Monkfish Fishery Management Plan
Annual Specifications for the
2005 Fishing Year

Incorporating
Stock Assessment and Fishery Evaluation (SAFE) Report
for the 2003 Fishing Year
and the
Environmental Assessment and
Regulatory Impact Review

Prepared by
New England Fishery Management Council
and Mid-Atlantic Fishery Management Council

in consultation with
NOAA Fisheries Service

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LIST OF ACRONYMS

A	Adult life stage
A13	Amendment 13 to the Multispecies FMP
ALWTRP	Atlantic Large Whale Take Reduction Plan
APA	Administrative Procedures Act
ASMFC	Atlantic States Marine Fisheries Commission
CA I	Closed Area I under the Multispecies FMP
CA II	Closed Area II under the Multispecies FMP
DAM	Dynamic Area Management
DAS	days-at-sea
DMF	Division of Marine Fisheries (Massachusetts)
DMR	Department of Marine Resources (Maine)
DSEIS	Draft Supplemental Environmental Impact Statement
E	Egg life stage
EA	Environmental Assessment
EEZ	exclusive economic zone
EFH	essential fish habitat
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FMP	fishery management plan
FW	Framework
FW 13	Framework 13 to the Scallop FMP
FY	fishing year
GB	Georges Bank
GOM	Gulf of Maine
GRT	gross registered tons/tonnage
HAPC	habitat area of particular concern
HCA	Habitat Closed Area
HPTRP	Harbor Porpoise Take Reduction Plan
IFQ	individual fishing quota
IWC	International Whaling Commission
J	Juvenile life stage
LOA	letter of authorization
MA	Mid-Atlantic
MAFMC	Mid-Atlantic Fishery Management Council
MMC	Monkfish Monitoring Committee
MMPA	Marine Mammal Protection Act
MPA	marine protected area
MSFCMA	Magnuson-Stevens Fishery Conservation and Management Act
MSMC	Multispecies Monitoring Committee
MSY	maximum sustainable yield
NAAA	Northwest Atlantic Analysis Area
NEFMC	New England Fishery Management Council
NEFSC	Northeast Fisheries Science Center

NEPA	National Environmental Policy Act
NERO	Northeast Regional Office
NFMA	Northern Fishery Management Area
NLCA	Nantucket Lightship Closed Area
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
OY	optimum yield
PBR	Potential Biological Removal
PRA	Paperwork Reduction Act
PREE	Preliminary Regulatory Economic Evaluation
RFA	Regulatory Flexibility Act
RMA	Regulated Mesh Area
RPA	Reasonable and Prudent Alternatives
SAFE	Stock Assessment and Fishery Evaluation
SARC	Stock Assessment Review Committee
SAW	Stock Assessment Workshop
SBNMS	Stellwagen Bank National Marine Sanctuary
SEIS	Supplemental Environmental Impact Statement
SFA	Sustainable Fisheries Act
SFMA	Southern Fishery Management Area
SIA	Social Impact Assessment
SMAST	U. Mass. Dartmouth School of Marine Science and Technology
SNE	southern New England
SNE/MA	southern New England-Mid-Atlantic
SSB	spawning stock biomass
TAC	total allowable catch
TED	turtle excluder device
USCG	United States Coast Guard
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VMS	vessel monitoring system
VPA	virtual population analysis
VTR	vessel trip report
YPR	yield per recruit

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1.0 Introduction

This Environmental Assessment (EA) presents the analysis of impacts of the annual adjustment to the monkfish fishery management measures for the 2005 fishing year (FY) (May 1, 2005, through April 30, 2006) under the stock-rebuilding program implemented in Framework Adjustment 2 to the Monkfish Fishery Management Plan (FMP). The monkfish fishery is jointly managed by the New England Fishery Management Council (NEFMC) and the Mid-Atlantic Fishery Management Council (MAFMC), with the NEFMC having the administrative lead. Framework 2, which became effective on May 1, 2003 (68 FR 22325, April 28, 2003), implemented a target total allowable catch (TAC) setting method that is based upon the relationship between the 3-year running average of the National Marine Fisheries Service's (NOAA Fisheries) fall trawl survey biomass index (3-year average biomass index) and established annual biomass index targets (annual index target). The annual index targets are based on 10 equal increments between the 1999 biomass index (the start of the rebuilding program) and the biomass target (B_{target}), which is to be achieved by 2009 according the rebuilding plan established in the FMP. According to this target TAC setting method, annual target TACs are set based on the ratio of the observed biomass index to the annual index target applied to the monkfish landings for the previous fishing year.

Since the method is based on established formulas for calculating TACs, trip limits and DAS allocations, the Councils did not make any decisions or evaluate alternatives relative to this program for the 2005 fishing year. Therefore, the no action alternative is considered in this EA to be a continuation of the 2004 TACs and associated measures. According to the Framework 2 method, the annual index targets are based on 10 equal increments between the 1999 biomass index (the start of the rebuilding program) and the biomass target (B_{target}), which is to be achieved by 2009 according to the rebuilding plan established in the FMP.

The Monkfish Monitoring Committee reviewed the fall trawl survey biomass indices and monkfish landings for FY 2003, and calculated the target TACs for FY 2005 in accordance with the procedures established in the regulations (50 CFR 648.96(b)(1)). According to these procedures, if the current 3-year average biomass index is below the annual index target, then the target TAC for the upcoming fishing year is set equal to the monkfish landings for the previous fishing year, minus the percentage difference between the 3-year average biomass index and the annual index target. Thus, based on the information presented in Table 1, the proposed FY 2005 target TAC for the Northern Fishery Management Area (NFMA) is 13,160 mt, and the proposed FY 2005 target TAC for the Southern Fishery Management Area (SFMA) is 9,673 mt. A map of these management areas is provided in Figure 1.

Management Area	FY 2003 Landings (mt)	2004 3-year Average (kg/tow)	2004 Biomass Target (kg/tow)	% Below Biomass Target	2005 Target TAC (mt)
NFMA	14,004	1.56	1.66	6.02%	13,160
SFMA	11,834	0.94	1.15	18.26 %	9,673

Table 1 Calculation of 2005 target TACs.

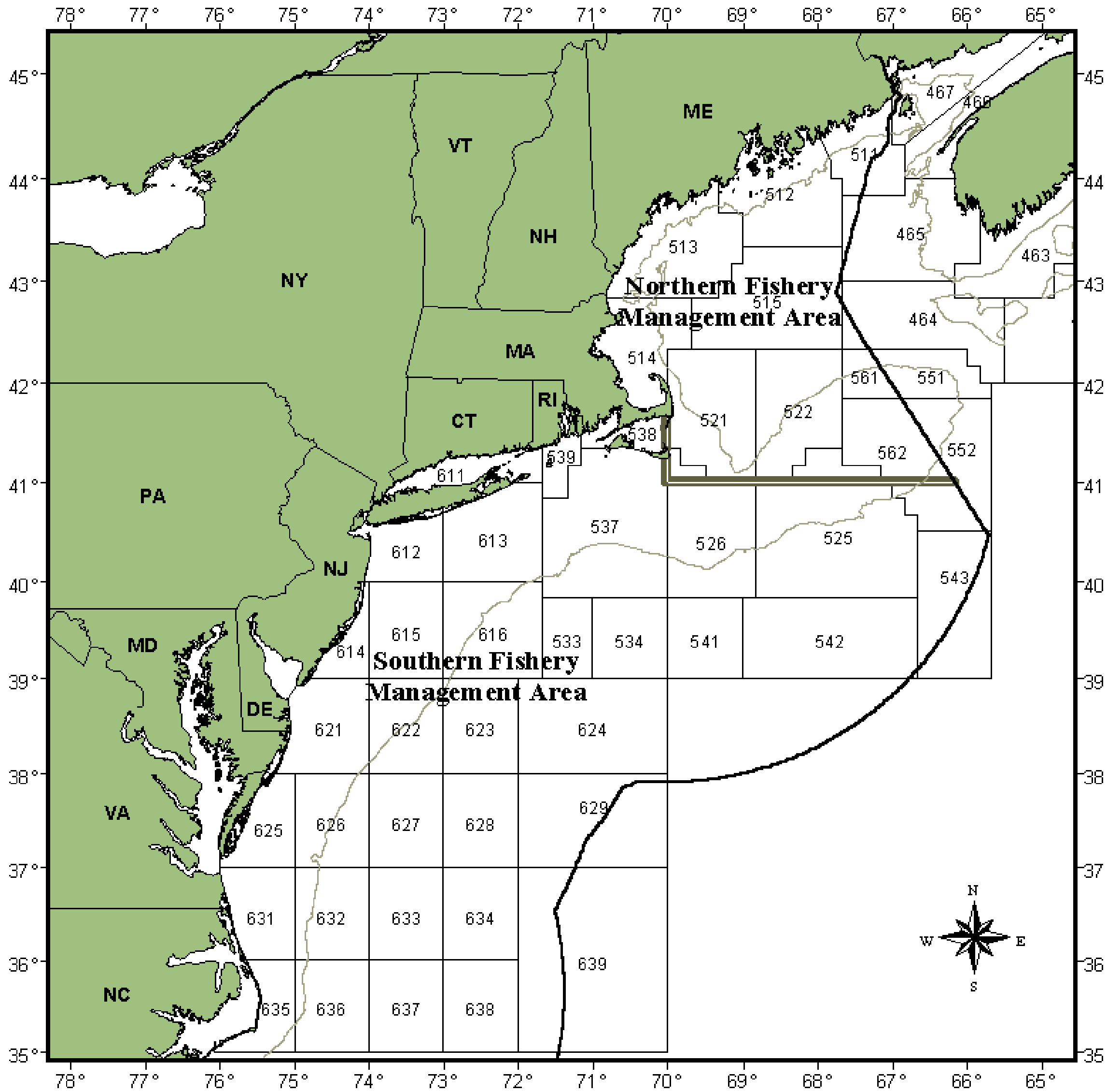


Figure 1 Monkfish management areas and three-digit statistical areas

This action does not propose any changes to the management measures for limited access monkfish vessels fishing in the NFMA since such changes are unnecessary in order to achieve the proposed target TAC for FY 2005. Currently, limited access monkfish vessels fishing exclusively in the NFMA are not subject to a monkfish trip limit when fishing under either a monkfish or a Northeast (NE) multispecies day-at-sea (DAS). It is unlikely that vessels fishing in the NFMA would exceed the proposed target TAC of 13,160 mt since this target TAC is less than 900 mt below the 2003 landings and the recent reduction in NE multispecies DAS allocations under Amendment 13 to the NE Multispecies FMP is expected to further constrain monkfish landings.

In fact, current FY 2004 monkfish landings (preliminary) for May through September are 3,913 mt for the NFMA, which is 70-percent of the May through September landings for the NFMA for FY 2003 (5,551 mt). The total landings in FY 2003 were 14,004 mt, so if current year landings follow the same trajectory, expected landings of approximately 10,000 mt would be well below the FY 2004 and proposed FY 2005 TACs. If changes to the management measures were required for the NFMA to prevent the target TAC for that area from being exceeded, a separate regulatory action would be required since changes to management measures in the NFMA are currently not authorized under the annual adjustment procedures specified under 50 CFR 648.96(b).

For the SFMA, this action proposes to remove the current restriction on the number of monkfish DAS that limited access monkfish vessels can use in the SFMA. Currently, limited access monkfish vessels are allowed to fish only 28 of their annual allocation of 40 monkfish DAS (plus carryover DAS) in the SFMA. All limited access monkfish vessels are authorized to carryover up to 10 unused monkfish DAS into the next fishing year, which are added to the vessel's 40 DAS allocation for that year. The DAS usage restriction was implemented for FY 2004 since the target TAC of 6,772 mt was less than 8,000 mt. Framework 2 included a provision that states if the target TAC for the SFMA is below a target TAC that would result in trip limits below 550 lb tail weight per DAS for Category A and C vessels, and 450 lb tail weight per DAS for Category B and D vessels (approximately 8,000 mt), then the trip limits would be fixed at those levels and the DAS available for vessels fishing in the SFMA would be reduced based upon the method outlined in the regulations at § 648.96(b)(2)(iii). This provision was included in Framework 2 to address the concern that, if the target TAC dropped below the 8,000 mt level, which is approximately the same target TAC established for FY 2002, the resulting trip limits would be comparable to the incidental catch limits on some vessels, essentially eliminating the directed monkfish fishery.

Since the proposed 2005 target TAC for the SFMA is nearly 21 percent higher than the threshold for adjusting DAS, limited access monkfish vessels would be authorized to use all 40 monkfish DAS allocated annually (plus carryover DAS) in either management area under the proposed action. This action also proposes to establish trip limits of 700 lb tail weight per DAS for limited access Category A and C vessels, and 600 lb tail weight per DAS for limited access Category B and D vessels. These trip limits were calculated using the trip limit analysis procedures established in Framework 2, and outlined in the regulations at § 648.96(b)(2).

2.0 Purpose and Need

As described in Section 1.0, Framework 2 established a streamlined annual target TAC setting process that is based on the ratio of the current 3-year average biomass index to the annual index target applied to monkfish landings for the previous fishing year. Once the target TACs are determined, trip limits and DAS are adjusted as necessary based upon a standard set of procedures that were established in Framework 2. Since the stock rebuilding program implemented in Framework 2 is based on established formulas for calculating TACs, trip limits and DAS allocations, the Councils had no discretion to evaluate alternatives relative to this program for FY 2005.

The purpose of the proposed action is to establish target monkfish TACs, and associated trip limits and DAS allocations for the 2005 fishing year in accordance with the annual target TAC setting, and trip limit and DAS adjustment methods established in Framework Adjustment 2. The proposed action is needed comply with the rebuilding plan established in the FMP and modified in Framework 2 to the FMP. The plan is necessary to eliminate overfishing and rebuild the monkfish resource in accordance with Magnuson-Stevens Fishery Conservation and Management Act requirements.

3.0 Proposed Action and alternatives

The following describes the proposed action and the no action alternative.

3.1 Proposed Action (Fishing Year 2005 TACs and associated management adjustments)

The proposed action would set FY 2005 monkfish TACs and SFMA DAS and trip limits as described below in Table 2. As noted, this action does not propose any changes to the management measures for limited access monkfish vessels fishing in the NFMA since such changes are unnecessary in order to achieve the proposed target TAC for FY 2005.

Management Area	2005 Target TAC (mt)	Trip Limits (lb. tail wt./DAS)	DAS
NFMA	13,160	NA	40 (no change)
SFMA	9,673	A & C: 700 B & D: 600	40

Table 2 – Proposed action. FY 2005 target TACs, and SFMA trip limits and DAS adjustments.

3.2 No Action

The regulations at §648.96 (b)(1) state that "If the action is submitted after January 7, then the target TACs and associated management measures for the prior fishing year shall remain in place until new target TACs are implemented." Thus, if no revisions to the TACs, trip limits or DAS are submitted, the FY 2005 measures would be as shown below in Table 3.

Management Area	2005 Target TAC (mt)	Trip Limits (lb. tail wt./DAS)	DAS
NFMA	16,968	NA	40 (no change)
SFMA	6,772	A & C: 550 B & D: 450	28

Table 3 – No action. FY 2004 target TACs, SFMA trip limits and DAS carried over to FY 2005.

4.0 Affected Environment (2003 SAFE Report)

A map showing the area covered by the monkfish SMP, including the NFMA and SFMA boundary and three-digit statistical areas is provided in Figure 1 for reference. The Council prepares annually a Stock Assessment and Fishery Evaluation (SAFE) Report that contains updated information on the resource status and human environment. Since this section of the annual adjustment also contains the same information, it will serve as the SAFE Report for the 2003 fishing year.

4.1 Biological Environment

This section supplements and updates the biological environment described in the FSEIS for Amendment 2.

4.1.1 Monkfish stock status

4.1.1.1 Stock Assessment (SAW 40)

The NEFSC held a monkfish stock assessment in the fall of 2004 (SAW 40). The summary report is attached as Appendix I. This assessment used data through 2004 NEFSC spring bottom trawl survey as well as the 2004 Cooperative Research survery. In summary, the Stock Assessment Review Committee concluded:

> *Based on existing reference points, the resource is not overfished in either stock management area (north or south). Fishing mortality rates (F) estimated from NEFSC and Cooperative survey data are currently not sufficiently reliable for evaluation of F with respect to the reference points.*

4.1.1.2 2004 Fall Survey Results

The FMP uses the NMFS fall bottom trawl survey to determine monkfish stock status (biomass) relative to management reference points. To smooth out year-to-year variability in the survey, a three-year running average is used to evaluate the stock against the MSY proxy target, and minimum biomass reference points. As shown in Table 4 both northern and southern stock components are above the minimum biomass threshold, and are, therefore, not overfished, although, the annual indices for both stocks declined in 2004.

kg/tow	2000	2001	2002	2003	2004	3-yr. Ave.	Bthreshold	Btarget
NFMA	2.495	2.052	2.103	1.925	0.638	1.56	1.25	2.5
SFMA	0.477	0.708	1.253	0.828	0.742	0.94	0.93	1.86

Table 4 2000 – 2004 NMFS autumn bottom trawl survey indices of monkfish abundance and biomass reference points.

Framework 2, adopted in 2003, established a method for evaluating on an annual basis the rebuilding progress of the fishery. That method compares the three-year running average of the biomass index to annual biomass targets which are ten equal increments between the 1999 observed value (at the start of the 10-year rebuilding program) and the 2009 target (Btarget). The ratio of the observed to the annual target value is applied to the previous year's landings to set target TACs for the upcoming year. The annual targets and the 1999-2004 observed values are shown in Figure 2 and Figure 3 for the NFMA and SFMA, respectively. The northern and southern stocks are 6% and 18% below their 2004 targets.

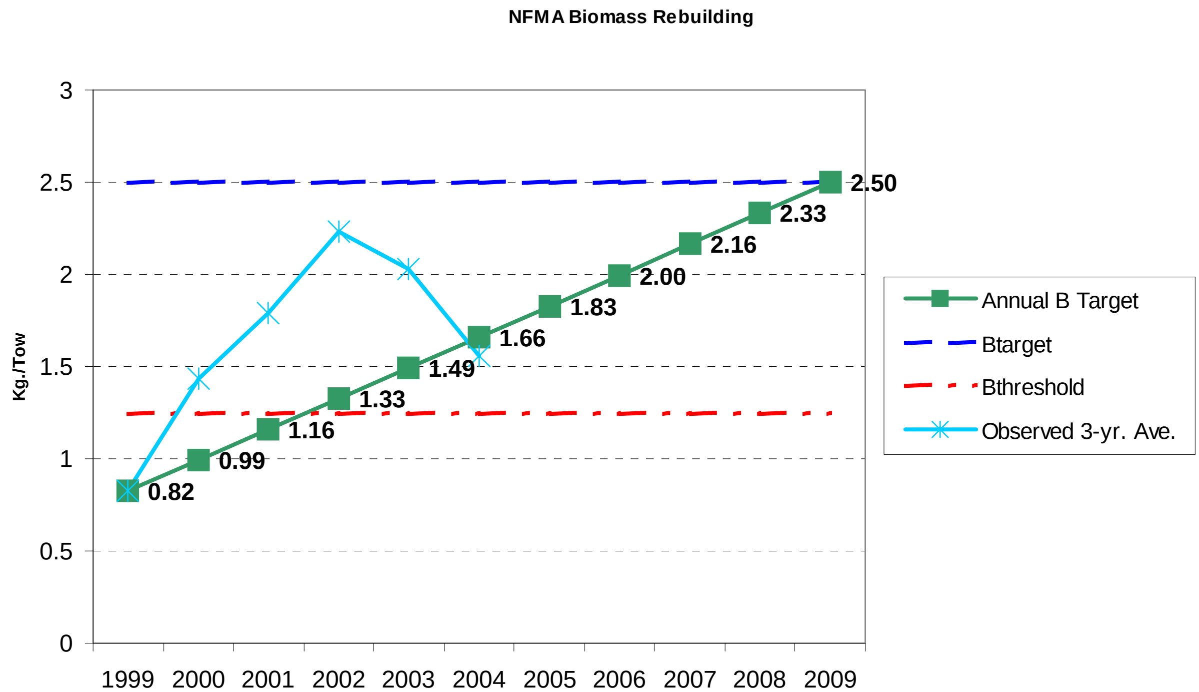


Figure 2 - NFMA biomass index (2004 three-year running average) relative to annual rebuilding targets.

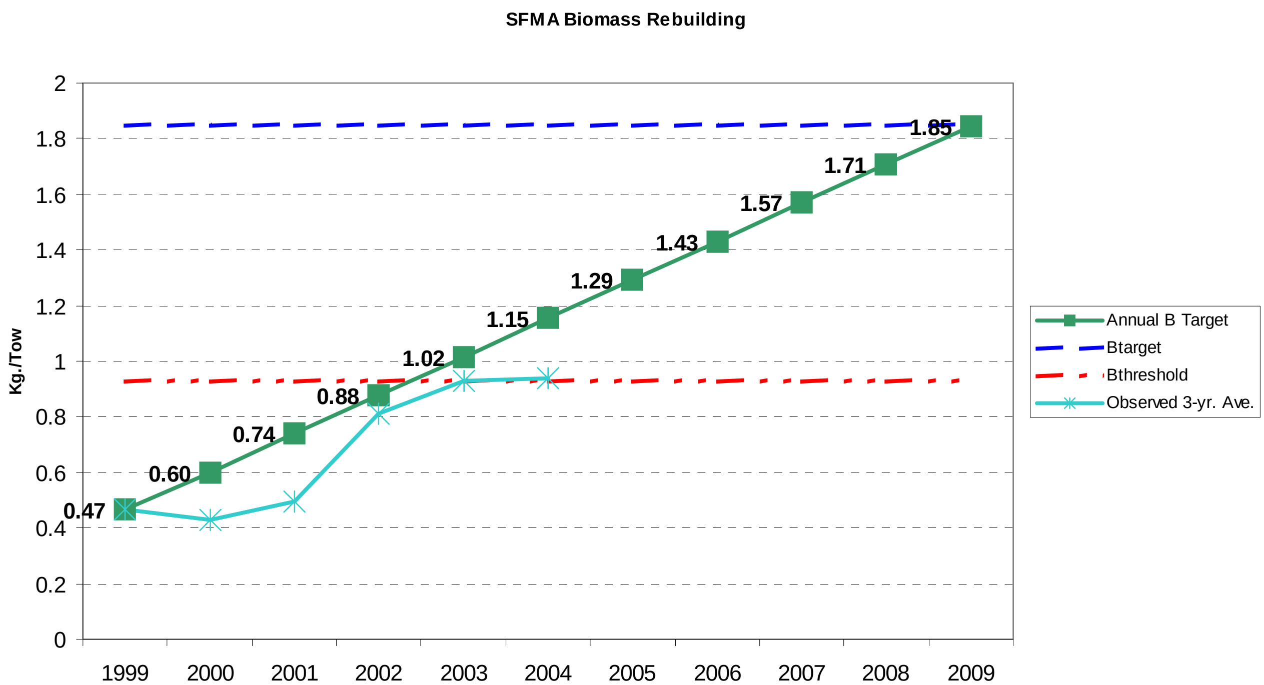


Figure 3 - SFMA biomass index (2004 three-year running average) relative to annual rebuilding targets.

4.1.2 Marine Mammals and Protected Species

The list of protected species affected by the monkfish FMP is discussed in the FSEIS to Amendment 2. The following species are found in the area of the fisheries regulated through the Monkfish FMP and are listed under the Endangered Species Act of 1973 (ESA) as endangered, threatened, or as candidate species. The Council has also included in the list below a number of species that are identified as protected under the Marine Mammal Protection Act of 1972 (MMPA) as well as two right whale critical habitat designations that are found in the same area. Appendix II contains a description of the listed marine mammals and protected species.

Cetaceans	
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
Harbor porpoise (*Phocoena phocoena*)	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*
Seals	
Harbor seal (*Phoca vitulina*)	Protected
Gray seal (*Halichoerus grypus*)	Protected
Harp seal (*Phoca groenlandica*)	Protected
Sea Turtles	
Leatherback sea turtle (*Dermochelys coriacea*)	Endangered
Kemp's ridley sea turtle (*Lepidochelys kempii*)	Endangered
Green sea turtle (*Chelonia mydas*)	Endangered
Hawksbill sea turtle (*Eretmochelys imbricata*)	Endangered*
Loggerhead sea turtle (*Caretta caretta*)	Threatened
Fish	
Shortnose sturgeon (*Acipenser brevirostrum*)	Endangered*
Atlantic salmon (*Salmo salar*)	Endangered*
Barndoor skate (*Dipturus laevis*)	Candidate Species
Birds	
Roseate tern (*Sterna dougallii dougallii*)	Endangered*

Piping plover (*Charadrius melodus*) Endangered*

Critical Habitat Designations

Right whale Cape Cod Bay *
Great South Channel *

Although all of the protected species listed above may be found in the general geographical area covered by the Monkfish FMP, not all are affected by the fishery. Some species may inhabit areas other than those in which the fishery is prosecuted, prefer a different depth or temperature zone, or may migrate through the area at times when the fishery is not in operation. In addition, certain protected species may not be vulnerable to capture or entanglement with the gear used in the fishery. Therefore, protected species are divided into two groups, one of which (indicated by "" in the list) contains those species not likely to be affected by the monkfish fishery while the second group is the subject of a more detailed assessment in Amendment 2. The updated status of the marine mammals on this list is discussed in U.S. Atlantic and Gulf of Mexico marine mammal stock assessments - 2003 (Waring, et al., 2003), although no significant changes are reported from what was described in Amendment 2.

Since completion of the FSEIS for Amendment 2, NOAA Fisheries has proposed modifying the rules protecting sea turtles in the large-mesh gillnet fishery off the North Carolina/Virginia coast. On December 3, 2002, the agency published a final rule (67 *Federal Register* 71895) establishing seasonally adjusted gear restrictions by closing portions of the mid-Atlantic EEZ waters to fishing with large-mesh (>8") to protect migrating sea turtles, following an interim final rule published March 21 that year. The basis of this rule was that sea turtles migrate northward as water temperatures warmed. At the time the interim and final rules were published, there was no evidence that the primary fishery involved – monkfish – was being prosecuted in state waters. In 2002, when most monkfish fishermen were not permitted under the FMP to fish in the EEZ and the rest were faced with the sea turtle closures, the proportion of North Carolina monkfish landings from state waters increased five-fold to 92%, posing an unforeseen risk to migrating sea turtles since they were not protected in state waters. In response, NOAA Fisheries is currently proposing to extend the closures into North Carolina state waters (proposed rule published 69 *Federal Register* 65127, November 10, 2004, comment period ended February 8, 2005).

Other than the sea turtle closure expansion described above, there have been no significant changes to the rules governing protected species interactions. Any future changes, such as modifications to the Atlantic Large Whale Take Reduction Plan (ALWTRP), will be discussed in any subsequent monkfish management action or future SAFE Report.

4.2 Physical Environment

The following sections summarize the physical environment of the monkfish fishery. A full description of the physical environment is provided in Section 5.2 of the FSEIS prepared for Amendment 2 to the FMP.

4.2.1 Gulf of Maine

The Gulf of Maine (GOM) is characterized by a system of deep basins, moraines and rocky protrusions with limited access to the open ocean. The GOM is topographically unlike any other part of the continental border along the U.S. Atlantic coast. The GOM's geologic features, when coupled with the vertical variation in water properties, result in a great diversity of habitat types. It contains twenty-one distinct basins separated by ridges, banks, and swells.

Bedrock is the predominant substrate along the western edge of the GOM north of Cape Cod in a narrow band out to a depth of about 60 m. Rocky areas become less common with increasing depth, but some rock outcrops poke through the mud covering the deeper sea floor. Mud is the second most common substrate on the inner continental shelf. Mud predominates in coastal valleys and basins that often abruptly border rocky substrates. Many of these basins extend without interruption into deeper water. Gravel, often mixed with shell, is common adjacent to bedrock outcrops and in fractures in the rock. Large expanses of gravel are not common, but do occur near reworked glacial moraines and in areas where the seabed has been scoured by bottom currents. Gravel is most abundant at depths of 20 - 40 m, except in eastern Maine where a gravel-covered plain exists to depths of at least 100 m. Bottom currents are stronger in eastern Maine where the mean tidal range exceeds 5 m. Sandy areas are relatively rare along the inner shelf of the western GOM, but are more common south of Casco Bay, especially offshore of sandy beaches.

An intense seasonal cycle of winter cooling and turnover, springtime freshwater runoff, and summer warming influences oceanographic and biologic processes in the GOM. The Gulf has a general counterclockwise nontidal surface current that flows around its coastal margin that is primarily driven by fresh, cold Scotian Shelf water that enters over the Scotian Shelf and through the Northeast Channel, and freshwater river runoff, which is particularly important in the spring. GOM circulation and water properties can vary significantly from year to year. Notable episodic events include shelf-slope interactions such as the entrainment of shelf water by Gulf Stream rings and strong winds that can create currents as high as 1.1 m/s over Georges Bank. Warm core Gulf Stream rings can also influence upwelling and nutrient exchange on the Scotian shelf, and affect the water masses entering the GOM.

4.2.2 Georges Bank

Georges Bank is a shallow (3 - 150 m depth), elongate (161 km wide by 322 km long) extension of the continental shelf that is characterized by a steep slope on its northern edge and a broad, flat, gently sloping southern flank. The Great South Channel lies to the west. Bottom topography on eastern Georges Bank is characterized by linear ridges in the western shoal areas; a relatively smooth, gently dipping sea floor on the deeper, easternmost part; a highly energetic peak in the north with sand ridges up to 30 m high and extensive gravel pavement; and steeper and smoother topography incised by submarine canyons on the southeastern margin. The central region of the Bank is shallow, and the bottom is characterized by shoals and troughs, with sand dunes superimposed upon them. The area west of the Great South Channel, known as Nantucket Shoals, is similar in nature to the central region of the Bank. The Great South Channel separates the main part of Georges Bank from Nantucket Shoals. Sediments in this region include gravel pavement and mounds, some scattered boulders, sand with storm generated ripples, and scattered shell and mussel beds.

