest limit would be 23.328 million lb. This limit would be approximately 38% higher than the recreational landings for 2006 (16.894 million lb) and less than 24% larger than the recreational harvest limit for 2007 (18.823 million lb). The possession limit would remain at 15 fish. It is not anticipated that this management measure will have any negative effects on recreational fishermen or affect the demand for party/charter boat trips. This alternative is not expected to affect angler satisfaction nor expected to result in landings in excess of the recreational harvest limit. The recreational impacts under this alternative are expected to be similar to those described under Alternatives 1 and 3 (sections 7.1.4 and 7.3.4 of the EA).

Other Impacts

Effects of the research set-aside

The impacts described in Alternative 1 above (section 7.1.4) also apply here. However, given the substantial decrease in the fishing opportunity associated with the 2008 commercial quotas relative to 2006 landings under Alternative 2 (most restrictive), the cost of any premature closure of the fishery (pounds of bluefish allocated for set-aside) would be shared among the non research set-aside participants in the fishery.

7.3 Impacts of Alternative 3 (Status Quo)

7.3.1 Biological Impacts

The TAL proposed under the status quo alternative is, by definition, equivalent to the current year TAL (27.762 million lb). Given the increase in bluefish biomass, marginally lower landings under this alternative should correspond to fishing mortality below F_{target} when compared to the TAL under the preferred alternative (Alternative 1) and Alternative 2 (28.156 million lb). A lower TAL would likely result in slightly lower commercial bluefish fishery effort than under Alternative 1 but greater than under Alternative 2. A constant commercial quota in the presence of increasing bluefish biomass is expected to produce a slight increase in incidentally captured bluefish. This would be a negative, albeit small, impact to bluefish in that a change in discarding patterns would affect assumptions about the importance of commercial discards relative to overall removals, which would result in less informed management of the resource. Because the TAC is the sum of the TAL and expected discards, discarding under the lower Alternative 3 TAL could increase as much as 384,000 lbs without exceeding target F in 2008.

7.3.2 Habitat Impacts

Table 18 presents the range of potential habitat impacts that could occur under each of the alternatives. Because harvest of the commercial quota under Alternative 3 would maintain the status quo, impacts on EFH related to the commercial harvest of bluefish should not change. EFH impacts associated with the bluefish fishery were determined to be minimal and therefore consistent with the baseline impacts of the fishery that were assessed in the 2004 Annual Specifications EA (see Section 6.2.3). Therefore, this action would continue minimizes the adverse effects of fishing on EFH to the extent practicable, pursuant to section 305 (a)(7) of the MSFCMA.

7.3.3 Impacts on Endangered and Other Protected Species

Endangered and other protected species are addressed in section 6.3 of this document. The range of these species overlaps with bluefish, and as such, a potential for incidental catch always exists. Except in unique situations, such incidental catches should have a negligible impact on marine mammals or abundances of endangered species, and NMFS has concluded in previous consultations that implementation of this FMP will not have an adverse impact upon these populations.

The measures under this alternative would maintain or slightly reduce commercial bluefish fishing effort and, as such, are not expected to increase the likelihood of interactions between the bluefish fishery, marine mammals, sea turtles, or other protected resources or their respective habitats.

7.3.4 Socioeconomic Impacts

The same overall discussion regarding the social impacts of quotas and characterization of the bluefish fisheries by port and community presented under Alternative 1 (section 7.1.4 of the EA) also apply here.

Alternative 3 would set the TAL at 27.762 million lb. This TAL includes an adjusted commercial quota of 8.673 million lb, an adjusted recreational harvest limit of 19.039 million lb, and an RSA of 50,000 lb for 2008. See section 5.3 for additional information regarding the derivation of this TAL and associated limits.

The state-by-state quota allocation for 2008 under Alternative 3 is shown in Table 19. The overall commercial quota allocation under this alternative (status quo) would provide commercial fishermen with greater fishing opportunities in 2008 compared to 2006 landings (section 2.5 of the RIR/IRFA). This alternative also provides greater fishing opportunities to commercial fishermen compared to Alternative 2 and lower fishing opportunities when compared to Alternative 1 in 2008.

Commercial Impacts

Vessels affected under the least restrictive alternative (Alternative 3)

According to Northeast dealer data, 20 vessels were projected to incur revenue losses in the range of 5 to 29%. In addition, 407 vessels were projected to incur revenue losses of less than 5%, and 298 vessels were projected to have no change in revenue (Table 30). A detailed description of how economic impacts were estimated is presented in sections 3.1 and 5.0 of the RIR/IRFA.

All of the 20 vessels projected to have revenue reductions of more than 5% hold some combination of Federal permits (Table 31).

In addition to the economic analysis presented above, South Atlantic Trip Ticket Report data were evaluated to further assess the economic impacts associated with the change in quota levels in 2008 compared to landings in 2006. This evaluation indicated that on average, reduction in revenues due to potential change in the landings level is expected to be small for fishermen that land bluefish in North Carolina (9%). No revenue reduction is expected for vessels that land bluefish in Florida as a consequence of the quota under Alternative 3 compared to 2006 landings in that state. A detailed analysis of the potential impacts to bluefish participants is presented in section 5.3 of the RIR/IRFA. The discussion regarding analysis limitation in section 5.2.4 above also apply here.

Recreational Impacts

Under Alternative 3, the bluefish 2008 recreational harvest limit would be 19.039 million lb. This limit would be approximately 13% above the recreational landings for 2006 (16.894 million lb). Given recent trends in recreational landings it is expected that the recreational sector will land more than recreational harvest limit for 2008 (section 2.5 of the RIR/IRFA). The possession limit would remain at 15 fish.

It is not anticipated that this management measure will have any negative effects on recreational fishermen or affect the demand for party/charter boat trips. This alternative is not expected to affect angler satisfaction nor expected to result in landings in excess of the recreational harvest limit. The recreational impacts under this alternative are expected to be similar to those described under Alternatives 1 and 2.

Other Impacts

Effects of the research set-aside

The impacts described in Alternative 1 above (section 7.1.4) also apply here.

7.4 Impacts of Alternative 4 on the Environment

Framework Adjustment 1 to the Bluefish FMP established a program in which data collection projects can be funded in part through a portion of the TAL set-aside for research. The purpose of this program is to support research and the collection of additional data that would otherwise be unavailable. Through the RSA program, the Council encourages collaborative efforts among the public, research institutions, and government in broadening the scientific base upon which management decisions are made. Reserving a small portion of the annual harvest of a species to subsidize the research costs of vessel operations and scientific expertise is considered an important investment in the future of the nation's fisheries.

An additional benefit that is sought from this program is the assurance that new data collected by non-governmental entities will receive the peer review and analysis necessary so that data can be utilized to improve the management of public fisheries resources. The annual research set-aside amount may vary between 0 and 3% of a 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.

7.4.1 No Research Set-Aside (No Action)

Under this alternative no RSA would be implemented for 2008.

7.4.1.1 Environmental Impacts, Not Including Socioeconomic Impacts

Under this alternative there would not be a bluefish RSA implemented for 2008. Because all bluefish landings would count against the overall quota whether or not a RSA is implemented, the biological/ecological impacts would not change relative to the status quo. Nevertheless, there would also be no indirect benefit from information gained through the research set-aside program if the no action alternative is implemented.

7.4.1.4 Socioeconomic Impacts

Under this alternative there will be no RSA deducted from the overall TAL. Therefore, the initial commercial quota and recreational harvest limit 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 would be taken and the fishery is prematurely closed (i.e., the quota is constraining), the economic and social costs of the program are shared among the non-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 research set-aside is implemented under this alternative, there are no direct economic or social costs as described above.

The socioeconomic discussion of the evaluated commercial quotas discussed in sections 7.1.4, 7.2.4, and 7.3.4 of the EA was based on adjusted commercial quotas that accounted for RSA (section 7.4.2). More specifically, an RSA of 50,000 lb was used to derive the adjusted commercial quotas and RHLs in all evaluated alternatives.

Tables 19 and 32 show the potential impacts of the three commercial quotas evaluated for 2008. These impacts are associated with the specific changes associated with the 2008 quota compared to the 2006 landings.

For example, under Alternative 1 the state of New York shows a potential decrease in landings of 22% when the 2008 quotas are compared to the 2006 landings (Table 32). If commercial quotas not adjusted for RSA are considered, the potential decrease in landings associated with the 2008 quotas compared to the 2006 landings would change by less than 1% (from 22.05% to 21.91%). In other words, an additional 1,637 lb of bluefish would be available to non-research participants in New York under Alternative 1. Therefore, since there is a small additional amount of bluefish available to non-RSA participants under this alternative compared to the status quo (section 7.4.2), the economic impacts discussed under the commercial quota alternatives adjusted for RSA would be slightly smaller than those discussed under sections 7.1.4, 7.2.4, and 7.3.4 of the EA.

Changes in the recreational harvest limit due to the RSA would be nil; the limit changes from 19.291 million lb to 19.247 million lb. This represents a < 1% percent change in the harvest level as a consequence of the RSA. In addition, given the level of the recreational harvest limit for 2008 and recreational landings in recent years, it is not anticipated that the RSA will affect angler satisfaction or recreational demand for bluefish.

However, under this alternative the collaborative efforts among the public, research institutions, and government in broadening the scientific base upon which management decisions are made will cease.

7.4.2 Specify a Research Set-Aside for 2008 (Status Quo Alternative)

The Council recommended a maximum bluefish RSA of 3% of the TAL for 2008. The currently approved project, however, is requesting only 50,000 lb. If the RSA is not used, the RSA quota would be put back into the overall TAL. A summary of the RSA project requesting bluefish for 2008 is presented in the Appendix. This description includes project name, description and duration, amount of RSA requested, and gear to be used to conduct the project. This alternative is the status quo alternative.

7.4.2.1 Environmental Impacts, Not Including Socioeconomic Impacts

The currently approved RSA amount is minimal (50,000 lb or 0.18% of the TAL) and is not expected to significantly affect the distribution or intensity of fishing effort. As such this alternative does not have meaningful biological/ecological impacts.

7.4.2.4 Socioeconomic Impacts

Under this program, successful applicants receive a share of the annual quota for the purpose of conducting scientific research. The Nation receives a benefit in that data or other information about the fishery is obtained for management or stock assessment purposes that would not otherwise be obtained. In fisheries where the entire quota would be taken and the fishery is prematurely closed (i.e., the quota is constraining), the economic and social costs of the program are shared among the non-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. However, in the case of bluefish the overall quota is not constraining landings, i.e., landings in recent years in the commercial and recreational sectors have been below the commercial TAL and recreational harvest limit, respectively. Therefore, on a coastwide basis, it is not expected that negative economic or social impacts will occur. However, it is possible that in specific states where commercial quotas have restrained landings in recent years, the decrease in quota availability associated with a commercial quota that is adjusted downward to account for RSA would not benefit those states.

The socioeconomic discussion of the evaluated commercial quotas discussed in sections 7.1.4, 7.2.4, and 7.3.4 of the EA were based on adjusted commercial quotas accounting for the RSA proposed under this alternative. More specifically, an RSA of 50,000 lb was used to derive the adjusted commercial quotas and RHLs in all evaluated alternatives. The discussion regarding the changes in commercial quotas and recreational harvest limits described in the previous section also apply here.

In addition, it is possible that the vessels that would be used by researchers to conduct the research would be vessels that have not traditionally fished for bluefish. As such, permit holders that would have landed these bluefish in a state where the quota has been reached and the fishery closed could be disadvantaged. However, the amount of the bluefish RSA is minimal, so impacts in such states would also be expected to be minimal.

7.5 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 bluefish fishery.

7.5.1 Consideration of the VECs

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

1. Managed resource (bluefish)
2. Non-target species
3. Habitat including EFH for the managed resource and non-target species
4. Endangered and protected species
5. Human communities

7.5.2 Geographic Boundaries

The analysis of impacts focuses on actions related to the harvest of bluefish. 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 resource is from Maine through Florida, as this represents the biological range for this stock. 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 bluefish and 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 6.4).

7.5.3 Temporal Boundaries

The temporal scope of past and present actions for the managed resource, non-target species, habitat and human communities is primarily focused on actions that have occurred after FMP implementation (1990). For endangered and other protected resources, the scope of past and present actions is on a species-by-species basis (section 6.3) 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 three years (2010) into the future. This period was chosen because it is the rebuild deadline for this stock. The temporal scope cannot extend too far into the future because the dynamic nature of resource management and lack of information on projects that may arise make it very difficult to predict impacts beyond this timeframe with any certainty.

7.5.4 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 7.4. Box 7.5.4 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 bluefish stock. Actions have been taken to manage the commercial and recreational fisheries through the FMP and Amendment 1. 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 bluefish stock.

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 species and their habitats on a population level is unknown, but likely neutral to low negative, since a large portion of 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 process required by Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act for certain activities that are regulated by Federal, state, and local authorities. The jurisdiction of these activities is in "waters of the U.S." and includes both riverine and marine habitats.

Reasonably Foreseeable Future Actions

There are currently no Reasonably Foreseeable Future (RFF) actions that relate directly to the federally-managed bluefish fishery except the continuing development of annual management measures.

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.

7.5.5 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.

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Box 7.5.4. 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 Amendment 1	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, RFF Bluefish 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 Develop 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
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 7.5.4. 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
RFF 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 7.5.4. 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 5 years)	Construction of wind turbines to harness electrical power (Several facilities proposed from ME through NC, including off the coast of 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
[RFF] Liquefied Natural Gas (LNG) terminals (within 5 years)	Transportation of natural gas via tanker to terminals located offshore and onshore (Several LNG terminals are proposed, including 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] Convene Atlantic Trawl Gear Take Reduction Team (2006)	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 Atl. Ocean and the Gulf of Mexico (w/in next 5 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

7.5.5.1 Managed Resource

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 7.5.5.1. The indirectly negative actions described in Box 7.5.5.1 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 7.5.4), 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 resource. It is anticipated that the future management actions, described in Box 7.5.5.1, 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 bluefish productivity depends. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to bluefish have had a positive cumulative effect.

The specification of annual TALs for the managed resource ensures the rebuilding schedule is met, supports long-term sustainability of the stock and is 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) and the extent to which mitigating measures were effective. The proposed action in this document would positively reinforce the past and anticipated positive cumulative effects on the stock by promoting rebuilding by the deadline specified in the FMP. Therefore, the proposed action would not have any significant effect on the managed resource individually or in conjunction with other anthropogenic activities (see Box 7.5.6).

Box 7.5.5.1. Summary of the effects of past, present, and reasonably foreseeable future actions on the managed resource.			
Action (see Box 7.5.4 for more detailed description)	**Past to the Present**		**Reasonably Foreseeable Future**
Original FMP and Amendment 1	**Indirect Positive**		
Bluefish Specifications	**Indirect Positive**		
Develop Standardized Bycatch Reporting Methodology	**Neutral**		
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 5 years)			**Uncertain – Likely Indirect Negative**
Liquefied Natural Gas (LNG) terminals (within 5 years)			**Uncertain – Likely Indirect Negative**
Convene Atlantic Trawl Gear Take Reduction Team (2006)			**Indirect Positive**
Strategy for Sea Turtle Conservation for the Atlantic Ocean and the Gulf of Mexico Fisheries (within next 5 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 7.5.5.1 for explanation.**		

7.5.5.2 Non-Target Fish Species

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 7.5.5.2. The effects of indirectly negative actions described in Box 7.5.5.2 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 7.5.4), 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 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 therefore anticipated that the future management actions, described in Box 7.5.5.2, 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.

The proposed actions in this document have a neutral impact 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 7.5.6).

Box 7.5.5.2. Summary of the effects of past, present, and reasonably foreseeable future actions on the non-target species.			
Action (see Box 7.5.4 for more detailed description)	**Past to the Present**		**Reasonably Foreseeable Future**
Original FMP and Amendment 1	**Indirect Positive**		
Bluefish Specifications	**Indirect Positive**		
Develop Standardized Bycatch Reporting Methodology	**Neutral**		
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 5 years)			**Uncertain – Likely Indirect Negative**
Liquefied Natural Gas (LNG) terminals (within 5 years)			**Uncertain – Likely Indirect Negative**
Convene Atlantic Trawl Gear Take Reduction Team (2006)			**Indirect Positive**
Strategy for Sea Turtle Conservation for the Atlantic Ocean and the Gulf of Mexico Fisheries (within next 5 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 7.5.5.2 for explanation.**		

7.5.5.3 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 7.5.5.3. The direct and indirect negative actions described in Box 7.5.5.3 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 7.5.4), 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 7.5.5.3, 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.