Oceanographic frontal systems separate water masses of the GOM and Georges Bank from oceanic waters south of the Bank. These water masses differ in temperature, salinity, nutrient concentration, and planktonic communities, which influence productivity and may influence fish abundance and distribution. Currents on Georges Bank include a weak, persistent clockwise gyre around the Bank, a strong semidiurnal tidal flow predominantly northwest and southeast, and very strong, intermittent storm induced currents, which all can occur simultaneously. Tidal currents over the shallow top of Georges Bank can be very strong, and keep the waters over the Bank well mixed vertically.

4.2.3 Mid-Atlantic Bight

The Mid-Atlantic Bight includes the shelf and slope waters from Georges Bank south to Cape Hatteras, and east to the Gulf Stream. In this region, the shelf slopes gently from shore out to between 100 and 200 km offshore where it transforms to the slope (100 - 200 m water depth) at the shelf break. In both the Mid-Atlantic and on Georges Bank, numerous canyons incise the slope, and some cut up onto the shelf itself. The primary morphological features of the shelf include shelf valleys and channels, shoal massifs, scarps, and sand ridges and swales. The sediment type covering most of the shelf in the Mid-Atlantic Bight is sand, with some relatively small, localized areas of sand-shell and sand-gravel. On the slope, silty sand, silt, and clay predominate.

Sediments are uniformly distributed over the shelf in this region. A sheet of sand and gravel varying in thickness from 0 - 10 m covers most of the shelf. The sands are mostly medium to coarse grains, with finer sand in the Hudson Shelf Valley and on the outer shelf. Mud is rare over most of the shelf, but is common in the Hudson Shelf Valley. Occasionally relic estuarine mud deposits are re-exposed in the swales between sand ridges. Fine sediment content increases rapidly at the shelf break, which is sometimes called the "mud line," and sediments are 70 - 100% fines on the slope.

The northern portion of the Mid-Atlantic Bight is sometimes referred to as southern New England. Most of this area was discussed under Georges Bank; however, one other formation of this region deserves note. The mud patch is located just southwest of Nantucket Shoals and southeast of Long Island and Rhode Island. Tidal currents in this area slow significantly, which allows silts and clays to settle out. The mud is mixed with sand, and is occasionally re-suspended by large storms. This habitat is an anomaly of the outer continental shelf.

Shelf and slope waters of the Mid-Atlantic Bight have a slow southwestward flow that is occasionally interrupted by warm core rings or meanders from the Gulf Stream. On average, shelf water moves parallel to bathymetry isobars at speeds of 5 - 10 cm/s at the surface and 2 cm/s or less at the bottom. Storm events can cause much more energetic variations in flow. Tidal currents on the inner shelf have a higher flow rate of 20 cm/s that increases to 100 cm/s near inlets.

Slope water tends to be warmer than shelf water because of its proximity to the Gulf Stream, and tends to be more saline. The abrupt gradient where these two water masses meet is called the shelf-slope front. The position of the front is highly variable, and can be influenced by many physical factors. Vertical structure of temperature and salinity within the front can develop complex patterns because of the interleaving of shelf and slope waters; e.g., cold shelf waters can protrude offshore, or warmer slope water can intrude up onto the shelf.

The seasonal effects of warming and cooling increase in shallower, nearshore waters. Stratification of the water column occurs over the shelf and the top layer of slope water during the spring-summer and is usually established by early June. Fall mixing results in homogenous shelf and upper slope waters by October in most years. A permanent thermocline exists in slope waters from 200 - 600 m deep where temperatures decrease at the rate of about 0.02ºC per meter and remain relatively constant except for occasional incursions of Gulf stream eddies or meanders. A warm, mixed layer approximately 40 m thick resides above the permanent thermocline.

4.3 Habitat Requirements and Gear Effects Evaluation

Section 5.1 of the FSEIS to Amendment 2 described benthic habitats that exist within the range of the monkfish fishery biological characteristics of regional systems, and assemblages of fish and benthic organisms. It also included a description of canyon habitats on the edge of the continental shelf. No new information is available.

Section 5.4 of the FSEIS to Amendment 2 evaluated the potential adverse effects of gears used in the directed monkfish fishery on EFH for monkfish and other federally-managed species and the effects of fishing activities regulated under other federal FMPs on monkfish EFH. The evaluation considered the effects of each activity on each type of habitat found within EFH. The two gears used in the directed monkfish fishery are bottom trawls and bottom gill nets (see Section 4.4.1). Monkfish EFH has been determined to only be minimally vulnerable to bottom-tending mobile gear (bottom trawls and dredges) and bottom gillnets (see Appendix II of Amendment 2 FSEIS). Therefore, the effects of the monkfish fishery and other fisheries on monkfish EFH do not require any management action. However, the the monkfish trawl fishery does have more than a minimal and temporary impact on EFH for a number of other demersal species in the region. Adverse impacts that were more than minimal and less than temporary in nature were identified for the following species and life stages, based on an evaluation of species life history and habitat requirements and the spatial distributions and impacts of bottom otter trawls in the region (Stevenson *et al.*, in press):

Species and life stages with EFH more than minimally vulnerable to otter trawl gear (42): American plaice (Juvenile (J), Adult (A)), Atlantic cod (J, A), Atlantic halibut (J, A), haddock (J, A), pollock (A), ocean pout (E, J, A), red hake (J, A), redfish (J, A), white hake (J), silver hake (J), winter flounder (A), witch flounder (J, A), yellowtail flounder (J, A), black sea bass (J, A), scup (J), tilefish (J, A), barndoor skate (J, A), clearnose skate (J, A), little skate (J, A), rosette skate (J, A), smooth skate (J, A), thorny skate (J, A), and winter skate (J, A).

There are no species or life stages for which EFH is more than minimally vulnerable to bottom gill nets (Stevenson *et al*., in press).

In Amendment 13 to the NE Multispecies FMP and Framework 16 to the Atlantic Sea Scallop FMP, the New England Council implemented a range of measures to minimize the impacts of bottom trawling in the Gulf of Maine, George's Bank and Southern New England. In addition to the significant reductions in days-at-sea and some gear modifications, the Council closed 2,811 square nautical miles to bottom-tending mobile fishing gear (known as Habitat Closed Areas). Because the monkfish fishery overlaps significantly with the groundfish fishery in the northern fishery management area and the habitat closed areas extend into the southern fishery management area, measures to protect habitat in Amendment 10 and Amendment 13 assist in minimizing the effect of fishing on EFH in the monkfish fishery.

The alternatives implemented in Amendment 2 focus on those areas (offshore/shelf slope/canyons) and gears modifications (trawl mesh) where the monkfish fishery operations do not overlap (spatially or gear use) with the groundfish or scallop fishery. The Councils proposed closing Oceanographer and Lydonia Canyons deeper than 200 meters, a total closure of 116 square nautical miles, to vessels on a monkfish DAS to minimize the impacts of the directed monkfish fishery on deepwater canyon, hard bottom communities.

4.4 Human Environment

This section updates information provided in the FSEIS for Amendment 2 to the Monkfish FMP, adding data for the 2003 fishing year.

4.4.1 Vessels and Fishery Sectors

The following sections show the distribution of effort and landings by permit category, area and gear type.

4.4.1.1 Permits

In 2003, there were 743 monkfish limited access vessels, of which 342 were Category C permits holding limited access permits in either a Multispecies (61%) or Scallop (47%) fisheries, and 345 were Category D permits, primarily (98%) holding limited access Scallop permits. Vessels in all four monkfish permit categories also hold limited access permits in a number of New England and Mid-Atlantic fisheries.

MONKFISH PERMIT CATEGORY	NUMBER OF MONKFISH PERMITS	NUMBER OF MONKFISH VESSELS ALSO ISSUED A LIMITED ACCESS PERMIT FOR:										
		BLACK SEA BASS	FLUKE	LOBSTER	MULTI-SPECIES	OCEAN QUAHOG	RED CRAB	SCALLOP	SCUP	SKATE	SQUID/MACK./BUTTER	TILEFISH
A	16	9	3	11	0	0	0	0	7	12	2	1
B	40	20	6	21	0	0	0	0	12	27	0	3
C	342	126	259	283	209	0	0	161	143	279	104	1
D	345	120	200	325	339	0	0	21	151	279	103	7
Total	743	275	468	640	548	0	0	182	313	597	209	12

MONKFISH PERMIT CATEGORY	NUMBER OF MONKFISH PERMITS	PERCENT OF MONKFISH VESSELS ALSO ISSUED A LIMITED ACCESS PERMIT FOR:										
		BLACK SEA BASS	FLUKE	LOBSTER	MULTI-SPECIES	OCEAN QUAHOG	RED CRAB	SCALLOP	SCUP	SKATE	SQUID/MACK./BUTTER	TILEFISH
A	16	56%	19%	69%	0%	0%	0%	0%	44%	75%	13%	6%
B	40	50%	15%	53%	0%	0%	0%	0%	30%	68%	0%	8%
C	342	37%	76%	83%	61%	0%	0%	47%	42%	82%	30%	0%
D	345	35%	58%	94%	98%	0%	0%	6%	44%	81%	30%	2%
Total	743	37%	63%	86%	74%	0%	0%	24%	42%	80%	28%	2%

Table 5 – Number and Percent of monkfish limited access vessels also issued a limited access permit in other fisheries in 2003, by permit category

The FMP also provides an open-access permit (Category E) for vessels that did not qualify for a limited access permit so those vessels can land monkfish caught incidentally in other fisheries. Table 6 shows that the number of category E permits increased during the first few years of the FMP but has remained relatively steady since 2001.

Category E monkfish permits by year since the start of the monkfish plan	
Fishing Year	Number of permits
1999	1466
2000	1882
2001	1991
2002	2142
2003	2120
2004	2081
TOTAL	3097

Table 6 – Monkfish open-access (Category E) permits issued each year since implementation of the FMP in 1999.
The total is the number of unique Category E permits issued since inception of the plan.

4.4.1.2 Landings and Revenues

Monkfish landings increased about 8.5 million pounds, or 17 percent between FY 2002 and FY 2003, principally due to the increase trip limits in the SFMA. Table 7 shows monthly landings for FY 2003 by area and gear, as well as total monthly landings since FY 2000. Landings were more evenly split between the NFMA (54 %) and SFMA (46%), compared to previous years under the FMP (that is, since FY2000), where the NFMA accounted for a greater percentage of the total, Figure 4. Over the longer term, landings increased steadily from 1982 to a peak in the mid-1990’s, and have declined since the FMP was implemented, while monkfish revenues have remained high.

Table 8 shows monthly landings by gear from the dealer reports for FY 2003, both as reported (landed weight) and converted to live weight. The lower landed weights reflect the fact that monkfish are landed as tails only, and as whole fish. The lower ratio of landed weight to live weight for otter trawls (0.38), compared to gillnets (0.73), is the result of a greater proportion of tails being landed by otter trawls, while gillnets land mostly whole fish.

Figure 5 shows the long-term trend in landings and revenues based on a calendar year. For the four-year periods prior to and since 2000, when the FMP took effect (actually November, 1999), landings averaged 58.7 and 51.2 million pounds, respectively, while revenues averaged 37.0 and 43.5 million dollars. When fishing year revenues are examined a similar trend is evident for the pre- and post-FMP period, but landed weights actually increased over that time, reflecting a shift in demand toward more whole fish (Table 9).

Figure 6 illustrates the seasonal pattern of monkfish landings, and the distinct difference between NFMA and SFMA fisheries, not only in terms of seasonality, but also in terms of the predominant gear. In the NFMA, trawl gear is the primary gear landing monkfish, and gillnet gear landings are near zero during the winter months. In the SFMA, on the other hand, gillnet gear accounts for the majority of monkfish landings, with a somewhat bimodal pattern peaking in the spring and fall months. Figure 7 shows the annual distribution of landings by gear for each area since FY 1999. While the NFMA pattern is fairly consistent over that period, the proportion of landings accounted for by trawl vessels has declined in the SFMA.

Fishing Year (May 2003 - April 2004) Monkfish Landings by Area, Gear and Month,
Also Showing Monthly and Total (May - April) Landings for 2000 - 2003

	MAY - 03	JUN - 03	JUL - 03	AUG - 03	SEP - 03	OCT - 03	NOV - 03	DEC - 03	JAN - 04	FEB - 04	MAR - 04	APR - 04	MAY 03 - APR 04	
	1000 Lbs	1000 Lbs	1000 Lbs	1000 Lbs	1000 Lbs	1000 Lbs	1000 Lbs	1000 Lbs	1000 Lbs	1000 Lbs	1000 Lbs	1000 Lbs	1000 Lbs	Percent
NORTHERN	**1,550**	**2,720**	**2,621**	**2,777**	**2,569**	**3,264**	**2,916**	**2,086**	**1,891**	**3,021**	**3,464**	**1,995**	**30,874**	**54%**
OTTER TRAWL	1,376	1,731	1,399	1,342	1,712	2,530	2,226	1,786	1,810	2,909	3,378	1,919	24,118	42%
GILLNET	170	959	1,088	1,243	829	713	649	279	80	109	77	75	6,272	11%
HOOK	0	0	0	0	0	0	0	0	0	0	0	0	1	0%
OTHER GEARS	4	29	133	192	28	22	41	20	1	3	9	0	482	1%
SOUTHERN	**4,360**	**4,333**	**1,598**	**1,072**	**561**	**1,702**	**3,307**	**2,118**	**2,397**	**1,807**	**1,170**	**1,660**	**26,085**	**46%**
OTTER TRAWL	245	288	271	552	338	267	322	196	188	356	292	151	3,465	6%
GILLNET	3,851	3,788	1,051	224	119	1,145	2,657	1,727	1,803	1,274	730	1,345	19,711	35%
HOOK	0	0	0	0	0	0	0	0	0	0	0	0	1	0%
OTHER GEARS	264	257	276	296	105	290	328	195	406	177	149	164	2,908	5%
ALL AREAS	**5,910**	**7,053**	**4,218**	**3,849**	**3,130**	**4,967**	**6,223**	**4,204**	**4,287**	**4,828**	**4,634**	**3,655**	**56,958**	**100%**
OTTER TRAWL	1,621	2,019	1,670	1,894	2,049	2,797	2,547	1,982	1,998	3,265	3,670	2,070	27,583	48%
GILLNET	4,021	4,747	2,139	1,467	948	1,858	3,306	2,006	1,883	1,383	806	1,420	25,983	46%
HOOK	0	0	0	0	0	0	0	1	0	0	0	0	2	0%
OTHER GEARS	268	286	409	488	133	312	370	215	407	180	157	164	3,390	6%
ALL AREAS														
FY 2003/2004	**5,910**	**7,053**	**4,218**	**3,849**	**3,130**	**4,967**	**6,223**	**4,204**	**4,287**	**4,828**	**4,634**	**3,655**	**56,958**	
FY 2002/2003	**3,470**	**4,614**	**3,284**	**3,047**	**3,360**	**3,623**	**4,270**	**4,858**	**4,713**	**3,894**	**5,817**	**3,485**	**48,434**	
FY 2001/2002	**4,500**	**5,415**	**3,727**	**3,316**	**3,296**	**4,463**	**5,853**	**6,601**	**5,391**	**4,255**	**4,457**	**5,874**	**57,148**	
FY 2000/2001	**3,623**	**3,935**	**2,897**	**2,818**	**2,858**	**4,084**	**5,206**	**4,076**	**3,985**	**3,077**	**3,209**	**3,926**	**43,694**	

1. The three digit statistical areas defined below are for statistical and management purposes and may not be consistent with stock area delineation used for biological assessment (see the attached statistical chart).

Monkfish Stock Areas: Northern: 464-465, 467, 511-515, 521-522, 561-562
Southern: 525-526, 533-534, 537-539, 541-543, 611-639

2. Landings in live weight.
3. State landings for 2003 have been updated and are complete.

5. Gear data are based on vessel trip reports.

* Fishing Year is May 1 through April 30.

Table 7 – Monkfish landings by area, gear and month for FY 2003 (converted to live weight).

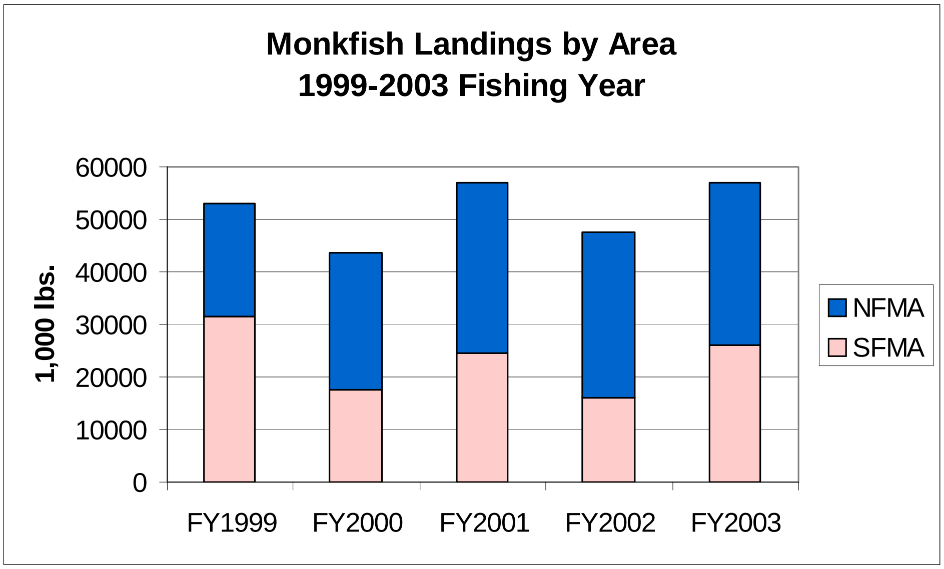


Figure 4 – Monkfish landings by management area, FY 1999 – 2003

Preliminary Monkfish Landings* (liveweight) from Dealer Reports for Fishing Year 2003

Month	Otter Trawl	Scallop Dredge	Gillnet	Hook	Other	Total Pounds
May	1,801,018	447,234	3,657,125	3,179	1,591	5,910,147
June	2,358,024	504,006	4,165,915	19,820	5,062	7,052,827
July	1,871,456	556,147	1,682,274	9,473	98,782	4,218,132
August	2,109,199	444,674	1,112,828	24,471	158,126	3,849,298
September	2,120,442	242,823	655,536	2,948	108,457	3,130,206
October	2,805,893	425,377	1,645,003	1,670	88,908	4,966,851
November	2,474,326	509,070	3,050,563	1,663	187,450	6,223,072
December	2,026,883	384,971	1,775,685	1,832	14,359	4,203,730
January	2,223,925	233,804	1,891,662	804	9,932	4,360,127
February	3,452,079	292,805	1,330,685	310	3,869	5,079,748
March	3,750,911	268,479	595,852	200	2,356	4,617,798
April	2,268,259	229,673	1,334,637	145	1,674	3,834,388
TOTAL	**29,262,415**	**4,539,063**	**22,897,765**	**66,515**	**680,566**	**57,446,324**

Source: NMFS Statistics Office, dealer weighout database

** May include data from CT vessels without a 2003 Monkfish permit*

LANDED WEIGHT for FY 2003

Month	Otter Trawl	Scallop Dredge	Gillnet	Hook	Other	Total Pounds
May	662,327	135,448	2,938,908	1,035	495	3,738,213
June	804,183	154,236	3,145,872	14,936	1,525	4,120,752
July	604,055	168,942	1,160,565	4,628	83,916	2,022,106
August	698,681	137,028	668,222	10,408	136,767	1,651,106
September	722,105	73,760	410,125	1,009	96,780	1,303,779
October	1,012,370	130,076	1,241,475	675	76,794	2,461,390
November	894,982	163,737	2,522,824	769	117,500	3,699,812
December	705,262	123,238	1,440,844	757	10,193	2,280,294
January	1,224,007	47,150	1,391,128	383	561	2,663,229
February	1,160,537	45,095	636,227	196	1,210	1,843,265
March	1,994,980	57,774	410,051	52	741	2,463,598
April	862,771	84,370	833,323	651	716	1,781,831
TOTAL	**11,346,260**	**1,320,854**	**16,799,564**	**35,499**	**527,198**	**30,029,375**

Table 8 – FY2003 monkfish landings from dealer reports, showing live weight and landed weights.

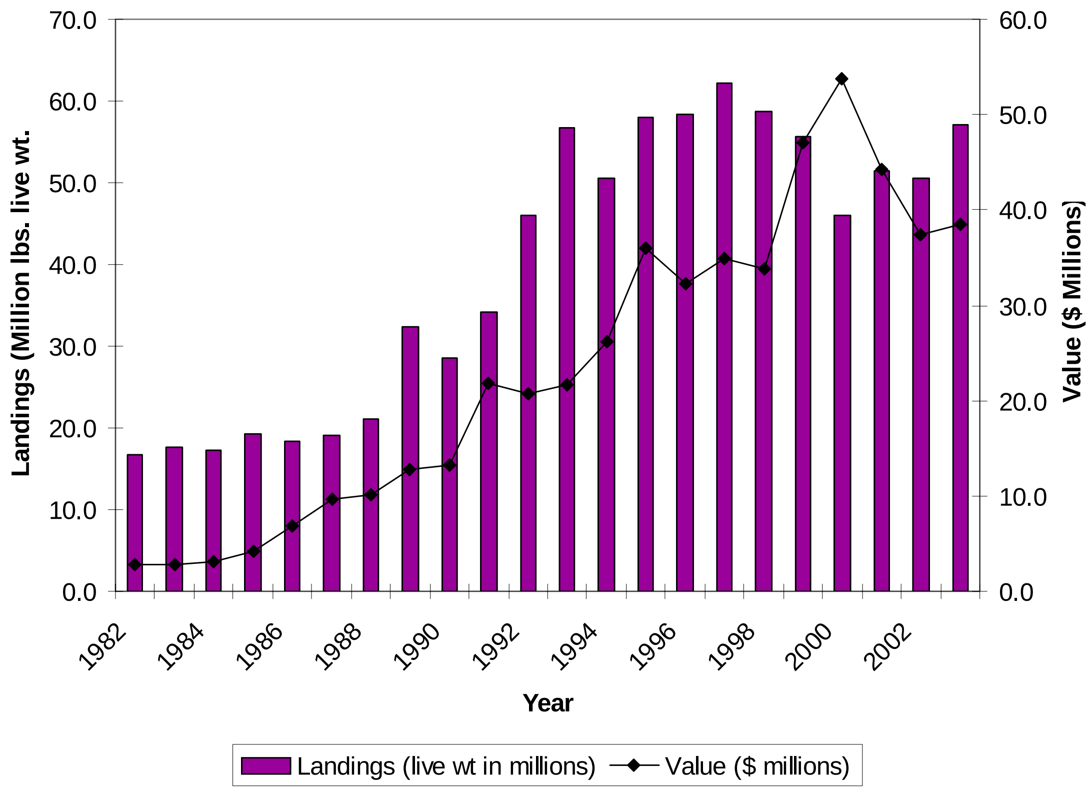


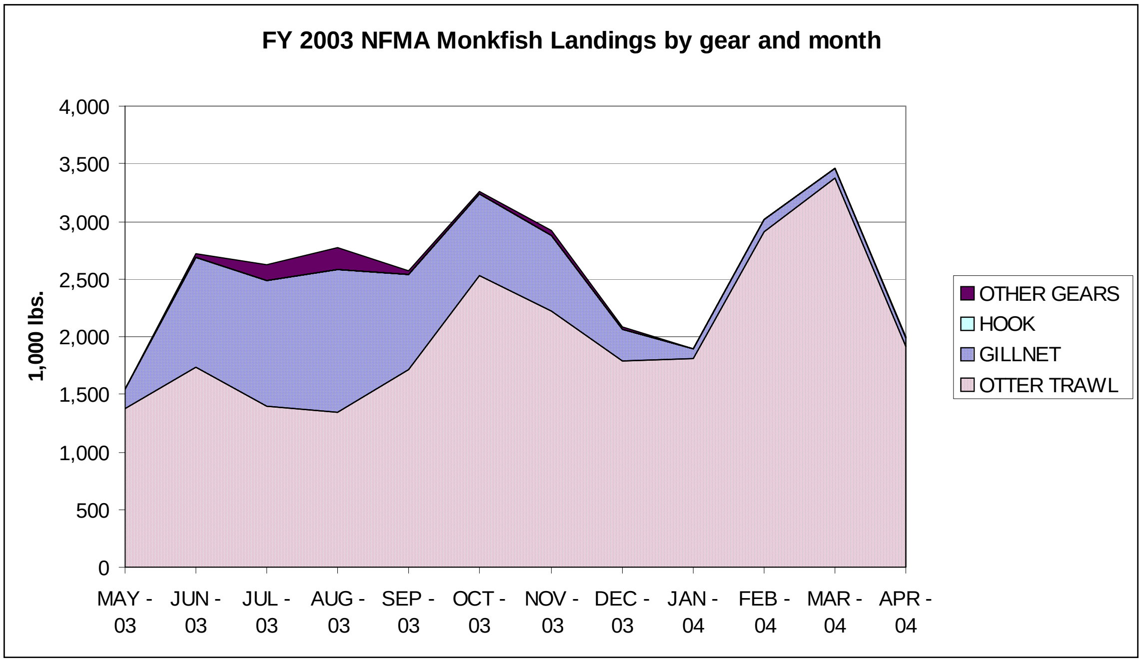
Figure 5 Calendar year monkfish landings and revenues, 1982-2003.

Fishing Year (May 1 - April 30)	Landings* (1,000 lbs. landed wt.)	Revenues* ($1,000)
1995	18,415.6	$24,758.8
1996	20,732.6	$26,188.5
1997	21,774.3	$30,127.0
1998	24,156.0	$34,682.0
1999	26,077.2	$48,713.7
2000	23,422.8	$46,122.9
2001	30,309.8	$42,072.4
2002	24,864.2	$34,653.7
2003	28,684.0	$36,590.4

** May include data from CT vessels without a 2001, 2002, or 2003 Monkfish permit*
1995-2001 data based on vessels that were issued a monkfish permit during the 2001 fishing year. 2002 and 2003 fishing year data are based on vessels issued a monkfish permit during the 2002 and 2003 fishing years, respectively.

Table 9 – Fishing year landings (in landed weights) and revenues, 1995 – 2003

(a)



(b)

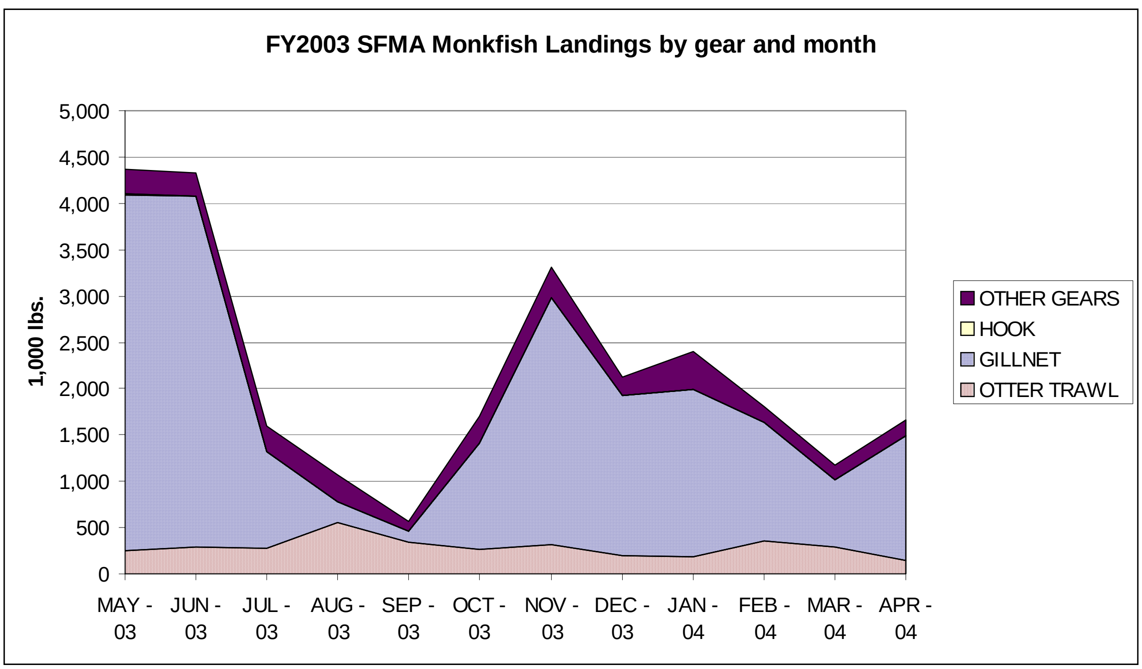
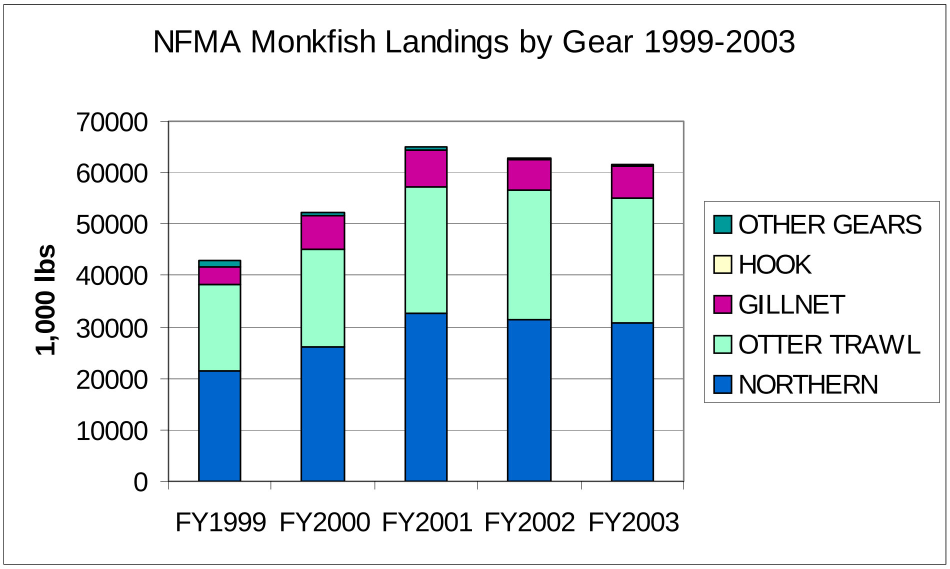


Figure 6 – FY2003 NFMA (a) and SFMA (b) monkfish landings by gear and month

(a)



(b)

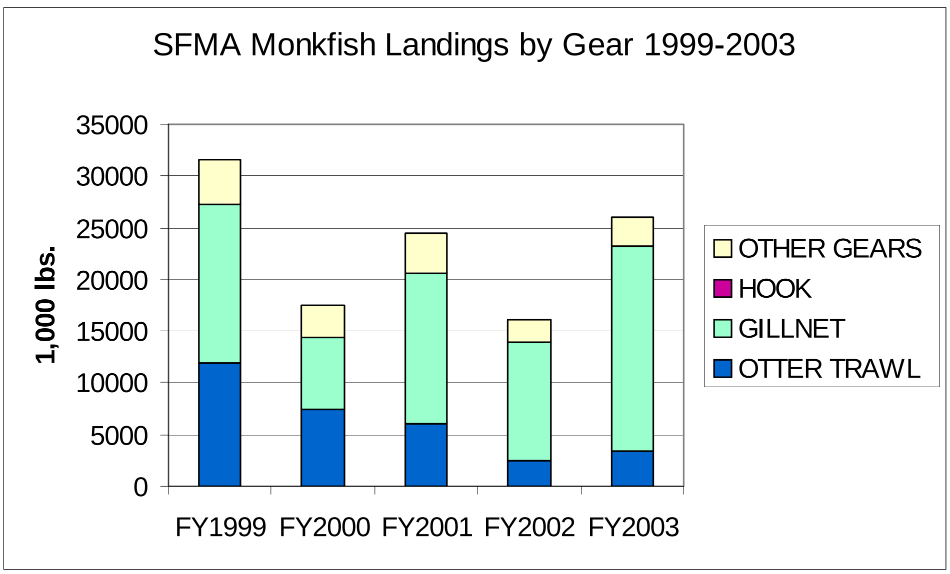


Figure 7 - NFMA (a) and SFMA (b) monkfish landings by gear, FY1999 – 2003

Massachusetts continues to account for the greatest proportion (nearly half) of all monkfish landings, while remaining relatively constant over the past nine years, while Maine, New Jersey and Rhode Island landings have increased noticeably (Table 10)

Total Monkfish Landings (landed weight), 1995-2003, by State

STATE	Thousands of Pounds of Monkfish								
	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003
CT*	1,029	733	592	574	557	603	577	7	108
MA	10,023	8,955	9,893	11,353	11,167	10,643	12,298	10,684	12,044
MD	178	524	382	322	341	107	158	38	119
ME	1,815	1,932	2,102	1,986	3,193	3,993	5,012	4,971	3,661
NC	0	431	445	395	432	166	167	112	121
NH	329	401	523	452	801	1,477	1,928	1,233	906
NJ	1,414	2,321	2,680	3,903	4,371	2,825	5,261	3,886	5,332
NY	248	513	654	775	573	435	707	694	1,047
RI	2,829	4,080	3,732	3,597	3,969	2,720	3,519	2,808	4,588
VA	550	841	773	799	671	455	683	431	758
TOTAL	**18,416**	**20,733**	**21,774**	**24,156**	**26,077**	**23,423**	**30,310**	**24,864**	**28,684**

Source: NMFS Statistics Office, dealer weighout database & permit database

** May include data from CT vessels without a 2001, 2002, or 2003 Monkfish permit*

1995-2001 data based on vessels that were issued a monkfish permit during the 2001 fishing year. 2002 and 2003 fishing year data are based on vessels issued a monkfish permit during the 2002 and 2003 fishing years, respectively.