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 7.5.6).

Box 7.5.5.3. Summary of the effects of past, present, and reasonably foreseeable future actions on the habitat.			
Action (see Box 7.5.4 for more detailed description)	**Past to the Present**		**Reasonably Foreseeable Future**
Original FMP and Amendment 1	**Indirect Positive**		
Bluefish Specifications	**Indirect Positive**		
Develop Standardized Bycatch Reporting Methodology	**Neutral**		
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 5 years)			**Potentially Direct Negative**
Liquefied Natural Gas (LNG) terminals (within 5 years)			**Potentially Direct Negative**
Convene Atlantic Trawl Gear Take Reduction Team (2006)			**Indirect Positive**
Strategy for Sea Turtle Conservation for the Atlantic Ocean and the Gulf of Mexico Fisheries (within next 5 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 7.5.5.3 for explanation.**		

7.5.5.4 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 7.5.5.4. The indirectly negative actions described in Box 7.5.5.4 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 7.5.4), 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 7.5.5.4, 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.

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 7.5.6).

Box 7.5.5.4. Summary of the effects of past, present, and reasonably foreseeable future actions on the protected resources.			
Action (see Box 7.5.4 for more detailed description)	**Past to the Present**		**Reasonably Foreseeable Future**
Original FMP and Amendment 1	**Indirect Positive**		
Bluefish Specifications	**Indirect Positive**		
Develop Standardized Bycatch Reporting Methodology	**Neutral**		
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 5 years)			**Uncertain – Likely Indirect Negative**
Liquefied Natural Gas (LNG) terminals (within 5 years)			**Uncertain – Likely Indirect Negative**
Convene Atlantic Trawl Gear Take Reduction Team (2006)			**Indirect Positive**
Strategy for Sea Turtle Conservation for the Atlantic Ocean and the Gulf of Mexico Fisheries (within next 5 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 7.5.5.4 for explanation.**		

7.5.5.5 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 7.5.5.5. The indirectly negative actions described in Box 7.5.5.5 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 7.5.4), 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 7.5.5.5, 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.

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). No overages have occurred during the bluefish rebuilding program. 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 7.5.6).

Box 7.5.5.5. Summary of the effects of past, present, and reasonably foreseeable future actions on human communities.			
Action (see Box 7.5.4 for more detailed description)	**Past to the Present**		**Reasonably Foreseeable Future**
Original FMP and Amendment 1	**Indirect Positive**		
Bluefish Specifications	**Indirect Positive**		
Develop Standardized Bycatch Reporting Methodology	**Potentially Indirect Negative**		
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 5 years)			**Uncertain – Likely Mixed**
Liquefied Natural Gas (LNG) terminals (within 5 years)			**Uncertain – Likely Mixed**
Convene Atlantic Trawl Gear Take Reduction Team (2006)			**Indirect Negative**
Strategy for Sea Turtle Conservation for the Atlantic Ocean and the Gulf of Mexico Fisheries (within next 5 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 7.5.5.5 for explanation.**		

7.5.6 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 7.5.6. 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 2007	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 7.5.4 and 7.5.5.1)	Negative to positive (Sections 7.1, 7.2, 7.3, 7.4, and 7.5)	**None**
Non-target Species	Complex and variable (Section 6.1)	Positive (Sections 7.5.4 and 7.5.5.2)	Neutral to positive (Sections 7.1, 7.2, 7.3, 7.4, and 7.5)	**None**
Habitat	Complex and variable (Section 6.2)	Neutral to positive (Sections 7.5.4 and 7.5.5.3)	Neutral to positive (Sections 7.1, 7.2, 7.3, 7.4, and 7.5)	**None**
Protected Resources	Complex and variable (Section 6.3)	Positive (Sections 7.5.4 and 7.5.5.4)	Neutral to positive (Sections 7.1, 7.2, 7.3, 7.4, and 7.5)	**None**
Human Communities	Complex and variable (Section 6.4)	Positive (Sections 7.5.4 and 7.5.5.5)	Short-term-Negative to positive; Long-term-Negative to Positive (Sections 7.1, 7.2, 7.3, 7.4, and 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 7.5. 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 ESSENTIAL FISH HABITAT ASSESSMENT

8.1 Description of the Proposed Action

The proposed action (fully described in Section 5.0 of this document) would establish Federal management measures for commercial and recreational bluefish fisheries on the Atlantic Coast of the U.S. for 2008. In accordance with the bluefish FMP, the purpose of this action is to ensure that overfishing does not occur in 2008 and that stock recovery can occur such that stock biomass is rebuilt to B_{msy} within the rebuilding timeframe established through Amendment 1 (i.e., by 2010).

8.2 Analysis of the Potential Adverse Effects of the Proposed Action

A description of the impacts of the proposed action on EFH is provided in Section 7.0 of this document. Bluefish are primarily caught recreationally using hook and line. The principal commercial gears for bluefish include bottom otter trawls and gillnets. The preferred alternative would increase the catch quota in the commercial bluefish fishery modestly, by 2% relative to the status quo. Although the specific consequences of this increase are unknown for habitat, it can be assumed that the effects would be related to changes in fishing effort. A larger commercial quota could result in more fishing trips or longer fishing trips, although the increase under the preferred alternative is marginal. Similarly, with increased species abundance, CPUE could increase which would result in no increase or even a decrease in effort. However, some states could modify their trip limits, which would result in slight changes in overall fishing effort.

8.3 Determination of Habitat Impacts of the Proposed Action

It was concluded in the 2003 through 2007 Annual Specifications EAs that the baseline impact of the bluefish fishery on EFH is minimal and temporary in nature. Additionally, the specified recreational and commercial catch quotas have not required any habitat impact mitigation. Since the proposed action is an extension of past actions to establish quotas for the fishery, it is not expected this action will pose any increased risk to bottom habitats.

8.4 Evaluation of Measures to Avoid, Minimize, or Mitigate Adverse Impacts of the Proposed Action

As stated above, the proposed action is not associated with measures that require mitigation.

9.0 OTHER APPLICABLE LAWS

9.1 NEPA

National Oceanic and Atmospheric Administration Administrative Order 216-6 (May 20, 18.28.28.2) 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 presented in this document are expected to jeopardize the sustainability of bluefish. The preferred quota specifications for each species are consistent with the FMP objectives. The preferred bluefish TAL of 28.156 million lb for 2008 is expected to likely achieve the target fishing mortality rate in 2008. The proposed actions will aid in the long-term sustainability of harvests from the bluefish stock.

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

None of the specifications presented in this document are expected to jeopardize the sustainability of any non-target species. The bluefish fishery is primarily a recreational fishery and prosecuted using hook and line and handlines, and the proposed measures are not expected to alter these fishing methods or activities. In addition, none of the specifications are expected to increase fishing effort.

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 damage to the ocean, coastal habitats, and/or EFH as defined under the Magnuson-Stevens Act and identified in the FMP. In general, bottom-tending mobile gear, primarily otter trawls, have the potential to adversely affect EFH for the species detailed in section 6.2 of the EA. However, the bluefish fishery is primarily a recreational fishery and prosecuted using hook and line and handlines. Overall, the measures proposed in this action are not expected to have adverse impacts to any EFH associated with the fishing activities managed under the FMP.

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

None of the measures alter the manner in which the industry conducts fishing activities for bluefish. Therefore, no changes in fishing behavior that would affect safety are anticipated. The overall effect of the proposed actions on bluefish, 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 are expected to alter fishing methods or activities. None of the proposed specifications are expected to increase fishing effort or the spatial and/or temporal distribution of current fishing effort. 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 fishery. It has been determined that fishing activities conducted under this proposed rule will have no adverse impacts on endangered or threatened species, marine mammals, or their critical habitat.

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 quota, recreational harvest limit, and research set-aside for the 2008 bluefish fishery. None of the specifications are expected to alter fishing methods or activities. None of the proposed specifications are expected to 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 economic impact or result in significant impacts on the natural or physical environment. None of the specifications are expected to alter fishing methods or activities or are expected to 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 proposed annual commercial quota, recreational

harvest limit, and research set-aside for the 2008 bluefish fishery. 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. 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 proposed annual commercial quota, recreational harvest limit, and research set-aside for the 2008 bluefish fishery. The bluefish fishery is 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 action merely revises the proposed annual commercial quota, recreational harvest limit, and research set-aside for the 2008 bluefish fishery. None of the specifications are expected to alter fishing methods or activities or are expected to 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, 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 7.5, the proposed action is not expected to have individually insignificant, but cumulatively significant impacts. The 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 action merely revises the proposed annual commercial quota, recreational harvest limit, and research set-aside for the 2008 bluefish fishery. The bluefish fishery is 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 a commercial quota, recreational harvest limit, and research set-aside for the 2008 bluefish fishery. There is no evidence or indication that this fishery has ever resulted in the introduction or spread of nonindigenous species. None of the specifications are expected to alter fishing methods or activities. None of the proposed specifications are expected to increase fishing effort or the spatial and/or temporal distribution of current fishing effort. Therefore, it is highly unlikely that the proposed specifications 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 proposed action merely revises the proposed annual commercial quota, recreational harvest limit, and research set-aside for the 2008 bluefish fishery. None of the proposed specifications are expected to increase fishing effort or the spatial and/or temporal distribution of current fishing effort. In addition, these specifications are consistent with the bluefish FMP. None of these specifications result 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 proposed action merely revises the proposed annual commercial quota, recreational harvest limit, and research set-aside for the 2008 bluefish fishery. None of the specifications are 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 9.2 to 9.11 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 preferred 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 7.5 of the EA. None of the proposed specifications are expected to 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 are expected to generate positive impacts overall, but the implementation of the proposed 2008 management

measures are not expected to result in any cumulative adverse effects that would have a substantial effect on target or non-target species.

DETERMINATION

In view of the information presented in this document and the analysis contained in the supporting Environmental Assessment prepared for the 2008 Bluefish Specifications, it is hereby determined that the 2008 bluefish fishery specifications will not significantly impact the quality of the human environment as described above and in the supporting Environmental Assessment. In addition, all beneficial and adverse impacts of the proposed action have been addressed to reach the conclusion of no significant impacts. Accordingly, preparation of an EIS for this action is not necessary.

_____ _____

Regional Administrator, Northeast Region, NMFS Date

9.2 Endangered Species Act

Sections 6.3, 7.1.3, 7.4.2.3, and 7.5.4 of the EA should be referenced for an assessment of the impacts of the proposed action on endangered or threatened species. Regarding the impacts of the RSA project, it is being approved through a different action (NEAMAP proposal to NOAA Grants Office). As such, that would be the action under which the ESA consultation would be performed. None of the specifications proposed in this document are expected to alter fishing methods or activities. Therefore, this action is not expected to affect endangered or threatened species or critical habitat in any manner not considered in previous consultations on the fisheries.

9.3 Marine Mammal Protection Act

The Council has reviewed the impacts of the 2008 Bluefish Specifications on marine mammals and concluded that the management actions proposed are consistent with the provisions of the MMPA and would not alter existing measures to protect the species likely to inhabit the management units of the subject fisheries. None of the specifications proposed in this document are expected to alter fishing methods or activities. For further information on the potential impacts of the fishery and the proposed management action, see sections 6.3, 7.1.3, 7.4.2.3, and 7.5.4 of the EA.

9.4 Coastal Zone Management Act

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

goals. The Council 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).

9.5 Administrative Procedure Act

Section 553 of the Administrative Procedure Act establishes procedural requirements applicable to informal rulemaking by Federal agencies. The purpose of these requirements is to ensure public access to the Federal rulemaking process and to give the public adequate notice and opportunity for comment. At this time, the Council is not requesting any abridgement of the rulemaking process for this action.

The Administrative Procedure Act requires solicitation and review of public comments on actions taken in the development of a fishery management plan and subsequent amendments and framework adjustments. Development of this specifications document provided many opportunities for public review, input, and access to the rulemaking process. This proposed specifications document was developed as a result of a multi-stage process that involved review of the source document (2008 Specifications package) by affected members of the public. The public had the opportunity to review and comment on management measures during the Bluefish Monitoring Committee Meeting held on July 19, 2007, and during the MAFMC meeting held on August 8, 2007, in Port Jefferson, NY. In addition, the public will have further opportunity to comment on this specifications package once NMFS publishes a request for comments notice in the Federal Register (FR).

9.6 Section 515 (Data Quality Act)

Utility of Information Product

Explain how the information product meets the standards for utility:

Is the information helpful, beneficial or serviceable to the intended user?

The proposed document includes: A description of the 2008 Specifications, the proposed changes to the implementing regulations of the FMP, a description of the alternatives considered, and the reasons for selecting the proposed management measures. This proposed specifications document implements the FMP's conservation and management goals consistent with the Magnuson-Stevens Act as well as all other existing applicable laws.

Is the data or information product an improvement over previously available information? Is it more current or detailed? Is it more useful or accessible to the public? Has it been improved based on comments from or interactions with customers?

This proposed specifications document was developed as a result of a multi-stage process that involved review of the source document (2008 Specifications package) by affected members of

the public. The public had the opportunity to review and comment on management measures during the Bluefish Monitoring Committee Meeting held on July 19, 2007, and during the MAFMC meeting held on August 8, 2007, in Port Jefferson, NY. In addition, the public will have further opportunity to comment on this specifications package once NMFS publishes a request for comments notice on the FR.

What media are used in the dissemination of the information? Printed publications? CD-ROM? Internet? Is the product made available in a standard data format? Does it use consistent attribute naming and unit conventions to ensure that the information is accessible to a broad range of users with a variety of operating systems and data needs?

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

Integrity of Information Product

Explain how the information product meets the standards for integrity:

All electronic information disseminated by National Oceanic and Atmospheric Administration (NOAA) adheres to the standards set out in Appendix III, "Security of Automated Information Resources," OMB Circular A-130; the Computer Security Act; and the Government Information Security Reform Act.

If information is confidential, it is safeguarded pursuant to the Privacy Act and Titles 13, 15, and 22 of the U.S. Code (confidentiality of census, business and financial information).

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

Objectivity of Information Product

Indicate which of the following categories of information products apply for this product:

- Original Data
- Synthesized Products
- Interpreted Products
- Hydrometeorological, Hazardous Chemical Spill, and Space Weather Warnings, Forecasts, and Advisories
- Experimental Products
- Natural Resource Plans
- Corporate and General Information

Describe how this information product meets the applicable objectivity standards. (See the DQA Documentation and Pre-Dissemination Review Guidelines for assistance and attach the appropriate completed documentation to this form).

What published standard(s) governs the creation of the Natural Resource Plan? Does the Plan adhere to the published standards? (See the NOAA Sec. 515 Information Quality Guidelines, Section II(F) for links to the published standards for the Plans disseminated by NOAA).

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

Was the Plan developed using the best information available? Please explain.

This specification's document has been developed to comply with all applicable National Standards, including National Standard 2. National Standard 2 states that the FMP's conservation and management measures shall be based upon the best scientific information available. Despite current data limitations, the conservation and management measures proposed to be implemented under this specifications document are based upon the best scientific information available. This information includes NMFS dealer weighout, VTR, and permit data and South Atlantic General Canvass Data for 2005 which were used to characterize the economic impacts of the management proposals and describe the bluefish fisheries. The specialists who worked with these data are familiar with the most recent analytical techniques and with the available data and information relevant to the bluefish fisheries. In addition, Marine Recreational Fisheries Statistics Survey data were used to further characterize the recreational fishery for this species.

Have clear distinctions been drawn between policy choices and the supporting science upon which they are based? Have all supporting materials, information, data and analyses used within the Plan been properly referenced to ensure transparency?

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

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

Describe the review process of the Plan by technically qualified individuals to ensure that the Plan is valid, complete, unbiased, objective and relevant. For example, internal review by staff not involved in the development of the Plan to formal, independent, external peer review. The level of review should be commensurate with the importance of the Plan and the constraints imposed by legally enforceable deadlines.

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

9.7 Paperwork Reduction Act

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

9.8 Impacts of the Plan Relative to Federalism/EO 13132

This specifications package does not contain policies with federalism implications sufficient to warrant preparation of a federalism assessment under Executive Order (EO) 13132. The affected states have been closely involved in the development of the proposed management measures through their representation on the Council (all affected states are represented as voting members of at least one Regional Fishery Management Council). No comments were received from any state officials relative to any federalism implications that may be associated with this action.

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11.0 LIST OF PREPARERS OF THE ENVIRONMENTAL ASSESSMENT

The bluefish specifications were submitted to the NMFS by the MAFMC. This specifications package was prepared by the following members of the MAFMC staff: James L. Armstrong, Dr. José L. Montañez, and Kathy M. Collins. Scott R. Steinback (NEFSC) assisted in describing the economic environment of the recreational fishery.

12.0 LIST OF AGENCIES AND PERSONS CONSULTED

In preparing this specifications document, the Council consulted with the NMFS, New England and South Atlantic Fishery Management Councils, Fish and Wildlife Service, and the states of Maine through North Carolina through their membership on the Mid-Atlantic and New England Fishery Management Councils.

To ensure compliance with NMFS formatting requirements, the advice of NMFS Northeast Region personnel, including Tobey Curtis was relied upon during document preparation.

REGULATORY IMPACT REVIEW/INITIAL REGULATORY FLEXIBILITY ANALYSIS (RIR/IRFA)

1.0 INTRODUCTION

The NMFS requires the preparation of a Regulatory Impact Review (RIR) for all regulatory actions that either implement a new FMP or significantly amend an existing plan. This RIR is part of the process of preparing and reviewing FMPs and provides a comprehensive review of the changes in net economic benefits to society associated with proposed regulatory actions. This analysis also provides a review of the problems and policy objectives prompting the regulatory proposals and an evaluation of the major alternatives that could be used to solve the problems. The purpose of this analysis is to ensure that the regulatory agency systematically and comprehensively considers all available alternatives so that the public welfare can be enhanced in the most efficient and cost-effective way. This RIR addresses many items in the regulatory philosophy and principles of EO 12866. Also included is an Initial Regulatory Flexibility Analysis (IRFA). This analysis is being undertaken in support of the 2008 specifications for bluefish.

2.0 EVALUATION OF REGULATORY IMPACT REVIEW (EO 12866) SIGNIFICANCE

2.1 Description of the Management Objectives

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

2.2 Description of the Fishery

A description of ports and communities is found in the 2002 Bluefish Specifications Document (MAFMC 2001; available via the internet at http://www.nero.noaa.gov/ro/doc/nr02.htm). Additionally, the "top bluefish ports" that landed bluefish in 2006 are identified in section 6.4 of the EA. An analysis of permit data is also found in section 6.4 of the EA.

2.3 A Statement of the Problem

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

2.4 A Description of Each Alternative

A full description of the alternatives analyzed in this section and the TAL derivation process is presented in sections 4.3 and 5.0 of the EA. In addition, a brief description of each alternative is presented below for reference purposes.

2.5 Analysis of Alternatives

The action does not constitute a significant regulatory action under EO 12866 for the following reasons. First, it will not have an annual effect on the economy of more than $100 million. The measures considered in this bluefish analysis will not affect total revenues generated by the commercial sector or party/charter sector to the extent that a $100 million annual economic impact will occur in the bluefish fisheries. Based on NMFS preliminary dealer data (ME-VA) and South Atlantic General Canvass data (NC-FL east coast), the total commercial value in 2006 (Maine through Florida's east coast) was estimated at approximately $2.5 million for bluefish.

The preliminary adjusted commercial bluefish quota for 2008 is higher (i.e., 3%) than the adjusted bluefish commercial quota for 2007 and approximately 27% above the commercial landings for 2006. This commercial quota would allow fishermen slightly higher fishing opportunities for bluefish in 2008 compared to 2007. On average, commercial bluefish landings for the 2002-2006 period are about 7.3 million lb (Table 1). Unless market conditions change substantially in year 2008, commercial bluefish fishermen on a coastwide basis would likely land bluefish in an amount close to the 2002-2006 average. The NMFS Quota Report as of the week ending September 12, 2007 indicates that overall bluefish commercial landings are within the overall commercial quota for 2007 (50% of the quota landed). Therefore, the 2008 overall quota was not adjusted for overages. There is no indication that the market environment for commercially caught bluefish will change considerably in year 2008. As such, it is expected that overall ex-vessel revenues from bluefish will not significantly change in 2008 when compared to 2006 as a consequence of the adjusted commercial quota. In addition, increase in effort in the directed bluefish fishery is not expected.

According to MRFSS data, the number of recreational fishing trips for all modes combined in the North Atlantic, Mid-Atlantic, and South Atlantic regions in 2006 were 9.3, 20.8, and 21.8 million, respectively. Of the total number of fishing trips for all modes combined in the North Atlantic, Mid-Atlantic, and South-Atlantic regions, approximately 0.4 million (4.3%), 1.2 million (5.5%), and 0.6 million trips (2.8%) were party/charter fishing trips, respectively. It is estimated that the number of party/charter fishing trips that sought bluefish as the primary species from Maine thought Virginia (i.e., total effort targeting bluefish by party/charter mode) in 2006 was approximately 126 thousand (section 6.4.2 of the EA).

Under Alternative 1, the bluefish 2008 recreational harvest limit would be 19.247 million lb. This limit would be approximately 14% above the recreational landings for 2006 (16.894 million lb) and over 2% above the recreational harvest limit for 2007 (18.823 million lb). The possession limit would remain at 15 fish. Bluefish recreational landings for the 2000 to 2005 period have been substantially lower than the RHLs established for those years. For example, in 2002 recreational bluefish landings were 31% below the RHL established for that year and in 2000 landings were 59% below that year's limit. For the 2000-2006 period, recreational landings have ranged from 10.606 million lb (2004) to 16.894 million lb (2006), averaging 13.800 million lb. In 2006, recreational landings were 16.894 million lb or less than 3% above the recreational harvest limit of 16.473 million lb for that year. Given recent trends in recreational landings it is expected that the recreational sector will land less than recreational harvest limit for 2008.

At the present time there are neither behavioral or demand data available to estimate how sensitive party/charter boat anglers might be to proposed fishing regulations. However, given the level of the recreational harvest limit for 2008 and recreational landings in recent years, it is not anticipated that this management measure will affect the demand for party/charter boat trips. Overall, the final recreational management measures will not affect gross revenues of businesses providing goods and services to anglers participating in the party/charter boat, private/rental boat, and shore fisheries for bluefish.

The action is necessary to advance the recovery of the bluefish stock, and to establish the harvest of this species at sustainable levels. The action benefits in a material way the economy, productivity, competition and jobs. The action will not adversely affect, in the long-term, competition, jobs, the environment, public health or safety, or state, local, or tribal government communities. Second, the action will not create a serious inconsistency or otherwise interfere with an action taken or planned by another agency. No other agency has indicated that it plans an action that will affect the bluefish fishery in the EEZ. Third, the action will not materially alter the budgetary impact of entitlement, grants, user fees, or loan programs or the rights and obligations of their participants. And, fourth, the action does not raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in EO 12866.

The economic effects of the bluefish effort reductions were evaluated through Amendment 1. The economic analysis presented at that time was largely qualitative in nature. Assessment of the bluefish quota indicates that overall landings have been within the quota specifications since the implementation of Amendment 1. Therefore, there is a reasonable expectation that the management objectives will be met and the expected economic benefits will not be compromised.

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

A more detailed description of the economic concepts involved can be found in "Guidelines for Economic Review of National Marine Fisheries Service Regulatory Actions" (NMFS 2007), as only a brief summary of key concepts will be presented here.

Benefit-cost analysis is conducted to evaluate the net social benefit arising from changes in consumer and producer surpluses that are expected to occur upon implementation of a regulatory action. Total Consumer Surplus (CS) is the difference between the amounts consumers are willing to pay for products or services and the amounts they actually pay. Thus CS represents

net benefits to consumers. When the information necessary to plot the supply and demand curves for a particular commodity is available, consumer surplus is represented by the area that is below the demand curve and above the market clearing price where the two curves intersect. Since an empirical model describing the elasticities of supply and demand for this species is not available, it was assumed that the price for this species was determine by the market clearance price or the interaction of the supply and demand curves. This price was the base price used to determine potential changes in prices due to changes in landings.

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

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

Alternative 1 (preferred alternative)

A complete description of the derivation of the TAL and its allocation to the commercial and recreational sectors is presented in section 5.0 of the EA. Alternative 1 would set the TAL at 28.156 million lb. This alternative includes a preliminary adjusted commercial quota of 8.859 million lb (the least restrictive commercial quota), a preliminary adjusted recreational harvest limit of 19.247 million lb, and a RSA of 50,000 lb for 2008.

Commercial Fishery

For purposes of this analysis, the status quo and all other alternatives will be evaluated under the assumption that the primary measure for achieving the conservation objectives will be through changes in quota levels. This alternative as well as the other alternatives will be evaluated against a base line. The base line condition provides the standard against which all other alternative actions are compared. In this analysis, the base line condition is the bluefish landings for 2006. This comparison will allow for the evaluation of the potential fishing opportunities associated with each alternative in 2008 versus landing that took place in 2006. Aggregate changes in fishing opportunities in 2008 (preliminary adjusted commercial quota) versus 2006 landings are shown in Table 32. The information presented in Table 32 was used to determine overall potential changes in commercial landings associated with the quota levels associated with each of the alternatives evaluated in this analysis.

Due to a lack of an empirical model for this fishery and knowledge of elasticities of supply and demand, a qualitative approach to the economic assessment was adopted. Nevertheless, quantitative measures are provided whenever possible.

Landings

Under the preferred alternative the overall commercial quota for 2008 would allow for an overall 27% increase in landings in 2008 compared to actual landings in 2006. However, in reality the 2006 bluefish commercial landings (6.985 million lb) were below (i.e., 19%) the commercial quota implemented that year (8.575 million lb). In addition, it is expected that 2007 commercial landings will be below the commercial quota for that year. There is no indication that the market environment for commercially caught bluefish will substantially change in 2008 compared to 2006. As such, it is expected that bluefish commercial landings in 2008 will be similar to those that occurred in 2006.

Prices

Given that this alternative is expected to result in the same overall landings level as in 2006 and that there is no indication that the market environment for commercially caught bluefish will change considerably in year 2008, it would be anticipated that there will be no chance in the price for this species holding all other factors constant.

Consumer Surplus

Given that no change in the price for this species under this scenario is anticipated, it is expected that consumer surplus associated with this fishery will not change.

Harvest Costs

No changes in harvest costs are identified under this alternative.

Producer surplus

Given that no change in the price for this species under this scenario is anticipated, it is expected that producer surplus associated with this fishery will not change.

Enforcement Costs

Properly defined, enforcement costs are not equivalent to the budgetary expense of dockside or at-sea inspection of vessels. Rather, enforcement costs from an economic perspective are measured by opportunity cost in terms of foregone enforcement services that must be diverted to enforcing regulations. The measures are not expected to change enforcement costs.

Distributive Effects

There are no changes to the quota allocation process for this species. As such, no distributional effects are identified under this alternative.

Recreational Fishery

Under Alternative 1, the bluefish 2008 recreational harvest limit would be 19.247 million lb. This limit would be approximately 14% above the recreational landings for 2006 (16.894 million lb) and over 2% above the recreational harvest limit for 2007 (18.823 million lb). The possession limit would remain at 15 fish. Given recent trends in recreational landings it is expected that the recreational sector will land less than the recreational harvest limit for 2008 (section 2.5 of the RIR/RFA).

There is very little information available to empirically estimate how sensitive the affected party/charter boat anglers might be to the fishing regulations. However, given the level of the recreational harvest limit for 2008 and recreational landings in recent years, it is not anticipated that this management measure will have any negative effects on recreational fishermen or affect the demand for party/charter boat trips. This alternative is not expected to affect angler satisfaction nor expected to result in landings in excess of the recreational harvest limit. As such, the transfer is not expected to affect recreational landings in 2008. In addition, the recreational possession limit remains unchanged for 2008.

Alternative 2

The same assumptions regarding landings relative to the base line and changes in fishing opportunities discussed under Alternative 1 also apply here. Alternative 2 would set the TAL at 28.156 million lb. This TAL includes a preliminary adjusted commercial quota of 4.778 million lb, a preliminary adjusted recreational harvest limit of 23.328 million lb, and an RSA of 50,000 lb for 2008.

Commercial Fishery

Landings

Under this alternative aggregate landings for bluefish in 2008 are expected to be 32% lower in 2008 when compared to 2006 landings (16.894 million lb).

Prices

Given that this alternative will result in lower 2008 landings compared to the overall 2006 landings, it would be anticipated that there will be an increase in the price for this species holding all other factors constant.

Consumer Surplus

Given the anticipated potential increase in the price for this species under this scenario, it is expected that consumer surplus associated with this fishery may decrease.

Harvest Costs

No changes in harvest costs are identified under this alternative.

Producer Surplus

Given the anticipated potential increase in the price for this species under this scenario, it is expected that producer surplus associated with this fishery will change. The magnitude of the PS change will be associated with the price elasticity of demand for the species in question.

The law of demand states that price and quantity demanded are inversely related. Given a demand curve for a commodity (good or service), the elasticity of demand is a measure of the responsiveness of the quantity that will be taken by consumers giving changes in the price of that commodity (while holding other variables constant). There are several major factors that influence the elasticity for a specific commodity. These factors largely determine whether demand for a commodity is price elastic or inelastic[2]: 1) the number and closeness of substitutes for the commodity under consideration, 2) the number of uses to which the commodity can be put, and 3) the price of the commodity relative to the consumers' purchasing power (income). There are other factors that may also determine the elasticity of demand but are not mention here because they are beyond the scope of this discussion. As the number and closeness of substitutes and/or the number of uses for a specific commodity increase, the demand for the specific commodity will tend to be more elastic. Demand for commodities that take a large amount of the consumer's income is likely to be elastic compared to services with low prices relative to the consumer's income. It is argued that the availability of substitutes is the most important of the factors listed in determining the elasticity of demand for a specific commodity (Leftwich 1973; Awk 1988). Seafood demand in general appears to be elastic. In fact, for most species, product groups, and product forms, demand is elastic (Asche and Bjørndal 2003).

For example, an increase in the ex-vessel price of bluefish may increase PS. A decrease in the ex-vessel price of bluefish may also increase PS if we assumed that the demand for bluefish is moderate to highly elastic. However, the magnitude of these changes cannot be entirely assessed without knowing the exact shape of the market demand curve for this species.

Enforcement Costs

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

Properly defined, enforcement costs are not equivalent to the budgetary expense of dockside or at-sea inspection of vessels. Rather, enforcement costs from an economic perspective are measured by opportunity cost in terms of foregone enforcement services that must be diverted to enforcing regulations. The measures are not expected to change enforcement costs.

Distributive Effects

There are no changes to the quota allocation process for this species. As such, no distributional effects are identified under this alternative.

Recreational Fishery

Under Alternative 2, the bluefish 2008 recreational harvest limit would be 23.328 million lb. This limit would be approximately 38% higher than the recreational landings for 2006 (16.894 million lb) and 24% larger than the recreational harvest limit for 2007 (18.823 million lb). Given recent trends in recreational landings it is expected that the recreational sector will land less than the recreational harvest limit for 2008 (section 2.5 of the RIR/RFA). The possession limit would remain at 15 fish. It is not anticipated that this management measure will have any negative effects on recreational fishermen or affect the demand for party/charter boat trips. This alternative is not expected to affect angler satisfaction nor expected to result in landings in excess of the recreational harvest limit.

There is very little information available to empirically estimate how sensitive the affected party/charter boat anglers might be to the fishing regulations. However, given the level of the recreational harvest limit for 2008 and recreational landings in recent years, it is not anticipated that this management measure will have any negative effects on recreational fishermen or affect the demand for party/charter boat trips. This alternative is not expected to affect angler satisfaction nor expected to result in landings in excess of the recreational harvest limit.