Table 10 – Monkfish landings by state (landed weight), FY 1995-2003

The following tables, Table 11 and Table 12 show monkfish landings and revenues as a percentage of total landings and revenues by permit categories for FY 1995 – 2003. For the years prior to 2001, the data is based on vessels that held a monkfish permit in 2001. For subsequent years, the data is based on vessels that held a permit in those years. Data for Connecticut is shown separately because there were landings by vessels that did not have a permit in 2001 – 2003. Since implementation of the FMP, vessels with Category B and D permit have shown an increased reliance on monkfish landings and revenues, while other vessels, including those with open access permits have remained relatively constant.

When monkfish landings and revenues are shown by vessel length category (Table 13 and Table 14), a decreased reliance on monkfish is evident for the larger size classes, while an increased reliance is evident for vessels in the 30-49 ft. and 50-69 ft. classes, with the 30-49 ft. vessels being the most reliant on monkfish throughout the period (up to 28% of landings and revenues in FY 2002 and 2003).

Monkfish Permit Category	1,000 pounds, landed weight								
	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003
A	453	817	563	1,093	1,277	845	1,152	1,072	1,373
% of Total A Landings	49.1%	54.1%	13.4%	10.0%	20.5%	6.5%	6.8%	4.6%	5.0%
B	322	583	479	992	1,474	1,050	2,084	1,594	1,934
% of Total B Landings	14.0%	18.2%	23.4%	24.1%	36.9%	30.2%	46.4%	40.1%	49.2%
C	11,504	12,322	12,364	12,144	11,876	10,583	12,708	10,359	10,982
% of Total C Landings	10.4%	9.3%	7.5%	8.2%	8.5%	6.9%	6.4%	7.9%	9.0%
D	4,094	5,020	6,139	7,509	8,982	8,905	11,974	10,388	12,977
% of Total D Landings	4.6%	5.3%	5.8%	6.7%	11.1%	9.7%	11.7%	9.9%	13.3%
E (Open Access)	1,014	1,257	1,637	1,845	1,911	1,459	1,816	1,452	1,418
% of Total E Landings	0.5%	0.6%	0.5%	0.6%	0.8%	0.6%	0.7%	0.6%	0.4%
CT	1,029	733	592	574	557	580	577	0	0
% of Total CT Landings	5.7%	4.0%	3.3%	3.5%	2.9%	3.3%	5.8%	0.0%	0.0%
TOTAL MONK LANDED	18,416	20,733	21,774	24,156	26,077	23,423	30,310	24,864	28,684

Source: NMFS Statistics Office, dealer weighout database

** CT data 1995-2001 may include landings from vessels without a 2001, 2002, or 2003 Monkfish permit*

1995-2001 data based on vessels that were issued a monkfish permit during the 2001 fishing year. 2002 and 2003 fishing year data are based on vessels issued a monkfish permit during the 2002 and 2003 fishing years, respectively.

Table 11 – Monkfish landings as a percent of total landings by permit category, 1995-2003.

Monkfish Permit Category	$1,000, nominal (not discounted)								
	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003
A	$582	$849	$663	$1,262	$2,011	$1,428	$1,615	$1,439	$1,429
% of Total A Revenues	36.9%	41.4%	35.7%	51.2%	63.5%	46.6%	50.6%	42.5%	36.5%
B	$391	$583	$552	$1,183	$2,528	$1,699	$2,828	$2,099	$1,999
% of Total B Revenues	24.6%	33.5%	38.7%	49.6%	62.2%	48.1%	60.3%	53.3%	54.5%
C	$16,014	$16,423	$18,091	$18,501	$23,250	$22,380	$17,503	$14,713	$15,503
% of Total C Revenues	13.0%	12.0%	13.3%	14.0%	13.5%	11.5%	9.2%	7.4%	7.2%
D	$4,736	$5,649	$7,514	$10,076	$16,043	$16,620	$16,836	$14,434	$15,724
% of Total D Revenues	8.2%	9.3%	11.2%	14.9%	20.4%	19.9%	20.2%	17.3%	18.7%
E (Open Access)	$1,263	$1,452	$2,270	$2,642	$3,471	$2,848	$2,504	$1,969	$1,936
% of Total E Revenues	1.1%	1.2%	1.7%	2.1%	2.4%	1.9%	1.6%	1.2%	1.0%
CT	$1,772	$1,233	$1,036	$1,018	$1,410	$1,148	$786	$0	$0
% of Total CT Revenues	4.1%	2.5%	3.1%	3.0%	3.6%	3.8%	6.0%	0.0%	0.0%
TOTAL MONK REVENUE	$24,759	$26,188	$30,127	$34,682	$48,714	$46,123	$42,072	$34,654	$36,590

Source: NMFS Statistics Office, dealer weighout database

** CT data 1995-2001 may include landings from vessels without a 2001, 2002, or 2003 Monkfish permit*

1995-2001 data based on vessels that were issued a monkfish permit during the 2001 fishing year. 2002 and 2003 fishing year data are based on vessels issued a monkfish permit during the 2002 and 2003 fishing years, respectively.

Table 12 - Monkfish revenues as a percent of total revenues by permit category, 1995-2003.

Vessel Length Category	1,000 pounds, landed weight								
	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003
0-29 Feet	70	61	21	20	50	62	73	54	55
% of Total 0-29 Landings	11.7%	10.5%	3.1%	2.5%	6.9%	7.1%	6.8%	6.5%	8.5%
30-49 Feet	5,303	6,317	6,415	8,458	10,537	9,291	13,067	11,384	14,761
% of Total 30-49 Landings	8.7%	10.3%	10.7%	13.3%	18.5%	17.0%	24.0%	23.8%	28.8%
50-69 Feet	2,675	3,771	3,398	4,057	4,550	4,983	7,056	5,919	6,362
% of Total 50-69 Landings	3.5%	4.7%	3.2%	4.7%	5.5%	5.9%	8.7%	7.6%	8.7%
70-89 Feet	7,228	8,208	9,629	9,217	8,904	7,469	8,250	6,846	6,702
% of Total 70-89 Landings	4.0%	4.4%	3.6%	3.8%	4.0%	3.4%	3.5%	3.1%	3.1%
90+ Feet	2,109	1,643	1,718	1,830	1,480	1,038	1,285	661	805
% of Total 90+ Landings	2.1%	1.3%	1.2%	1.1%	1.2%	0.7%	0.6%	0.4%	0.3%
CT	1,029	733	592	574	557	580	577	0	0
% of Total CT Landings	5.7%	4.0%	3.3%	3.5%	2.9%	3.3%	5.8%	0.0%	0.0%
TOTAL MONK LANDED	18,416	20,733	21,774	24,156	26,077	23,423	30,310	24,864	28,684

Source: NMFS Statistics Office, dealer weighout database

** CT data 1995-2001 may include landings from vessels without a 2001, 2002, or 2003 Monkfish permit*

1995-2001 data based on vessels that were issued a monkfish permit during the 2001 fishing year. 2002 and 2003 fishing year data are based on vessels issued a monkfish permit during the 2002 and 2003 fishing years, respectively.

Table 13 – Monkfish landings as a percent of total landings by vessel length category, 1995 - 2003

Vessel Length Category	$1,000, nominal (not discounted)								
	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003
0-29 Feet	$72	$60	$34	$25	$99	$98	$98	$66	61
% of Total 0-29 Revenues	8.3%	8.3%	3.3%	2.4%	8.9%	9.4%	8.4%	6.3%	6.4%
30-49 Feet	$5,657	$6,474	$7,049	$9,933	$16,887	$16,199	$18,410	$15,353	15,796
% of Total 30-49 Revenues	13.1%	15.1%	15.4%	20.2%	29.3%	29.3%	31.0%	27.9%	28.4%
50-69 Feet	$3,524	$4,530	$4,488	$5,718	$8,669	$9,963	$9,931	$8,460	8,562
% of Total 50-69 Revenues	7.2%	8.4%	7.7%	10.3%	13.0%	13.6%	13.5%	11.3%	11.2%
70-89 Feet	$10,548	$11,509	$14,712	$14,957	$18,420	$16,034	$11,161	$9,894	10,945
% of Total 70-89 Revenues	7.1%	7.2%	8.6%	8.8%	8.7%	6.8%	4.8%	4.0%	3.9%
90+ Feet	$3,186	$2,383	$2,808	$3,031	$3,228	$2,682	$1,687	$880	1,227
% of Total 90+ Revenues	5.6%	3.8%	4.7%	5.4%	4.9%	3.8%	2.3%	1.2%	1.5%
CT	$1,772	$1,233	$1,036	$1,018	$1,410	$1,148	$786	$0	0
% of Total CT Revenues	4.1%	2.5%	3.1%	3.0%	3.6%	3.8%	6.0%	0.0%	0.0%
TOTAL MONK REVENUE	$24,759	$26,188	$30,127	$34,682	$48,714	$46,123	$42,072	$34,654	36,590

Source: NMFS Statistics Office, dealer weighout database

** CT data 1995-2001 may include landings from vessels without a 2001, 2002, or 2003 Monkfish permit*

1995-2001 data based on vessels that were issued a monkfish permit during the 2001 fishing year. 2002 and 2003 fishing year data are based on vessels issued a monkfish permit during the 2002 and 2003 fishing years, respectively.

Table 14– Monkfish revenues as a percent of total revenues by vessel length category, 1995 – 2003

When viewed in aggregate, vessels that hold a monkfish permit are not significantly reliant on monkfish, as monkfish has accounted for less than 10 percent of total landings and revenues during FY 1995-2003, Table 15 and Table 16. While the proportion of monkfish has remained relatively constant (4-5% of landings, 7-11% of revenues), as has the proportion of most other species, the proportion of scallop landings and revenues has increased significantly, reflecting improvements in the scallop fishery in recent years.

Species Category	1,000 pounds, landed weight								
	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003
Dogfish	33,914	32,392	23,902	34,127	22,942	6,742	4,129	3,624	2,277
Dogfish % of Total Landings	7.8%	6.8%	4.0%	5.9%	4.6%	1.3%	0.7%	0.7%	0.4%
Fluke	7,829	7,941	7,732	9,396	9,478	8,670	11,190	11,758	13,197
Fluke % of Total Landings	1.8%	1.7%	1.3%	1.6%	1.9%	1.7%	1.9%	2.3%	2.3%
Monkfish	18,416	20,733	21,774	24,156	26,077	23,423	30,310	24,864	28,684
Monkfish % of Total Landings	4.2%	4.3%	3.7%	4.2%	5.2%	4.5%	5.1%	4.9%	4.9%
Other	306,209	329,535	448,958	412,327	334,735	343,322	384,713	318,247	385,023
Other % of Total Landings	70.0%	69.0%	75.6%	71.2%	66.5%	65.6%	64.4%	62.8%	65.8%
Multispecies	47,365	53,830	62,951	67,977	68,654	88,095	102,266	82,953	80,535
Multispecies % of Total Landings	10.8%	11.3%	10.6%	11.7%	13.6%	16.8%	17.1%	16.4%	13.8%
Scallops	14,535	15,852	11,834	12,565	23,332	35,380	47,054	48,978	56,591
Scallops % of Total Landings	3.3%	3.3%	2.0%	2.2%	4.6%	6.8%	7.9%	9.7%	9.7%
Skates	9,134	17,503	16,740	18,756	18,061	17,643	17,846	16,257	19,053
Skates % of Total Landings	2.1%	3.7%	2.8%	3.2%	3.6%	3.4%	3.0%	3.2%	3.3%
TOTAL LBS. LANDED	437,402	477,786	593,890	579,303	503,280	523,275	597,508	506,682	585,360

Source: NMFS Statistics Office, dealer weighout database

** CT data may include landings from vessels without a 2001, 2002, or 2003 Monkfish permit*

1995-2001 data based on vessels that were issued a monkfish permit during the 2001 fishing year. 2002 and 2003 fishing year data are based on vessels issued a monkfish permit during the 2002 and 2003 fishing years, respectively.

Table 15 – FY 1995-2003 Landings of monkfish and other species as a percent of total landings, on vessels with a monkfish permit in 2001 – 2003.

Species Category	$1,000, nominal (not discounted)								
	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003
Dogfish	$6,610	$6,003	$3,555	$5,876	$4,072	$1,798	$1,110	$868	$535
Dogfish % of Total Revenues	1.9%	1.6%	1.0%	1.6%	0.9%	0.4%	0.2%	0.2%	0.1%
Fluke	$13,961	$13,243	$14,061	$14,418	$16,148	$13,663	$14,030	$16,003	$19,555
Fluke % of Total Revenues	4.1%	3.6%	3.8%	3.9%	3.7%	2.9%	3.1%	3.5%	3.9%
Monkfish	$24,759	$26,188	$30,127	$34,682	$48,714	$46,123	$42,072	$34,654	$36,590
Monkfish % of Total Revenues	7.3%	7.1%	8.2%	9.5%	11.0%	9.9%	9.3%	7.6%	7.2%
Other	$159,711	$163,907	$171,432	$152,363	$162,812	$138,606	$118,675	$105,867	$122,102
Other % of Total Revenues	46.9%	44.5%	46.4%	41.6%	36.9%	29.7%	26.3%	23.3%	24.1%
Multispecies	$57,323	$60,825	$71,309	$82,758	$83,994	$93,601	$101,816	$98,402	$88,075
Multispecies % of Total Revenues	16.8%	16.5%	19.3%	22.6%	19.0%	20.1%	22.6%	21.7%	17.4%
Scallops	$75,624	$92,763	$76,005	$72,999	$122,812	$169,409	$170,630	$194,503	$236,123
Scallops % of Total Revenues	22.2%	25.2%	20.6%	19.9%	27.8%	36.3%	37.8%	42.9%	46.5%
Skates	$2,708	$5,440	$3,071	$3,471	$3,234	$3,598	$3,068	$3,342	$4,349
Skates % of Total Revenues	0.8%	1.5%	0.8%	0.9%	0.7%	0.8%	0.7%	0.7%	0.9%
TOTAL LBS. LANDED	$340,696	$368,369	$369,559	$366,568	$441,785	$466,797	$451,401	$453,640	$507,330

Source: NMFS Statistics Office, dealer weighout database

** CT data may include landings from vessels without a 2001, 2002, or 2003 Monkfish permit*

1995-2001 data based on vessels that were issued a monkfish permit during the 2001 fishing year. 2002 and 2003 fishing year data are based on vessels issued a monkfish permit during the 2002 and 2003 fishing years, respectively.

Table 16 – FY 1995-2003 Revenues of monkfish and other species as a percent of total landings, on vessels with a monkfish permit in 2001-2003.

4.4.1.3 Days-at-sea (DAS)

Starting in Year 2 of the FMP (May, 2000 –April, 2001) limited access monkfish vessels (Categories A, B, C, and D) were allocated 40 monkfish DAS. By definition, Category A and B vessels do not qualify for limited access multispecies or scallop permits, and Category C and D vessels must use either a multispecies or scallop DAS while on a monkfish DAS. In the NFMA, however, there is no monkfish trip limit when a vessel is on either a combined (monkfish/multispecies or monkfish/scallop) DAS or a multispecies-only DAS, and, consequently, multispecies vessels in Categories C and D and fishing in the NMFA do not call-in monkfish DAS. For this reason, DAS usage, therefore, is well below the total DAS allocated (Table 17), and reflects monkfish fishing activity in the SFMA. In FY 2003, Category A and B vessels fishing in the SFMA used 70% and 55% of their allocated DAS, respectively, while Category B and D vessels used 46% and 41%, Table 18. DAS usage by Category C and D vessels that also hold a multispecies limited access permit has increased since FY 2001 (Figure 8).

Permit Category	All Vessels		Call-in Vessels	
	DAS Allocated	DAS Used	DAS Allocated	DAS Used
A	632	345	490	345
B	1,741	743	1,351	743
C	16,544	1,782	3,894	1,782
D	16,511	2,699	6,576	2,699
TOTAL	**35,428**	**5,568**	**12,312**	**5,568**

Source: NMFS Office of Law Enforcement, DAS call-in database

Table 17 – Monkfish DAS usage, FY 2003

Permit Category	DAS Allocated	DAS Used				
		Monkfish	Monkfish/ Multispecies	Monkfish/ Scallop	Total	% Used
A	490	345	0	0	345	70%
B	1,351	743	0	0	743	55%
C	3,894	0	1,782	0	1,782	46%
D	6,576	0	2,699	0	2,699	41%
TOTAL	**12,312**	**1,088**	**4,481**	**0**	**5,568**	**45%**

Source: NMFS Office of Law Enforcement, DAS call-in database

Table 18 - Monkfish-only, Monkfish/Multispecies and Monkfish/Scallop DAS Usage by call-in vessels (vessels fishing in the SFMA), FY 2003.

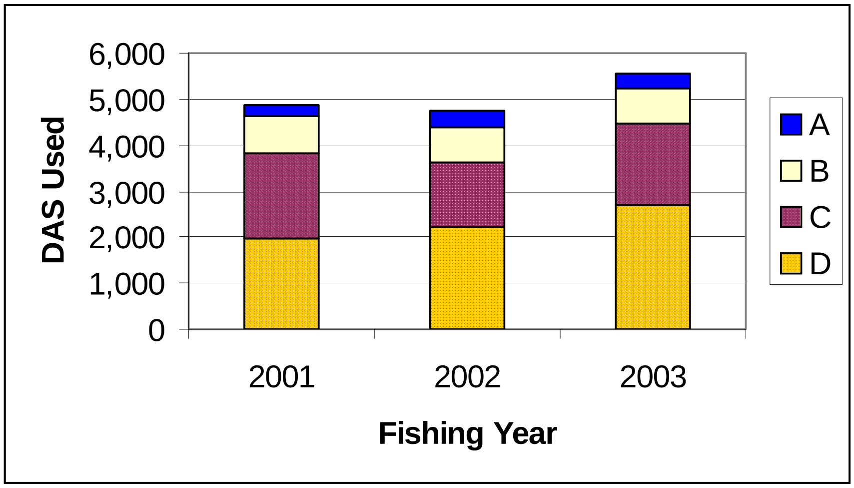


Figure 8 - DAS used by permit category, FY 2001 – 2003.

4.4.2 Ports and communities

This section updates information contained in the FSEIS for Amendment 2. The Monkfish FMP references Amendments 5 and 7 to the NE Multispecies FMP and Amendment 4 to the Atlantic Sea Scallop FMP for social and cultural information about monkfish ports, including port profiles. Because of the nature of the monkfish fishery, there is significant overlap between the vessels and communities involved with the monkfish fishery and those involved with the NE multispecies (groundfish) and scallop fisheries. Many of the same boats that target monkfish or catch them incidentally also target groundfish or scallops. Only about six percent of the limited access monkfish permit holders do not also hold limited access permits in either the NE multispecies or scallop fisheries.

For the purposes of this SAFE Report, “primary monkfish ports” are defined as those averaging more than $1,000,000 in monkfish revenues from 1994-1997 (based on the dealer weighout data presented in Table 45 of the Monkfish FMP). “Secondary monkfish ports” are defined as those averaging more than $50,000 in monkfish revenues from 1994-1997 (based on the dealer weighout data presented in the Monkfish FMP.

Primary monkfish ports include:

- Portland, ME
- Boston, MA
- Gloucester, MA
- New Bedford, MA
- Long Beach/Barnegat Light, NJ, and
- Point Judith, RI.

Secondary monkfish ports include:

- Rockland, ME
- Port Clyde, ME

- South Bristol, ME
- Ocean City, MD
- Chatham, MA
- Provincetown, MA
- Scituate, MA
- Plymouth, MA
- Westport, MA
- Portsmouth, NH
- Point Pleasant, NJ
- Cape May, NJ
- Greenport, NY
- Montauk, NY
- Hampton Bay, NY
- Newport, RI
- Hampton, VA, and
- Newport News, VA.

Table 19 shows the distribution of monkfish permit holders by homeport and monkfish permit category for the six primary, 18 secondary, and "other" monkfish ports for FY2000 - 2003. Table 20 shows the VTR landings for five of the six major ports (as reported by NMFS in their regular "Northeast Preliminary Fisheries Statistics" Report, not including Long Beach/Barnegat Light, NJ) and states, broken down by management area from which landings were reported, as well as by gear type. Virtually all of the monkfish landed in Portland, Gloucester and Boston come from the NFMA, while about 1/2 of New Bedford's landings and only 3 percent of Pt. Judith's landings come from the NFMA. Portland and Boston's landings are almost totally from otter trawls, while otter trawls make up about ½ of New Bedford and Gloucester landings. Gloucester landings are evenly split between trawls and gillnets, while New Bedford also has about 18% of monkfish landings by scallop dredge (included in "other gear" in the table). Pt. Judith landings are about 2/3 gillnet, while New Hampshire, New York and New Jersey landings are predominately (>80%) caught by gillnet gear.

Port landings and revenue data based on May-April fishing year is presented in Table 21 and Table 22, for primary and secondary ports (as identified in the original FMP), respectively, for FY1995-FY2003. Data is based on the vessel's homeport and, for FY2003, on the vessel's principal port of landing as indicated on the permit application. While vessels homeported in New Bedford recorded the highest monkfish landings and revenues from 1995-1999, their share declined in more recent years, while the share of vessels homeported in Boston has increased. Of note is the observation that while Boston ranked the highest in monkfish revenues based on the vessels' homeport, Portland and New Bedford were the highest based on principal port in FY2003, while Boston and Pt. Judith were the lowest of the six primary ports. Revenues from monkfish increased slightly in all primary ports from FY 2002 to Fy 2003, with the exception of Boston where monkfish revenues declined about 11%. Monkfish landings and revenues are noticeably smaller for the secondary ports (Table 22), but monkfish revenues make up a greater proportion of total revenues for many of those ports (Table 23).

HOMEPORT		FY 2000 by Category						FY 2001 by Category						FY 2002 by Category						FY 2003 by Category					
		A	**B**	**C**	**D**	**E**	**TOTAL**	**A**	**B**	**C**	**D**	**E**	**TOTAL**	**A**	**B**	**C**	**D**	**E**	**TOTAL**	**A**	**B**	**C**	**D**	**E**	**TOTAL**
PRIMARY PORTS		4	16	196	153	351	720	4	16	200	161	366	747	4	17	194	158	403	776	5	17	203	160	396	781
Portland	ME	0	X	11	16	18	46	0	X	11	10	21	43	0	X	10	14	20	45	0	X	12	17	27	57
Boston	MA	X	X	46	47	137	233	X	X	42	49	128	222	X	X	43	43	126	215	X	X	39	40	116	198
Gloucester	MA	0	0	18	34	104	156	0	0	19	35	110	164	0	0	18	33	138	189	0	0	20	34	129	183
New Bedford	MA	X	0	93	30	41	165	0	0	100	34	53	187	0	0	94	35	68	197	0	0	102	33	68	203
Barnegate Light	NJ	X	13	9	12	17	52	X	13	10	17	19	61	X	14	11	17	15	59	X	14	10	20	19	65
Point Judith	RI	X	0	19	14	34	68	X	0	18	16	35	70	X	0	18	16	36	71	X	0	20	16	37	75
SECONDARY PORTS		0	6	56	73	335	470	3	8	57	73	362	503	3	8	59	74	388	532	5	10	61	77	396	549
Rockland	ME	0	X	X	0	5	7	0	X	X	0	8	10	0	X	0	0	4	5	0	X	0	0	3	4
Port Clyde	ME	0	0	3	3	6	12	0	0	5	3	5	13	0	0	5	3	5	13	0	0	5	4	5	14
South Bristol	ME	0	0	X	3	6	11	0	0	X	3	5	10	0	0	X	3	4	9	0	0	X	4	3	9
Ocean City	MD	0	0	0	0	13	13	0	0	0	0	14	14	0	0	0	0	14	14	0	0	0	0	16	16
Chatham	MA	0	0	0	11	47	58	0	0	0	12	46	58	0	0	0	12	69	81	0	0	0	14	71	85
Provincetown	MA	0	0	0	5	11	16	0	0	0	6	12	18	0	0	0	5	13	18	0	0	0	3	14	17
Scituate	MA	0	0	3	7	27	37	0	0	X	7	26	34	0	0	X	7	30	38	0	0	X	6	31	38
Plymouth	MA	0	X	0	X	13	15	0	X	X	X	17	21	0	X	X	X	18	22	X	X	X	3	17	23
Westport	MA	0	0	X	6	14	21	0	0	X	6	18	25	0	0	X	5	18	24	0	0	X	5	19	25
Portsmouth	NH	0	0	4	14	17	35	0	0	3	12	19	34	0	0	3	10	23	36	0	0	3	10	19	32
Point Pleasant	NJ	0	3	X	3	27	35	X	4	X	X	30	39	X	3	X	5	32	42	X	4	X	4	33	44
Cape May	NJ	0	0	19	5	49	73	X	0	16	6	55	79	X	0	18	5	59	84	X	0	20	6	66	94
Greenport	NY	0	0	X	X	4	6	0	0	X	0	5	6	0	0	X	0	6	7	0	0	X	0	7	8
Montauk	NY	0	0	4	5	68	77	0	0	4	6	71	81	0	X	4	7	65	77	0	X	4	8	65	79
Hampton Bay	NY	0	X	X	X	5	8	0	X	X	X	4	7	0	X	X	X	5	8	0	X	X	0	7	9
Newport	RI	0	0	X	5	13	20	0	X	4	5	16	26	0	X	5	7	12	25	0	X	7	8	8	24
Hampton	VA	0	0	4	0	3	7	0	0	4	0	4	8	0	0	5	0	3	8	0	0	3	X	3	7
Newport News	VA	0	0	9	3	7	19	0	0	11	X	7	20	0	0	11	X	8	21	0	0	11	X	9	21
OTHER PORTS		8	10	89	122	1,177	1,406	9	15	78	103	1,253	1,458	8	15	75	103	1,346	1,547	6	13	76	104	1,316	1,515
TOTAL		**12**	**32**	**341**	**348**	**1,863**	**2,596**	**16**	**39**	**335**	**337**	**1,981**	**2,708**	**15**	**40**	**328**	**335**	**2,137**	**2,855**	**16**	**40**	**340**	**341**	**2,108**	**2,845**

Source: NMFS Statistics Office, permit databases

Table 19 – Monkfish permits by port, FY 2000 – 2003.
Ports where there are only one or two permits are marked “x” for confidentiality reasons.

PORT/ STATE	MAY 03 - APR 04	STOCK AREAS				GEAR TYPES							
		NORTHERN		SOUTHERN		OTTER TRAWL		GILLNET		HOOK		OTHER GEARS	
	1000 Lbs	1000 Lbs	Percent	1000 Lbs	Percent	1000 Lbs	Percent	1000 Lbs	Percent	1000 Lbs	Percent	1000 Lbs	Percent
Portland, ME	9,180	9,130	99%	49	1%	8,852	96%	326	4%	1	0%	2	0%
Gloucester, MA	6,257	6,174	99%	83	1%	3,563	57%	2,681	43%	0	0%	13	0%
Boston, MA	2,734	2,723	100%	11	0%	2,734	100%	0	0%	0	0%	0	0%
New Bedford, MA	12,439	6,417	52%	6,022	48%	6,686	54%	3,486	28%	0	0%	2,267	18%
Point Judith, RI	3,350	101	3%	3,250	97%	1,215	36%	2,078	62%	0	0%	58	2%
MAINE	11,224	11,166	99%	58	1%	10,696	95%	520	5%	1	0%	7	0%
NEW HAMPSHIRE	1,532	1,532	100%	0	0%	104	7%	1,423	93%	0	0%	5	0%
MASSACHUSETTS	25,360	17,010	67%	8,350	33%	13,660	54%	9,389	37%	1	0%	2,311	9%
RHODE ISLAND	7,191	1,132	16%	6,059	84%	2,287	32%	4,725	66%	0	0%	179	2%
CONNECTICUT	942	16	2%	926	98%	138	15%	567	60%	0	0%	238	25%
NEW YORK	1,712	3	0%	1,709	100%	286	17%	1,420	83%	1	0%	5	0%
NEW JERSEY	7,320	14	0%	7,306	100%	137	2%	6,739	92%	0	0%	444	6%
OTHER NORTHEAST	1,677	1	0%	1,676	100%	274	16%	1,201	72%	0	0%	202	12%
TOTAL	**56,958**	**30,874**	**54%**	**26,085**	**46%**	**27,583**	**48%**	**25,983**	**46%**	**2**	**0%**	**3,390**	**6%**

1. The three digit statistical areas defined below are for statistical and management purposes and may not be consistent with stock area delineation used for biological assessment (see the attached statistical chart).

   Monkfish stock areas: Northern: 464-465, 467, 511-515, 521-522, 561-562
   Southern: 525-526, 533-534, 537-539, 541-543, 611-639

2. State landings for CT are estimated for the Jan. 2004 - Apr. 2004 period.
3. Landings in live weight.
4. Gear data are based on vessel trip reports.

Table 20 – Preliminary FY2003 monkfish landings by primary port (excluding Long Beach/Barnegat Light, NJ) and State, by gear.

HOME PORT		MONKFISH LANDINGS AND REVENUES									Principal Port
		FY1995	FY1996	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2003
Portland, ME	1,000 Lbs.	1,446.2	1,604.8	1,691.7	1,472.8	2,542.9	2,995.8	1,487.6	1,498.2	1,421.6	2,530.3
	$1,000	$2,257.6	$2,393.9	$2,707.1	$2,640.2	$5,472.7	$6,707.8	$2,004.9	$2,289.6	$2,642.4	$4,719.8
Boston, MA	1,000 Lbs.	822.8	674.0	917.6	781.9	1,267.6	960.9	4,964.1	4,777.8	4,245.9	1,311.5
	$1,000	$1,082.5	$936.3	$1,300.3	$1,104.1	$2,240.1	$2,027.5	$6,737.6	$6,629.9	$5,874.9	$1,794.9
Gloucester, MA	1,000 Lbs.	1,675.6	1,154.1	844.3	941.6	1,700.9	2,364.8	2,090.8	2,055.4	1,961.8	2,476.6
	$1,000	$1,620.8	$1,097.7	$1,037.9	$1,382.6	$3,060.7	$4,441.5	$3,053.4	$2,923.5	$2,604.0	$3,172.8
New Bedford, MA	1,000 Lbs.	5,983.8	5,789.6	7,345.5	8,537.1	7,026.5	5,515.4	3,452.8	2,319.5	2,583.3	3,183.2
	$1,000	$8,980.7	$8,260.4	$11,686.0	$13,926.2	$14,442.8	$11,783.9	$4,697.9	$3,278.4	$3,916.1	$4,848.4
Long Beach/Barnegat Light, NJ	1,000 Lbs.	846.4	1,382.2	729.0	1,702.9	2,568.7	1,801.5	3,582.0	2,435.4	3,614.1	3,523.3
	$1,000	$1,210.6	$1,531.5	$977.7	$2,099.9	$4,430.7	$3,049.4	$4,807.6	$3,227.3	$3,850.8	$3,761.0
Point Judith, RI	1,000 Lbs.	1,194.2	2,444.6	2,125.9	1,485.1	1,708.7	1,635.0	643.4	511.9	942.5	1,940.1
	$1,000	$1,645.1	$3,366.8	$3,248.1	$2,175.5	$3,275.3	$3,423.8	$1,008.6	$779.4	$1,359.5	$2,554.0

Source: NMFS Statistics Office, dealer weighout database & permit database

Pounds are in landed weight

1995-2001 data based on vessels that were issued a monkfish permit during the 2001 fishing year. 2002 and 2003 fishing year data are based on vessels issued a monkfish permit during the 2002 and 2003 fishing years, respectively.

Table 21 – Monkfish landings and revenues for monkfish primary ports, FY 1995 – 2003, and principal port, FY 2003.

HOME PORT		MONKFISH LANDINGS AND REVENUES									Principal Port
		FY1995	FY1996	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2003
Rockland, ME	1,000 Lbs.	47.7	42.5	37.1	56.3	53.9	74.0	8.3	3.8	3.1	33.4
	$1,000	$61.2	$55.3	$54.3	$90.0	$113.2	$184.5	$15.5	$5.5	$5.4	$54.8
Port Clyde, ME	1,000 Lbs.	119.2	120.0	183.0	210.4	294.3	325.1	543.5	471.9	383.5	432.3
	$1,000	$148.5	$152.7	$260.9	$328.4	$581.8	$749.5	$748.4	$676.8	$674.2	$761.2
South Bristol, ME	1,000 Lbs.	126.4	109.5	89.9	93.3	106.6	219.2	278.7	238.3	233.4	183.5
	$1,000	$162.9	$145.1	$131.2	$146.5	$217.4	$494.5	$410.1	$342.7	$431.4	$337.6
Ocean City, MD	1,000 Lbs.	178.5	520.8	348.5	282.0	314.1	106.7	3.1	2.6	2.4	8.5
	$1,000	$241.0	$450.5	$310.3	$254.1	$347.4	$154.4	$4.6	$4.2	$3.9	$13.1
Chatham, MA	1,000 Lbs.	126.3	97.5	117.2	231.6	212.7	475.3	613.4	944.1	1,313.6	1,353.3
	$1,000	$110.9	$936.3	$126.9	$237.2	$327.1	$771.5	$829.9	$1,229.6	$1,357.6	$1,395.1
Provincetown, MA	1,000 Lbs.	83.3	38.8	24.4	85.6	79.9	35.1	25.9	19.8	38.0	42.8
	$1,000	$108.0	$51.8	$36.7	$141.5	$136.4	$76.8	$37.7	$26.4	$75.2	$76.4
Scituate, MA	1,000 Lbs.	58.9	45.3	43.2	330.0	331.0	434.4	100.0	206.8	202.9	727.7
	$1,000	$67.9	$53.0	$50.3	$391.6	$561.5	$745.7	$147.7	$266.4	$216.1	$778.5
Plymouth, MA	1,000 Lbs.	53.5	33.0	27.6	42.3	13.9	276.5	585.5	613.1	712.4	715.1
	$1,000	$61.6	$37.6	$25.5	$55.8	$24.3	$508.0	$826.2	$795.9	$699.1	$703.6
Westport, MA	1,000 Lbs.	809.6	856.9	461.4	539.0	451.9	307.4	685.7	549.5	830.6	876.6
	$1,000	$764.5	$768.5	$387.6	$543.3	$691.2	$568.3	$1,022.6	$739.3	$799.1	$846.1
Portsmouth, NH	1,000 Lbs.	370.7	387.9	519.9	474.7	845.3	1,253.7	1,098.7	671.8	558.7	949.4
	$1,000	$447.5	$443.0	$636.9	$532.5	$1,319.5	$2,122.7	$1,578.8	$967.0	$632.5	$1,033.4
Point Pleasant, NJ	1,000 Lbs.	84.3	517.7	1,091.5	1,578.5	1,286.0	772.5	337.9	128.3	401.2	495.1
	$1,000	$111.4	$565.8	$1,096.5	$1,884.9	$2,320.0	$1,208.2	$441.5	$164.4	$395.6	$492.4
Cape May, NJ	1,000 Lbs.	273.0	312.6	465.0	316.3	124.3	117.5	187.5	117.9	161.9	192.1
	$1,000	$370.1	$389.2	$571.7	$398.2	$255.7	$266.2	$248.2	$134.7	$206.0	$249.1
Greenport, NY	1,000 Lbs.	26.1	48.9	62.9	41.9	12.1	3.6	6.9	19.8	7.8	8.1
	$1,000	$35.1	$72.0	$86.2	$62.2	$20.0	$8.7	$10.7	$32.6	$14.5	$15.0
Montauk, NY	1,000 Lbs.	46.9	53.0	92.2	157.4	79.7	47.2	146.7	238.4	572.5	569.4
	$1,000	$62.3	$74.2	$135.9	$246.9	$170.1	$122.2	$237.5	$358.4	$694.3	$688.6
Hampton Bays, NY	1,000 Lbs.	87.0	318.9	309.5	454.3	415.7	316.6	93.2	138.8	128.7	130.0
	$1,000	$120.5	$516.1	$589.6	$733.0	$661.6	$562.6	$134.4	$191.2	$134.6	$136.3
Newport, RI	1,000 Lbs.	312.0	406.9	436.3	406.8	581.5	360.9	614.2	671.1	1,231.6	1,156.6
	$1,000	$388.0	$505.4	$558.1	$584.3	$1,229.4	$808.1	$848.2	$917.9	$1,505.6	$1,430.8
Hampton, VA	1,000 Lbs.	256.2	336.0	113.4	134.9	42.2	35.8	20.7	3.6	4.7	22.7
	$1,000	$326.5	$350.5	$129.3	$178.5	$79.1	$76.1	$23.8	$3.6	$6.3	$28.2
Newport News, VA	1,000 Lbs.	184.3	253.9	373.0	275.2	95.9	90.0	39.6	43.8	37.3	55.5
	$1,000	$221.1	$285.0	$454.0	$333.1	$140.4	$106.5	$42.9	$50.9	$43.3	$64.7

Source: NMFS Statistics Office, dealer weighout database & permit database

Pounds are in landed weight

1995-2001 data based on vessels that were issued a monkfish permit during the 2001 fishing year. 2002 and 2003 fishing year data are based on vessels issued a monkfish permit during the 2002 and 2003 fishing years, respectively.

HOME PORT		MONKFISH LANDINGS AND REVENUES									Principal Port
		FY1995	FY1996	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2003
All Other Ports	1,000 Lbs.							8699.4	6182.4	7090.5	7091.5
	$1,000							$ 12,153.5	$ 8,618.0	$ 8,448.0	$ 8,449.0

	FY2001	FY2002	FY2003	Principal Port FY2003
Summary of "Primary", "Secondary" and "Other" Ports,	30,310	24,864	28,684	30,009
	$42,072	$34,654	$36,590	$38,405

Table 22 - Monkfish landings and revenues for monkfish secondary and other ports, FY 1995 – 2003, and principal port, FY 2003.

HOME PORT		Number of Vessels	FY1995	FY1996	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003
1	Westport, MA	14	56.9%	69.0%	42.5%	40.8%	49.6%	51.2%	62.9%	37.4%	47.3%
2	Port Clyde, ME	17	10.6%	7.7%	13.7%	19.2%	37.6%	44.6%	36.5%	32.7%	37.0%
3	Plymouth, MA	47	6.0%	4.2%	6.3%	7.9%	7.5%	38.5%	29.8%	28.6%	4.6%
4	South Bristol, ME	10	7.1%	7.6%	7.5%	13.5%	22.6%	42.5%	32.4%	27.7%	35.6%
5	Portsmouth, NH	73	11.8%	12.5%	19.8%	19.4%	38.4%	39.9%	49.8%	37.8%	31.3%
6	Scituate, MA	39	5.9%	3.5%	3.2%	20.2%	30.5%	40.5%	34.5%	17.5%	30.7%
7	Boston, MA	26	13.1%	10.8%	14.0%	13.5%	27.4%	30.8%	20.6%	23.6%	23.3%
8	Portland, ME	130	12.5%	13.0%	13.9%	14.4%	23.5%	26.2%	22.2%	27.6%	26.7%
9	Rockland, ME	13	17.6%	22.4%	4.1%	9.0%	12.3%	14.3%	9.5%	2.8%	4.5%
10	Long Beach/Barnegat Light, NJ	62	17.7%	21.6%	14.8%	28.6%	39.1%	22.3%	34.2%	24.0%	25.1%
11	Gloucester, MA	246	10.2%	6.9%	5.2%	5.8%	13.2%	18.0%	15.8%	15.1%	13.0%
12	Point Judith, RI	138	6.6%	12.7%	9.1%	8.5%	10.6%	13.3%	11.2%	8.0%	9.7%
13	Newport, RI	58	6.2%	9.5%	10.1%	10.7%	23.6%	11.4%	13.3%	12.1%	18.2%
14	Chatham, MA	100	2.8%	22.4%	2.6%	4.9%	5.7%	11.2%	9.3%	20.1%	18.0%
15	Point Pleasant, NJ	89	2.0%	7.1%	10.6%	19.0%	19.1%	9.0%	13.8%	8.0%	7.9%
16	New Bedford, MA	407	13.4%	9.4%	14.0%	15.8%	11.5%	8.1%	5.9%	4.1%	4.6%
17	Hampton Bays, NY	79	2.5%	9.5%	8.1%	10.0%	10.1%	7.9%	9.7%	7.0%	6.4%
18	Ocean City, MD	28	7.3%	15.0%	12.3%	11.7%	15.3%	4.3%	4.8%	0.8%	3.1%
19	Provincetown, MA	53	9.0%	4.9%	2.5%	8.1%	6.7%	4.3%	0.9%	2.2%	4.3%
20	Montauk, NY	103	0.9%	1.4%	1.8%	3.3%	2.1%	1.6%	2.3%	3.4%	6.2%
21	Cape May, NJ	144	1.5%	1.8%	2.4%	1.9%	1.4%	1.2%	0.7%	0.5%	0.6%
22	Greenport, NY	10	1.7%	2.6%	2.9%	2.0%	1.3%	1.0%	1.1%	0.6%	0.2%
23	Hampton, VA	56	4.0%	5.1%	2.7%	2.9%	1.2%	0.8%	0.6%	0.2%	0.2%
24	Newport News, VA	70	1.8%	2.2%	3.9%	2.8%	0.9%	0.5%	0.2%	0.2%	0.2%

Source: NMFS Statistics Office, dealer weighout database & permit database

Pounds are in landed weight

1995-2001 data based on vessels that were issued a monkfish permit during the 2001 fishing year. 2002 and 2003 fishing year data are based on vessels issued a monkfish permit during the 2002 and 2003 fishing years, respectively.

Table 23 - Monkfish Revenues, FY 1995-2003, as a Percentage of Total Revenues by Port

5.0 Environmental Consequences of Proposed Action

5.1 Biological Impacts

5.1.1 Impact on monkfish and non-target species

The proposed action is consistent with the stock-rebuilding program adopted in Framework 2, and as such, is expected to result in an increase in monkfish biomass to the target level by 2009. Even though this action will allow for an short-term increase in SFMA monkfish landings and effort from the low target level in FY 2004, the increase is an 18% reduction from FY 2003 levels will only be in effect for one year. In subsequent years, under the program, targets and management measures will depend on the relative increase (or decrease) in the survey indices and the previous year's landings. In this light, the impact of the proposed action on the monkfish resource is expected to be neutral or positive in the long-term, despite the short-term increase in allowable landings in the SFMA.

The increase in monkfish effort for FY 2005 is not likely to have a significant impact on other managed species, since incidental catch and bycatch rates for most other species are low, according to limited number of observations reported in Section 5.3.5 of Amendment 2. Amendment 2 reported that the overall rate of discards appears to be highest in trawl gear and lowest in large mesh gillnet fisheries. Winter skates and dogfish are the predominant species discarded in the NFMA, and winter and thorny skates, as well as dogfish are discarded in the SFMA. The limited number of observations available precludes a quantitative assessment of the bycatch rates of non-target species on a fishery-wide basis, however, it can be noted that winter skates are not overfished and that thorny skates are overfished but overfishing is not occurring according to the Fall 2004 bottom trawl survey index. The 2005 Skate annual review concluded that thorny skates are rebuilding. Furthermore, all vessels are required by the Skate FMP to discard all thorny skates. Based on this analysis, the impact of the proposed action on non-target species is expected to be neutral, particularly in the NFMA where there is no change in regulations, or slightly negative in the short term (the one year duration of the specifications), particularly in the SFMA where the target TACs, trip limits and DAS are proposed to increase in relation to the no action alternative.

5.1.2 Impact on Protected Species

NOAA Fisheries previously considered the effects of implementation of Framework 2 on Endangered Species Act (ESA)-listed cetaceans, sea turtles, shortnose sturgeon, and Atlantic salmon during Section 7 consultation on the fishery, which was completed on April 14, 2003. The Biological Opinion (Opinion) for that consultation concluded that the proposed action was not likely to result in jeopardy to any ESA-listed species under NOAA Fisheries' jurisdiction. A revised Incidental Take Statement was provided for the anticipated taking of loggerhead, leatherback, green, and Kemp's ridley sea turtles in the fishery. Reasonable and prudent measures to reduce the likelihood of take were also provided to address the possible entanglement of sea turtles in the fishery.

Under Framework 2, the 2003 fishing year TACs and the 2003 fishing year SFMA trip limits were greater than what is currently proposed. Therefore, the proposed 2005 fishing year specifications for the monkfish fishery are not expected to result in an increase in effort in the fishery than what was considered in the in the Opinion for Framework 2. It should be noted that compared to the 2004 fishing year, when SFMA monkfish effort (DAS and trip limits) was reduced, the proposed action calls for an increase in monkfish effort. Monkfish effort in the SFMA is primarily attributed to the use of sink gillnets, which are typically used in the SFMA during the spring and fall when many animals are migrating. Northeast sink gillnet gear is currently listed as Category I gear under the MMPA, which means that this gear type is associated with annual mortality and serious injury that is greater than or equal to 50 percent of the potential biological removal (PBR) for specific marine mammal stocks (see Appendix II for information on specific stocks). In the case of sea turtles, current gillnet closures and the expansion of these closures that is now in rulemaking (see Section 4.1.2) should mitigate the impact of the proposed action on ESA-listed sea turtles.

Although the proposed action would allow vessels to fish up to 40 DAS between the NFMA and the SFMA, which is potentially an effort allocation increase from the current (FY 2004) restriction of 28 DAS in the SFMA, this proposed effort allocation is the same as in the previous four fishing years (FY 2000 through FY 2003). The effects on ESA-listed species of the 40 DAS allocated between the NFMA and the SFMA were previously reviewed in the April 14, 2003, Section 7 consultation on the monkfish fishery. Therefore, removing the restriction on the number of DAS that could be used in the SFMA is not expected to result in an increase or shift in effort within the fishery that has not already been considered in the previous opinion. Therefore, the Councils do not expect a significant impact, positive or negative, from the proposed adjustment on marine mammals and protect species compared to what was analyzed in the original FMP and in Amendment 2.

5.2 Habitat Impacts and EFH Assessment

The embodied essential fish habitat (EFH) assessment is provided pursuant to 50 CFR 600.920(e) of the EFH Final Rule to initiate EFH consultation with the National Marine Fisheries Service. Even though this action will allow for a short-term increase in SFMA monkfish landings and effort from the low target level in FY 2004, the increase is an 18% reduction from FY 2003 levels will only be in effect for one year. Therefore, the habitat impacts of the proposed action will be minimal.

Description of Action

The proposed action would set FY 2005 monkfish TACs and SFMA DAS and trip limits as described below in Table 24. As noted, this action does not propose any changes to the management measures for limited access monkfish vessels fishing in the NFMA since such changes are unnecessary in order to achieve the proposed target TAC for FY 2005.

Management Area	2005 Target TAC (mt)	Trip Limits (lb. tail wt./DAS)	DAS
NFMA	13,160	NA	40 (no change)

SFMA	9,673	A & C: 700 B & D: 600	40

Table 24 – Proposed action. FY 2005 target TACs, and SFMA trip limits and DAS adjustments.

In general, the activity described by this proposed action, fishing for monkfish occurs off the New England and Mid-Atlantic coasts within the U.S. EEZ. Thus, the range of this activity occurs across the designated EFH of all Council-managed species (see Amendment 11 to the NE Multispecies FMP for a list of species for which EFH was designated, the maps of the distribution of EFH, and descriptions of the characteristics that comprise the EFH). EFH designated for species managed under the Secretarial Highly Migratory Species FMPs are not affected by this action, nor is any EFH designated for species managed by the South Atlantic Council as all of the relevant species are pelagic and not directly affected by benthic habitat impacts.

Assessing the Potential Adverse Impacts
Even though this action will allow for a short-term increase in SFMA monkfish landings and effort from the low target level in FY 2004, the increase is an 18% reduction from FY 2003 levels will only be in effect for one year. Therefore, the habitat impacts of the proposed action will be minimal.

The monkfish fishery is prosecuted predominantly by bottom otter trawls and sink gillnets which are described in detail in Section 1.2.1 of Appendix 2 to Amendment 2 to the Monkfish FMP. Very generally, otter trawls are towed at speeds of 2-3 knots over the bottom and the trawl doors and footrope contact the benthic environment. Conversely, while sink gill nets are deployed on the ocean bottom, they are fished in a stationary or static method and are anchored at each end and left in place for varying periods of time.

Additional reasons why adverse impacts of proposed action will not have more than minimal impacts on benthic EFH for any species:

- Bottom gill nets are the principal gear used to catch monkfish in SFMA (Figure 56 and Figure 67).
- Impacts of bottom gill nets on benthic habitats in the NE region are minimal (NREFHSC, 2002).
- Gill nets in SFMA are used primarily in relatively shallow continental shelf waters (see Figure 70 in Amendment 2).
- Predominant substrate in Mid-Atlantic region (shelf and slope waters from Georges Bank to Cape Hatteras) is sand (see revised Affected Environment section of 2005 specifications), which is subject to a higher degree of natural disturbance than other substrates (NRC, 2002). Recovery from any physical or biological impacts related to bottom gillnet fishing would therefore by relatively rapid (days to months for biological impacts – NREFHSC, 2002). See Figure 9.

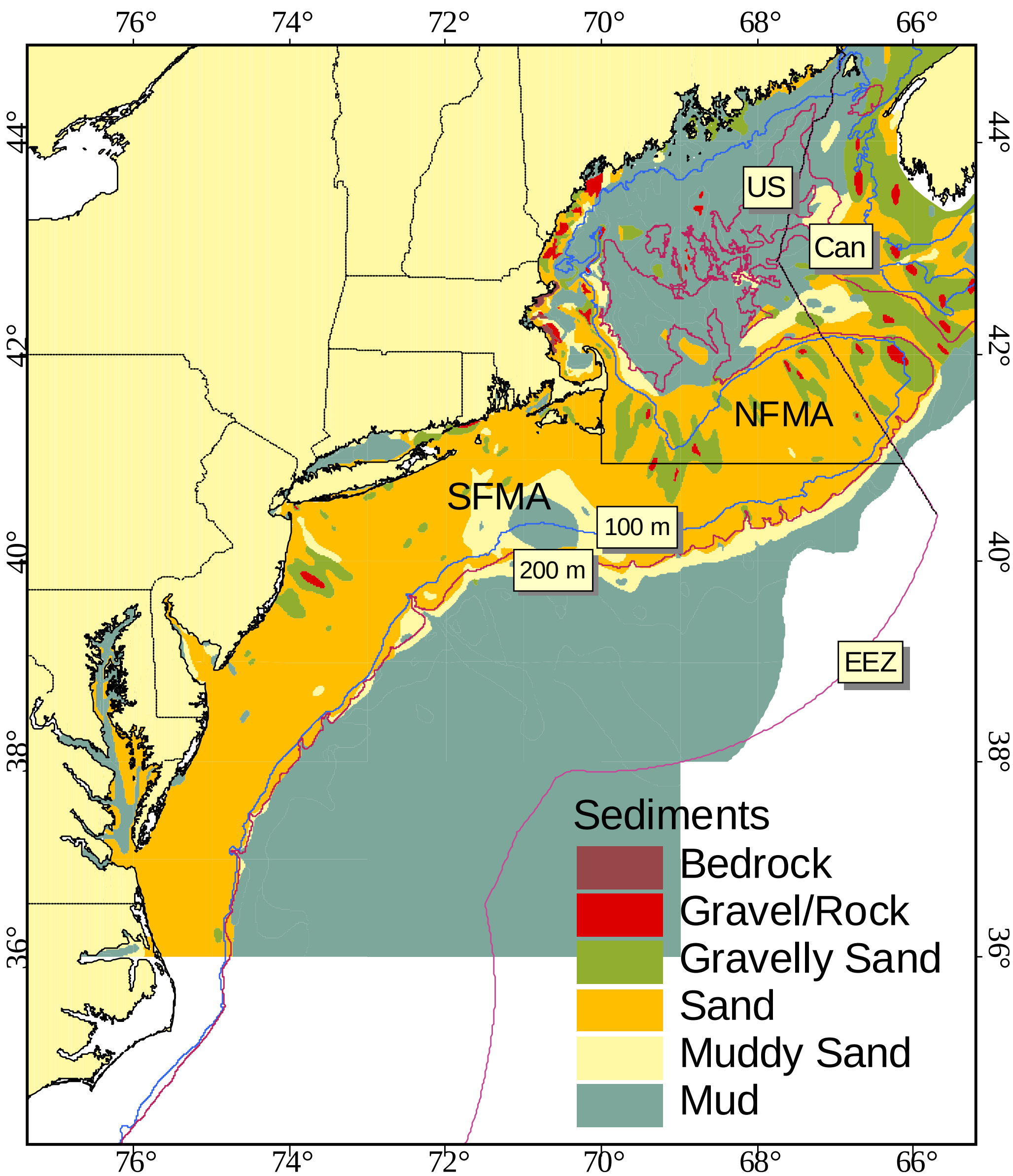


Figure 9. Overlap of sediment types and fishery management areas in Monkfish FMP (Poppe *et al*. 1989a and b).

Minimizing or Mitigating Adverse Impacts
In Amendment 13 to the NE Multispecies FMP and Framework 16 to the Atlantic Sea Scallop FMP, the New England Council implemented a range of measures to minimize the impacts of bottom trawling in the Gulf of Maine, George's Bank and Southern New England. In addition to the significant reductions in days-at-sea and some gear modifications, the Council closed 2,811 square nautical miles to bottom-tending mobile fishing gear (known as Habitat Closed Areas). Because the monkfish fishery overlaps significantly with the groundfish fishery in the northern fishery management area and the habitat closed areas extend into the southern fishery management area, measures to protect habitat in Amendment 10 and Amendment 13 assist in minimizing the effect of fishing on EFH in the monkfish fishery.

The alternatives implemented in Amendment 2 focus on those areas (offshore/shelf slope/canyons) and gears modifications (trawl mesh) where the monkfish fishery operations do not overlap (spatially or gear use) with the groundfish or scallop fishery. The Councils proposed closing Oceanographer and Lydonia Canyons deeper than 200 meters, a total closure of 116 square nautical miles, to vessels on a monkfish DAS to minimize the impacts of the directed monkfish fishery on deepwater canyon, hard bottom communities.

The habitat impacts of the proposed action are minimal and are minimized by the baseline habitat protections established under Amendment 13. In addition, the fishery must respect the 2,811 square nautical miles of habitat closed areas established by the Amendment 13 to the NE Multispecies FMP and the proposed Oceanographer and Lydonia Canyon closures in Amendment 2 to the Monkfish FMMP. Therefore, any additional effort will occur in areas that are already open to bottom tending mobile gears or by gears that have been determined to not adversely impact EFH in a manner that is more than minimal and less than temporary in nature. Therefore, measures to mitigate or minimize adverse effects on EFH are not necessary.

Conclusion
The proposed action will only minimally affect EFH of federally managed species. While effort (DAS) is increased in the SFMA from 28 to 40, it is merely being restored to the level that has been in place since the FMP was implemented (it was only reduced to 28 DAS in FY 2004). In other words, the short-term reduction in effort for the 2004 fishing year did not have a significant positive effect on EFH, and the increase proposed for 2005 will, conversely, not have a significant adverse effect. In addition, fishing effort in the SFMA is predominantly (>85%) gillnet effort, which does not adversely affect EFH. Furthermore, monkfish fishing effort in the NFMA is largely regulated by the NE Multispecies FMP, which has significantly reduced the fishing effort and DAS allocations beginning in fishing year 2003, and is not changed by the proposed action.

5.3 Socioeconomic Impacts

This assessment is an extension of the economic analysis found in Section 6.3 of this document, the Initial Regulatory Flexibility Analysis (IRFA). Section 6.3.2.6 contains the description of the methods used to calculate the homeport level values in this section. Numerous data sources were used in this analysis: weighout data were used to calculate average prices; VTR data were used to analyze trip impacts; the DAS call-in database was used to estimate how many days would be restored; and, observer data were used to estimate trip costs.

5.3.1 Introduction to the social impact assessment

The need to assess social impacts emanating from federally mandated fishing regulations stems from National Environmental Protection Agency (NEPA) and Sustainable Fisheries Act (SFA) mandate that the social impacts of management measures be evaluated. NEPA requires the evaluation of social and economic impacts in addition to the consideration of environmental impacts. National Standard 8 of the SFA demands that "Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of over fishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities" (16 U.S.C.§1851(2)(8)). The analysis that follows provides a context for understanding possible social impacts resulting from the proposed measures in this environmental assessment.

Daily routines, safety, occupational opportunities, and community infrastructure are examples of social impacts that can be affected by changes in management measures. Modifications to daily routines can make long-term planning difficult. New gear requirements such as netting and some equipment must be ordered months in advance resulting in changes to daily routines when these modifications cannot be met in a time and cost efficient manner. Further the cost of making such changes may prove to be a burden for some vessel owners. Changes in management measures that limit access to fishing may increase the likelihood of safety risks. Increased risk can result when fishermen spend longer periods at sea in order to minimize steam time to and from fishing grounds, operate with fewer crew, and fish in poor weather conditions.

Occupational opportunities within the fishing industry in general appear to be largely on the decline with more people leaving the industry then entering it. Management measures that further reduce occupational opportunities may have profound social impacts on the future occupational viability of commercial fishing. Impacts that decrease occupational opportunities in turn can affect community infrastructure. More specifically, port infrastructure may be affected by the gradual loss of shore based services essential to a strong working waterfront.