Alternative 3 (Status Quo/No Action Alternative)

The same assumptions regarding landings relative to the base line and changes in fishing opportunities discussed under Alternative 1 also apply here. Alternative 3 would set the TAL at 27.762 million lb. This TAL includes a preliminary adjusted commercial quota of 8.673 million lb, a preliminary adjusted recreational harvest limit of 19.039 million lb, and an RSA of 50,000 for 2008.

Landings

Under this alternative the overall commercial quota for 2008 would allow for a 24% increase in landings in 2008 compared to actual landings in 2006 (6.985 million lb). However, in reality the 2006 bluefish commercial landings (6.985 million lb) were below (i.e., 19%) the commercial quota implemented that year (8.575 million lb). In addition, it is expected that 2007 commercial landings will be below the commercial quota for that year. There is no indication that the market

environment for commercially caught bluefish will substantially change in 2008 compared to 2006. As such, it is expected that bluefish commercial landings in 2008 will be similar to those that occurred in 2006.

Prices

Given that this alternative is expected to result in the same overall landings level as in 2006 and that there is no indication that the market environment for commercially caught bluefish will change considerably in year 2008, it would be anticipated that there will be no chance in the price for this species holding all other factors constant.

Consumer Surplus

Given that no change in the price for this species under this scenario is anticipated, it is expected that consumer surplus associated with this fishery will not change.

Harvest Costs

No changes in harvest costs are identified under this alternative.

Producer surplus

Given that no change in the price for this species under this scenario is anticipated, it is expected that producer surplus associated with this fishery will not change.

Enforcement Costs

Properly defined, enforcement costs are not equivalent to the budgetary expense of dockside or at-sea inspection of vessels. Rather, enforcement costs from an economic perspective are measured by opportunity cost in terms of foregone enforcement services that must be diverted to enforcing regulations. The measures are not expected to change enforcement costs.

Distributive Effects

There are no changes to the quota allocation process for this species. As such, no distributional effects are identified under this alternative.

Recreational Fishery

Under Alternative 3, the bluefish 2008 recreational harvest limit would be 19.039 million lb. This limit would be approximately 13% above the recreational landings for 2006 (16.894 million lb) and over 1% above the recreational harvest limit for 2007 (18.823 million lb). Given recent trends in recreational landings it is expected that the recreational sector will land less than recreational harvest limit for 2008 (section 2.5 of the RIR/RFA). The possession limit would

remain at 15 fish for 2008. It is not anticipated that this management measure will have any negative effects on recreational fishermen or affect the demand for party/charter boat trips. This alternative is not expected to affect angler satisfaction nor expected to result in landings in excess of the recreational harvest limit.

Description of Impacts of Alternatives

The overall impacts of bluefish landings on prices, consumer surplus, and consumer surplus are difficult to determine without detailed knowledge of the relationship between supply and demand factors for this fishery. In the absence of detailed empirical models for this fishery and knowledge of elasticities of supply and demand, a qualitative approach was employed to assess potential impacts of the management measures.

The impact of each the regulatory alternatives relative to the base year was discussed above. The analysis conducted in this section was based on the evaluation of potential fishing opportunities associated with each quota alternative in 2008 compared to overall landings in 2006.

The preferred alternative (Alternative 1) and the status-quo alternative (Alternative 3), are expected to have no impacts on prices, consumer surplus, or producer surplus in the commercial sector. Alternative 2 show a potential increase in price, a decrease in consumer surplus, and a potential increase in producer surplus (assuming the demand for bluefish is moderate to highly elastic).

No changes in the competitive nature of these fisheries are expected to occur if any of these management measures were implemented. All the alternatives would maintain the competitive structure of the fishery, that is, there are no changes in the manner the quotas are allocated by region or state from the base year. However, large reductions in quota levels from year to year may affect vessels differently due to their capability to adjust to quota changes.

No changes in enforcement costs or harvest costs have been identified for any of the evaluated alternatives.

Since empirical models describing the elasticities of supply and demand for this species is not available, we cannot determine with certainty the impact of changes in landings on prices, consumer surplus, or producer surplus. Therefore, in order to assess the potential net benefits of each alternative, changes in overall ex-vessel gross revenues associated with each alternative were estimated. More specifically, changes in landings for bluefish in 2008 compared to the 2006 base year were derived to assess the potential changes in fishing opportunities between these two time periods. Potential changes in landings (i.e., fishing opportunities) for bluefish were then multiplied by the overall 2006 ex-vessel price for bluefish to derive potential changes in overall net revenues which are used as a proxy for changes in net benefits. Preliminary NMFS dealer data from Maine through Virginia and South Atlantic General Canvass data were used to derive the ex-vessel price for bluefish from Maine through Florida's east coast. The ex-vessel price for bluefish in 2006 was estimated at $0.36/lb. The aggregate change in landings in 2008

compared to the base year landings (2006) is expected to be nil under Alternatives 1 and 3. Therefore, no overall changes in revenues are expected under these two alternatives. However, due to the potential decrease in landings associated with Alternative 2 quota in 2008 compared to landings in 2006, an overall decrease in revenue of approximately $0.8 million is expected under that alternative.

The changes in gross revenues estimated above assumed static prices (i.e., 2005) for bluefish. However, if prices for this species decrease or increase as a consequence of changes in landings, then the associated revenue decreases could be different than those estimated above.

The changes in gross revenues indicate that Alternatives 1 and 3 will provide the largest commercial net benefits. However, Alternative 1 provides the best allocation to the commercial and recreational sectors considering recent fishing practices. Stable or increased landings from one year to the next are desirable from both a management and industry perspective. Drastic reductions in the quota from one year to the next could lead to increased levels of noncompliance by both commercial and recreational fishermen. A stable landings pattern would allow fishermen, processors, party/charter boat operators, equipment and bait suppliers to make business decisions.

Given the level of the recreational harvest limit for 2008 and recreational landings in recent years it is not anticipated that these management measures will affect the demand for party/charter boat trips. Angler satisfaction is not expected to be affected in a negative manner since the recreational harvest limit for 2008 is not expected to affect the number of bluefish recreational trips. In addition, the recreational possession limit remains unchanged for 2008.

It is important to mention that although the measures that are evaluated in this specification package are for the 2008 fisheries, the annual specification process for these fisheries could have potential cumulative impacts. The extent of any cumulative impacts from measures established in previous years is largely dependent on how effective those measures were in meeting their intended objectives and the extent to which mitigating measures compensated for any quota overages. To date, the management measures implemented in the commercial and recreational fisheries have the intended recovery objective of the FMP and in the period from 2000 though 2006 overall commercial and recreational landings were below the commercial TALs and recreational harvest limits implemented those years. In 2006, commercial landings were below the commercial quota specified for that year; however, recreational landings (16.894 million lb) were above (3%) the recreational harvest level (16.473 million lb). In all, the combined commercial and recreational landings for 2006 (23.879 million lb) were below the TAL for that year (24.797 million lb). While the overall commercial quota was not taken in 2000-2006, one or two states were constrained by the initial quota in those years. As the result of increased landings, those states received transfers of bluefish from other states; however the overall commercial quota was not taken. The NMFS Quota Report as of the week ending September 12, 2007 indicates that overall bluefish commercial landings are within the overall commercial quota for 2006 (50% of quota landed). The most recent stock assessment for bluefish was conducted in June, 2005 and was peer-reviewed by the 41st SARC (NEFSC 2005). For the 2008 fishing year,

the ASAP model was updated with 2006 landings and survey indices to calculate TAC using the rebuilding target fishing mortality rate of 0.15 (the lesser of 0.31 or realized F for 2006). The updated model projection indicates that a TAC of 14,464 mt (31,887,334 pounds) in 2008 would achieve target F. Given the endorsement of the use of the ASAP model for management purposes, the model projections represent the best available information on bluefish stock status and potential yield. According to the updated assessment, bluefish biomass in 2006 was 139,496 mt, which is about 95% of the biomass target (147, 051 mt). Projected stock biomass for the upcoming 2008 fishing year (146,132 mt) is about 99% of the rebuilding target. The stock rebuilding deadline is 2010 and biomass is projected to be at or above the rebuilding target in 2009.

3.0 INITIAL REGULATORY FLEXIBILITY ANALYSIS

3.1 Introduction and Methods

The Regulatory Flexibility Act (RFA) requires the Federal rule maker to examine the impacts of proposed and existing rules on small businesses, small organizations, and small governmental jurisdictions. When an agency publishes a general notice of proposed rulemaking for any proposed rule, the agency is required to prepare an IRFA describing the impacts of the proposed rule on small entities. Agencies also are required to prepare a FRFA when they promulgate a final rule. However, agencies may forgo the preparation of a regulatory flexibility analysis if they can certify that the rule would not have a significant economic impact on a substantial number of small entities. Although overall negative economic impacts are not anticipated as a result of this action due to the fact that the overall commercial quota in 2008 is not anticipated to restrict the overall commercial bluefish fishery under the preferred alternative, the IRFA was prepared to further evaluate the economic impacts of the three quota alternatives on small business entities.

3.1.1 Description of the Reasons Why Action by the Agency is being Considered

A complete description of the purpose and need and objectives of this proposed rule is found under section 4.0 of the EA. A statement of the problem for resolution is also presented under section 4.0 of the EA.

3.1.2 The Objectives and legal basis of the Proposed Rule

A complete description of the objectives of this proposed rule is found under section 4.2 of the EA. This action is taken under the authority of the Magnuson-Stevens Act and regulations at 50 CFR part 648.

3.1.3 Estimate of the Number of Small Entities

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

3.1.4 Reporting Requirements

This action does not contain any new collection of information, reporting, or record-keeping requirements.

3.1.5 Conflict with Other Federal Rules

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

A description of the bluefish fisheries is presented in section 6.0 of the EA and section 2.3 of Amendment 1 to the Bluefish FMP. A description of ports and communities is found in the 2002 Bluefish Specifications Document (MAFMC 2001; available via the internet at http://www.nero.noaa.gov/ro/doc/nr02.htm). Additionally, the "top bluefish ports" that landed bluefish in 2006 are identified in section 6.4 of the EA. An analysis of permit data is also found in section 6.4 of the EA. A full description of the alternatives analyzed in this section and the TAL derivation process is presented in sections 4.3 and 5.0 of the EA. In addition, 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. This rule could affect any vessel that fish for bluefish in Federal or state waters. The final measures regarding the 2008 quotas could affect any vessel holding an active Federal permit for bluefish as well as vessels that fish for this species in state waters.

An active participant in the commercial sector was defined as being any vessel that reported having landed one or more pounds of bluefish the dealer data during calendar year 2006. This data covers activity by unique vessels. Of the active vessels reported in 2006, 725 known vessels landed bluefish from Maine through North Carolina. The dealer data does not cover vessel activity in the South Atlantic. The dealer data indicate that 83 federally permitted vessels landed bluefish in North Carolina in 2006. However, the North Carolina landings data for bluefish may be incomplete is this data system. South Atlantic Trip Ticket Report data indicate that 820 vessels landed bluefish in North Carolina in 2006 (Alan Bianchi, NC Division of Marine Fisheries, pers. comm., 2007). Some of these vessels may be included among the 83 vessels identified as landing bluefish in the dealer data. As such, double counting is possible. In addition, up to 567 vessels may have landed bluefish in Florida's east coast in 2006 (Steve Brown, Fla Fish and Wildlife Conservation Commission, pers. comm., 2007). Bluefish landings in Georgia were almost nil in 2006, representing a negligible proportion of the total bluefish landings along the Atlantic coast. In addition, there were no landings of bluefish in South Carolina in 2006. As such, it was assumed that no vessel activity for those two states took place in 2006. In addition, it was estimated that in recent years approximately 2,063 party/charter vessels may have been active and/or caught bluefish.

Not all landings and revenues reported through the dealer data can be attributed to a specific vessel. Vessels with no Federal permits are not subject to any Federal reporting requirements with which to corroborate the dealer reports. Similarly, dealers that buy exclusively from state water only vessels and have no Federal permits are also not subject to Federal reporting requirements. Thus, it is possible that some vessel activity cannot be tracked with the landings and revenue data that are available. Thus, these vessels cannot be included in the threshold analysis, unless each state 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. 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. 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 this fishery, changes in gross revenues are used a proxy for profitability. Where quantitative data were not available, qualitative analyses were conducted.

Procedurally, the economic effects of the commercial quota alternatives were estimated as follows. First, the Northeast dealer data were queried to identify all vessels that landed at least one or more pounds of bluefish in calendar year 2006 in the North Atlantic region. 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. Recent South Atlantic Trip Ticket Report data was also used to identify the vessels that landed bluefish in North Carolina and Florida's east coast.

The second step was to estimate total revenues from all species landed by each vessel during calendar year 2006. This estimate provides the base from which subsequent quota changes and their associated effects on vessel revenues were compared. Since 2006 is the last full year from which data are available (partial year data could miss seasonal fisheries), it was chosen as the base year for the analysis. That is, partial landings data for 2007 were not used in this analysis because the year is not complete. Since the South Atlantic Trip Ticket Report data system does not provide information at the trip level, averages were used to describe the contribution of bluefish to total landings and values for those entities. As such, steps 3 and 4 below were conducted for averages for vessels under the South Atlantic Trip Ticket Report data.

The third step was to deduct or add, as appropriate, the expected change in vessel revenues (associated with the potential landings associated with the 2008 adjusted quota compared to the 2006 landings). The NMFS Quota Report as of the week ending September 12, 2007 indicates

that overall bluefish commercial landings are within the overall commercial quota for 2007. Therefore, the 2008 overall quota was not adjusted for overages.

The fourth step was to compare the estimated 2008 revenues from all species to the base year for every vessel due to the proposed quota changes. For each quota alternative a summary table was constructed that report the results of the threshold analysis. These results were further summarized by home state as defined by permit application data when applicable.

The threshold analysis just described is intended to identify impacted vessels and to characterize the potential economic impact on directly affected entities. In addition to evaluating if the proposed regulations reduce profit for a significant number of small entities, the RFA also requires that disproportionality be evaluated. Disproportionality is judged to occur when a proportionate affect on profits, costs, or net revenue is expected to occur for a substantial number of small entities compared to large entities, that is, if a regulation places a substantial number of small entities at a significant competitive disadvantage. According to the SBA definition of small business presented above, all permitted vessels in these fisheries readily fall within the definition of small business. Therefore, there are no disproportionality issues.

To further characterize the potential impacts on indirectly impacted entities and the larger communities within which owners of impacted vessels reside, selected county profiles are typically constructed. Each profile 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. The following criteria was employed to derive the range of counties profiled: the number of vessels with revenue losses exceeding 5% per county was either greater than 4, or all vessels with losses exceeding 5% 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 nine counties were identified: Dare, NC; Ocean and Monmouth, NJ; Nassau and Suffolk, NY; Rockingham, NH; New Heaven, CT; Washington, RI; and Philadelphia, PA (section 6.1 of the RIR/IRFA). Counties not included in this analysis (e.g., Essex, Barnstable, and Suffolk, MA; Cape May and Monmouth, NJ; Queens, NY) 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. In fact, most of these counties only had one or two affected vessel.

It should be noted that the county profiles are intended to characterize the relative importance of commercial fishing and fishing related industries in the home counties. As such, the county profiles provide a link to the socioeconomic analysis presented for each alternative in the EA but are not intended to be a substitute for that analysis. The target counties were identified based on the county associated with the vessels home port as listed in the owner's 2006 permit application.

Counties were 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, wages, income, and number of establishments for each county.

4.0 DESCRIPTION OF QUOTA ALTERNATIVES

All quota alternatives considered in this analysis are based on various commercial harvest levels for bluefish (a high, medium, and low level of harvest). Table 19 shows the commercial quotas under the three alternatives evaluated in this analysis and their state-by-state distribution. Table 32 shows the percentage change of the 2008 allowable commercial landings (adjusted for RSA) relative to the 2006 landings. Note that the overall changes in commercial fishing opportunity in 2008 compared to 2006 are 27% and 24% increase for Alternatives 1 and 3, respectively, and a 32% decrease for Alternative 2. While most states show a similar directional changes in fishing opportunities as the overall change in fishing opportunity in 2008 compared to 2006 landings under quota Alternatives 1 and 3, the state of New York show a reduction in fishing opportunity under Alternatives 1 and 3; in addition, the states of Rhode Island, New Jersey, and North Carolina also show a reduction in fishing opportunity under Alternative 3. This is due to the fact that those states landed a substantially higher amount of bluefish in 2006 compared to their commercial quotas that year. The same occurrence is evident for five states (Massachusetts, Rhode Island, New York, New Jersey, and North Carolina) under Alternative 2. However, under Alternative 2, while the overall commercial 2008 quota would allow for a coastwide decrease in bluefish landings of 32% compared to 2006 landings, most states show that under the 2008 Alternative quota 2 they could land more bluefish that in 2006 if they wish to do so.