5.3.2 Social impact of proposed action

This section analyzes the social impact of the adjustment to the SFMA trip limit and DAS allocation. As the positive financial returns from this alternative demonstrate, potential social impacts are estimated to be positive or neutral for both large and small ports. Smaller ports are aggregated due to confidentially considerations. Improved or additional harvesting opportunities improve sources of income that in turn compensate for the previous reduction of harvesting opportunities resulting of increasing regulatory restrictions.

For vessels landing monkfish exclusively in the SFMA, the potential impacts of this alternative by homeport will be positive compared to the no action alternative, with an overall increase in crew and vessel returns greater than 11 percent (Table 25). The ports with the greatest estimated increases in vessel returns will be Waretown (33.76%), Newport (26.70%), Boston (19.67%), and Westport (19.56%), and Barnegat Light (17.2%). Estimated increases in crew returns closely followed vessel returns.

For vessels landing monkfish from both the SFMA and the NFMA, the potential impacts of this alternative by homeport will be positive compared to the no action alternative with an overall increase in crew and vessel returns between 0.8 and 2 percent, though less than the positive impacts in the SFMA alone (Table 26). The ports with the greatest estimated increases in vessel returns will be Barnegat Light (19.38%), Chatham (7.96%), and Scituate (6.45%). Estimated increases in crew returns closely followed vessel returns.

Average per trip return to vessels by homeport is to be positive compared to the no action alternative with greater than twenty percent increase overall in average per trip return to vessels (Table 27). The ports estimated to have twenty percent or greater increase per vessel include Chatham (27.9%), Gloucester (22.5%), Barnegat Light (22.3%), and Westport (20.1%).

Average per trip net pay per crew member by homeport is estimated to be positive compared to the no action alternative with greater than twenty percent increase overall in average pay to crew members (Table 28). The ports estimated to have twenty percent or greater increase per crew include Chatham (26.9%), Barnegat Light (21.8%), Gloucester (20.8%), and Westport (20.3%).

	Number of Vessels	Net Crew Return 2004	Net Crew Return 2005	% Change in Crew Return	Net Vessel Return 2004	Net Vessel Return 2005	% Change in Vessel Return
BARNEGAT LIGHT	31	2,376,839	3,009,073	17.5%	1,670,141	2,099,868	17.2%
POINT JUDITH	11	1,149,630	1,187,504	3.29%	1,185,875	1,209,389	1.98%
NEWPORT	9	563,364	719,313	27.68%	404,763	512,827	26.70%
BOSTON	8	431,058	536,169	24.38%	376,250	450,272	19.67%
NEW YORK	8	366,827	360,244	-1.79%	636,413	630,037	-1.00%
CAPE MAY	6	253,732	253,732	0.00%	246,911	246,911	0.00%
WANCHESE	6	580,971	580,971	0.00%	583,668	583,668	0.00%
MONTAUK	5	809,548	883,182	9.10%	644,726	697,387	8.17%
POINT PLEASANT	5	291,482	321,049	10.14%	292,854	313,424	7.02%
WESTPORT	5	302,893	361,995	19.51%	211,539	252,923	19.56%
NEW BEDFORD	4	424,443	473,597	11.58%	311,469	346,109	11.12%
NEW LONDON	4	453,720	494,354	8.96%	376,430	405,016	7.59%
WARETOWN	4	333,137	445,400	33.70%	232,607	311,132	33.76%
Total: Communities with < 4 Vessels	52	3,416,568	3,898,342	12.36%	3,001,789	3,328,244	9.81%
TOTAL	158			11.70%			11.30%

Table 25 Vessels Landing Monkfish Exclusively from the SFMA by Homeport

	Number of Vessels	Net Crew Return 2004	Net Crew Return 2005	% Change in Crew Return	Net Vessel Return 2004	Net Vessel Return 2005	% Change in Vessel Return
BOSTON	60	9,928,439	10,049,117	1.2%	8,881,332	8,966,154	0.96%
NEW BEDFORD	59	8,557,870	8,597,948	0.47%	8,124,834	8,153,031	0.35%
GLOUCESTER	51	5,226,104	5,273,209	0.90%	4,544,080	4,577,492	0.74%
POINT JUDITH	25	5,416,088	5,416,088	0.00%	5,092,081	5,092,081	0.00%
PORTLAND	23	3,185,433	3,185,433	0.00%	2,961,596	2,961,596	0.00%
CHATHAM	13	1,173,971	1,270,183	8.20%	852,984	920,874	7.96%
PORTSMOUTH	13	903,708	919,709	1.77%	698,390	710,211	1.69%
PORT CLYDE	9	601,635	601,635	0.00%	548,401	548,401	0.00%
NEWPORT	7	1,224,029	1,224,029	0.00%	1,282,592	1,282,592	0.00%
SCITUATE	7	318,665	341,806	7.26%	252,292	268,573	6.45%
MONTAUK	6	2,919,677	2,919,693	0.00%	2,493,025	2,494,479	0.06%
RYE	5	462,245	486,367	5.22%	370,359	387,543	4.64%
SOUTH BRISTOL	5	301,361	301,361	0.00%	288,615	288,615	0.00%
BARNEGAT LIGHT	4	366,500	437,293	19.32%	256,884	306,658	19.38%
CUNDYS HARBOR	4	522,718	522,718	0.00%	445,182	445,182	0.00%
NEW YORK	4	478,133	478,133	0.00%	518,487	518,487	0.00%
Total: Communities with < 4 Vessels	81	8,725,730	8,864,504	1.59%	8,116,035	8,214,393	1.20%
TOTAL	376			0.80%			2.10%

Table 26 Vessels Landing Monkfish from Both Management Areas by Homeport

Home Port	Number of Vessels	Number of Trips	Average Vessel Return with FY2004 Trip Limits	Average Vessel Return with FY2005 Trip Limits	Percent Change in Average Vessel Return
BARNEGAT LIGHT	25	261	294	359	22.3%
BOSTON	10	270	813	970	19.3%
CHATHAM	8	127	902	1,154	27.9%
GLOUCESTER	7	88	934	1,144	22.5%
WESTPORT	6	157	682	819	20.1%
NEW BEDFORD	4	108	1,073	1,286	19.9%
WARETOWN	4	18	353	417	18.1%
Total: Communities with < 4 Vessels	44	1127	697	852	20.5%
					21.3%
TOTAL	108	2156			20.7%

Table 27 Average per Trip Return to Vessels by Home Port (60/40 Lay System)

Home Port	Number of Vessels	Average Net Pay per Crew Member with FY2004 Trip Limits	Pay per Crew Member with FY2005 Trip Limits	Percent Change in Average Payment per Crew Member
BARNEGAT LIGHT	25	186	226	21.8%
BOSTON	10	338	402	18.9%
CHATHAM	8	360	457	26.9%
GLOUCESTER	7	467	564	20.8%
WESTPORT	6	305	367	20.3%
NEW BEDFORD	4	468	561	19.9%
WARETOWN	4	143	166	16.1%
Total: Communities with < 4 Vessels	44	363	442	22.0%
TOTAL	108			20.6%

Table 28 Average per Trip Net Pay per Crew Member by Home Port (60/40 Lay System)

5.4 Environmental Consequences of the No Action Alternative

The no action alternative, while not feasible from a regulatory standpoint, would result in FY 2004 TACs and SFMA trip limits and DAS allocations being retained for FY 2005.

5.4.1 Biological Impacts

In the NFMA, the no action alternative would have the same environmental consequences as the proposed action even though the target TAC for the NFMA would be higher (16,968 mt verus 16,160 mt). This is because the change in target TAC for the NFMA does not require a change in management measures (i.e., DAS or trip limits), as discussed in Section 1.0 of this EA. Conversely, the no action alternative would result in lower trip limits and DAS available for vessels fishing in the SFMA than under the proposed action. These reduced DAS and trip limits could have a positive effect on monkfish stock rebuilding since fewer monkfish would be harvested. Furthermore, the reduced trip limits and DAS would result in less effort in the SFMA than under the proposed action, potentially reducing the bycatch of non-target species. However, the benefits on non-targets species are uncertain since vessel owners may chose to target other species in order to make up for lost revenues in the monkfish fishery. Furthermore, any positive effects on the monkfish resource and non-target species in the SFMA resulting from the no action alternative would be minimal and temporary since the stock rebuilding plan implemented in Framework 2 requires an annual adjustment of target TACs, including adjustments to trip limits and DAS as necessary, in order to achieve the stock rebuilding goals of the FMP.

5.4.1.1 Impacts on Protected Species

An informal Section 7 consultation was conducted for the 2004 target TAC, trip limit, and DAS adjustment. This consultation stated that the proposed reduction in trip limits and DAS for the SFMA is not expected to result in a shift in effort within the fishery (i.e., to the NFMA) since limited access monkfish vessels fishing in the SFMA have typically not used all of their allocated DAS (see Tables 17 and 18 in Section 4.4.1.3). As a result, the informal consultation concluded that the proposed FY 2004 target TACs, trip limits and DAS restrictions would not impact ESA-listed species beyond the effects analyzed in the April 14, 2003, Biological Opinion. Because the no action alternative would continue the FY 2004 target TACs, trip limits, and DAS restrictions for FY 2005, the same conclusion would apply.

5.4.1.2 Habitat Impacts

The no action alternative would continue to restrict the DAS available to limited access monkfish vessels fishing in the SFMA (28 DAS). This reduction in effort could result in some habitat benefits. However, preliminary FY 2003 landings indicate that 76 percent of the monkfish landings occurring in the SFMA are associated with gillnet effort (Table 7). Therefore, because gillnets have been determined to not adversely affect EFH, any benefits to EFH resulting from the reduced fishing effort in the SFMA under the no action alternative are expected to be minimal.

With respect to the NFMA, the no action alternative would result in the same management measures as the proposed action since there is currently no monkfish trip limit for limited access monkfish vessels that fish in the NFMA under either a monkfish or a NE multispecies DAS. As stated in Section 5.4.1.1, the reduced amount of DAS available to vessels fishing in the SFMA is not expected to result in a shift in effort to the NFMA. Therefore, no additional impacts to EFH are expected for the NFMA under the no action alternative.

5.4.2 Socioeconomic Impacts

Although the no action alternative may have minimal biological benefits for vessels fishing in the SFMA, it would result in lost revenues and adverse economic and social impacts. As discussed in Section 5.3.2, when compared to the no action alternative, the proposed action would result in an average increase in both crew and vessel returns of greater than 11 percent when analyzed by homeport. Furthermore, the average per trip returns to both vessels and crew under the proposed action, when analyzed by homeport, would increase by approximately 20 percent under the proposed action. Vessel owners may be able to mitigate some of the economic and social impacts associated with the no action alternative by targeting other species. However, due to constraints in other fisheries (limited entry, DAS, trip limits, etc.), the extent to which vessel owners could offset the revenues lost in the monkfish fishery under the no action alternative is likely minimal.

As stated above in Section 5.4.1, the no action alternative would not result in different management measures for the NFMA than under the proposed action. Therefore, although the proposed target TAC of 16,968 mt is higher than the proposed target TAC of 13,160 mt, there is no anticipated social or economic benefits to vessels fishing in the NFMA under the no action alternative.

5.5 Cumulative Effects

5.5.1 Introduction

The purpose of this section is to summarize the incremental impact of the proposed action on the environment resulting when added to other past, present and reasonably foreseeable future actions regardless of what agency or person undertakes them. The National Environmental Policy Act (NEPA) requires that cumulative effects of "past, present, and reasonably foreseeable future actions" (40 CFR § 1508.7) be evaluated along with the direct effects and indirect effects of each proposed alternative. Cumulative impacts result from the combined effect of the proposed action's impacts and the impacts of other past, present, and reasonably foreseeable future actions. These impacts can result from individually minor but collectively significant actions taking place over a period of time. The Council on Environmental Quality (CEQ) directs federal agencies to determine the significance of cumulative effects by comparing likely changes to the environmental baseline. On a more practical note, the CEQ (1997) states that the range of alternatives considered must include the "no-action alternative as a baseline against which to evaluate cumulative effects." Therefore, the analyses in this document, referenced in the following cumulative impacts discussion, compare the likely effects of the proposed action to the effects of the no-action alternative.

CEQ Guidelines state that cumulative effects include the effects of all actions taken, no matter who (federal, non-federal or private) has taken the actions, but that the analysis should focus on those effects that are truly meaningful in terms of the specific resource, ecosystem and human community being affected. Thus, this section will contain a summary of relevant past, present and reasonably foreseeable future actions to which the proposed alternatives may have a cumulative effect. This analysis has taken into account, to the extent possible, the relationship between historical (both pre- and post-FMP) and present condition of the monkfish population and fishery, although significantly less is known about the population and the fishery prior to the implementation of the FMP and other management actions affecting the fishery (particularly NE Multispecies Amendments 5 and 7 and Sea Scallop Amendment 4).

In terms of past actions for fisheries, habitat and socioeconomic impacts, the temporal scope for this analyis is primarily focused on the 1980's and 1990's, although some historical trawl survey data extending to the 1960's is considered. For endangered and other protected species, the context is largely focused on the 1980's and 1990's, when NMFS began generating stock assessments for marine mammals and sea turtles that inhabit waters of the U.S. EEZ. In terms of future actions, the analysis examines the period between implementation of these specifications (Spring 2005) and approximately 5-10 years (the period of the rebuilding program and immediately following).

The geographic scope of the analysis of impacts to fish species and habitat for this action is the range of the fisheries in the Western Atlantic Ocean, as described in the Affected Environment (Section 4.0). For endangered and protected species, the geographic range is the total range of each species as described in Appendix II. The geographic range for socioeconomic impacts is defined as those fishing communities bordering the range of the monkfish fishery (Section 4.4), from the U.S.-Canada border to, and including North Carolina.

The cumulative effects analysis focuses on five Valued Environmental Components (VEC's):

1. target species (monkfish)
2. non-target species (incidental catch and bycatch)
3. protected species
4. habitat, and
5. communities.

The cumulative effects determination on these VEC's is based on the following analyses: (1) the discussion in this section of non-fishing actions occurring outside the scope of this FMP; (2) the analysis of direct and indirect impacts contained in the Environmental Consequences section; and (3) the summary of past, present and future actions affecting the monkfish fishery.

NOAA Fisheries staff determined that the 5 VECs (target species, non-target species, protected species, habitat and communities) are appropriate for the purpose of evaluating cumulative effects of the proposed action based on the environmental components that have historically been impacted by fishing, and statutory requirements to complete assessments of these factors under the Magnuson-Stevens Act, Endangered Species Act, Marine Mammal Protection Act, Regulatory Flexibility Act, and several Executive Orders. The VECs are intentionally broad (for example, there is one devoted to protected species, rather than just marine mammals, and one on habitat, rather than Essential Fish Habitat) to allow for flexibility in assessing all potential environmental factors that are likely to be impacted by the action. While subsistence fishing would ordinarily fall under the "communities" VEC, no subsistence fishing or Indian treaty fishing take place in the area managed under this FMP.

The vessels participating in the monkfish fishery must comply with all federal air quality (engine emissions) and marine pollution regulations, and, therefore, do not significantly affect air or marine water quality. Consequently, the management measures contained in this adjustment would not likely result in any additional impact to air or marine water quality.

5.5.2 Past, Present, and Reasonably Foreseeable Future Actions

The current condition of the monkfish fishery (in the context of the five VECs) is the result of the cumulative effect of the Monkfish FMP, implemented in 1999, and regulations under other FMPs in the region that impact vessels catching monkfish as well as measures adopted under other laws, particularly the Endangered Species Act and the Marine Mammal Protection Act. The two FMP's that have had the greatest impact on monkfish fishery VECs, other than the Monkfish FMP, are the Atlantic Sea Scallop and NE Multispecies FMP's because of the spatial overlap of the fisheries, the relatively high level of incidental catch of monkfish in those fisheries, and the fact that more than 90 percent of the monkfish limited access permit holders are also permitted in one or the other of those two fisheries (evenly split).

Both the NE multispecies and sea scallop fisheries have undergone a series of major actions since 1994 to reduce fishing effort and rebuild overfished stocks. These actions have reduced overall fishing effort significantly since 1994, and have imposed other restrictions such as year-round and seasonal closed areas, and gear restrictions that have affected both the directed and incidental catch monkfish fishery. Cumulatively, these actions have likely had a positive effect on monkfish as a result of the overall reduction in fishing effort and the increased selectivity of gears used in those fisheries.

Other FMPs that likely have had an impact on the fishery VECs include those managing other demersal species in the region, such as the Skate FMP (implemented 2003), Spiny Dogfish FMP (implemented 2000), and the Summer Flounder, Scup, Black Sea Bass FMP (1996 and amendments). To varying degrees, these management plans, as well as others in the region, have directly or indirectly affected the monkfish fishery by causing effort to shift among fisheries and by changes to the levels of incidental catch of monkfish, but it is not possible to analyze the impact of individual actions on the monkfish fishery.

In addition to FMPs implemented by the Councils, other actions that have directly and cumulatively affected the monkfish fishery VEC's include three federal court decisions, two marine mammal take reduction plans, and a final rule implemented by NMFS under authority of the Endangered Species Act to protect sea turtles. Cumulatively, these actions have limited areas open to fishing on a seasonal basis, specifically to gillnet gear, and have prescribed gear restrictions, including the mandatory use of acoustic deterrent devices in some areas, net limits and buoy line specifications.

There are several reasonably foreseeable future (RFF) actions that could affect the monkfish fishery. These actions are as follows:

- <u>Amendment 2 to the Monkfish FMP</u>. A Notice of Availability for the FSEIS prepared for Amendment 2 published in the Federal Register on January 14, 2005. This action, if approved, would implement several management measures aimed at providing vessels involved in the monkfish fishery with a more flexible and efficient management program that does not compromise the conservation objectives of the FMP. One of the management measures being considered in this amendment is the establishment of an Offshore Fishery Program in the SFMA. In order to mitigate the impacts of a potentially expanding offshore monkfish fishery on EFH, the Councils are also proposing to close two canyon areas (Lydonia and Oceanographer Canyons) to vessels fishing under a monkfish DAS. Another measure being considered in Amendment 2 that could result in a minor increase in effort is the implementation of a modified limited entry program for vessels fishing in the southern range of the fishery. The analysis contained in the FSEIS for Amendment 2 estimated that 5 new vessels would enter the monkfish fishery as a result of the proposed program. The increase in effort resulting from these 5 vessels will be taken into account when adjusting annual trip limits and DAS in accordance with the procedures established in Framework 2, thus mitigating potential impacts resulting from the inclusion of these 5 vessels in the directed monkfish fishery.

- Framework 40B to the NE Multispecies FMP. This action, if approved, would implement management measures to improve the effectiveness of the effort control program implemented in Amendment 13 to the NE Multispecies FMP, including the opportunities developed to use effort to target healthy stocks and other measures that were adopted to facilitate adaptation to the amendment's effort reductions. The majority of the measures being considered in Framework 40B would not impact overall effort in the NE multispecies fishery, with which the monkfish fishery is closely associated. However, there are two measures that impact effort in the NE multispecies fishery, and therefore likely in the monkfish fishery. The first measure would re-categorize ten Category C DAS as Category B (reserve) DAS for approximately 400 vessels that were not allocated either Category A or Category B DAS under Amendment 13. Amendment 13 categorized the NE multispecies DAS allocated to each permit based on recent fishing history, and currently only Category A and B DAS can be used. The DAS allocated to these 400 vessels would have to be used in specific Special Access Programs (SAPs) where the amount of effort that can be used is capped by a TAC for targeted and incidental catch groundfish species. Allocating a minimum amount of effort does not change these TACs and, therefore, is not likely to increase the amount of effort used in these SAPs. As a result, this measure is not likely to change bycatch amounts or rates, and thus have minimal impact on the monkfish fishery. The second measure that could impact fishing effort is the proposal to eliminate the net limitations for gillnet vessels. Based on the VTR analysis contained in the environmental assessment prepared for Framework 40B, monkfish is a major component of the catch of trip gillnet vessels, and thus is likely to be affected by the change in net limits. The proposed measure could increase the amount of nets being fished, resulting in an increase in monkfish mortality. This would be particularly evident in the NFMA where there is no monkfish trip limit for limited access monkfish vessels when they are fishing under a NE multispecies DAS.
- Annual TAC Adjustment for the U.S./Canada Management Area under the NE Multispecies FMP. This action would establish TACs for Georges Bank cod, haddock and yellowtail flounder for the 2005 fishing year (May 1, 2005, through April 30, 2006) in accordance with the U.S./Canada Resource Sharing Understanding. The proposed 2005 TACs for cod and yellowtail flounder are lower than the TACs adopted for the 2004 fishing year (cod reduced by 13% and yellowtail flounder reduced by 29%). However, the proposed 2005 TAC for

haddock would increase by 49%. Because vessels targeting cod, yellowtail flounder and haddock typically catch monkfish as well, the proposed TACs, particularly the increased haddock TAC, could impact the monkfish resource. Although the increase in the haddock TAC would provide vessels fishing in the Eastern U.S./Canada Area additional opportunities to catch monkfish, historically vessels have not reached the haddock quota (as of February 17, 2005, the total haddock catch in the Eastern U.S./Canada Area including estimated discards is only 14% of the 2004 TAC). Therefore, the 2005 TAC for Georges Bank haddock could slightly increase effort on the monkfish resource; however, because it is unlikely that the quota will be obtained, impacts are expected to be minimal.

- Framework 41 to the NE Multispecies FMP. This action would allow vessels using hook gear that are not in the Hook Sector to target haddock in a small portion of Closed Area I while under a Category A or B DAS. Because the catch of monkfish in the hook gear fishery is extremely minimal, if approved, this action is not expected to impact the monkfish resource.
- Framework 42 to the NE Multispecies FMP. This action consists of the setting of revised specifications for the NE multispecies fishery based on an updated assessment of groundfish stocks that is scheduled to take place in 2005. It is not possible to predict how management measures may change as a result of this assessment. However, if such measures result in an increase in fishing effort, they could have potential impacts on the monkfish fishery.
- Liquid natural gas (LNG) terminals. There are approximately 11 LNG projects in various stages of the approval process (i.e., existing with approved expansions, approved, proposed, or planned) in the northeast region of the U.S. Only two onshore LNG projects have been constructed, one in Everett, MA and one in Cove Point, MD. LNG facilities are currently being proposed or planned for construction in Pleasant Point, ME (onshore); two projects offshore of Boston, MA area and one in Somerset, MA (onshore); Providence, RI (onshore); Long Island Sound, NY (onshore); Logan Township, NJ (onshore); Philadelphia, PA (onshore); and an expansion of an existing facility in Cove Point, MD.
- Offshore wind energy generation projects. Although only two offshore wind energy projects have formally been proposed in the northeast region, at least 20 other separate projects may be proposed in the near future. Cape Wind Associates (CWA) proposes to construct a wind farm on Horseshoe Shoal, located between Cape Cod and Nantucket in Nantucket Sound, Massachusetts. A second project is proposed by the Long Island Power Authority (LIPA) off Long Island, New York. The CWA project would have 130 wind turbines located as close as 4.1 miles offshore of Cape Cod in an area of approximately 24 square miles with the turbines being placed at a minimum of 1/3 mile apart. The turbines will be interconnected by cables, which will relay the energy to shore to the power grid.

There are several non-fishing actions that could potentially impact the monkfish fishery. These non-fishing activities include: chemical (e.g. pesticides and oil pollution), biological (e.g. invasive species and pathogens), and physical (e.g. dredging and disposal, coastal development) disturbances to riverine, inshore and offshore fish habitats; power plant operations (thermal pollution and entrainment of larvae); global warming; and energy projects such as liquid natural gas (LNG) facilities and windfarms. The majority of these activities tend to affect inshore areas, and the impacts are often localized. Monkfish are a ubiquitous species that can be found in inshore areas to depths greater than 800 meters. Monkfish are known to migrate seasonally and these migration patterns, although not well understood, are thought to be associated with spawning and food availability. Additionally, monkfish are known to live on various types of substrate from mud to rocky bottom, and can tolerate a wide range of temperatures. Since monkfish are not dependant upon any particular biological, physical, or habitat requirements during any life stage, the impacts to this species of non-fishing activities such as oil pollution, dredging activities, and coastal development are likely localized, and minimal as a whole. Similarly, as discussed in the paragraphs below, the potential impacts associated with LNGs and windfarms are also localized, with minimal impact to the monkfish fishery as a whole.

LNG is transported via tanker to specialized terminals at a super-cooled temperatures of –260 degrees F. Upon arrival, the LNG is warmed by using either seawater (open loop system) or an enclosed heating medium/liquid (closed loop system), within a regassification facility. At this point, LNG can be transported into existing pipelines. Depending on the specific location and type of LNG facility, a range of impacts to fisheries and/or fisheries habitat may result from both construction and operation of terminals.

Due to the large size of LNG tankers, dredging may need to occur in order to access onshore terminals. Dredging can result in direct loss of fish and/or shellfish habitat and can elevate levels of suspended sediment within the water column. As with other dredging, suspended sediments can impact various life stages of fish and shellfish. The construction of pipelines and fill associated with site construction can have adverse impacts on intertidal habitats and salt marshes in the area.

In addition, the operation of LNG facilities can have adverse effects on fishery habitats. Ballast water intakes for LNG vessels as well as intakes for regassification facilities can impinge and entrain fish eggs and larvae and can have a significant impact on coastal ecosystems. Closed loop systems that do not use seawater for regassification can help to reduce this impact. If open loop systems are utilized, water is generally returned to the waterbody at cooler temperatures. Depending on the location of the discharge, changes in temperature have the potential to alter ecosystems and obstruct anadromous fish passage. For LNG facilities located offshore, anchor lines and increases in vessel traffic have the potential to impact protected resources in the area. Due to the potentially hazardous nature of the facilities, security zones are generally established around LNG facilities. Depending on the location of the facility, this can restrict access to areas traditionally utilized for fishing and shellfishing. A list of constructed, approved, and proposed LNG projects is provided in the above discussion of RFF actions.

There are currently ten operational offshore wind energy generation facilities throughout the world and approximately 12 in various stages of proposal (British Wind Energy Association website: http://www.bwea.com/offshore/worldwide.html). Only two projects are formally proposed in the U.S., but at least 20 other separate projects may be proposed in the near future. The Army Corps of Engineers, New England District has developed a draft environmental impact statement (DEIS) and has completed a scoping process for the proposed Cape Wind Associates (CWA) project on Horseshoe Shoal. The DEIS will assess potential impacts from the project to recreational and commercial fisheries, endangered species, cultural resources, visual resources, benthic communities, avian resources, navigation and aeronautical activities. The potential impacts associated with the CWA offshore wind energy project include the construction, operation and removal of turbine platforms and transmission cables; thermal and vibration impacts; changes to species assemblages within the area from the introduction of vertical structures, and the cumulative impacts on the resources and habitats of Nantucket Sound.

Although wind energy has the ability to produce a renewable, clean energy source that will reduce the use of, and dependence on, fossil fuels, there is much controversy associated with potential user group and aesthetic impacts. Once constructed, the turbines would preempt other bottom uses in an area similar to oil and natural gas leases. Agencies responsible for such leases have no established authority for reviewing or permitting renewable energy projects, and legislation has been introduced in recent years to expand federal authority to grant easements in the outer continental shelf to include wind farms and other renewable energy projects. To date none of the submitted bills have passed.

5.5.3 Cumulative Effects on the Monkfish Fishery (target species)

The proposed action is taken in accordance with the stock-rebuilding program adopted in Framework 2, and is, therefore, expected to have a positive cumulative effect on the monkfish resource. This program sets annual target TACs and associated management measures based on the progress of the rebuilding program relative to annual rebuilding goals. Thus, in the SFMA, proposed monkfish trip limits and DAS allocations are based on a TAC that is proportionally reduced (since the observed index is below the annual target) from the previous year's landings. Even though these specifications (SFMA TAC, trip limits and DAS) are above levels in the current year, the actions are consistent with the rebuilding formula, and are expected to be positive for the monkfish resource over the long term. In the NFMA, where the monkfish fishery is closely integrated with the NE multispecies fishery, the Councils propose no specific action and expect that effort controls implemented in Amendment 13 (primarily, DAS reductions) and subsequent framework adjustments (FW 40a and 40b) will effectively keep landings below the target TAC.

5.5.4 Cumulative Effects on Non-target Species

Since the proposed action does not increase effort levels (DAS) over the baseline level established in the FMP, the cumulative effect of the adjustment to the TACs and SFMA trip limits and DAS for FY 2005 on non-target species is expected to be consistent with the neutral or positive cumulative effects of the rebuilding program as described in the FMP and subsequent analyses (Framework 2 and Amendment 2). Furthermore, since the effort level is within the baseline analyzed in the Skate FMP, the proposed adjustment does not trigger a skate baseline review. Both skate species that are in a formal rebuilding plan (thorny and barndoor) are not present in the SFMA where DAS are restored to the baseline 40 in FY 2005.

5.5.5 Cumulative Effects on Protected Species

The proposed action maintains monkfish fishing effort at the level analyzed in Amendment 2 and Framework 2 (40 DAS), although it allows for an increase from the reduced level in FY 2004. Therefore, the proposed action is not expected to have significant cumulative effects on marine mammals and protected species beyond those analyzed and discussed in the noted documents.

5.5.6 Cumulative Effects on Habitat

The cumulative effect of the proposed action on habitat, when viewed in context of the habitat protection measures proposed in Amendment 2 to the Monkfish FMP, as well as actions taken in the Atlantic Sea Scallop and NE Multispecies FMPs, is minimal and not significant. The effort allocation in the NFMA is unchanged, and in the SFMA is within the range of the effort analyzed in Amendment 2 and Framework 2, even though the SFMA allocation is an increase from reduced levels in FY 2004.

5.5.7 Cumulative Effects on Communities

The proposed action, which restores DAS allocation levels in the SFMA from the reduced levels FY 2004 (28 DAS) to the level set in the FMP (40 DAS) will have a positive cumulative effect on communities due to the resulting increase in community, vessel and crew revenues from monkfish. The proposed trip limit and DAS allocation is consistent with the stock rebuilding program adopted in Framework 2, and as such, will have a long-term positive cumulative effect on communities dependent on the monkfish resource.