Quota Alternatives 1 and 2 are based on a TAL of 28.156 million lb and Alternative 3 is based on a 27.762 million lb TAL. The TALs evaluated in this IRFA would either achieve the F target (Alternatives 1 and 2), or result in F slightly below the F target (Alternative 3) in 2008. A complete description of the derivation of the TAL and its allocation to the commercial and recreational sectors is presented in sections 5.0 of the EA. In addition, the final management measures are also briefly described in section 2.5 of the RIR/IRFA.

5.0 ANALYSIS OF IMPACT OF ALTERNATIVES

For the purpose of analysis under the following alternatives, several assumptions were made. Participation and revenue changes noted in this analysis were made using the Northeast dealer and South Atlantic Trip Ticket Report data. That is all vessels that landed at least one or more pounds bluefish in calendar year 2006 were identified. Total revenues from all species landed by each vessel during calendar year 2006 were estimated using the dealer data. Since the dealer data only provides information from Maine through North Carolina, vessel trip report data was used to generate average revenues from all species landed by federally permitted vessels during

calendar year 2006. These estimates provided the base from which to compare the effects of the 2008 adjusted quota compared to the 2006 landings and associated potential changes in revenues.

The proposed bluefish quota for 2008 would allow fishermen to land an additional 1.9 million lb of bluefish compared to 2006. However, on average, bluefish landings for the 2002-2006 period are about 7.3 million lb (Table 1). Unless market conditions change substantially in year 2008, commercial bluefish fishermen would likely have bluefish landings close to the 2006 landings or 2002-2006 average. There is no indication that the market environment for commercially caught bluefish will change considerably in year 2008. As such, for states that show a 2008 quota allocation greater than their 2006 landings, it is assumed that 2008 landings would be equal to the 2006 landings. However, for states that show a 2008 quota allocation smaller than their 2006 landings, the 2008 allocation is considered for analysis purposes.

It is most likely that the percent of revenue reduction for impacted vessels varied considerably based on permits it held (i.e., based on the fisheries in which it was able to participate) and species it landed. Diversity in the fleet, perhaps, helps to balance loss in one fishery with revenue generated from other fisheries. For example, if 90% of a vessel's revenue was derived from bluefish in the base year, then a small decrease in the bluefish quota or landings level would be expected to have a large proportional reduction in the revenue of that vessel compared to one that only generates 10% of its revenue from bluefish. Lastly, it is important to keep in mind that while the analyses based on landings for federally permitted vessels only (dealer data), 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.

Bluefish comprised 0.17% and 0.45% of the total ex-vessel value and pounds landed of all finfish and shellfish species landed along the Atlantic coast of the U.S. in 2006, respectively. The contribution of bluefish to the total value of all finfish and shellfish vary by state, ranging from less than 0.01% in Maine and Georgia to approximately 1% in each North Carolina and New York. The contribution of bluefish to the total pounds landed of all finfish and shellfish vary by state, ranging from less than 0.01% in each Maine and Georgia to approximately 4% in each North Carolina and New York. Relative to total landings value, bluefish were most important in North Carolina and New York, contributing with the largest percentage of ex-vessel value of all commercial landings in those states (Table 3). This contribution has not changed considerably from the previous fishing year (i.e., 2005) and it is not expected to change considerably in 2008.

5.1 Quota Alternative 1 (preferred alternative)

To analyze the economic effects of this alternative, the total harvest limits specified in section 5.0 of the EA were employed. Under this alternative, the allocation to the commercial sector is approximately 27% higher than the 2006 commercial landings. The recreational allocation under this alternative is approximately 14% higher the recreational landings for 2006.

Even though the overall commercial allocation for 2008 is higher than the 2006 landings, when this allocation is distributed to the states, all states except New York show a 2008 quota level which is lower than their 2006 landings (Table 19). Under Amendment 1, states would be allowed to trade or combine quotas and the states could impose trip limits or other measures to manage their quotas. The system is the same as that operating under the Summer Flounder FMP. In most cases, quotas are transferred among states when fishing fleets follow migration routes of valuable fish stocks. Such is the case in the summer flounder fishery. For example, if summer flounder is present in the northern part of the Atlantic Ocean at a specific time of the year and a vessel from a southern state harvests and lands summer flounder in a northern state, then a quota transfer from the southern state can be made to the northern state. This allows vessels to land in a port close to where they are fishing and avoid returning to their home state or principal port to offload their catch. This is of special importance when you have valuable species that have to enter the market in a timely fashion, or have species that may have shorter shelf live. It is not expected that commercial vessels will travel large distances to catch bluefish. However, quota transfers in the bluefish fishery have been made to allow states that have harvested their quota levels (i.e., that have been constrained by the initial quota) to continue to fish for bluefish in previous years. It is possible that bluefish quota could be transferred among states and that the New York initial quota be increased as a result of such transfers. This could potentially decrease negative impacts to affected vessels.

5.1.1 Commercial Impacts

5.1.1.1 Threshold Analysis for Participating Vessels

The results of the threshold analysis from dealer data are reported in Table 20. The analysis of the harvest levels under this alternative indicates that the economic impacts ranged from no change in revenues for 481 vessels to revenue losses of more than 5% for 6 vessels. More specifically, 2 vessels were projected to incur revenue losses of 5-9%, 3 vessels of 10-19%, and 1 vessel of 20-29%. In addition, 238 vessels were projected to incur revenue losses of less than 5%. The revenue loss under this alternative occurs in spite of the fact that the overall proposed quota under Alternative 1 is higher than the total 2006 landings. This is primarily due to the fact that the New York quota in 2008 is smaller than the actual landings in that state in 2006.

Impacts of the quotas provisions were examined relative to a vessel's home state as reported on the vessel's permit application (Table 21). "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. All of the 6 impacted vessels under this alternative with Federal permits are home ported in New York. Most states had no vessels impacted with revenue reduction $\geq$ 5%. The larger number of impacted vessels in New York is related to the fact that New York's allocation for 2008 is lower than the 2006 landings by approximately 14%. Additional descriptive statistics regarding these vessels is presented in section 7.1.4 of the EA.

The threshold analysis presented in Table 21 is based on Northeast dealer data and represents potential impacts on vessels participating in the fisheries on the North Atlantic region. In order to further assess the impacts of the commercial 2008 quota measure on commercial vessels participating in the bluefish fishery in North Carolina and Florida, South Atlantic Trip Ticket Report data was reviewed. No revenue reduction is expected for vessels that land bluefish in North Carolina or Florida as a consequence of the proposed 2008 quota compared to 2006 landings in those states.

The changes described above are based on the potential changes in landings associated with the 2008 quotas versus 2006 landings. Amendment 1 implemented a transfer provision as a tool to mitigate the adverse economic impacts of prematurely closing a fishery when surplus quota exists. In fact, under the Interstate Management Plan for Atlantic Bluefish, states have been very cooperative in transferring commercial bluefish quota when needed to states that are running a deficit. If quota allocations were to be transferred from a state or states that do not need to land their entire bluefish quota allocation for 2008, then the number of affected entities described in this threshold analysis could potentially decrease, thus decreasing economic burden.

5.1.2 Recreational Impacts

Under Alternative 1, the bluefish 2008 recreational harvest limit would be 19.247 million lb. This limit would be approximately 14% above the recreational landings for 2006 (16.894 million lb) and 2% above the recreational harvest limit for 2007 (18.823 million lb). The possession limit would remain at 15 fish. Given recent trends in recreational landings it is expected that the recreational sector will land less than recreational harvest limit for 2008 (section 2.5 of the RIR/IRFA).

There is very little information available to empirically estimate how sensitive the affected party/charter boat anglers might be to the fishing regulations. However, given the level of the recreational harvest limit for 2008 and recreational landings in recent years, it is not anticipated that this management measure will have any negative effects on recreational fishermen or affect the demand for party/charter boat trips. This alternative is not expected to affect angler satisfaction nor expected to result in landings in excess of the recreational harvest limit. As such, the transfer is not expected to affect recreational landings in 2008.

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

The Council approved an RSA amount of 50,000 lb for 2008 (alternative 5.4 below). A research project as part of the RSA program was submitted to NMFS that would require an exemption from some of the current bluefish regulations. The impacts of these exemptions are described in sections 7.4 of the EA and 5.4 below.

The economic analysis regarding changes in the commercial TALs for the bluefish fisheries conducted under this alternative, as well as the other alternatives analyzed, incorporated adjustments for the quota specifications for 2008. That is, the RSA for bluefish was deducted

from the initial overall TAL for 2008 to derive adjusted 2008 quotas. Therefore, the threshold analyses conducted under each alternative has accounted for overall reductions in fishing opportunities to all vessels typically participating in this fishery due to RSA. A detailed description of the potential impacts of the RSA is presented in section 5.4 below.

5.1.3 Summary of Impacts

In sum, Alternative 1 would result in a commercial and recreational allocation that is approximately 27% and 14%, respectively, higher than the commercial and recreational landings for 2006.

Under this scenario, a total of 6 of the 725 commercial vessels were projected to incur revenue losses of 5% or greater according to dealer data. The affected entities are smaller vessels that landed bluefish in New York. No revenue reduction is expected for vessels that land bluefish in North Carolina or Florida as a consequence of the proposed 2008 quota compared to 2006 landings in those states.

This alternative is not expected to affect angler satisfaction nor expected to result in landings in excess of the recreational harvest limit.

It is important to stress that these changes represent merely the potential, i.e., based on available data. Actual changes in revenue will likely vary. This variation would occur for several reasons, including impacts undetermined for unidentifiable vessels. In addition, if quota allocations were to be transferred from a state or states that do not need to land their entire bluefish quota allocation for 2008 to states that are constrained by the 2008 allocation, then the number of affected entities described in this threshold analysis could potentially decrease, thus decreasing economic burden.

There should be no adverse economic or social impacts associated with the RSA. The RSAs are expected to yield important long-term benefits associated with improved data upon which to base management decisions.

This alternative was chosen by the Council and Board because it provides the best allocation among the commercial and recreational sectors considering recent fishing practices and is consistent with the objectives of the FMP. Stable or increased landings from one year to the next are desirable from both a management and industry perspective. Drastic reductions in the quota from one year to the next could lead to increased levels of noncompliance by both commercial and recreational fishermen. A stable landings pattern would allow fishermen, processors, party/charter boat operators, equipment and bait suppliers to make business decisions. In addition, this alternative may maximize commercial revenues when compared to Alternatives 2 and 3 (status quo).

5.2 Quota Alternative 2

To analyze the economic effects of this alternative, the total harvest limits specified in section 5.0 of the EA were employed. Under this alternative, the allocation to the commercial fishery is 32% below the 2006 commercial landings. The recreational allocation under this alternative is approximately 38% above the recreational landings for 2006.

Even though the overall commercial allocation for 2008 is lower than the 2006 landings, when this allocation is distributed to the states, all states except New Hampshire, Massachusetts, Rhode Island, New York, New Jersey, and North Carolina show a 2008 quota level which is higher than their 2006 landings (Table 19). Therefore, landings in these states (Massachusetts, Rhode Island, New York, New Jersey, and North Carolina) will be constrained by the 2008 quota when compared to landings in 2006.

As stated before (section 5.1 of the RIR/IRFA), under Amendment 1, states would be allowed to trade or combine quotas and the states could impose trip limits or other measures to manage their quotas. These quota transfers have allowed states that have been constrained by their initial quota levels to harvest additional bluefish in previous years. It is possible that bluefish quota could be transferred among states and that the initial quotas for the states with constraining 2008 quotas be increased by the amounts transferred. However, given that under this alternative the overall commercial quota in 2008 is substantially lower than the 2007 quota and the 2006 landings, the amount of bluefish that could potentially be transferred among states would be lower than under Alternatives 1 and 3, thus potentially allowing for less economic relief.

5.2.1 Commercial Impacts

5.2.1.1 Threshold Analysis for Participating Vessels

The results of the threshold analysis from dealer data are reported in Table 25. A total of 53 vessels were projected to incur revenue losses of more than 5%. More specifically, 15 vessels were projected to incur in revenue losses of 5-9%, 12 vessels of 10-19%, 4 vessels of 20-29%, 20 vessels of 30-39%, 1 vessel of 40-49%, and 1 vessel of 50% or more. In addition, 610 vessels were projected to incur in revenue losses of less than 5% and 62 vessels were projected to have no change in revenue relative to 2006.

Impacts of the quota provision were examined relative to a vessel's home state as reported on the vessel's permit application (Table 26). "Home state" indicates the state where a vessel is based and primarily ported, and is presumed to reflect to where the costs and benefits of management actions return. However, home state is self-reported at the time an individual applies for a Federal permit and may not necessarily indicate where the vessel subsequently conducts most of its activity. The number of vessels with revenue reduction of less than 5% by home state ranged from 1 in Delaware to 97 in each Rhode Island and New York. The number of vessels with revenue reduction of 5% or more ranged from 1 in Rhode Island to 16 in New Jersey. Four states (Delaware, Maryland, Maine, and Virginia) had no vessels impacted with revenue reduction $\geq$ 5%. The larger number of impacted vessels with revenue reduction of 5% or more in New Jersey, New York, North Carolina, and Massachusetts may be due to a relatively higher

dependence on bluefish. Additional descriptive statistics regarding these vessels is presented in section 7.2.4 of the EA.

The threshold analysis presented in Table 26 is based on Northeast dealer data. Thus, represents potential impacts on vessels participating in the fisheries on the North Atlantic region. In order to further assess the impacts of the commercial 2008 quota measure on commercial vessels participating in the bluefish fishery in North Carolina, South Atlantic Trip Ticket Report data was reviewed. South Atlantic Trip Ticket Report data indicate that 820 vessels (257 vessels <=18 ft; 450 vessels between 19-38 ft; and 113 vessels =>39 ft) landed bluefish in North Carolina in 2006. On average, these vessels generated 8.92% of their total ex-vessel revenue from bluefish landings. By vessel size, the contribution of bluefish to total revenue for these vessels was 4.12% for vessel <=18 ft; 12.80% for vessels 19-38 ft; and 7.90% for vessels =>39 ft. Under this alternative, landings are projected to decrease as a consequence of the 2008 allocation when compared to 2006 landings by approximately 47% in North Carolina (Table 32). On average, reduction in revenues due to the potential decrease in landings associated with the 2008 quota compared to the 2006 landings are expected to be slightly over 4% for fishermen that land bluefish in that state. No revenue reduction is expected for vessels that land bluefish in Florida as a consequence of the proposed 2008 quota compared to 2006 landings in that state (Table 32).

The changes described above are based on the potential changes in landings associated with the 2008 quotas versus 2006 landings. Amendment 1 implemented a transfer provision as a tool to mitigate the adverse economic impacts of prematurely closing a fishery when surplus quota exists. In fact, under the Interstate Management Plan for Atlantic Bluefish, states have been very cooperative in transferring commercial bluefish quota when needed to states that are running a deficit. If quota allocations were to be transferred from a state or states that do not need to land their entire bluefish quota allocation for 2008, then the number of affected entities described in this threshold analysis could potentially decrease, thus decreasing economic burden. However, since the overall quota in 2008 is substantially lower than the 2007 quota and the 2006 landings, the amount of bluefish that could potentially be transferred among states would be lower than under Alternatives 1 and 3, thus potentially allowing for less economic relief.

5.2.2 Recreational Impacts

Under Alternative 2, the bluefish 2008 recreational harvest limit would be 23.328 million lb. This limit would be approximately 38% higher than the recreational landings for 2006 (16.894 million lb) and less than 24% larger than the recreational harvest limit for 2007 (18.823 million lb). The possession limit would remain at 15 fish. It is not anticipated that this management measure will have any negative effects on recreational fishermen or affect the demand for party/charter boat trips. This alternative is not expected to affect angler satisfaction nor expected to result in landings in excess of the recreational harvest limit. The recreational impacts under this alternative are expected to be similar to those described under Alternatives 1 and 3 (section 5.1.2 and 5.3.2 of the RIR/IFRA).