5.5.8 Summary of Cumulative Effects

There are no significant cumulative impacts of this fishery action on the monkfish resource, non-target species, social/economic resources, EFH, or protected species. The proposed action is to set monkfish TACs, and SFMA trip limits and DAS consistent with the stock rebuilding program established in Framework 2, based on annual evaluation of stock status (trawl survey indices relative to annual index targets) and previous fishing year landings. The DAS and trip limits proposed for FY 2005 are within the range of DAS and trip limits analyzed in Framework 2, and determined to be “not significant” under the National Environmental Policy Act (NEPA) guidelines. This action is also not considered a “significant regulatory action” under the criteria established in Executive Order 12866 (See Section 6.3 *Regulatory Impact Review and Initial Regulatory Flexibility Analysis* for more details on the economic impacts of the proposed action).

6.0 Consistency with Applicable Law

6.1 Magnuson-Stevens Act (MSA)

Section 301 of the Magnuson-Stevens Fishery Conservation and Management Act requires that fishery management plans contain conservation and management measures that are consistent with the ten National Standards and other provisions. NOAA Fisheries has determined that the Monkfish FMP and Framework 2, the action establishing the annual adjustment program under which the proposed specifications are being made, are consistent with the MSA. The proposed TACs, SFMA trip limits and DAS are within the range of those analyzed and discussed in Framework 2, and, therefore, these specifications also comply with the MSA since they do not modify the Framework 2 rebuilding program.

6.2 National Environmental Policy Act (NEPA)

This section evaluates the proposed action in the context of NEPA, for determining the significance of federal actions, in this case the setting of annual monkfish fishery specifications.

6.2.1 Finding of No Significant Impact (FONSI Statement)

Based on guidance in Section 6.01(b) of NOAA Administrative Order NAO 216-6, May 20, 1999, and the analysis of impacts and alternatives in this document and the Monkfish FMP (including the EA for Framework 2 and the EIS for Amendment 2 to the FMP), the proposed 2005 specifications are not deemed to be significant. The proposed action, does not increase the total DAS allocated to vessels above levels established in the original FMP, and sets FY 2005 trip limits within the range of trip limits analyzed in Framework 2, and is consistent with the monkfish rebuilding plan established in Framework 2. Therefore, the proposed action will not likely impact the target species, non-target species, the ecosystem biota, or the physical structures or the habitat of any endangered species. They do not threaten or violate a Federal, State, or local law or requirements imposed for the protection of the environment. The action is also not deemed to be controversial.

NOAA Administrative Order 216-6 provides guidance for the determination of significance of the impacts resulting from the management measures contained in fishery management plans, their amendments, and framework adjustments. The nine criteria to be considered are addressed below:

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

As noted in Section 5.1.1, the proposed action is an adjustment to the monkfish effort allocation in accordance with the stock rebuilding program established in Framework 2, and is, therefore, intended to ensure the sustainability of the target species affected by this action, and certainly not expected to jeopardize that sustainability.

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

As noted in Section 5.1.1, the proposed action is not expected to jeopardize the sustainability of any non-target species. The effort levels and trip limits set by this action are within the levels analyzed in the FMP, Framework 2, and Amendment 2. Although information about bycatch is limited and not conclusive with respect to fishery-wide impacts, the impact of the monkfish fishery on non-target species is likely not significant, primarily as a result of the gear requirements and low level of effort allocated.

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

Impacts of the proposed specifications on ocean and coastal habitats and/or EFH were assessed in Section 5.2. The analysis concluded that this action is not expected to allow substantial damage to the ocean and coastal habitats and/or EFH as defined under the Magnuson-Stevens Fishery Conservation and Management Act and identified in the FMP and updated in Amendment 2.

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

The proposed specifications are not expected to have substantial adverse impacts on public health or safety. The proposed action sets effort allocations within the levels established in the FMP, including Framework 2 and Amendment 2. There has been no indication that these levels affect public health or safety in any way.

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

The activities to be conducted under the proposed action are within the scope of the FMP and do not change the basis for the determinations made in previous consultations, as noted in Section 5.1.2.

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

Cumulative effects related to the proposed action are discussed in Section 5.5 of this document. Based on that discussion, cumulative effects are not expected to be significant, and there is no change from the original analysis of cumulative impacts as assessed in the FMP.

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

The proposed action is not expected to have a substantial impact on biodiversity and ecosystem function within the affected area, since it is a one-year incremental adjustment within the overall monkfish rebuilding program. While the role of monkfish within the ecosystem is not well understood, the rebuilding of this predator and opportunistic feeder to historical and sustainable levels is likely to promote biodiversity and ecosystem function over the long term.

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

There are no significant social or economic impacts, nor are there any significant natural or physical environmental effects expected to result from the proposed action (Section 5.0, Environmental Consequences). The proposed adjustment is within the range of specifications analyzed in the EA for Framework 2, the action establishing the specification setting methodology.

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

The annual specifications presented in this document are not expected to be highly controversial, based on comments received during the development of Framework 2. Framework 2, in addition to implementing the annual specifications process, eliminated the controversial default measures in the FMP that would have closed the directed fishery.

FONSI Statement

In view of the analysis presented in this document, the EA/RIR/IRFA for the 2005 specifications, as well as in the EA for Framework 2 (establishing the stock rebuilding method under which these specifications are set), and in the EIS for the Monkfish Fishery Management Plan (including the Supplemental EIS for Amendment 2), the 2005 specifications will not have a significant effect on the human environment, with specific reference to the criteria contained in Section 6.02 of NOAA Administrative Order NAO 216-6, Environmental Review events for Implementing the National Environmental Policy Act, May 20, 1999. The impacts and alternatives in this document were analyzed with regard to both context and intensity and are deemed not to be significant. Accordingly, the preparation of a Supplemental Environmental Impact Statement for the proposed action is not necessary.

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Assistant Administrator for Fisheries, NOAA Date

6.3 Regulatory Impact Review and Initial Regulatory Flexibility Analysis (EO 12866 and RFA)

6.3.1 Determination of significance under E.O. 12866

NOAA Fisheries Guidelines provide criteria to be used to evaluate whether a proposed action is significant. A “significant regulatory action” means any regulatory action that is likely to result in a rule that may:

> *1. Have an annual effect on the economy of $100 million or more, or adversely effect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local or tribal governments or communities.*
>
> This action will have neither an annual effect on the economy of $100 million, nor adversely effect in a material way the economy, a sector of the economy, productivity, competition, the environment, public health or safety, or State, local, tribal governments or communities. During fishing years 1998 through 2000, gross monkfish revenues averaged approximately $43.7 million per fishing year. Monkfish revenues were $41.8 million in fishing year 2001 but dropped to $34.7 million in fishing year 2002 before increasing to $36.8 million in fishing year 2003. Assuming the entire FY2004 TAC was taken, the total value of monkfish landings would be $34.4 million at 2003 average prices. The value of the proposed FY2005 TAC would be $33.2 million. Thus, there would be an impact on the National economy of $1.2 million in forgone revenues from monkfish landings relative to fishing year 2004.
>
> Monkfish dealers likely would be impacted by the proposed increase in TAC for the SFMA due to the increased availability of product. This may reduce their costs relative to FY2004, when they would have had to purchase monkfish landed in the NFMA in order

to offset the lack of available TAC in the SFMA. However, there will be a concurrent decrease in TAC in the NFMA in FY2005, which could mitigate any cost reductions.

2. Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency.

The proposed action does not create an inconsistency or otherwise interfere with an action taken or planned by another agency. The activity that would be allowed under this action involves commercial fishing for monkfish in Federal waters of the EEZ, for which NOAA Fisheries is the sole agency responsible for regulation. Therefore, there is no interference with actions taken by another agency. Furthermore, this action would create no inconsistencies in the management and regulation of commercial fisheries in the Northeast.

3. Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof.

The proposed action would establish target monkfish TACs for the 2005 fishing year, and adjust the trip limits and DAS allocation for vessels fishing in the SFMA. This action is unrelated to any entitlements, grants, user fees, or loan programs, and, therefore, cannot be considered significant under the third criterion specified in E.O. 12866.

4. Raise novel legal or policy issues arising out of legal mandates, the President=s priorities, or the principles set forth in the Executive Order.

The proposed action is being taken pursuant to the mandates of the Sustainable Fisheries Act to end overfishing, rebuild the stock to MSY in 10 years, and achieve optimum yield from the fishery using the best scientific information available. This action uses biomass indices from the most recent NOAA Fisheries Fall Trawl Survey (Fall 2004) to establish target TACs for the 2005 fishing year based on a streamlined target TAC setting process that was established in Framework 2. Therefore, the proposed action would not be considered significant under the fourth criterion specified in E.O. 12866.

Because none of these criteria apply, NOAA Fisheries has determined that the proposed action in the monkfish fishery to establish target TACs, and adjust the trip limits and DAS allocation for vessels fishing in the SMFA for the 2005 fishing year, is not significant for the purpose of E.O. 12866.

6.3.2 Initial Regulatory Flexibility Analysis (IRFA)

The following sections contain analyses of the effect of the proposed action on small entities in accordance with Section 603(b) of the Regulatory Flexibility Act.

6.3.2.1 Reasons for Considering the Action

The FMP requires that the status of the monkfish resource be reviewed on an annual basis. In addition, the measures contained in Framework 2 established an annual target TAC setting method that is based on the most recent 3-year running average of the NOAA Fisheries fall trawl survey biomass index as compared to an established annual biomass index target. This action utilizes the target TAC setting method implemented in Framework 2 to establish target TACs for FY 2005, as required under the regulations at § 648.96(b)(1).

Framework 2 also established a method for adjusting trip limits and DAS for vessels fishing in the SFMA to achieve the target TAC for that area. This action also adjusts the trip limits and DAS for vessels fishing in the SFMA based upon the method established in Framework 2, and implemented under the regulations at § 648.96(b)(2) and (b)(3).

6.3.2.2 Objectives and legal basis for the action

The regulations implementing the FMP, found at 50 CFR Part 648, authorize the Council to adjust the management measures as needed in order to achieve the goals of the FMP. Framework 2 adjusted FMP management measures by establishing a streamlined process for setting annual target TACs, and for adjusting trip limits and DAS allocations as necessary to achieve those target TACs. The objective of this action is to achieve the goals of the FMP through the application of the target TAC setting method established in Framework 2 for the 2005 fishing year. Thus, the proposed action is consistent with the goals of the FMP and its implementing regulations.

6.3.2.3 Description and number of small entities to which the rule applies

All of the entities (fishing vessels) affected by this action are considered small entities under the SBA size standards for small fishing businesses ($3.5 million in gross sales). There are approximately 737 limited access monkfish permit holders and, as of January 20, 2005, approximately 2,105 vessels holding an open access Category E permit. This action would affect only limited access monkfish vessels while fishing for monkfish in the SFMA.

Based on activity reports for the 2003 fishing year (the most recent fishing year for which complete information is available) there were 534 limited access permit holders participating in the monkfish fishery. Of these, 141 fished for monkfish exclusively in the Northern Fishery Management Area (NFMA) and 158 fished for monkfish in only the Southern Fishery Management Area (SFMA). The remaining 235 vessels fished for monkfish in both management areas. Thus, the proposed measures would affect at least the 393 vessels that fished for monkfish for at least part of the time in the SFMA, but would be likely to have greatest affect on the 158 vessels that fished for monkfish exclusively in the SFMA.

6.3.2.4 Reporting, recordkeeping and other compliance requirements

This action does not introduce any new reporting, recordkeeping, or other compliance requirements. However, this action would reinforce the fact that if a vessel wants to fish in the NFMA under the less restrictive measures of that area, it must obtain a LOA from the Regional Administrator. If a vessel does not possess a monkfish LOA, then it is assumed fishing in the SFMA.

6.3.2.5 Duplication, overlap or conflict with other Federal rules

The proposed rule does not duplicate, overlap or conflict with other Federal rules.

6.3.2.6 Economic impacts on small entities resulting from the proposed action

The combined TAC for both monkfish management areas would be decreased by approximately 3 percent compared to fishing year 2004. While the TAC for the NFMA would be decreased by approximately 22 percent, the SFMA TAC would be increased by nearly 43 percent. Monkfish trip limits in the SFMA would also be increased by approximately 30 percent, and since the target TAC for the SFMA has been set at a level greater than the 8,000-mt threshold below which DAS reductions are triggered, allowable DAS that may be fished in the SFMA would be increased back to the full 40-day allotment. Thus, the proposed measures would have differential impacts on participating vessels depending on the management area in which they fish.

As in the 2004 annual adjustment, estimation of relative economic impacts was accomplished using a two-step procedure. The first step identifies FY2003 trips in the SFMA using large mesh where monkfish revenue was at least 50 percent of trip revenue, and uses these trips to calculate the average change in per-trip vessel returns net of operating costs and crew payments. In the second step, this trip average was applied to these trips while also including average DAS increases based on FY2003 call-in data. A more detailed description of these two steps follows.

Step 1. Estimation of per-Trip Returns

Since FY2003 trip limits were higher than the proposed FY2005 limits, this data can be used to analyze the economic effect of the proposed change. As was the case in the FY2004 annual adjustment, the effect was evaluated based on a comparison of the expected return for alternative trip-taking strategies. A vessel may abandon a trip if the trip limit causes earnings to fall below zero, they may continue to fish while discarding any monkfish above the trip limit, or they may fish up to the trip limit and then return to port. Assuming that a trip is taken, vessels may choose to continue fishing while discarding monkfish over the trip limit so long as the revenue earned from other species offsets the costs of fishing. Trips where other species make up a relatively small portion of the trip revenue may lead to trips being discontinued when the trip limit is reached, since the cost of continued fishing would exceed the additional revenue.

The relative change in net return to the vessel was estimated by calculating the average per-trip returns to the vessel owner using both the FY2004 trip limits and the proposed FY2005 trip limits. These returns take into account operating costs, which were assigned to different gears as follows: gillnet vessels less than 40 feet ($95 per day), gillnet vessels 40 feet and above ($125 per day), otter trawl vessels less than 50 feet ($165 per day), otter trawl vessels 50 to 70 feet ($350 per day), and otter trawl vessels greater than 70 feet ($800 per day). These operating costs are based on trip cost data collected on observer logs in FY2003. Returns to the vessel were calculated using a standard 60/40 lay system where 40 percent of the gross revenue goes to the vessel and 60 percent is shared among the crew, who pay for the operating expenses for the trip. Therefore, the net to the crew is the difference between the 60 percent share and the operating costs. Net pay per crew member is then the total net pay divided by the number of crew.

Based on the trip limit model, the per trip average vessel return on monkfish trips would be increased by 21.2 percent (see Table 29). On average, a trip taken in the SFMA would produce 21.2 percent more income toward fixed costs, debt, and owner profit under the proposed FY2005 trip limits. Net pay per crew member would also be increased by an average of 20.8 percent (see Table 30).

Home Port State	Number of Trips	Average Vessel Return with FY2004 Trip Limits	Average Vessel Return with FY2005 Trip Limits	Percent Change in Average Vessel Return
CT	48	977	1198	+22.6%
MA	876	874	1070	+22.4%
NH	65	600	768	+28.0%
NJ	306	334	398	+19.2%
NY	279	464	553	+19.2%
RI	445	808	966	+19.6%
All States				+21.2%

* Data for 1 DE, 1 ME, 2 NC, and 2 VA vessels not reported due to confidentiality.

Table 29 Average Per Trip Return to Vessels by Home Port State (60/40 Lay System)

Home Port State	Average Net Pay per Crew Member with FY2004 Trip Limits	Average Net Pay per Crew Member with FY2005 Trip Limits	Percent Change in Average Payment per Crew Member
CT	592	733	+23.8%
MA	378	461	+22.0%
NH	439	562	+28.0%
NJ	193	229	+18.7%
NY	254	303	+19.3%
RI	391	462	+18.2%
All States			+20.8%

* Data for 1 DE, 1 ME, 2 NC, and 2 VA vessels not reported due to confidentiality.

Table 30 Average Per Trip Net Pay per Crew Member by Home Port State (60/40 Lay System)

Step 2. Estimation of Economic Impacts of Proposed Measures

Having estimated the average changes in returns due to the proposed trip limit changes, the FY2003 data were then again used to estimate the impacts on participating limited access monkfish permit holders in the following manner. Vessel trip reports for all trips taken by limited access monkfish permit holders and landing at least one pound of monkfish were identified. This permits estimation of economic impacts on a vessel's entire fishing business, by including both trips where monkfish was targeted and trips where monkfish was not landed or may have been landed in incidental quantities. The total value earned on each trip was estimated by applying monthly average prices by species from dealer data to the reported kept pounds for each species in the trip reports. The 60/40 lay system was applied to each trip to calculate returns to the vessel and the net crew payments. Trips using large mesh and landing monkfish in greater than incidental quantities were then identified, and the returns to vessel owners and crew on trips determined to be monkfish trips in the SFMA were adjusted based on the average change in returns that was calculated in Step 1. Specifically, FY 2003 returns to the vessel and net pay to crew were both increased by 21 percent.

Each vessel from the FY2003 data set was assigned to one of three categories depending on whether the vessel fished for monkfish exclusively in the SFMA, exclusively in the NFMA, or fished for monkfish at least once in both management areas. Since no changes to either trip limits or DAS are proposed for the NFMA, vessels fishing exclusively in the NFMA would not be affected by the proposed measure. Vessels fishing in both management areas would be affected by the proposed SFMA trip limits when fishing in the SFMA.

Since the DAS that may be used in the SFMA is being restored to the full 40-day allotment, this increase in available DAS must be taken into account when calculating the economic impact. To do so, the average increase in DAS used by vessels fishing exclusively in the SFMA was estimated. Based on call-in records, approximately 55 percent of vessels landing monkfish exclusively from the SFMA took no monkfish-only trips. Of the remaining 45 percent of vessels taking at least one monkfish-only trip, the average difference between observed call-in DAS and the proposed allowable DAS in the SFMA was 4.25 days. Thus, the average vessel fishing for monkfish in the SFMA would gain 4.25 days of fishing over and above the gains associated with the change in trip limits. To account for this increase in DAS, the average return on monkfish DAS was multiplied by 4.25 and added to the total net return for the year. Total net returns to each vessel and total net crew payments were summed for all trips, which were adjusted for the applicable trip limits. For vessels fishing for monkfish exclusively in the SFMA, total net return was then increased by the value associated with the increased DAS allowance.

As was previously noted, vessels fishing exclusively in the NFMA would not be affected by the proposed SFMA measures. The average impact on vessels fishing in both areas was estimated to be roughly a 2 percent increase in both net pay to crew and net return to the vessel (see Table 31). This relatively low level of impact suggests that vessels fishing in both management areas fished primarily in the NFMA during FY2003. The average impact of vessels fishing exclusively in the SFMA was a 14 percent increase in net pay to crew and a 12 percent increase in returns to the vessel owner. These effects vary greatly between states, with vessels from NC and NY experiencing small increases relative to those vessels from Massachusetts and New Jersey (see Table 32).

Home Port State	Number of Vessels	Average Change in Net Pay to Crew	Average Change in Return to Vessel Owner
CT	3	+7.3%	+4.7%
MA	221	+1.4%	+1.1%
ME	63	+0.2%	+0.2%
NC	6	+2.3%	+1.6%
NH	21	+3.3%	+3.0%
NJ	7	+9.6%	+7.6%
NY	12	+0.0%	+0.0%
RI	40	+0.1%	+0.0%
All States		+2.4%	+1.8%

* Data for 2 DE, and 1 VA vessels not reported due to confidentiality.

Table 31 Relative Change in Vessel Net Return and Change in Average Net Pay to Crew for Vessels Landing Monkfish from Both Management Areas

Home Port State	Number of Vessels	Average Change in Net Pay to Crew	Average Change in Return to Vessel Owner
CT	5	+8.2%	+6.5%
MA	24	+22.8%	+21.3%
NC	13	+3.0%	+2.0%
NJ	56	+22.8%	+20.1%
NY	23	+3.6%	+1.9%
RI	30	+13.5%	+10.7%
VA	6	+12.7%	+9.5%
All States		+14.0%	+12.0%

* Data for 1 DE vessel not reported due to confidentiality.

Table 32 Relative Change in Vessel Net Return and Change in Average Net Pay to Crew for Vessels Landing Monkfish Exclusively from the SFMA

6.4 Endangered Species Act (ESA)

Section 7 of the Endangered Species Act requires federal agencies conducting, authorizing or funding activities that affect threatened or endangered species to ensure that those effects do not jeopardize the continued existence of listed species. The NEFMC concludes, at this writing, that measures proposed in this specifications adjustment to the Monkfish FMP and the prosecution of the monkfish fishery may affect, but are not likely to jeopardize any ESA-listed species or alter or modify any critical habitat, based on the discussion of impacts in this and other documents. The NEFMC is seeking a determination by the National Marine Fisheries Service on this matter.

For further information on the potential impacts of the fishery and the proposed management action on listed species, see Section 5.5 of this document.

6.5 Marine Mammal Protection Act (MMPA)

The NEFMC has reviewed the impacts of the Framework Adjustment 2 on marine mammals and has concluded that the management actions proposed are consistent with the provisions of the

MMPA, and will not alter existing measures to protect the species likely to inhabit the monkfish management unit.

For further information on the potential impacts of the fishery and the proposed management action on marine mammals, see Section 5.5 of this document.

6.6 Paperwork Reduction Act (PRA)

The proposed action has no new collection-of-information requirements, and, therefore, a PRA analysis is not necessary.

6.7 Coastal Zone Management Act (CZMA)

Section 307 of the Coastal Zone Management Act (CZMA) is known as the federal consistency provision. Federal Consistency review requires that "federal actions, occurring inside or outside of a state's coastal zone, that have a reasonable potential to affect the coastal resources or uses of that state's coastal zone, to be consistent with that state's enforceable coastal policies, to the maximum extent practicable". The Council previously made determinations that the FMP was consistent with each states coastal zone management plan and policies, and each coastal state concurred in these consistency determinations. Since the specifications for the 2005 fishing year do not exceed the specifications for the 2003 fishing year, and are only modestly above the 2004 fishing year specifications, the Council has determined that the proposed action is consistent with the coastal zone management plan and policies of the coastal states in this region. A copy of this specification package is being sent to each coastal zone management office from Maine to North Carolina seeking their concurrence with the Council's consistency finding.

6.8 Data Quality Act (DQA)

Pursuant to NOAA Fisheries guidelines implementing Section 515 of Public Law 106-554 (the Data Quality Act), all information products released to the public must first undergo a Pre-Dissemination Review to ensure and maximize the quality, objectivity, utility, and integrity of information (including statistical information) disseminated by Federal agencies. The following paragraphs address these requirements.

Utility

Utility means that disseminated information is useful to intended users. "Useful" means that the content of the information is helpful, beneficial, or serviceable to its intended users, or that the information supports the usefulness of other disseminated information by making it more accessible or easier to read, see, understand, obtain or use. The intended users of the information contained in this document include individuals involved in the monkfish fishery, (e.g., fishing vessels, fish processors, fish processors, fishery managers), and other individuals interested in the management of the monkfish fishery. The information contained in this document will be helpful and beneficial to owners of vessels holding limited access monkfish permits since it will notify these individuals of changes to the monkfish target TACs and trip limits for the 2005 fishing year (FY). This information will enable these individuals to adjust their management practices and make appropriate business decisions based upon the new management measures. Furthermore, this document, which consists of an Environmental Assessment (EA), Regulatory Impact Review (RIR), and Initial Regulatory Flexibility Analysis (IRFA), will provide the public with information concerning the impacts of the proposed action. Specifically, the EA/RIR/IRFA will provide the intended users with a comprehensive analysis (biological, social, economic, and cumulative) of the impacts of the proposed target TACs and trip limits, including an analysis of the impacts of the proposed action on small entities.

The information contained in this document includes detailed, and relatively recent information on the monkfish resource, therefore, represents an improvement over previously available information. For example, the Affected Human Environment section of the EA contains the most recent (FY 2003) Stock Assessment and Fishery Evaluation (SAFE Report) for the monkfish fishery. The information product will be subject to public comment through proposed rulemaking, as required under the Administrative Procedure Act, and therefore, may be improved based on comments received.

The media being used in the dissemination of the information contained in this document will be a Federal Register notice for the proposed rule, which will be made available in printed publication and on the Northeast Regional Office Internet website (www.nero.noaa.gov). In addition, the EA/RIR/IRFA prepared for this action will be made available in paper form from the New England Fishery Management Council, and electronically on their website at www.nefmc.org.

Integrity

Integrity refers to security--the protection of information from unauthorized access or revision, to ensure that the information is not comprised through corruption or falsification. Prior to dissemination, information associated with this action, independent of the specific intended distribution mechanism, is safeguarded from improper access, modification, or destruction, to a degree commensurate with the risk and magnitude of harm that could result from the loss, misuse, or unauthorized access to or modification of such information. All electronic information disseminated by NMFS adheres to the standards set out in Appendix III of OMB Circular A-130, "Security of Automated Information Resources,"; the Computer Security Act; and the Government Information Security Act. All confidential (e.g., dealer purchase reports) is safeguarded pursuant to the Privacy Act; Titles 13, 15, and 22 of the U.S. Code (confidentiality of census, business and financial information); the Confidentiality of Statistics provisions of the Magnuson-Stevens Fishery Conservation and Management Act; and NOAA Administrative Order 216-100, Protection of Confidential Fisheries Statistics.

Objectivity

Objective information is presented in an accurate clear, complete, and unbiased manner, and in the proper context. The substance of the information is accurate, reliable, and unbiased; in the scientific, financial, or statistical context, original and supporting data are generated and the analytical results are developed using sound, commonly accepted scientific and research methods. "Accurate" means that information is within an acceptable degree of imprecision or error appropriate to the particular kind of information at issue and otherwise meets commonly accepted scientific, financial, and statistical standards.

For the purpose of the Pre-Dissemination Review, the proposed regulatory action for the monkfish fishery and its accompanying EA/RIR/IRFA is considered to be a "Natural Resource Plan." Accordingly, the document adheres to the published standards of the Magnuson-Stevens

Act; the Operational Guidelines, Fishery Management Plan Process; the Essential Fish Habitat Guidelines; the National Standard Guidelines; and NOAA Administrative Order 216-6, Environmental Review Procedures for Implementing the National Environmental Policy Act.

National Standard 2 of the Magnuson-Stevens Act states that a FMP's conservation and management measures shall be based upon the best scientific information available. Several sources of data were used in the development of Framework 2, which implemented the target TAC setting method and trip limit analysis method used in this action. These data sources included, but were not limited to, landings data from vessel trip reports and dealer weighout reports, effort data collected in the monkfish days-at-sea (DAS) call-in program, and fisheries independent data collected in the NMFS bottom trawl surveys and cooperative research projects. The proposed action, including the associated EA/RIR/IRFA, utilized current landings data (for FY 2003) from vessel trip reports and dealer weighout reports, and the most recent fisheries independent data from the 2004 NMFS bottom trawl survey and the 2004 Cooperative monkfish survey. NMFS has determined that these are the best available scientific data.

The proposed target TACs and trip limits for the monkfish fishery for FY 2005 represent the policy choices made, and are supported by the available science. The methods used to calculate the proposed target TACs and trip limits were designed to meet the conservation goals and objectives of the FMP, and prevent overfishing and rebuild the monkfish resource while maintaining a sustainable level of monkfish harvest. The proposed target TACs and trip limits are described in Section 3.1 in order to distinguish them from associated analyses and underlying science, which are described in other sections of the EA.

The data used to calculate the proposed target TACs and trip limits, and to analyze their impacts, are described in detail in this document, and will be summarized in the proposed rule. Further, this document includes appropriate references to sections of the document that contain detailed descriptions of source material (i.e. literature cited, appendices), as well as references to tables, figures and analyses.

The review process for FMPs, amendments and framework adjustments involves the Northeast Regional Office (NERO) of NMFS, the Northeast Fisheries Science Center (Center), and NOAA Fisheries Headquarters (Headquarters). Review by staff at NERO involves those with expertise in fisheries management and policy, habitat conservation, protected species, and compliance with the applicable law. Review by Center staff involves scientists, economists, and social anthropologists. Review by Headquarters staff is conducted by those with expertise in fisheries management and policy. Framework 2 to the FMP, which established the target TAC setting method being utilized in this action, was reviewed in such a manner. Because this action would establish the 2005 target TACs utilizing the expedited method established in Framework 2, this level of review is unnecessary. However, this document (the EA/RIR/IRFA), the proposed rule, and the final rule will undergo review by staff within NERO, various staff (Office of Sustainable Fisheries, Office of General Counsel, etc.) at the Headquarters office of NMFS, as well as other staff within the Department of Commerce. In addition, the information contained in this document concerning monkfish stock status was peer reviewed according to standard methodology (Stock Assessment Review Committee; SARC).

6.9 E.O. 13132 (Federalism)

The proposed action does not contain policies with federalism implications.

6.10 Administrative Procedure Act (APA)

The New England Fishery Management Council is not seeking relief from the requirements of the APA for notice and comment rulemaking.

7.0 References

National Research Council (NRC). 2002. Effects of Trawling and Dredging on Seafloor Habitat. National Academy Press, Washington, D.C. 126 p.

New England Fishery Management Council. 2003. Framework 2 to the Monkfish FMP.

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Monkfish FMP 2005 Specifications

APPENDIX I
Summary Report of SAW 40

Monkfish FMP 2005 Specifications

APPENDIX II
Description of listed Marine Mammals and Protected Species

The following species are found in the area of the fisheries regulated through the Monkfish FMP and are listed under the Endangered Species Act of 1973 (ESA) as endangered, threatened, or as candidate species. The Council has also included in the list below a number of species that are identified as protected under the Marine Mammal Protection Act of 1972 (MMPA) as well as two right whale critical habitat designations that are found in the same area.