5.2.3 Summary of Impacts

In sum, Alternative 2 would result in a 32% decrease the commercial bluefish landings in 2008 compared to 2006 landings. The 2008 recreational harvest limit is 38% higher than the recreational landings in 2006.

Under this alternative, according to dealer data, a total of 53 of the 725 commercial vessels reporting landings in 2006 were projected to incur revenue losses in the 5% or more. Furthermore, 610 vessels were projected to incur in revenue losses of less than 5%. In addition, given recent South Atlantic Trip Ticket Report data, 820 vessels in North Carolina could potentially lose, on average, slightly over 4% of their total ex-vessel revenue. No revenue reduction is expected for vessels that land bluefish in Florida as a consequence of the proposed 2008 quota compared to 2006 landings in that state.

This alternative is not expected to affect angler satisfaction nor expected to result in landings in excess of the recreational harvest limit.

It is important to stress that these changes represent merely the potential, i.e., based on available data. Actual changes in revenue will likely vary. This variation would occur for several reasons, including impacts undetermined for unidentifiable vessels.

This alternative was not chosen by the Council and Board because it does not provide the best allocation among the commercial and recreational sectors considering recent fishing practices. The commercial losses associated with this alternative are the largest among all alternatives evaluated.

5.3 Quota Alternative 3 (Status Quo/No Action Alternative)

To analyze the economic effects of this alternative, the total harvest limits specified in section 5.0 of the EA were employed. Under this alternative, the allocation to the commercial and recreational fisheries is approximately 24% and 13% higher than the commercial and recreational landings for 2006, respectively.

As with Alternative 1, even though the overall commercial allocation for 2008 is higher than the 2006 landings, when this allocation is distributed to the states, all states except Rhode Island, New York, and North Carolina show a 2008 quota level which is higher than their 2006 landings (Table 19).

As stated before (section 5.1 of the RIR/IRFA), under Amendment 1, states would be allowed to trade or combine quotas and the states could impose trip limits or other measures to manage their quotas. These quota transfers have allowed states that have been constrained by their initial quota levels to harvest additional bluefish in previous years. It is possible that bluefish quota could be transferred among states and that the initial quotas for the states with constraining 2008 quotas be increased by the amounts transferred.

5.3.1 Commercial Impacts

5.3.1.1 Threshold Analysis for Participating Vessels

The results of the threshold analysis from dealer data are reported in Table 30. The economic range from expected revenue losses are losses on the order of 5 to 29% for a total of 20 vessels of the 725 commercial vessels reporting landings in 2006. In addition, 407 vessels were projected to incur revenue losses of less than 5%.

Impacts of the quotas provisions were examined relative to a vessel's home state as reported on the vessel's permit application (Table 31). "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 impacted vessels with revenue reduction in the 5 to 29% by home state ranged from 1 Massachusetts to 11 vessels in North Carolina. Most states had no vessels impacted with revenue reduction $\geq$ 5%. The larger number of impacted vessels with revenue reductions in the 5 to 29% range in New York and New Jersey may be due to a relatively higher dependence on bluefish.

The threshold analysis presented in Table 31 is based on Northeast dealer data. Thus, represents potential impacts on vessels participating in the fisheries on the North Atlantic region. In order to further assess the impacts of the commercial 2008 quota measure on commercial vessels participating in the bluefish fishery in North Carolina, South Atlantic Trip Ticket Report data was reviewed. South Atlantic Trip Ticket Report data indicate that 820 vessels (257 vessels <=18 ft; 450 vessels between 19-38 ft; and 113 vessels =>39 ft) landed bluefish in North Carolina in 2006. On average, these vessels generated 8.92 of their total ex-vessel revenue from bluefish landings. By vessel size, the contribution of bluefish to total revenue for these vessels was 4.12% for vessel <=18 ft; 12.80% for vessels 19-38 ft; and 7.90% for vessels =>39 ft. Under this alternative, landings are projected to decrease as a consequence of the 2008 allocation when compared to 2006 landings by approximately 9% in North Carolina (Table 32). On average, reduction in revenues due to the potential decrease in landings associated with the 2008 quota compared to the 2006 landings are expected to be less than 1% for fishermen that land bluefish in that state. No revenue reduction is expected for vessels that land bluefish in Florida as a consequence of the proposed 2008 quota compared to 2006 landings in that state.

The changes described above are based on the potential changes in landings associated with the 2008 quotas versus 2006 landings. Amendment 1 implemented a transfer provision as a tool to mitigate the adverse economic impacts of prematurely closing a fishery when surplus quota exists. In fact, under the Interstate Management Plan for Atlantic Bluefish, states have been very cooperative in transferring commercial bluefish quota when needed to states that are running a deficit. If quota allocations were to be transferred from a state or states that do not need to land

their entire bluefish quota allocation for 2008, then the number of affected entities described in this threshold analysis could potentially decrease, thus decreasing economic burden.

5.3.2 Recreational Impacts

Under Alternative 3, the bluefish 2008 recreational harvest limit would be 19.039 million lb. This limit would be approximately 13% above the recreational landings for 2006 (16.894 million lb). Given recent trends in recreational landings it is expected that the recreational sector will land more than recreational harvest limit for 2008 (section 2.5 of the RIR/IRFA). The possession limit would remain at 15 fish.

It is not anticipated that this management measure will have any negative effects on recreational fishermen or affect the demand for party/charter boat trips. This alternative is not expected to affect angler satisfaction nor expected to result in landings in excess of the recreational harvest limit. The recreational impacts under this alternative are expected to be similar to those described under Alternatives 1 and 2.

5.3.3 Summary of Impacts

In sum, under this alternative, the allocation to the commercial and recreational fisheries is approximately 24% and 13% higher than the commercial and recreational landings for 2006, respectively.

Under this alternative, according to dealer data, a total of 407 of the 725 commercial vessels reporting landings in 2006 were projected to incur revenue losses of less than 5% and 20 vessels were projected to incur revenue losses in the 5 to 29% range. Furthermore, given recent South Atlantic Trip Ticket Report data, 820 vessels in North Carolina could potentially lose, on average, less than 1% of their total ex-vessel revenue. No revenue reduction is expected for vessels that land bluefish in Florida as a consequence of the proposed 2008 quota compared to 2006 landings in that state.

The proposed recreational management measures are not expected affect the demand for party/charter boat trips.

It is important to stress that these changes represent merely the potential, i.e., based on available data. Actual changes in revenue will likely vary. This variation would occur for several reasons, including impacts undetermined for unidentifiable vessels. In addition, if quota allocations were to be transferred from a state or states that do not need to land their entire bluefish quota allocation for 2008 to states that are constrained by the 2008 allocation, then the number of affected entities described in this threshold analysis could potentially decrease, thus decreasing economic burden.

There should be no adverse economic or social impacts associated with the RSA. The RSAs are expected to yield important long-term benefits associated with improved data upon which to base management decisions.

5.4 Research Set-Aside Alternatives

The purpose of the RSA program is to support research and the collection of additional data that would otherwise be unavailable. Through the RSA program, the Council encourages collaborative efforts among the public, research institutions, and government in broadening the scientific base upon which management decisions are made. Reserving a small portion of the annual harvest of a species to subsidize the research costs of vessel operations and scientific expertise is considered an important investment in the future of the nation's fisheries.

An additional benefit that is sought from this program is the assurance that new data collected by non-governmental entities will receive the peer review and analysis necessary so that data can be utilized to improve the management of public fisheries resources. The annual research set-aside amount may vary between 0 and 3% of a 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 No Research Set-Aside (No Action)

Under this alternative there will be no RSA deducted from the overall TAL. Therefore, the initial commercial quota and recreational harvest limit does not need to be adjusted downward as it would be done under a situation when a RSA is established. No adverse economic impacts are expected for vessels that land bluefish under this alternative. However, under this alternative the collaborative efforts among the public, research institutions, and government in broadening the scientific base upon which management decisions are made will cease.

5.4.2 Specify a Research Set-Aside for 2007

The Council and Board recommended to specify a bluefish RSA of 50,000 lb for 2008. If the RSA is not used, the RSA quota would be put back into the overall TAL. A summary of the RSA project requesting bluefish for 2008 is presented in Appendix B. This description includes project name, description and duration, amount of RSA requested, and gear to be used to conduct the project. This alternative is the status quo alternative.

Under this program, successful applicants receive a share of the annual quota for the purpose of conducting scientific research. The Nation receives a benefit in that data or other information about that fishery is obtained for management or stock assessment purposes that would not otherwise be obtained. In fisheries where the entire quota would be taken and the fishery is prematurely closed (i.e., the quota is constraining), the economic and social costs of the program are shared among the non 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. However, in the case of bluefish the overall quota is not constraining landings i.e., landings in recent years in the commercial and recreational sectors have been below the commercial TAL and recreational harvest limit, respectively. Therefore, it is not expected that overall negative economic or social impacts will occur. It is possible that the vessels that would be used by researchers to conduct the research would be vessels that have not traditionally fished for bluefish. As such, permit holders that would have landed these bluefish in a state were the quota has been reached and the fishery closed could be disadvantaged. Furthermore, it is possible that in specific states where commercial quotas have restrained landings in recent years, the increased quota availability associated with a commercial quota that is not adjusted downward to account for RSA would benefit those states.

The economic discussion of the evaluated commercial quotas and recreational harvest limits discussed in sections 5.1, 5.2, and 5.3 of the RIR/IRFA were based on adjusted commercial quotas accounting for the RSA proposed under this alternative. More specifically, a RSA of 50,000 lb was used to derive the adjusted commercial quotas and RHLs in all evaluated alternatives.

Tables 19 and 32 show the potential impacts of the three commercial quotas evaluated for 2008. These impacts are associated with the specific changes associated with the 2008 quota compared to the 2006 landings. For example, under Alternative 1 the state of New York shows a potential decrease in landings of 22% when the 2008 quotas are compared to the 2006 landings. If commercial quotas not adjusted for RSA are considered, the potential decrease in landings associated with the 2008 quotas compared to the 2006 landings would change by less than 1% (from 22.05% to 21.91%). In other words, an additional 1,637 lb of bluefish would be available to non-research participants in New York under Alternative 1.

Changes in the recreational harvest limit due to the RSA would be nil; the limit changes from 19.291 million lb to 19.247 million lb. This represents a < 1% percent change in the harvest level as a consequence of the RSA. In addition, given the level of the recreational harvest limit for 2008 and recreational landings in recent years, it is not anticipated that the RSA will affect angler satisfaction or recreational demand for bluefish.

6.0 OTHER IMPACTS

6.1 County Impacts

For the reasons specified in section 3.1 of this RIR/IRFA, the economic impacts on vessels of a specified home port were analyzed on a county wide basis. The profile of impacted counties was based on impacts under various alternatives evaluated. Counties included in the profile had to meet the following criteria: the number of vessels with revenue loss exceeding 5% per county was either greater than 4, or all vessels with revenue loss exceeding 5% in a given state were from the same home county.

Based on these criteria, a total of nine counties were identified: Dare, NC; Ocean and Monmouth, NJ; Nassau and Suffolk, NY; Rockingham, NH; New Heaven, CT; Washington, RI; and Philadelphia, PA (section 6.1 of the RIR/IRFA). Counties not included in this analysis (e.g., Essex, Barnstable, and Suffolk, MA; Cape May and Monmouth, NJ; Queens, NY) 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. In fact, most of these counties only had one or two affected vessel.

Table 33 details population, employment personal income and the contribution of commercial fishing and sea food processing to total personal income for selected counties. Counties presented in Table 33 correspond to the counties identified as impacted (>= 4 vessels with revenue loss exceeding 5% per county) due to the management measures evaluated (i.e., as described in the above paragraph). Data presented in Table 33 were obtained from data bases supplied by the Minnesota IMPLAN Group for the calendar year 2001.

Of the counties identified in Table 33, the percentage of total personal income derived from commercial fishing sales and from seafood processing was less than 1% for all counties. These data indicate that each of the counties in Table 33 is not substantially dependent upon sales of commercial fishing products to sustain the county economies. Population in these counties ranged from 31 thousand in Dare (NC) County to 1.4 million in Suffolk County (NY).

TABLES

Table 1. Bluefish commercial and recreational landings (‘000 lb), 1981-2006.

Year	Comm	Rec	Total	% Comm	% Rec
1981	16,454	95,288	113,725	15	85
1982	15,430	83,006	98,436	16	84
1983	15,799	89,122	104,921	15	85
1984	11,863	67,453	79,316	15	85
1985	13,501	52,515	66,016	20	80
1986	14,677	92,887	107,564	14	86
1987	14,504	76,653	91,157	16	84
1988	15,790	48,222	64,012	25	75
1989	10,341	39,260	49,601	21	79
1990	13,779	30,557	44,336	31	69
1991	13,581	32,997	46,578	29	71
1992	11,477	24,275	35,753	32	68
1993	10,122	20,292	30,414	33	67
1994	9,495	15,541	25,036	38	62
1995	8,009	14,307	22,316	36	64
1996	9,301	11,746	21,047	44	56
1997	9,063	14,302	23,366	39	61
1998	8,247	12,334	20,581	40	60
1999	7,307	8,253	15,338	48	54
2000	8,036	10,606	18,642	43	57
2001	8,689	13,230	21,919	40	60
2002	6,864	11,371	18,235	38	62
2003	7,403	13,136	20,376	36	64
2004	8,041	15,203	22,839	35	67
2005	7,026	16,162	23,188	30	70
2006	6,985	16,894	23,879	29	71
Avg 81-06	10,838	35,600	46,438	30	70
Avg 95-06	7,914	13,129	21,043	38	62
Avg 00-06	7,578	13,800	21,378	36	64

Table 2. Fishing effort of the bluefish fishery relative to other fisheries by gear type from Maine through North Carolina in 2006 (VTR data).

	Bottom Otter Trawls	Gillnets	Other	Total
Total Trips (N)	33,343	16,587	80,238	130,168
Trips That Caught Bluefish (N)	5,572	4,098	2,995	12,665
% of Trips That Caught Bluefish by Gear Type	44.0%	32.4%	23.6%	100.0%
% of *Total Trips* by Gear Type That Caught Bluefish	16.7%	24.7%	3.7%	9.7%
% of Directed Bluefish Trips[a]	0.3%	8.7%	1.2%	1.9%

[a]A directed bluefish trip is a trip where bluefish is greater than 50% of the catch. These percentages reflect the proportion of total trips within a particular gear category that also qualified as "directed bluefish trips".

Table 3. The percentage contribution of bluefish to the commercial landings and value of all species combined from Maine through East Coast of Florida, 2006.

State	Pounds of Bluefish as a Percentage of all Species	Value of Bluefish as a Percentage of all Species
ME	< 0.01%	< 0.01%
NH	0.28%	0.07%
MA	0.13%	0.06%
RI	0.54%	0.18%
CT	0.35%	0.04%
NY	3.59%	1.01%
NJ	0.60%	0.28%
DE	0.95%	0.28%
MD	0.14%	0.06%
VA	0.13%	0.13%
NC	4.07%	1.08%
GA	< 0.01%	< 0.01%
FL (East Coast)	0.38%	0.08%
Total	0.45%	0.17%

Source: NMFS Dealer Weighout data and South Atlantic General Canvass data.
Note: There were no bluefish landings reported in PA or SC in 2006.

Table 4. The percentage (%) of bluefish caught and landed by recreational fishermen for each mode, Maine through Florida, 1997-2006.

Mode	Catch (Number A+B1+B2)	Landing (Weight A+B1)
Shore	43	22
Party/Charter	6	18
Private/Rental	51	60

Source: MRFSS.

Table 5. Number of bluefish recreational fishing trips, recreational harvest limit, and recreational landings from 1991 to 2008.