Cetaceans	
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
Harbor porpoise (*Phocoena phocoena*)	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
Seals	
Harbor seal (*Phoca vitulina*)	Protected
Gray seal (*Halichoerus grypus*)	Protected
Harp seal (*Phoca groenlandica*)	Protected
Sea Turtles	
Leatherback sea turtle (*Dermochelys coriacea*)	Endangered
Kemp's ridley sea turtle (*Lepidochelys kempii*)	Endangered
Green sea turtle (*Chelonia mydas*)	Endangered
Hawksbill sea turtle (*Eretmochelys imbricata*)	Endangered
Loggerhead sea turtle (*Caretta caretta*)	Threatened
Fish	
Shortnose sturgeon (*Acipenser brevirostrum*)	Endangered
Atlantic salmon (*Salmo salar*)	Endangered
Barndoor skate (*Dipturus laevis*)	Candidate Species
Birds	
Roseate tern (*Sterna dougallii dougallii*)	Endangered
Piping plover (*Charadrius melodus*)	Endangered
Critical Habitat Designations	
Right whale	Cape Cod Bay

Great South Channel

Although all of the protected species listed above may be found in the general geographical area covered by the Monkfish FMP, not all are affected by the fishery. Some species may inhabit areas other than those in which the fishery is prosecuted, prefer a different depth or temperature zone, or may migrate through the area at times when the fishery is not in operation. In addition, certain protected species may not be vulnerable to capture or entanglement with the gear used in the fishery. Therefore, protected species are divided into two groups. The first contains those species not likely to be affected by Amendment 2 while the second group is the subject of a more detailed assessment.

Protected Species Not Likely to be Affected by the Monkfish FMP

Following a review of the current information available on the distribution and habitat needs of the endangered, threatened, and otherwise protected species listed above in relation to the action being considered, the Council considers that monkfish fishing operations and the measures proposed in Amendment 2 to the Monkfish FMP unlikely to affect the shortnose sturgeon *(Acipenser brevirostrum*), the Gulf of Maine distinct population segment (DPS) of Atlantic salmon (*Salmo salar*), or the hawksbill sea turtle (*Eretmochelys imbricata*), all of which are species listed under the ESA.

Additionally, there are several cetaceans protected under the MMPA that are found in the action area: Risso's dolphin (*Grampus griseus*), spotted and striped dolphins (*Stenella* spp.), and coastal forms of Atlantic bottlenose dolphin (*Tursiops truncatus*). Although these species may occasionally become entangled or entrapped in certain fishing gear such as pelagic longline and mid-water trawls, these gear types are not used in the monkfish fishery.

The Council also believes that monkfish fishing operations will not adversely affect the right whale critical habitat areas listed above.

Shortnose Sturgeon

The shortnose sturgeon is benthic fish that mainly occupies the deep channel sections of several Atlantic coast rivers. They can be found in most major river systems from St. Johns River, Florida to the Saint John River in New Brunswick, Canada. The species is considered truly anadromous in the southern portion of its range (*i.e.*, south of Chesapeake Bay). However, they spend the majority of their life history within the fresh water sections of the northern rivers with only occasional forays into salt water, and are thus considered to be "freshwater amphidromous" (NMFS 1998a). There have been no documented cases of shortnose sturgeon taken in gear used in the monkfish fishery.

The monkfish fishery in Northeast and Mid-Atlantic may extend to shallow waters, but not into the intertidal zone of major river systems where shortnose sturgeon are likely to be found. Therefore, there appears to be adequate separation between the two species making it highly unlikely that the monkfish fisheries will affect shortnose sturgeon.

Atlantic Salmon

The wild populations of Atlantic salmon found in rivers and streams from the lower Kennebec River north to the U.S.-Canada border are listed as endangered. These rivers include the Dennys, East Machias, Machias, Pleasant, Narraguagus, Ducktrap, and Sheepscot Rivers and Cove Brook. Atlantic salmon are an anadromous species with spawning and juvenile rearing occurring in freshwater rivers followed by migration to the marine environment.

Juvenile salmon in New England rivers typically migrate to sea in May after a two to three year period of development in freshwater streams, and remain at sea for two winters before returning to their U.S. natal rivers to spawn from mid October through early November. While at sea, salmon generally undergo an extensive northward migration to waters off Canada and Greenland. Historical commercial harvest data indicate that post-smolts overwinter in the southern Labrador Sea and in the Bay of Fundy. The numbers of wild Atlantic salmon that return to these rivers are perilously small, with total run sizes of approximately 150 spawners occurring in 1999 (Baum 2000).

Capture of Atlantic salmon has occurred in U.S. commercial fisheries or by research/survey vessels, although none have been documented since 1992. No monkfish landings have been recorded for the areas adjacent to the Atlantic salmon rivers. In addition, NMFS fishery research surveys have not found monkfish in the nearshore regions adjacent to the Atlantic salmon rivers, nor does the monkfish fishery operate in or near the rivers where concentrations of Atlantic salmon are most likely to be found.

Hawksbill Sea Turtle

The hawksbill turtle is relatively uncommon in the action area. Hawksbills prefer coral reefs, such as those found in the Caribbean and Central America where they feed primarily on a wide variety of sponges and mollusks. There are accounts of small hawksbills stranded as far north as Cape Cod, Massachusetts. Many of these strandings, however, were observed after hurricanes or offshore storms. No takes of hawksbill sea turtles have been recorded in Northeast or Mid-Atlantic fisheries where observers have been deployed in the otter trawl (including the Mid-Atlantic) and sink gillnet fisheries that catch multispecies and also participate in the monkfish fishery.

Hawksbills may occur in the southern range of the action area (i.e., North Carolina and South Carolina), but their distribution is not known to overlap significantly with monkfish fishing activity. It is unlikely, therefore, that interactions between hawksbill sea turtles and vessels that catch monkfish will occur.

Right Whale Critical Habitat

Critical habitat for right whales has been designated for Cape Cod Bay, Great South Channel, and coastal Florida and Georgia (outside of the action area for this action). Cape Cod Bay and the Great South Channel areas were designated critical habitat for right whales due to their importance as spring/summer foraging grounds for this species. There is no evidence to suggest that operation of the monkfish fishery adversely affects the value of critical habitat designated for the right whale. Right whale critical habitat, therefore, is not discussed further in this document.

Protected Species Potentially Affected by this FMP
The status of the various ESA-listed species affected by the monkfish fishery is described in the Biological Opinions prepared by the National Marine Fisheries Service, beginning in 1998. The most recent Opinions are dated May 14, 2002 and April 14, 2003. The information provided in these documents on the status of species listed as endangered, threatened, or candidate species is incorporated herein by reference. Information on protected species that are potentially affected by the monkfish fishery is provided below.

Right Whale

Right whales were found historically in all the world's oceans within the temperate to subarctic latitudes. There are three major subdivisions of right whales: North Pacific, North Atlantic, and Southern Hemisphere; with eastern and western subunits found in the North Atlantic (Perry et al. 1999). Because of our limited understanding of the genetic structure of the species, the conservative approach to conservation of this species has been to treat the subunits as separate groups whose survival and recovery is critical to the health of the species.

The northern right whale has the highest risk of extinction of all large whales. Scarcity of right whales is the result of an 800-year history of whaling that continued into the 1960s (Klumov 1962). Records indicate that right whales were subject to commercial whaling in the North Atlantic as early as 1059, with an estimated 25,000-40,000 right whales believed to have been taken between the 11th and 17th centuries. The size of the western North Atlantic right whale population at the termination of whaling is unknown. The stock was first recognized as seriously depleted as early as 1750. However, right whales continued to be taken in shore-based operations or opportunistically by whalers in search of other species as late as the 1920s. By the time the species was internationally protected in 1935 there may have been fewer than 100 North Atlantic right whales in the western North Atlantic (Hain 1975; Reeves et al. 1992; Kenney et al. 1995).

Intense whaling was also the cause of the critically endangered status of the North Pacific right whale. Currently, the North Pacific population is so small that no reliable estimate can be given. In the Atlantic, the eastern subpopulation of the North Atlantic population may already be extinct. The fact that the western North Atlantic subpopulation is the most numerous right whale population in the northern hemisphere, and is only estimated to number approximately 300 animals, is testimony to the severely depleted status of this species in the northern hemisphere. In contrast, the southern right whale is recovering with a growth rate of 7% in many areas.

Right whales appear to prefer shallow coastal waters, but their distribution is also strongly correlated to zooplankton prey distribution (Winn et al. 1986). In both northern and southern hemispheres, right whales are observed in the lower latitudes and more coastal waters during winter, where calving takes place, and then migrate to higher latitudes during the summer. In the western North Atlantic, they are found west of the Gulf Stream and are most commonly associated with cooler waters (<21º C). They are not found in the Caribbean and have been recorded only rarely in the Gulf of Mexico.

NMFS designated three right whale critical habitat areas on June 3, 1994 (59 FR 28793) to help protect important right whale foraging and calving areas within the U.S. These areas are: Cape Cod Bay; the Great South Channel (both off Massachusetts); and the waters adjacent to the southern Georgia and northern Florida coast. In 1993, Canada's Department of Fisheries declared two conservation areas for right whales; one in the Grand Manan Basin in the lower Bay of Fundy, and a second in Roseway Basin between Browns and Baccaro Banks (Canadian Recovery Plan for the North Atlantic Right Whale 2000).

Right whales feed on zooplankton through the water column, and in shallow waters may feed near the bottom. In the Gulf of Maine, they have been observed feeding primarily on copepods, by skimming at or below the water's surface with open mouths (NMFS 1991b; Kenney et al. 1986; Murison and Gaskin 1989; and Mayo and Marx 1990). Research suggests that right whales must locate and exploit extremely dense patches of zooplankton to feed efficiently (Waring et al. 2001). New England waters include important foraging habitat for right whales and at least some portion of the right whale population is present in these waters throughout most months of the year. They are most abundant in Cape Cod Bay between February and April (Hamilton and Mayo 1990; Schevill et al. 1986; Watkins and Schevill 1982) and in the Great South Channel in May and June (Kenney et al. 1986; Payne et al. 1990) where they have been observed feeding predominantly on copepods, largely of the genera *Calanus* and *Pseudocalanus* (Waring et al. 2001). Right whales also frequent Stellwagen Bank and Jeffrey's Ledge, as well as Canadian waters including the Bay of Fundy and Browns and Baccaro Banks, in the spring and summer months. Mid-Atlantic waters are used as a migratory pathway from the spring and summer feeding/nursery areas to the winter calving grounds off the coast of Georgia and Florida.

However, much about right whale movements and habitat use are still unknown. Approximately 85% of the population is unaccounted for during the winter (Waring et al. 2001). Radio and satellite tagging has been used to track right whales, and has shown lengthy and somewhat distant excursions into deep water off the continental shelf (Mate et al. 1997). In addition photographs of identified individuals have documented movements of the western North Atlantic right whales as far north as Newfoundland, the Labrador Basin and southeast of Greenland (Knowlton et al. 1992). Sixteen satellite tags were attached to right whales in the Bay of Fundy, Canada, during summer 2000 in an effort to further elucidate the movements and important habitat for North Atlantic right whales. The movements of these whales varied, with some remaining in the tagging area and others making periodic excursions to other areas before returning to the Bay of Fundy. Several individuals were observed to move along the coastal waters of Maine, while others traveled to the Scotian Shelf off Nova Scotia. One individual was successfully tracked throughout the fall, and was followed on her migration to the Georgia/Florida wintering area.

Recognizing the precarious status of the right whale, the continued threats present in its coastal habitat throughout its range, and the uncertainty surrounding attempts to characterize population trends, the International Whaling Commission (IWC) held a special meeting of its Scientific Committee from March 19-25, 1998, in Cape Town, South Africa, to conduct a comprehensive assessment of right whales worldwide. The workshop's participants reviewed available information on the North Atlantic right whale. The conclusions of Caswell et al. (1999) were particularly alarming. Using data on reproduction and survival through 1996, Caswell determined that the western North Atlantic right whale population was declining at a rate of 2.4% per year, with one model suggesting that the mortality rate of the right whale population had increased five-fold in less than one generation. According to Caswell, if the mortality rate as of 1996 does not decrease and the population's reproductive performance does not improve, extinction could occur in 191 years and would be certain within 400 years.

The IWC Workshop participants expressed "considerable concern" in general for the status of the western North Atlantic right whales. This concern was based on recent (1993-1995) observations of near-failure of calf production, the significantly high mortality rate, and an observed increase in the calving interval. It was suggested that the slow but steady recovery rate published in Knowlton et al. (1994) may not be continuing. Workshop participants urgently recommended increased efforts to reduce the human-caused mortality factors affecting this right whale population.

As stated in the IWC Workshop, there is been concern over the decline in birth rate. In the three calving seasons following Caswell's analysis, only 10 calves are known to have been born into the population, with only one known right whale birth in the 1999/2000 season. However, the 2000/2001 calving season had 31 right whale calves sighted, with 27 surviving. Although these births are encouraging, biologists recognize that there may be some additional natural mortality with the 2000/2001 calves and cautious optimism is necessary because of how close the species is to extinction. In addition, efforts to reduce human-caused mortality must be accelerated if these individuals are to survive to sexual maturity and help reverse the population decline.

One question that has repeatedly arisen regarding the western North Atlantic population of right whales is the effect that "bottlenecking" may have played on the genetic integrity of right whales. Several genetics studies have attempted to examine the genetic diversity of right whales. Results from a study by Schaeff et al. (1997) indicate that North Atlantic right whales are less genetically diverse than southern right whales; a separate population that numbers at least four times as many animals with an annual growth rate of nearly seven percent. A recent study compared the genetic diversity of North Atlantic right whales with the genetic diversity of southern right whales. The researchers found only five distinct haplotypes (a maternal genetic marker) exist amongst 180 different North Atlantic right whales sampled, versus 10 haplotypes among just 16 southern right whales sampled. In addition, one of the five haplotypes found in the North Atlantic right whales was observed in only four animals; all males born prior to 1982 (Malik et al. 2000). Because this genetic marker can be passed only from female to offspring, there is an expectation that it will be lost from the population. Two interesting facts about this haplotype are: (1) the last known female with this type was the animal killed by the shore fishery at Amagansett, Long Island in 1907; and (2) this haplotype is basal to all others worldwide (i.e., it is the most ancient of all right whales).

Low genetic diversity is a general concern for wildlife populations. It has been suggested that North Atlantic right whales have been at a low population size for hundreds of years and, while the present population exhibits very low genetic diversity, the major effects of harmful genes are thought to have occurred well in the past, effectively eliminating those genes from the population (Kenney 2000). To determine how long North Atlantic right whales have exhibited such low genetic diversity, researchers have analyzed DNA extracted from museum specimens.

Rosenbaum et al. (2000) found these samples represented four different haplotypes, all of which are still present in the current population, suggesting there has not been a significant loss of genetic diversity within the last 191 years. Although his sample size (n=6) was small, it supports the theory that significant reduction in genetic diversity likely occurred prior to the late 19th century.

The role of contaminants or biotoxins in reducing right whale reproduction has also been raised. Contaminant studies have confirmed that right whales are exposed to and accumulate contaminants, but the effect that such contaminants might be having on right whale reproduction or survivability is unknown.

Competition for food resources is another possible factor impacting right whale reproduction. Researchers have found that North Atlantic right whales appear to have thinner blubber than right whales from the South Atlantic (Kenney, 2000). It has also been suggested that oceanic conditions affecting the concentration of copepods may in turn have an effect on right whales since they rely on dense concentrations of copepods to feed efficiently (Kenney 2000). However, evidence is lacking to demonstrate either that a decline in birth rate is related to depleted food resources or that there is a relationship between oceanic conditions and copepod abundance to right whale fitness and reproduction rates.

General Human Impacts and Entanglement

Right whales may be adversely affected by habitat degradation, habitat exclusion, acoustic trauma, harassment, or reduction in prey resources due to trophic effects resulting from a variety of activities including the operation of commercial fisheries. However, the major known sources of anthropogenic mortality and injury of right whales clearly are ship strikes and entanglement in commercial fishing gear such as the sink gillnet gear used to catch multispecies.

Based on photographs of catalogued animals from 1959 and 1989, Kraus (1990) estimated that 57% of right whales exhibited scars from entanglement and 7% from ship strikes (propeller injuries). Hamilton et al. (1998) updated this work using data from 1935 through 1995. The new study estimated that 61.6% of right whales exhibit injuries caused by entanglement, and 6.4% exhibit signs of injury from vessel strikes. These data may be misleading, as a ship strike may be less of a "recoverable" event than entanglement in rope. It is also known that several whales have apparently been entangled on more than one occasion, and that some right whales that have been entangled were subsequently involved in ship strikes. Furthermore, these numbers are based on sightings of free-swimming animals that initially survive the entanglement or ship strike. Therefore, the actual number of interactions may be higher as some animals are likely drowned or killed immediately, and the carcass never recovered or observed.

The most recent data describing the observed entanglements of right whales is found in Table 33. It should be noted that no information is currently available on the response of the right whale population to recent (1997-1999) efforts to mitigate the effects of entanglement and ship strikes. However, as noted above, both entanglements and ship strikes have continued to occur. Therefore, it is not possible to determine whether the trend through 1996, as reported by Caswell, is continuing. Furthermore, results reported by Caswell suggest that it is not possible to determine that anthropogenic mortalities alone are responsible for the decline in right whale survival. However, the IWC concluded that reduction of anthropogenic mortalities would significantly improve the species' survival probability.

The best available information makes it reasonable to conclude that the current death rate exceeds the birth rate in the western North Atlantic right whale population. The nearly complete reproductive failure in this population from 1993 to 1995 and again in 1998 and 1999 suggests that this pattern has continued for almost a decade. Because no population can sustain a high death rate and low birth rate indefinitely, this combination places the North Atlantic right whale population at high risk of extinction. The one bright spot is the 2000/2001 calving season that is the most promising in the past 5 years in terms of calves born. However, these young animals must be provided with protection so that they can mature and contribute to future generations in order to be a factor in stabilizing of the population.

SPECIES	**Right**		**Humpback**		**Fin**		**Minke**		**TOTAL**	
	Dead	**Alive**	**Dead**	**Alive**	**Dead**	**Alive**	**Dead**	**Alive**	**Dead**	**Alive**
1997										
Gillnet	**0**	1	0	0	0	2	0	0	0	3
Pot/Trap	0	2	0	1	0	1	0	2	0	6
UNK/Other	0	1	0	1	0	0	0	0	0	2
TOTAL	**0**	**4**	**0**	**2**	**0**	**3**	**0**	**2**	**0**	**11**
1998										
Gillnet	0	0	1	4	0	0	1	0	2	4
Pot/Trap	0	2	0	1	0	0	0	0	0	3
UNK/Other	0	1	0	0	0	0	0	1	0	2
TOTAL	**0**	**3**	**1**	**5**	**0**	**0**	**1**	**1**	**2**	**9**
1999										
Gillnet	1	0	0	2	0	0	0	0	1	2
Pot/Trap	0	2	0	1	0	1	0	1	0	5
UNK/Other	0	1	0	1	0	0	2	0	2	2
TOTAL	**1**	**3**	**0**	**4**	**0**	**1**	**2**	**1**	**3**	**9**
2000										
Gillnet	0	0	0	2	0	0	0	0	0	2
Pot/Trap	0	0	0	0	0	0	0	2	0	2
UNK/Other	0	2	0	1	0	0	0	0	0	3
TOTAL	**0**	**2**	**0**	**3**	**0**	**0**	**0**	**2**	**0**	**7**
2001										
Gillnet	0	0	1	1	0	0	0	0	1	1
Pot/Trap	0	1	0	1	0	0	0	0	0	2
UNK/Other	1	1	0	1	0	0	0	0	1	2
TOTAL	**1**	**2**	**1**	**3**	**0**	**0**	**0**	**0**	**2**	**5**
TOTAL ALL	**2**	**14**	**2**	**17**	**0**	**4**	**3**	**6**	**7**	**41**

Table 33 Large Whale Entanglements, 1997-2001*

***** Data from NMFS entanglement reports where some gear was recovered and/or observed allowing experts to attempt to ID gear. Other entanglement records exist but gear was not recovered or observed.

Humpback Whale

Humpback whales calve and mate in the West Indies and migrate to feeding areas in the northwestern Atlantic during the summer months. Six separate feeding areas are utilized in northern waters (Waring et al. 2001). Only one of these feeding areas, the Gulf of Maine, lies within U.S. waters contained within the management unit of the FMP (Northeast Region). Most of the humpbacks that forage in the Gulf of Maine visit Stellwagen Bank and the waters of Massachusetts and Cape Cod Bays. Sightings are most frequent from mid-March through November between 41º N and 43º N, from the Great South Channel north along the outside of Cape Cod to Stellwagen Bank and Jeffreys Ledge (CeTAP 1982), and peak in May and August. However, small numbers of individuals may be present in this area year-round. They feed on a number of species of small schooling fishes, particularly sand lance and Atlantic herring, by filtering large amounts of water through their baleen to capture prey (Wynne and Schwartz 1999).

Data from a photographic identification catalogue of over 600 individual humpback whales have described the majority of the habitats used by this species (Barlow and Clapham 1997; Clapham et al. 1999). The photographic data have identified that reproductively mature western North Atlantic humpbacks winter in tropical breeding grounds in the Antilles, primarily on Silver and Navidad Banks north of the Dominican Republic. The primary winter range where calving and copulation is believed to take place also includes the Virgin Islands and Puerto Rico (NMFS 1991a). Calves are born from December through March and are about 4 meters at birth. Sexually mature females give birth approximately every 2 to 3 years. Sexual maturity is reached between 4 and 6 years of age for females and between 7 and 15 years for males. Size at maturity is about 12 meters.

Humpback whales use the mid-Atlantic as a migratory pathway. However, observations of juvenile humpbacks since 1989 in the mid-Atlantic have been increasing during the winter months, peaking January through March (Swingle et al. 1993). Biologists theorize that non-reproductive animals may be establishing a winter-feeding range in the mid-Atlantic since they are not participating in reproductive behavior in the Caribbean. The whales using this mid-Atlantic area were found to be residents of the Gulf of Maine and Atlantic Canada (Gulf of St. Lawrence and Newfoundland) feeding groups, suggesting a mixing of different feeding stocks in the mid-Atlantic region. Strandings and entanglements of humpback whales have increased between New Jersey and Florida during the same period (Wiley et al. 1995).

New information has become available on the status and trends of the humpback whale population in the North Atlantic that indicates the population is increasing. However, it has not yet been determined whether this increase is uniform across all six feeding stocks (Waring et al. 2001). For example, although the overall rate of increase has been estimated at 9.0% (CV=0.25) by Katona and Beard (1990), Barlow and Clapham (1997) reported a 6.5% rate through 1991 for the Gulf of Maine feeding group.

A variety of methods have been used to estimate the North Atlantic humpback whale population. However, the photographic mark-recapture analyses from the Years of the North Atlantic

Humpback (YONAH) project gave a North Atlantic basin-wide estimate of 10,600 (95% c.i. = 9,300 - 12,100) is regarded as the best available estimate for that population.

General Human Impacts and Entanglement

The major known sources of anthropogenic mortality and injury of humpback whales include entanglement in commercial fishing gear such as the sink gillnet gear used to catch multispecies, and ship strikes. Based on photographs of the caudal peduncle of humpback whales, Robbins and Mattila (1999) estimated that between 48% and 78% of animals in the Gulf of Maine exhibit scarring caused by entanglement. Several whales have apparently been entangled on more than one occasion. These estimates are based on sightings of free-swimming animals that initially survive the encounter. The most recent data describing the observed entanglements of humpback whales is found in Table 64. Because some whales may drown immediately, the actual number of interactions may be higher. In addition, the actual number of species-gear interactions is contingent on the intensity of observations from aerial and ship surveys.

Humpback whales may also be adversely affected by habitat degradation, habitat exclusion, acoustic trauma, harassment, or reduction in prey resources due to trophic effects resulting from a variety of activities including the operation of commercial fisheries.

Fin Whale

Fin whales inhabit a wide range of latitudes between 20-75° N and 20-75° S (Perry et al. 1999). Fin whales spend the summer feeding in the relatively high latitudes of both hemispheres, particularly along the cold eastern boundary currents in the North Atlantic and North Pacific Oceans and in Antarctic waters (IWC 1992). Most migrate seasonally from relatively high-latitude Arctic and Antarctic feeding areas in the summer to relatively low-latitude breeding and calving areas in the winter (Perry et al. 1999).

As was the case for the right and humpback whales, fin whale populations were heavily affected by commercial whaling. However, commercial exploitation of fin whales occurred much later than for right and humpback whales. Wide-scale commercial exploitation of fin whales did not occur until the 20th century when the use of steam power and harpoon- gun technology made exploitation of this faster, more offshore species feasible. In the southern hemisphere, over 700,000 fin whales were landed in the 20th century. More than 48,000 fin whales were taken in the North Atlantic between 1860 and 1970 (Perry et al. 1999). Fisheries existed off of Newfoundland, Nova Scotia, Norway, Iceland, the Faroe Islands, Svalbard (Spitsbergen), the islands of the British coasts, Spain and Portugal. Fin whales were rarely taken in U.S. waters, except when they ventured near the shores of Provincetown, MA, during the late 1800's (Perry et al. 1999).

In the North Atlantic today, fin whales are widespread and occur from the Gulf of Mexico and Mediterranean Sea northward to the edges of the arctic pack ice (NMFS 1998b). A number of researchers have suggested the existence of fin whale subpopulations in the North Atlantic. Mizroch et al. (1984) suggested that local depletions resulting from commercial over harvesting supported the existence of North Atlantic fin whale subpopulations. Others have used genetic information to support the existence of multiple subpopulations of fin whales in the North Atlantic and Mediterranean (Bérubé et al. 1998). Although the IWC's Scientific Committee proposed seven stocks for North Atlantic fin whales, it is uncertain whether these stock boundaries define biologically isolated units (Waring et al. 2001). NMFS has designated one stock of fin whale for U.S. waters of the North Atlantic (Waring et al. 2001) where the species is commonly found from Cape Hatteras northward.

Various estimates have been provided to describe the current status of fin whales in western North Atlantic waters. Based on the history and trends of whaling catch, an estimate of 3,590 to 6,300 fin whales was obtained for the entire western North Atlantic (Perry et al. 1999). Hain et al. (1992) estimated that about 5,000 fin whales inhabit the Northeastern United States continental shelf waters. The latest published SAR (Waring et al. 2002) gives a best estimate of abundance for fin whales of 2,814 (CV = 0.21). However, this is considered an underestimate, as too little is known about population structure, and the estimate is derived from surveys over a limited portion of the western North Atlantic. There is also not enough information to estimate population trends.

Despite our broad knowledge of fin whales, less is known about their life history as compared to right and humpback whales. Age at sexual maturity for both sexes ranges from 5-15 years. Physical maturity is reached at 20-30 years. Conception occurs during a 5 month winter period in either hemisphere. After a 12-month gestation, a single calf is born. The calf is weaned between 6 and 11 months after birth. The mean calving interval is 2.7 years, with a range of between 2 and 3 years (Agler et al. 1993). Like right and humpback whales, fin whales are believed to use western North Atlantic waters primarily for feeding and migrate to more southern waters for calving. However, the overall pattern of fin whale movement consists of a less obvious north-south pattern of migration than that of right and humpback whales.

Based on acoustic recordings from hydrophone arrays, Clark (1995) reported the fin whale as the most acoustically common whale species heard in the North Atlantic and described a general pattern of fin whale movements in the fall from the Labrador/Newfoundland region, south past Bermuda, and into the West Indies. However, evidence regarding where the majority of fin whales winter, calve, and mate is still scarce.

The overall distribution of fin whales may be based on prey availability. This species preys opportunistically on both zooplankton and fish (Watkins et al. 1984). The predominant prey of fin whales varies greatly in different geographical areas depending on what is locally available. In the western North Atlantic fin whales feed on a variety of small schooling fish (i.e., herring, capelin, sand lance) as well as squid and planktonic crustaceans (Wynne and Schwartz 1999). As with humpback whales, fin whales feed by filtering large volumes of water for their prey through their baleen plates. Photo identification studies in western North Atlantic feeding areas, particularly in Massachusetts Bay, have shown a high rate of annual return by fin whales, both within years and between years (Seipt et al. 1990).

As discussed above, fin whales were the focus of commercial whaling, primarily in the 20th century. The IWC did not begin to manage commercial whaling of fin whales in the North Atlantic until 1976 and were not given total protection until 1987, with the exception of a subsistence whaling hunt for Greenland. In total, there have been 239 reported kills of fin whales from the North Atlantic from 1988 to 1995.

General Human Impacts and Entanglement

The major known sources of anthropogenic mortality and injury of fin whales include ship strikes and entanglement in commercial fishing gear such as the sink gillnet gear used to catch multispecies. However, many of the reports of mortality cannot be attributed to a particular source. Of 18 fin whale mortality records collected between 1991 and 1995, four were associated with vessel interactions, although the true cause of mortality was not known. Although several fin whales have been observed entangled in fishing gear, (see Table 64) with some being disentangled, no mortalities have been attributed to gear entanglement.

In general, known mortalities of fin whales are less than those recorded for right and humpback whales. This may be due in part to the more offshore distribution of fin whales where they are either less likely to encounter entangling gear, or are less likely to be noticed when gear entanglements or vessel strikes do occur. Fin whales may also be adversely affected by habitat degradation, habitat exclusion, acoustic trauma, harassment, or reduction in prey resources due to trophic effects resulting from a variety of activities including the operation of commercial fisheries.

Sei Whale

Sei whales are a widespread species in the world's temperate, subpolar and subtropical and even tropical marine waters. However, they appear to be more restricted to temperate waters than other balaenopterids (Perry et al. 1999). The IWC recognized three stocks in the North Atlantic based on past whaling operations: (1) Nova Scotia; (2) Iceland Denmark Strait; (3) Northeast Atlantic (Donovan 1991 *in* Perry et al. 1999). Mitchell and Chapman (1977) suggested that the sei whale population in the western North Atlantic consists of two stocks, a Nova Scotian Shelf stock and a Labrador Sea stock. The Nova Scotian Shelf stock includes the continental shelf waters of the Northeast Region, and extends northeastward to south of Newfoundland. The IWC boundaries for this stock are from the U.S. east coast to Cape Breton, Nova Scotia and east to 42°W longitude (Waring et al. 2001). This is the only sei whale stock within the management unit of this FMP.

Sei whales became the target of modern commercial whalers primarily in the late 19th and early 20th century after stocks of other whales, including right, humpback, fin and blues, had already been depleted. Sei whales were taken in large numbers by Norway and Scotland from the beginning of modern whaling (NMFS 1998b). Small numbers were also taken off of Spain, Portugal, and West Greenland from the 1920's to 1950's (Perry et al. 1999). In the western North Atlantic, a total of 825 sei whales were taken on the Scotian Shelf between 1966-1972, and an additional 16 were by a shore-based Newfoundland whaling station (Perry et al. 1999). The species continued to be exploited in Iceland until 1986 even though measures to stop whaling of sei whales in other areas had been put into place in the 1970s (Perry et al. 1999). There is no estimate for the abundance of sei whales prior to commercial whaling. Based on whaling records, approximately14,295 sei whales were taken in the entire North Atlantic from 1885 to 1984 (Perry et al. 1999).