Year	Number of Fishing Trips[a]	Recreational Harvest Limit ('000 lb)	Recreational Landings ('000 lb)[b]
1991	5,811,446	None	32,997
1992	4,261,811	None	24,275
1993	3,999,487	None	20,292
1994	3,414,337	None	15,541
1995	3,409,966	None	14,307
1996	2,523,984	None	11,746
1997	2,021,713	None	14,302
1998	1,838,525	None	12,334
1999	1,316,939	None	8,253
2000	1,279,035	25,745	10,606
2001	1,914,480	28,258	13,230
2002	1,880,539	16,365	11,371
2003	2,099,771	26,691[c]	13,136
2004	1,926,190	21,150[c]	15,203
2005	n/a	20,157[c]	16,162
2006	n/a	16,473[c]	16,894
2007	n/a	18,823[c]	n/a
2008	-	19,032[c]	-

[a]Number of fishing trips as reported by anglers in the intercept survey indicating that the primary species sought was bluefish, North Atlantic, Mid-Atlantic, and South Atlantic regions combined. Estimates are not expanded. MRFSS Data.
[b]Atlantic coast from Maine through Florida's east coast.
[c]Adjusted for RSA.
Source: MRFSS.
n/a = Data not available.

Table 6. Total angler trip expenditures ('000 $) by mode and state in 1998.

State	Party/Charter	Private/Rental	Shore
CT	1,707	28,132	11,032
DE	2,190	18,272	17,609
ME	189	7,656	13,401
MD	15,468	70,297	48,753
MA	10,686	73,391	51,829
NH	1,231	4,394	4,429
NJ	28,785	143,130	33,430
NY	12,055	102,358	24,138
RI	4,191	15,944	16,586
VA	5,190	98,208	38,634
Total	81,692	561,782	259,841

Table 7. Angler effort that targeted bluefish in 2006, Maine thought Virginia.

Mode	Total Angler Effort	Angler Effort Targeting Bluefish[a]	Percent Angler Effort Targeting Bluefish
Party/Charter	1,812,526	125,768	6.94%
Private/Rental	16,804,126	563,091	3.35%
Shore	12,405,650	1,122,678	9.05%
Total	31,022,302	1,811,537	5.84%

[a]Total effort targeting bluefish as primary species.

Table 8. Average willingness to pay for a one-day fishing trip, by state.

State	Mean 1994 ($'s)	Adjusted to 2006 ($'s)[a]
ME	6.4	8.87
NH	0.85	1.18
MA	8.38	11.62
RI	4.23	5.86
CT	3.07	4.26
NY	21.58	29.91
NJ	14.12	19.57
DE	1.43	1.98
MD	12.09	16.76
VA	42.33	58.68

[a]Prices were adjusted using the Bureau of Labor Statistics Consumer Price Index.

Table 9. Aggregate willingness to pay for anglers that indicated they were targeting bluefish in 2006.

State	Total Effort Targeting Bluefish[a]	Willingness to Pay ($'s)
ME	13,029	115,567
NH	12,411	14,645
MA	319,339	3,710,719
RI	126,835	743,253
CT	165,103	703,339
NY	693,217	20,734,412
NJ	338,177	6,618,124
DE	30,924	61,229
MD	86,500	1,449,740
VA	26,002	1,525,797

Source: Scott Steinback, NEFSC.

Table 10. Willingness to pay for a one fish increase in the catch rate of small game per trip, Maine through Virginia.

State	Mean 1994 ($'s)	Adjusted to 2006 ($'s)[a]
ME	3.74	5.18
NH	3.25	4.51
MA	3.09	4.28
RI	3.13	4.34
CT	3.29	4.56
NY	2.43	3.37
NJ	2.69	3.73
DE	3.00	4.16
MD	3.44	4.77
VA	2.46	3.41
All States	2.89	4.01

[a]Prices were adjusted using the Bureau of Labor Statistics Consumer Price Index.

Table 11. Recreational anglers' ratings (mean) of reasons for marine fishing, by subregion.

	New England			Mid-Atlantic		
Statement	**Not Important**	**Somewhat Important**	**Very Important**	**Not Important**	**Somewhat Important**	**Very Important**
To Spend Quality Time with Friends and Family	4.4%	14.3%	81.3%	3.0%	12.0%	85.0%
To Enjoy Nature and the Outdoors	1.4%	10.1%	88.5%	1.1%	11.6%	87.3%
To Catch Fish to Eat	42.2%	37.4%	20.4%	29.3%	40.1%	30.6%
To Experience the Excitement or Challenge of Sport Fishing	6.2%	24.9%	68.8%	8.4%	26.0%	65.6%
To be Alone	55.0%	27.9%	17.1%	57.7%	25.8%	16.4%
To Relax and Escape from my Daily Routine	3.4%	13.3%	83.3%	2.6%	11.9%	85.5%
To Fish in a Tournament or when Citations are Available	78.6%	14.0%	7.4%	73.4%	17.1%	9.5%

Source: Steinback *et al.*, 1999.

Table 12. Recreational anglers' ratings (mean) of fishing regulation methods, by subregion.

	New England		Mid-Atlantic	
Type of Regulation	**Support**	**Oppose**	**Support**	**Oppose**
Limits on the Minimum Size of Fish You Can Keep	92.5%	7.5%	93.2%	6.8%
Limits on the Number of Fish You Can Keep	91.1%	8.9%	88.3%	11.7%
Limits on the Times of the Year When You Can Keep the Fish You Catch	78.8%	21.2%	77.1%	22.9%
Limits on the Areas You Can Fish	67.9%	32.1%	66.0%	34.0%

Source: Steinback *et al.*, 1999.

Table 13. Recreational anglers' ratings (mean) of fishing regulation methods, by mode.

	Party/Charter		Private/Rental		Shore	
Type of Regulation	**Support**	**Oppose**	**Support**	**Oppose**	**Support**	**Oppose**
Limits on the Minimum Size of Fish You Can Keep	92.1%	7.9%	94.4%	5.6%	90.1%	9.9%
Limits on the Number of Fish You Can Keep	87.9%	12.1%	90.0%	10.0%	87.7%	12.3%
Limits on the Times of the Year When You Can Keep the Fish You Catch	79.2%	20.8%	78.3%	21.7%	75.0%	25.0%
Limits on the Areas You Can Fish	74.4%	25.6%	65.9%	34.1%	63.6%	36.4%

Source: Steinback *et al.*, 1999.

Table 14. Statistical areas that accounted for at least 5 percent of the bluefish landings and/or trips in 2006, NMFS VTR data. (A map showing the location of these statistical areas is presented in Figure 1).

Statistical Area	Catch (percent)	Trips (percent)
636	13.1%	0.9%
635	12.7%	1.5%
613	12.5%	16.4%
611	9.9%	27.8%
612	7.6%	10.4%
614	7.4%	5.1%
539	5.1%	11.1%

Table 15. Top ports of bluefish landings (in pounds), based on NMFS 2006 dealer data. Since this table includes only the "top ports" (ports where landings of bluefish were > 100,000 lb), it does not include all of the landings for the year.

Port	Pounds	# Vessels
WANCHESE, NC	2,294,695	45
LONG BEACH/BARNEGAT LIGHT, NJ	516,300	33
HAMPTON BAY, NY	421,875	44
POINT JUDITH, RI	407,055	89
BELFORD, NJ	276,760	22
GREENPORT, NY	263,156	7
MONTAUK, NY	253,554	55
PT. PLEASANT, NJ	210,979	35
CHATHAM, MA	202,688	45
CHINCOTEAGUE, VA	140,414	45
HATTERAS, NC	125,695	18

Table 16. MRFSS preliminary estimates of 2006 recreational harvest and total catch for bluefish.

State	Harvest (A+B1)		Catch (A+B1+B2)
	Pounds of Fish	Number of Fish	Number of Fish
ME	21,409	6,408	48,611
NH	57,335	10,372	36,683
MA	3,404,423	713,535	2,239,457
RI	936,933	363,511	1,018,969
CT	2,382,838	478,167	1,265,384
NY	3,419,842	1,526,692	3,363,489
NJ	2,675,544	1,451,944	3,381,243
DE	122,549	96,007	418,538
MD	712,002	511,767	1,362,263
VA	883,798	441,595	1,012,918
NC	1,227,027	1,133,756	3,010,302
SC	126,130	197,475	1,105,128
GA	3,267	3,294	36,631
FL (East Coast)	920,670	639,849	1,531,757

Table 17. Permitted dealers and dealers reporting buying bluefish (active dealers) by state in 2006 (from NMFS commercial dealer landings database).

State	Permitted Dealers	Active Dealers
MA	124	45
NY	88	42
NJ	63	10
RI	48	21
VA	32	12
NC	30	20
ME	18	3 or less*
MD	12	3 or less*
FL	8	0
NH	7	3 or less*
DE	6	3 or less*
CT	5	3 or less*
PA	3 or less*	0
LA	3 or less*	0
HI	3 or less*	0
GA	3 or less*	0
Total	448	157

*Not specified for confidentiality purposes.

Table 18. Comparison of habitat impacts and considerations for selecting alternatives.

Alternative	Commercial Quota (million lb)	Potential Change in CPUE and Habitat Impacts	Considerations for Selecting Alternative
Alternative 1 (Least Restrictive /Preferred)	8.859	Increased CPUE and a marginal increase in the commercial quota - habitat impacts are likely to remain minimal and temporary. The *potential* for increased (though insignificant) habitat impacts is greater than under Alternatives 2 and 3.	Maximizes commercial landings to greatest extent, expected to achieve the target exploitation rate, no significant habitat impacts, increased financial benefit to industry
Alternative 2 (Most Restrictive)	4.778	Increased CPUE and a substantially lower commercial quota (compared to Alternatives 1 and 3) - greatest potential for decreasing habitat impacts.	Does not maximize commercial landings, reduces short-term yields, potential decrease in impacts on habitat, decrease in financial benefit to industry
Alternative 3 (Status Quo)	8.673	Increased CPUE and no change in the commercial quota - habitat impacts are likely to remain minimal and temporary. These impacts would be greater (though insignificant) than under Alternative 2 and less than under Alternative 1.	Does not maximize commercial landings, slightly reduced short-term yields, potential decrease in impacts on habitat, potential slight decrease in financial benefit to industry

Table 19. The 2008 state-by-state commercial bluefish quota[a] allocations and the 2006 commercial landings by state. All units are lbs.

State	% of Quota	2008 Commercial Quota Alternative 1	2008 Commercial Quota Alternative 2	2008 Commercial Quota Alternative 3	2006 Landings
ME	0.6685	59,224	31,941	57,980	182
NH	0.4145	36,722	19,805	35,950	28,780
MA	6.7167	595,049	320,927	582,547	510,681
RI	6.8081	603,146	325,294	590,474	605,419
CT	1.2663	112,185	60,504	109,828	41,461
NY	10.3851	920,041	496,205	900,711	1,180,311
NJ	14.8162	1,312,603	707,926	1,285,025	1,059,572
DE	1.8782	166,394	89,741	162,898	41,454
MD	3.0018	265,937	143,428	260,349	70,165
VA	11.8795	1,052,433	567,609	1,030,322	556,592
NC	32.0608	2,840,343	1,531,881	2,780,669	2,791,120
SC	0.0352	3,118	1,682	3,053	0
GA	0.0095	842	454	824	78
FL	10.0597	891,213	480,658	872,489	99,402
Total	100	8,859,240	4,778,051	8,673,111	6,985,217

[a]2008 quota adjusted for RSA.
Source: Preliminary Dealer Data (as of 05/21/2007) and South Atlantic General Canvass Data (as of 6/25/2007).

Table 20. Threshold analysis of revenues for participating vessels under Alternative 1 (preferred), based on dealer data.

Quota Alternative 1 (Preferred)		No Change in Revenue (number)	Number of Impacted Vessels by Reduction Percentile (%)						
Total Vessels	Number of Vessels Impacted by ≥ 5% Reduction		<5	5-9	10-19	20-29	30-39	40-49	≥50
725	6	481	238	2	3	1	0	0	0

Table 21. Review of revenue impacts under quota Alternative 1 (preferred), by home port state, based on dealer data.

State	Participating Vessels	Number of Vessels Impacted ≥5%	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	6	0	1	5	0	0	0	0	0	0
DE	6	0	5	1	0	0	0	0	0	0
MA	223	0	201	22	0	0	0	0	0	0
MD	14	0	14	0	0	0	0	0	0	0
ME	6	0	3	3	0	0	0	0	0	0
NC	85	0	84	1	0	0	0	0	0	0
NH	23	0	23	0	0	0	0	0	0	0
NJ	98	0	98	0	0	0	0	0	0	0
NY	109	6	5	98	2	3	1	0	0	0
RI	99	0	2	97	0	0	0	0	0	0
VA	23	0	23	0	0	0	0	0	0	0
OTHER[a]	6	0	5	1	0	0	0	0	0	0
NOT KNOWN[b]	27	0	17	10	0	0	0	0	0	0
Total	725	6	481	238	2	3	1	0	0	0

[a]States with fewer than 3 vessels were aggregated.

[b]Vessels have shown landings of bluefish in 2006, but do not hold any commercial Federal permits in 2006. These vessels may be fishing exclusively in state waters fisheries for bluefish, 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 22. Federal permits held by the 6 commercial vessels (holding any Federal fishing permit in 2006) projected to have revenue reductions of more than 5% under the preferred alternative (Alternative 1).

	Northeast Region Permit Status		Number of Vessels	Percent of Permitted Vessels
Commercial	Multispecies	Open Access	1	33
	Herring, VMS	Open Access	3	60
	Tilefish	Open Access	2	67
	Squid/Mackerel/Butterfish	Open Access	5	83
	Black Sea Bass	Limited Access	1	33
	Dogfish	Open Access	4	67
	Monkfish	Open Access	1	33
	Monkfish	Limited Access	2	67
	Skate	Open Access	4	67
	Atlantic Deep-Sea Red Crab	Open Access	1	33
Recreational (Party/Charter)	Multispecies	Open Access	1	33
	Summer Flounder	Open Access	1	33
	Squid/Mackerel/Butterfish	Open Access	1	33

Table 23. Descriptive information for the 6 commercial vessels (holding any Federal fishing permit in 2005) projected to have revenue reductions of more than 5% under the preferred alternative (Alternative 1). Based on 2006 descriptive data from NMFS permit files - No vessel characteristics data are reported for states with fewer than 3 permits.

	NY
# Permits by Home Port State	6
# Permits by Principal Port State	6
# Permits by Mailing Address State	6
Avg. Length in Feet by Principal Port	33
Avg. GRT by Principal Port	11
% of Vessels where Home Port State = Principal Port State	100

Table 24. Distribution of the 6 commercial vessels (holding any Federal fishing permit in 2006) projected to have revenue reductions of more than 5% under the preferred alternative (Alternative 1). Distribution by state, county, and home port, from 2005 NMFS permit files - home ports with fewer than 3 vessels are not reported - only county-level data supplied; counties with fewer than 3 vessels are not reported.

State	County	Home Port	Number of Vessels
New York	**Suffolk**	**Other[a]**	4

[a]The four impacted vessels in Suffolk county are distributed among three different ports. Other counties with impacted vessels were Nassau and New York (NY).

Table 25. Threshold analysis of revenues for participating vessels under quota Alternative 2 (most restrictive alternative), based on dealer data.

Quota Alternative 2 (Most Restrictive)		No Change in Revenue (number)	Number of Impacted Vessels by Reduction Percentile (%)						
Total Vessels	Number of Vessels Impacted by ≥ 5% Reduction		<5	5-9	10-19	20-29	30-39	40-49	≥50
725	53	62	610	15	12	4	20	1	1

Table 26. Review of revenue impacts under quota Alternative 2 (most restrictive alternative), by home port state, based on dealer data.

State	Participating Vessels	Number of Vessels Impacted ≥5%	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	6	2	0	4	0	0	0	1	1	0
DE	6	0	5	1	0	0	0	0	0	0
MA	223	5	3	215	1	2	0	2	0	0
MD	14	0	14	0	0	0	0	0	0	0
ME	6	0	0	6	0	0	0	0	0	0
NC	85	9	13	63	3	2	2	2	0	0
NH	23	3	0	20	0	0	0	3	0	0
NJ	98	16	6	76	4	5	1	6	0	0
NY	109	12	0	97	5	2	1	3	0	1
RI	99	1	1	97	1	0	0	0	0	0
VA	23	0	18	5	0	0	0	0	0	0
OTHER[a]	6	2	1	3	0	1	0	1	0	0
NOT KNOWN[b]	27	3	1	23	1	0	0	2	0	0
Total	725	53	62	610	15	12	4	20	1	1

[a]States with fewer than 3 vessels were aggregated.

[b]Vessels have shown landings of bluefish in 2006, but do not hold any commercial Federal permits in 2006. These vessels may be fishing exclusively in state waters fisheries for bluefish, 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 27. Federal permits held by the 50 commercial vessels (holding any Federal fishing permit in 2006) projected to have revenue reductions of more than 5% under the most restrictive alternative (Alternative 2).

	Northeast Region Permit Status		Number of Vessels	Percent of Permitted Vessels
Commercial	Multispecies	Limited Access	6	12
	Multispecies	Open Access	6	12
	Surfclam	Open Access	9	18
	Ocean Quahogs	Open Access	7	14
	Herring, VMS	Open Access	28	56
	Lobster, Non-trap	Limited Access	2	4
	Lobster, Trap	Limited Access	6	12
	Tilefish	Open Access	29	58
	Summer Flounder	Limited Access	5	10
	Scup	Limited Access	9	18
	Squid/Mackerel/Butterfish	Open Access	39	78
	Black Sea Bass	Limited Access	14	28
	Dogfish	Open Access	37	74
	Monkfish	Limited Access	8	16
	Monkfish	Open Access	26	52
	Skate	Open Access	26	52
	Atl. Deep-Sea Red Crab	Open Access	10	20
Recreational (Party/Charter)	Multispecies	Open Access	15	30
	Summer Flounder	Open Access	19	38
	Scup	Open Access	16	32
	Squid/Mackerel/Butterfish	Open Access	16	32
	Black Sea Bass	Open Access	16	32
	Lobster, Non-trap	Limited Access	2	4

Table 28. Descriptive information for the 50 commercial vessels (holding any Federal fishing permit in 2006) projected to have revenue reductions of more than 5% under the most restrictive alternative (Alternative 2). Based on 2006 descriptive data from NMFS permit files - No vessel characteristics data are reported for states with fewer than 3 permits.

	MA	NC	NH	NJ	NY	Other
# Permits by Home Port State	5	8	3	16	12	5
# Permits by Principal Port State	7	9	3	16	12	3
# Permits by Mailing Address State	6	9	3	17	11	3
Avg. Length in Feet by Principal Port	30	42	35	49	31	-
Avg. GRT by Principal Port	7	14	22	34	10	-
% of Vessels where Home Port State = Principal Port State	100	100	100	75	100	-

Table 29. Distribution of the 50 commercial vessels (holding any Federal fishing permit in 2006) projected to have a revenue reductions of more than 5% under the most restrictive alternative (Alternative 2). Distribution by state, county, and home port, from 2006 NMFS permit files - home ports with fewer than 3 vessels are not reported - only county-level data supplied; counties with fewer than 3 vessels are not reported.

State	County	Home Port	Number of Vessels
North Carolina	Dare	Wanchese	3
		Other	6
New Jersey	Ocean	Barnegat Light	7
		Pt. Pleasant	5
		Other	1
	Monmouth	Other	3
New York	Nassau	Other	3
	Suffolk	Other	7
New Hampshire	Rockingham	Other	3

Table 30. Threshold analysis of revenues for participating vessels under quota Alternative 3 (status quo), based on dealer data.

Quota Alternative 3 (Status Quo)		No Change in Revenue (number)	Number of Impacted Vessels by Reduction Percentile (%)						
Total Vessels	Number of Vessels Impacted by ≥ 5% Reduction		<5	5-9	10-19	20-29	30-39	40-49	≥50
725	20	298	407	7	6	7	0	0	0

Table 31. Review of revenue impacts under quota Alternative 3 (status quo), by home port state, based on dealer data.

State	Participating Vessels	Number of Vessels Impacted ≥5%	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	6	0	1	5	0	0	0	0	0	0
DE	6	0	5	1	0	0	0	0	0	0
MA	223	1	197	25	1	0	0	0	0	0
MD	14	0	14	0	0	0	0	0	0	0
ME	6	0	3	3	0	0	0	0	0	0
NC	85	0	14	71	0	0	0	0	0	0
NH	23	0	22	1	0	0	0	0	0	0
NJ	98	11	8	79	3	3	5	0	0	0
NY	109	7	1	101	3	3	1	0	0	0
RI	99	0	2	97	0	0	0	0	0	0
VA	23	0	18	5	0	0	0	0	0	0
OTHER[a]	6	1	3	2	0	0	1	0	0	0
NOT KNOWN[b]	27	0	10	17	0	0	0	0	0	0
Total	725	20	298	407	7	6	7	0	0	0

[a]States with fewer than 3 vessels were aggregated.

[b]Vessels have shown landings of bluefish in 2006, but do not hold any commercial Federal permits in 2006. These vessels may be fishing exclusively in state waters fisheries for bluefish, 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 32. Percentage changes associated with allowable commercial landings for various quota alternatives in 2008 (adjusted quota for RSA) relative to 2006 landings by state.

State	2008 Commercial Quota Alternative 1	2008 Commercial Quota Alternative 2	2008 Commercial Quota Alternative 3
ME	32441%	17450%	31757%
NH	28%	-31%	25%
MA	17%	-37%	14%
RI	< -1%	-46%	-2%
CT	171%	46%	165%
NY	-22%	-58%	-24%
NJ	24%	-33%	21%
DE	301%	116%	293%
MD	279%	104%	271%
VA	89%	2%	85%
NC	2%	-45%	< -1%
SC	[a]	[a]	[a]
GA	979%	482%	956%
FL	797%	384%	778%
Total	27%	-32%	24%

[a]There were no bluefish landings in South Carolina in 2006.

Table 33. Counties identified as having >= 4 commercial vessels showing revenue reductions of 5% or more as a consequence of the most restrictive alternative (Alternative 2) evaluated in this document (section 3.1 the RIR/IRFA).

State	County[a]	Population[b]	Employment[c]	Total Personal Income[d] (million of $'s)	Commercial Fishing Employment	Percent of Personal Income Derived From Comm. Fishing	Fresh and Frozen Seafood Processing Employment	Percent of Personal Income derived From Seafood Processing
NH	Rockingham	284,061	180,603	11,006.14	49	.01%	258	.09%
RI	Washington	125,991	62,870	4,212.16	793	.46%	96	.11%
CT	New Heaven	828,374	469,966	29,191.17	66	.0025%	0	0%
NY	Nassau	1,334,648	761,530	63,524.34	198	.0039%	84	.0029%
NY	Suffolk	1,438,973	752,834	52,116.44	1,111	.01%	0	0%
NJ	Ocean	527,207	187,627	15,742.25	166	.04%	0	0%
NJ	Monmouth	622,977	326,491	26,192.23	52	.01%	23	.0002%
NC	Dare	31,168	25,453	830.10	77	.08%	17	.01%

* = < 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.

APPENDIX

Mid-Atlantic Research Set-Aside Program
Requesting Bluefish for the 2008 Fishing Year

Scope of Work for 2008 Mid-Atlantic Research Set-Aside (RSA) Project 08-RSA-002-VIMS NEAMAP

08-RSA-002 – *Virginia Institute of Marine Science,* "Data collection and analysis in support of single and multispecies stock assessments in the Mid-Atlantic: Northeast Area Monitoring and Assessment Program Near Shore Trawl Program"

Principal Investigators: Christopher Bonzek

08-RSA-002 – *Virginia Institute of Marine Science,* "Data collection and analysis in support of single and multispecies stock assessments in the Mid-Atlantic: Northeast Area Monitoring and Assessment Program Near Shore Trawl Program"

Principal Investigators: Christopher Bonzek

RSA Amount:	**Summer flounder:**	**150,000 lbs**	**(68,038.8 kg)**
	Loligo:	**50,000 lbs**	**(22,679.6 kg)**
	Scup:	**150,000 lbs**	**(68,038.8 kg)**
	Bluefish:	**50,000 lbs**	**(22,679.6 kg)**
	Black Sea Bass	**50,000 lbs**	**(22,679.6 kg)**

Project Abstract: The Atlantic States Marine Fisheries Commission (ASMFC) has outlined a new Mid-Atlantic near-shore ocean trawling program with a successful pilot survey conducted in the autumn of 2006. The proposed survey design will follow NEAMAP descriptions for a twice-yearly (spring and fall) monitoring (trawl) survey in shallow (<15fm.) waters between Montauk, NY and Cape Hatteras, NC. This project plans to provide significant stock assessment data improvements for RSA species including summer flounder, scup, black seabass, *Loligo* squid, butterfish, and Atlantic bluefish, and assessment-quality data for weakfish, Atlantic croaker, spot, several skate and ray species, smooth dogfish, horseshoe crab, and several unmanaged but important forage species.

Description:
Survey Design & Timing: The sampling area includes ocean waters extending from ***(revised)*** **Gay Head, MA (including Block Island Sound (BIS) and Rhode Island Sound (RIS))** to Cape Hatteras, North Carolina (Figure 1), at depths from 3 to **10** ***(revised from 15)*** fathoms (18-**60** feet), **except in BIS and RIS, where depths are greater.** Approximately 200 stations (~1 per 30sq.mi.) are to be conducted during each survey which will be selected based on a

random stratified design defined by region and depth. Major regions are closely aligned to historical NMFS designations which generally correspond both to state boundaries and to estuarine outflows. Within each region, depth strata are defined so as to assure sampling throughout the depth profile. The number of stations within each major region is proportional to the surface area within the region. An equal number of stations within each region's depth strata (20-40ft., 40-60ft.) are then selected at random.

Dependant upon final selection of sampling stations, a subset of research tows may occur in the Dr. Carl N. Shuster, Jr. Horseshoe Crab Reserve (Figure 2), encompassing almost 1,500 square miles and located in federal waters adjacent to Delaware Bay (ASMFC 2004). Within this reserve, the retention of horseshoe crabs is prohibited. However, it is unlikely that a preponderance of stations will occur within the confines of the reserve.

The number of surveys to be conducted during this proposal period will primarily be a function of funding availability. Total survey costs are expected to be approximately $900,000 annually. If total available funds are inadequate to fund two full surveys, an autumn survey conducted from late September through October would be performed.

Fishing and Sampling Operations*:* At each station, a number of standard parameters will be recorded. These include (but are not limited to):

- All necessary station identification parameters (date, station number, stratum, depth, tidal stage, current direction, current speed).
- All necessary vessel operation parameters (beginning and ending GPS position, beginning and ending tow times, compass course, engine RPM
- All necessary gear identification and operational parameters (net type code and net number, door type code and door numbers, amount of cable deployed).
- Atmospheric and weather data (air temperature, wind speed, wind direction, general weather state, sea state, barometric pressure).
- Hydrographic data (water temperature, salinity, dissolved oxygen, turbidity, secchi depth reading). At a minimum these readings should be taken both at the surface and at the bottom. Depth profile readings should be taken if appropriate equipment is available.

All fishing operations will be conducted during daylight hours. Each tow will be 20 minutes in duration with a target tow speed of between 3.0 and 3.5 knots. For cases in which a tow must be cut short (due to known hangs in the tow path, surface traffic ahead, and so on), we propose that a tow should be considered acceptable if it lasts at least 15 minutes.

Trawl monitoring equipment, currently owned by VIMS (the *Netmind* system manufactured by *Northstar Technical, Inc.*), was used during the pilot NEAMAP survey. Trawl monitor readings can be saved to computer files which allow data analysis to be performed on an area-swept basis. Such analyses provide standard adjustments for tow-to-tow differences in tow

speed, tow duration, current speed, and so on. Further, the *Netmind* software records GPS position every two seconds, which allows later calculation of actual tow distances when tow paths are not perfectly straight.

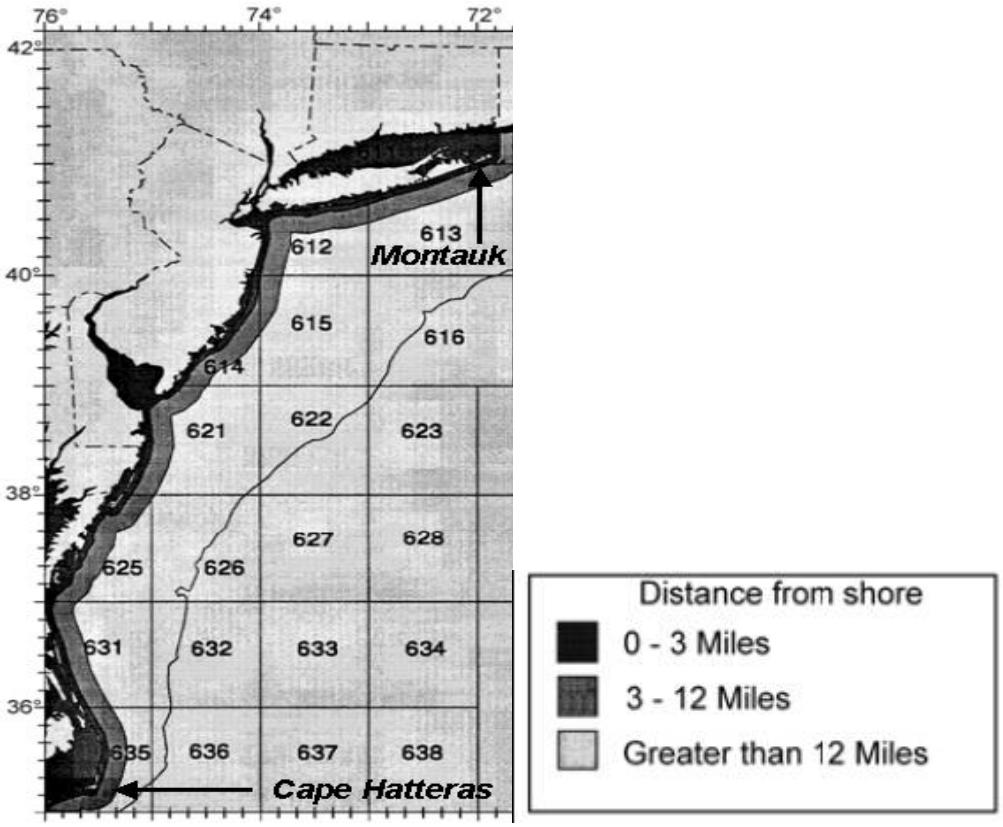
At each sampling site, the catch will be sorted by species and modal size group. Biomass (kg) will be measured for each species-size group combination, and a subsample from each group will be selected for complete processing. Experience shows that a species-size subsample of 3-5 individuals per species-size class group (3 for very common species, 5 for all others) per tow will be sufficient. The data collected from each subsampled specimen will include length (to the nearest millimeter), weight (measured in grams, accuracy depends upon the balance on which individuals will be measured), and macroscopic sex and maturity stage (mature, immature, unknown) determination. Eviscerated weight (g), for determination of condition indices, will be taken for selected species. Stomachs will be removed and those containing prey items will preserved onboard for subsequent examination. Otoliths or other appropriate ageing structures will also be removed from each subsampled specimen for age determination. All specimens not selected for the complete processing will be enumerated, and either all or a large proportion will be measured for length.

Fishing System: NEAMAP will employ the net and trawl door design that was developed by the Mid-Atlantic Council's Trawl Advisory Panel. A full net design description, along with technical design plans, is available at: http://www.nefsc.noaa.gov/TrawlNet/Survey_Net_Design-web.pdf. This fishing system was successfully used during the pilot survey.

RSA Harvesting Activities (from proposal):
It is undetermined at this time when and how these activities will take place. In past RSA grants, VIMS has negotiated terms with participating commercial fishers in which the institution receives copies of final settlement sheets and the commercial partner transfers payment(s) to VIMS.

No Revised Map Available- Northern Range extended to Gay Head, MA (including Block Island Sound (BIS) and Rhode Island Sound (RIS)

Figure 1. Spatial Extent of Survey Area of Proposed Study **(unrevised).** Numbers within grid correspond to NMFS Statistical Areas. The 50-fathom isobath appears as a solid, single, freeform, black line.


76°
74°
72°
42°
40°
38°
36°
612
613
Montauk
615
616
614
621
622
623
627
628
625
626
631
632
633
634
635
636
637
638
Cape Hatteras
Distance from shore
0 - 3 Miles
3 - 12 Miles
Greater than 12 Miles