Sei whales winter in warm temperate or subtropical waters and summer in more northern latitudes. In the North Atlantic, most births occur in November and December when the whales are on the wintering grounds. Conception is believed to occur in December and January. Gestation lasts for 12 months and the calf is weaned at 6-9 months when the whales are on the summer feeding grounds (NMFS 1998b). Sei whales reach sexual maturity at 5-15 years of age. The calving interval is believed to be 2-3 years (Perry et al. 1999).

Sei whales occur in deep water throughout their range, typically over the continental slope or in basins situated between banks (NMFS 1998b). In the northwest Atlantic, the whales travel along the eastern Canadian coast in autumn on their way to and from the Gulf of Maine and Georges Bank where they occur in winter and spring. Within the Northeast Region, the sei whale is most common on Georges Bank and into the Gulf of Maine/Bay of Fundy region during spring and summer. Individuals may range as far south as North Carolina. It is important to note that sei whales are known for inhabiting an area for weeks at a time then disappearing for year or even decades. This has been observed all over the world, including in the southwestern Gulf of Maine in 1986, but the basis for this phenomenon is not clear.

Although sei whales may prey upon small schooling fish and squid in the Northeast Region, available information suggests that calanoid zooplankton are the primary prey of this species. There are occasional influxes of sei whales further into Gulf of Maine waters, presumably in conjunction with years of high copepod abundance inshore. Sei whales are occasionally seen feeding in association with right whales in the southern Gulf of Maine and in the Bay of Fundy, although there is no evidence of interspecific competition for food resources. There is very little information on natural mortality factors for sei whales. Possible causes of natural mortality, particularly for young, old or otherwise compromised individuals are shark attacks, killer whale attacks, and endoparasitic helminthes (Perry et al. 1999).

There are insufficient data to determine trends of the sei whale population. Because there are no abundance estimates within the last 10 years, a minimum population estimate cannot be determined for management purposes (Waring et al. 2001). Abundance surveys are problematic because this species is difficult to distinguish from the fin whale and too little is known of the sei whale's distribution, population structure and patterns of movement.

General Human Impacts and Entanglement

No instances of injury or mortality of sei whales due to entanglements in fishing gear have been recorded in U.S. waters, possibly because sei whales typically inhabit waters further offshore than most commercial fishing operations, or perhaps entanglements do occur but are less likely to be observed. However, due to the overlap of this species observed range with the monkfish fishery areas that use sink gillnet gear, the potential for entanglement does exist. As noted in Waring, et al. (2002), sei whale movements into inshore areas have occurred historically. Similar impacts noted above for other baleen whales may also occur. Due to the deep-water distribution of this species, interactions that do occur are less likely to be observed or reported than those involving right, humpback, and fin whales that often frequent areas within the continental shelf.

Blue Whale

Like the fin whale, blue whales occur worldwide and are believed to follow a similar migration pattern from northern summering grounds to more southern wintering areas (Perry et al. 1999).

Three subspecies have been identified: *Balaenoptera musculus musculus, B.m. intermedia,* and *B.m. brevicauda* (NMFS 1998c). Only *B. musculus* occurs in the northern hemisphere. Blue whales range in the North Atlantic from the subtropics to Baffin Bay and the Greenland Sea. The IWC currently recognizes these whales as one stock (Perry et al. 1999).

Blue whales were intensively hunted in all of the world's oceans from the turn of the century to the mid-1960's when development of steam-powered vessels and deck-mounted harpoon guns in the late 19th century made it possible to exploit them on an industrial scale (NMFS 1998c). Blue whale populations declined worldwide as the new technology spread and began to receive widespread use (Perry et al. 1999). Subsequently, the whaling industry shifted effort away from declining blue whale stocks and targeted other large species, such as fin whales, and then resumed hunting for blue whales when the species appeared to be more abundant (Perry et al. 1999). The result was a cyclical rise and fall, leading to severe depletion of blue whale stocks worldwide (Perry et al. 1999). In all, at least 11,000 blue whales were taken in the North Atlantic from the late 19th century through the mid-20th century.

Blue whales were given complete protection in the North Atlantic in 1955 under the International Convention for the Regulation of Whaling. There are no good estimates of the pre-exploitation size of the western North Atlantic blue whale stock but it is widely believed that this stock was severely depleted by the time legal protection was introduced in 1955 (Perry et al. 1999). Mitchell (1974) suggested that the stock numbered in the very low hundreds during the late 1960's through early 1970's (Perry et al. 1999). Photo-identification studies of blue whales in the Gulf of St. Lawrence from 1979 to 1995 identified 320 individual whales (NMFS 1998c). The NMFS recognizes a minimum population estimate of 308 blue whales within the Northeast Region (Waring et al. 2001).

Blue whales are only occasional visitors to east coast U.S. waters. They are more commonly found in Canadian waters, particularly the Gulf of St. Lawrence where they are present for most of the year, and in other areas of the North Atlantic. It is assumed that blue whale distribution is governed largely by food requirements (NMFS 1998c). In the Gulf of St. Lawrence, blue whales appear to predominantly feed on several copepod species (NMFS 1998c).

Compared to the other species of large whales, relatively little is known about this species. Sexual maturity is believed to occur in both sexes at 5-15 years of age. Gestation lasts 10-12 months and calves nurse for 6-7 months. The average calving interval is estimated to be 2-3 years. Birth and mating both take place in the winter season (NMFS 1998c), but the location of wintering areas is speculative (Perry et al. 1999). In 1992 the U.S. Navy and contractors conducted an extensive blue whale acoustic survey of the North Atlantic and found concentrations of blue whales on the Grand Banks and west of the British Isles. One whale was tracked for 43 days during which time it traveled 1,400 nautical miles around the general area of Bermuda (Perry et al. 1999).

There is limited information on the factors affecting natural mortality of blue whales in the North Atlantic. Ice entrapment is known to kill and seriously injure some blue whales during late winter and early spring, particularly along the southwest coast of Newfoundland. Habitat degradation has been suggested as possibly affecting blue whales such as in the St. Lawrence

River and the Gulf of St. Lawrence where habitat has been degraded by acoustic and chemical pollution. However, there is no data to confirm that blue whales have been affected by such habitat changes (Perry et al. 1999).

General Human Impacts and Entanglement

Entanglements in fishing gear such as the sink gillnet gear used in the monkfishfishery and ship strikes are believed to be the major sources of anthropogenic mortality and injury of blue whales. However, confirmed deaths or serious injuries are few. NOAA Fisheries 2003 Biological Opinion for the monkfish fishery references an incident in 1987, when, concurrent with an unusual influx of blue whales into the Gulf of Maine, one report was received from a whale watch boat that spotted a blue whale in the southern Gulf of Maine entangled in gear described as probable lobster pot gear. A second animal found in the Gulf of St. Lawrence apparently died from the effects of an entanglement.

Sperm Whale

Sperm whales inhabit all ocean basins, from equatorial waters to the polar regions (Perry et al. 1999). In the western North Atlantic they range from Greenland to the Gulf of Mexico and the Caribbean. The sperm whales that occur in the western North Atlantic are believed to represent only a portion of the total stock (Blaylock et al. 1995). Total numbers of sperm whales off the USA or Canadian Atlantic coast are unknown, although eight estimates from selected regions of the habitat do exist for select time periods. The best estimate of abundance for the North Atlantic stock of sperm whales is 4,702 (CV=0.36) (Waring et al. 2001). The IWC recognizes one stock for the entire North Atlantic (Waring et al. 2001).

The IWC estimates that nearly a quarter-million sperm whales were killed worldwide in whaling activities between 1800 and 1900 (IWC 1971). With the advent of modern whaling the larger rorqual whales were targeted. However as their numbers decreased, whaling pressure again focused on smaller rorquals and sperm whales. From 1910 to 1982 there were nearly 700,000 sperm whales killed worldwide from whaling activities (Clarke 1954). Some sperm whales were also taken off the U.S. Mid-Atlantic coast (Reeves and Mitchell 1988; Perry et al. 1999), and in the northern Gulf of Mexico (Perry et al. 1999). Recorded North Atlantic sperm whale catch numbers for Canada and Norway from 1904 to 1972 total 1,995. All killing of sperm whales was banned by the IWC in 1988.

Sperm whales generally occur in waters greater than 180 meters in depth with a preference for continental margins, seamounts, and areas of upwelling, where food is abundant (Leatherwood and Reeves 1983). Sperm whales in both hemispheres migrate to higher latitudes in the summer for feeding and return to lower latitude waters in the winter where mating and calving occur. Mature males typically range to higher latitudes than mature females and immature animals but return to the lower latitudes in the winter to breed (Perry et al. 1999). Waring et al. (1993) suggest sperm whale distribution is closely correlated with the Gulf Stream edge with a migration to higher latitudes during summer months where they are concentrated east and northeast of Cape Hatteras. Distribution extends further northward to areas north of Georges Bank and the Northeast Channel region in summer and then south of New England in fall, back to the mid-Atlantic Bight (Waring et al. 2001).

Mature females in the northern hemisphere ovulate April through August. A single calf is born after a 15-month gestation. A mature female will produce a calf every 4-6 years. Females attain sexual maturity at a mean age of nine years, while males have a prolonged puberty and attain sexual maturity at about age 20 (Waring et al. 2001). Male sperm whales may not reach physical maturity until they are 45 years old (Waring et al. 2001). The sperm whales prey consists of larger mid-water squid and fish species (Perry et al. 1999). Sperm whales, especially mature males in higher latitude waters, have been observed to take significant quantities of large demersal and deep water sharks, multispecies, and bony fishes.

<u>General Human Impacts and Entanglement</u>

Few instances of injury or mortality of sperm whales due to human impacts have been recorded in U.S. waters. Because of their generally more offshore distribution and their benthic feeding habits, sperm whales are less subject to entanglement than are right or humpback whales. However, the monkfish fishery is conducted near the shelf edge and utilizes fixed sink gillnet gear that may pose a threat to sperm whales.

Documented takes primarily involve offshore fisheries such as the offshore lobster pot fishery and pelagic driftnet and pelagic longline fisheries. Ships also strike sperm whales. Due to the offshore distribution of this species, interactions (both ship strikes and entanglements) that do occur are less likely to be reported than those involving right, humpback, and fin whales that more often occur in nearshore areas. Other impacts noted above for baleen whales may also occur.

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 that allow it to forage into the colder Northeast Region waters (NMFS and USFWS, 1995). Evidence from tag returns and strandings in the western North Atlantic suggests that adults engage in routine migrations between boreal, temperate and tropical waters (NMFS and USFWS, 1992). In the U.S., leatherback turtles are found throughout the western North Atlantic during the warmer months along the continental shelf, and near the Gulf Stream edge. 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 (CeTAP 1982). Shoop and Kenney (1992) also observed concentrations of leatherbacks during the summer off the south shore of Long Island and New Jersey. Leatherbacks in these waters are thought to be following their preferred jellyfish prey.

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. Since populations or subpopulations of leatherback sea turtles have not been formally recognized, the conservative approach is to treat leatherback nesting populations as distinct.

Leatherbacks are predominantly a pelagic species and feed on jellyfish and other soft-body prey. Time-depth-recorder data collected by Eckert et al. (1996) indicate that leatherbacks are night feeders and are deep divers, with recorded dives to depths in excess of 1,000 meters. However, leatherbacks may feed in shallow waters if there is an abundance of jellyfish near shore. For example, leatherbacks occur annually in shallow bays such as Cape Cod and Narragansett Bays during the fall.

Leatherbacks are a long lived species (> 30 years), with an estimated age at sexual maturity reported as about 13-14 years for females, and an estimated minimum age at sexual maturity of 5-6 years, with (Zug and Parham 1996 and NMFS 2001). Leatherbacks nest from March through July and produce 100 eggs or more in each clutch, or a total of 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 that reach the ocean are virtually unknown (NMFS and USFWS 1992).

Status and Trends of Leatherback Sea Turtles

Estimated to number approximately 115,000 adult females globally in 1980 (Pritchard 1982) and only 34,500 by 1995 (Spotila et al. 1996), leatherback populations have been decimated worldwide, not only by fishery related mortality but, at least historically, primarily due to exploitation of eggs (Ross 1979). On some beaches nearly 100% of the eggs laid have been harvested (Eckert 1996).

Data collected in southeast Florida clearly indicate increasing numbers of nests over the past twenty years (9.1-11.5% increase), although it is critical to note that there was also an increase in the survey area in Florida over time (NOAA Fisheries SEFSC 2001). The largest leatherback rookery in the western Atlantic remains along the northern coast of South America in French Guiana and Suriname. More than half of the present world leatherback population is estimated to be nesting on the beaches in and close to the Marowijne River Estuary in Suriname and French Guiana (Hilterman and Goverse 2004). Nest numbers in Suriname have shown an increase and the long-term trend for the Suriname and French Guiana nesting group seems to show an increase. In 2001, the number of nests for Suriname and French Guiana combined was 60,000, one of the highest numbers observed for this region in 35 years. Studies by Girondot, et al. (in review) also suggest that the trend for the Suriname-French Guiana nesting population over the last 36 years is stable or slightly increasing.

General Human Impacts and Entanglement

Anthropogenic impacts to the leatherback population include fishery interactions as well as 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 egg harvesting.

Poaching is not known to be a problem for U.S. nesting populations. However, numerous fisheries that occur in both U.S. state and federal waters are known to negatively impact juvenile and adult leatherback sea turtles. These include incidental take in several commercial and recreational fisheries. Fisheries known or suspected to incidentally capture leatherbacks include those deploying bottom trawls, off-bottom trawls, purse seines, bottom longlines, hook and line, gill nets, drift nets, traps, haul seines, pound nets, beach seines, and surface longlines (NMFS and USFWS 1992).

Leatherback interactions with the southeast shrimp fishery, which operates from North Carolina through southeast Florida (NOAA Fisheries 2002), are also common. The National Research Council Committee on Sea Turtle Conservation identified incidental capture in shrimp trawls as the major anthropogenic cause of sea turtle mortality (NRC 1999). Leatherbacks are likely to encounter shrimp trawls working in the coastal waters off the Atlantic coast (from Cape Canaveral, Florida through North Carolina) as they make their annual spring migration north. For many years, TEDs that were required for use in the southeast shrimp fishery were less effective for leatherbacks, compared to the smaller, hard-shelled turtle species, because the TED openings were too small to allow leatherbacks to escape. To address this problem, on February 21, 2003, NOAA Fisheries issued a final rule to amend the TED regulations. Modifications to the design of TEDs are now required in order to exclude leatherbacks as well as large benthic immature and sexually mature loggerhead and green turtles.

Leatherbacks are also susceptible to entanglement in lobster and crab pot gear. The probable reasons may be: attraction to gelatinous organisms and algae that collect on buoys and buoy lines at or near the surface; attraction to the buoys which could appear as prey; or the gear configuration which may be more likely to wrap around flippers. The total number of leatherbacks reported entangled from New York through Maine from all sources for the years 1980 - 2000 is 119. Entanglements are also common in Canadian waters where Goff and Lien (1988) reported that 14 of 20 leatherbacks encountered off the coast of Newfoundland/Labrador were entangled in fishing gear including salmon net, herring net, gillnet, trawl line and crab pot line. Prescott (1988) reviewed stranding data for Cape Cod Bay and concluded that for those turtles where cause of death could be determined (the minority), entanglement in fishing gear is the leading cause of death followed by capture by dragger, cold stunning, or collision with boats.

As noted, there are many human-related sources of mortality to leatherbacks. A tally of all leatherback takes anticipated annually under current biological opinions was projected to be as many as 801 leatherback takes, although this sum includes many takes expected to be non-lethal.

Leatherbacks have a number of pressures on their populations, including injury or mortality in fisheries, other federal activities (e.g., military activities, oil and gas development, etc.), degradation of nesting habitats, direct harvest of eggs, juvenile and adult turtles, the effects of ocean pollutants and debris, lethal collisions, and natural disturbances such as hurricanes that are capable of destroying nesting beaches. Spotila et al. (1996) 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.”

Kemp's Ridley Sea Turtle

The Kemp's ridley is the most endangered of the world's sea turtle species. Of the world's seven extant species of sea turtles, the Kemp's ridley has declined to the lowest population level. Kemp's ridleys nest in daytime aggregations known as arribadas, primarily on a stretch of beach in Mexico called Rancho Nuevo. Most of the population of adult females nest in this single locality (Pritchard 1969). When nesting aggregations at Rancho Nuevo were discovered in 1947, adult female populations were estimated to be in excess of 40,000 individuals (Hildebrand 1963). By the early 1970s, the world population estimate of mature female Kemp's ridleys had been reduced to 2,500-5,000 individuals. The population declined further through the mid-1980s.

Status and Trends of Kemp's Ridley Sea Turtles

The TEWG (1998; 2000) indicated that the Kemp's ridley population appears to be in the early stage of exponential expansion. Nesting data, estimated number of adults, and percentage of first time nesters have all increased from lows experienced in the 1970s and 1980s. From 1985 to 1999, the number of nests observed at Rancho Nuevo and nearby beaches has increased at a mean rate of 11.3% per year, allowing cautious optimism that the population is on its way to recovery. For example, nesting data indicated that the number of adults declined from a population that produced 6,000 nests in 1966 to a population that produced 924 nests in 1978 and 702 nests in 1985 then increased to produce 1,940 nests in 1995. Estimates of adult abundance followed a similar trend from an estimate of 9,600 in 1966 to 1,050 in 1985 and 3,000 in 1995. The increased recruitment of new adults is illustrated in the proportion of neophyte, or first time nesters, which has increased from 6% to 28% from 1981 to 1989 and from 23% to 41% from 1990 to 1994.

Kemp's ridley nesting occurs from April through July each year. Little is known about mating but it is believed to occur before the nesting season in the vicinity of the nesting beach. Hatchlings emerge after 45-58 days. Once they leave the beach, neonates presumably enter the Gulf of Mexico where they feed on available sargassum and associated infauna or other epipelagic species (USFWS and NMFS, 1992). Ogren (1988) suggests that the Gulf coast, from Port Aransas, Texas, through Cedar Key, Florida, represents the primary habitat for subadult ridleys in the northern Gulf of Mexico. However, at least some juveniles will travel northward as water temperatures warm to feed in productive coastal waters off Georgia through New England (USFWS and NMFS, 1992).

Juvenile Kemp's ridleys use northeastern and Mid-Atlantic coastal waters of the U.S. Atlantic coastline as primary developmental habitat during summer months, with shallow coastal embayments serving as important foraging grounds. Ridleys found in Mid- Atlantic waters are primarily post-pelagic juveniles averaging 40 centimeters in carapace length, and weighing less than 20 kilograms (Terwilliger and Musick 1995). Next to loggerheads, they are the second most abundant sea turtle in Virginia and Maryland waters, arriving in these areas during May and June (Keinath et al., 1987; Musick and Limpus, 1997). Studies have found that post-pelagic ridleys feed primarily on a variety of species of crabs. Mollusks, shrimp, and fish are consumed less frequently (Bjorndal, 1997).

With the onset of winter and the decline of water temperatures, ridleys migrate to more southerly waters from September to November (Keinath et al., 1987; Musick and Limpus, 1997). Turtles who do not head south soon enough face the risks of cold stunning in northern waters. Cold stunning can be a significant natural cause of mortality for sea turtles in Cape Cod Bay and Long Island Sound. For example, in the winter of 1999/2000, there was a major cold-stunning event where 218 Kemp's ridleys, 54 loggerheads, and 5 green turtles were found on Cape Cod beaches. The severity of cold stun events depends on: the numbers of turtles utilizing Northeast waters in a given year; oceanographic conditions; and the occurrence of storm events in the late fall. Cold-stunned turtles have also been found on beaches in New York and New Jersey. Cold-stunning events can represent a significant cause of natural mortality, in spite of the fact that many cold-stun turtles can survive if found early enough.

<u>General Human Impacts and Entanglement</u>

Like other turtle species, the severe decline in the Kemp's ridley population appears to have been heavily influenced by a combination of exploitation of eggs and impacts from fishery interactions. From the 1940s through the early 1960s, nests from Ranch Nuevo were heavily exploited (USFWS and NMFS, 1992), but beach protection in 1966 helped to curtail this activity (USFWS and NMFS, 1992). Currently, anthropogenic impacts to the Kemp's ridley population are similar to those discussed above for other sea turtle species. Takes of Kemp's ridley turtles have been recorded by sea sampling coverage in the Northeast otter trawl fishery, pelagic longline fishery, and southeast shrimp and summer flounder bottom trawl fisheries.

Kemp's ridleys may also be affected by large-mesh gillnet fisheries. In the spring of 2000, a total of five Kemp's ridley carcasses were recovered from a North Carolina beach where 277 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. It is possible that strandings of Kemp's ridley turtles in some years have increased at rates higher than the rate of increase in the Kemp's ridley population (TEWG 1998).

Green Sea Turtle

Green turtles are distributed circumglobally. In the western Atlantic they range from Massachusetts to Argentina, including the Gulf of Mexico and Caribbean, but are considered rare north of Cape Hatteras (Wynne and Schwartz, 1999). Most green turtle nesting in the continental United States occurs on the Atlantic Coast of Florida (Ehrhart 1979). Green turtles were traditionally highly prized for their flesh, fat, eggs, and shell, and directed fisheries in the United States and throughout the Caribbean are largely to blame for the decline of the species. In the Gulf of Mexico, green turtles were once abundant enough in the shallow bays and lagoons to support a commercial fishery. However, declines in the turtle fishery throughout the Gulf of Mexico were evident by 1902 (Doughty 1984).

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). The pattern of green turtle nesting shows biennial peaks in abundance, with a generally positive trend during the ten years of regular monitoring, perhaps due to increased protective legislation throughout the Caribbean (Meylan et al., 1995). Increased nesting has also been observed along the Atlantic Coast of Florida, on beaches where only loggerhead nesting was observed in the past). Recent population estimates for the western Atlantic area are not available.

While nesting activity is obviously important in determining population distributions, the remaining portion of the green turtle's life is spent on the foraging and breeding grounds. Juvenile green sea turtles occupy pelagic habitats after leaving the nesting beach. Pelagic juveniles are assumed to be omnivorous, but with a strong tendency toward carnivory during early life stages. At approximately 20 to 25 cm carapace length, juveniles leave pelagic habitats and enter benthic foraging areas, shifting to a chiefly herbivorous diet (Bjorndal 1997). Green turtles appear to prefer marine grasses and algae in shallow bays, lagoons and reefs (Rebel 1974) but also consume jellyfish, salps, and sponges.

As is the case for loggerhead and Kemp's ridley sea turtles, green sea turtles use mid-Atlantic and northern areas of the western Atlantic coast as important summer developmental habitat. Green turtles are found in estuarine and coastal waters as far north as Long Island Sound, Chesapeake Bay, and North Carolina sounds (Musick and Limpus 1997). Like loggerheads and Kemp's ridleys, green sea turtles that use northern waters during the summer must return to warmer waters when water temperatures drop, or face the risk of cold stunning. Cold stunning of green turtles may occur in southern areas as well (*i.e.*, Indian River, Florida), as these natural mortality events are dependent on water temperatures and not solely geographical location.

General Human Impacts and Entanglement

Anthropogenic impacts to the green sea turtle population are similar to those discussed above for other sea turtles species. As with the other 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, scallop dredge, southeast shrimp trawl, and summer flounder bottom trawl fisheries has recorded takes of green turtles.

Loggerhead Sea Turtle

Loggerhead sea turtles occur throughout the temperate and tropical regions of the Atlantic, Pacific, and Indian Oceans in a wide range of habitats. These include open ocean, continental shelves, bays, lagoons, and estuaries (NMFS and USFWS 1995). Loggerhead sea turtles are primarily benthic feeders, opportunistically foraging on crustaceans and mollusks (Wynne and Schwartz 1999). Under certain conditions they may also scavenge fish (NMFS and USFWS 1991b). Horseshoe crabs are known to be a favorite prey item in the Chesapeake Bay area (Lutcavage and Musick 1985).

Status and Trends of Loggerhead Sea Turtles

The loggerhead sea turtle was listed as threatened under the ESA on July 28, 1978. The species was considered to be a single population in the North Atlantic at the time of listing. However, further genetic analyses conducted at nesting sites indicate the existence of five distinct subpopulations ranging from North Carolina, south along the Florida east coast and around the keys into the Gulf of Mexico, to nesting sites in the Yucatan peninsula and Dry Tortugas (TEWG 2000 and NMFS SEFSC 2001). Natal homing to those nesting beaches is believed to provide the genetic barrier between these nesting aggregations, preventing recolonization from turtles from other nesting beaches.

The threatened loggerhead sea turtle is the most abundant of the sea turtles listed as threatened or endangered in the U.S. waters. In the western North Atlantic, most loggerhead sea turtles nest from North Carolina to Florida and along the gulf coast of Florida. The southeastern U.S. nesting aggregation is the second largest and represents about 35 % of the nests of this species. The total number of nests along the U.S. Atlantic and Gulf coasts between 1989 and 1998, ranged from 53,014 to 92,182 annually, with a mean of 73,751. Since a female often lays multiple nests in any one season, the average adult female population was estimated to be 44,780 (Murphy and Hopkins 1984).

However, the status of the northern loggerhead subpopulation is of particular concern. Based on the above, there are only an estimated 3,800 nesting females in the northern loggerhead subpopulation, and the status of this northern population based on number of loggerhead nests, has been classified declining or stable (TEWG 2000). Another factor that may add to the vulnerability of the northern subpopulation is that genetics data show that the northern subpopulation produces predominantly males (65%). In contrast, the much larger south Florida subpopulation produces predominantly females (80%) (NMFS SEFSC 2001).

The activity of the loggerhead is limited by temperature. Loggerheads commonly occur throughout the inner continental shelf from Florida through Cape Cod, Massachusetts. Loggerheads may also occur as far north as Nova Scotia when oceanographic and prey conditions are favorable. Surveys conducted offshore as well as sea turtle stranding data collected during November and December off North Carolina suggest that sea turtles emigrating from northern waters in fall and winter months may concentrate in nearshore and southerly areas influenced by warmer Gulf Stream waters (Epperly et al. 1995). This is supported by the collected work of Morreale and Standora (1998) who tracked 12 loggerheads and 3 Kemp's ridleys by satellite. All of the turtles followed similar spatial and temporal corridors, migrating south from Long Island Sound, New York, during October through December. The turtles traveled within a narrow band along the continental shelf and became sedentary for one or two months south of Cape Hatteras.

Loggerhead sea turtles do not usually appear on the most northern summer foraging grounds in the Gulf of Maine until June, but are found in Virginia as early as April. They remain in the mid-Atlantic and northeast areas until as late as November and December in some cases, but the majority leaves the Gulf of Maine by mid-September. Aerial surveys of loggerhead turtles north of Cape Hatteras indicate that they are most common in waters from 22 to 49 meters deep, although they range from the beach to waters beyond the continental shelf (Shoop and Kenney 1992).

All five loggerhead subpopulations are subject to natural phenomena that cause annual fluctuations in the number of young produced. For example, there is a significant overlap between hurricane seasons in the Caribbean Sea and northwest Atlantic Ocean (June to November), and the loggerhead sea turtle nesting season (March to November). Sand accretion and rainfall that result from these storms as well as wave action can appreciably reduce hatchling success. In 1992, Hurricane Andrew affected turtle nests over a 90-mile length of coastal Florida; all of the eggs were destroyed by storm surges on beaches that were closest to the eye of this hurricane (Milton et al. 1994). Other sources of natural mortality include cold stunning and biotoxin exposure.

General Human Impacts and Entanglement

The diversity of the sea turtles life history leaves them susceptible to many human impacts, including impacts on land, in the benthic environment, and in the pelagic environment. Anthropogenic factors that impact the success of nesting and hatching include: beach erosion, beach armoring and nourishment; artificial lighting; beach cleaning; increased human presence; recreational beach equipment; beach driving; coastal construction and fishing piers; exotic dune and beach vegetation; and poaching. An increased human presence at some nesting beaches or close to nesting beaches has led to secondary threats such as the introduction of exotic fire ants, and an increased presence of native species (e.g., raccoons, armadillos, and opossums) which raid and feed on turtle eggs.

Loggerhead sea turtles originating from the western Atlantic nesting aggregations are believed to lead a pelagic existence in the North Atlantic gyre for as long as 7-12 years before settling into benthic environments. Loggerhead sea turtles are impacted by a completely different set of threats from human activity once they migrate to the ocean. During that period, they are exposed to a series of long-line fisheries that include the U.S. Atlantic tuna and swordfish longline fisheries, an Azorean long-line fleet, a Spanish long-line fleet, and various fleets in the Mediterranean Sea (Aguilar et al. 1995, Bolten et al. 1994, Crouse 1999). Observer records indicate that, of the 6,544 loggerheads estimated to be captured by the U.S. Atlantic tuna and swordfish longline fleet between 1992-1998, an estimated 43 were dead (Yeung 1999). For 1998, alone, an estimated 510 loggerheads (225-1250) were captured in the longline fishery. Aguilar et al. (1995) estimated that the Spanish swordfish longline fleet, which is only one of the many fleets operating in the region, captures more than 20,000 juvenile loggerheads annually (killing as many as 10,700).

Once loggerheads enter the benthic environment in waters off the coastal U.S., they are exposed to a suite of fisheries in federal and State waters including trawl, purse seine, hook and line, gillnet, pound net, longline, and trap fisheries. Loggerhead sea turtles are captured in fixed pound net gear in the Long Island Sound, in pound net gear and trawls in summer flounder and other finfish fisheries in the Mid-Atlantic and Chesapeake Bay, in gillnet fisheries in the Mid-Atlantic and elsewhere, and in multispecies, monkfish, spiny dogfish, and northeast sink gillnet fisheries.

In addition to fishery interactions, loggerhead sea turtles also face other man-made threats in the marine environment. These include oil and gas exploration and coastal development, as well as marine pollution, underwater explosions, and hopper dredging. Offshore artificial lighting, power plant entrainment and/or impingement, and entanglement in debris or ingestion of marine debris are also seen as possible threats. Boat collisions and poaching are two direct impacts that affect loggerheads.

Barndoor Skate

Barndoor skate is considered a candidate species under the ESA as a result of two petitions to list the species as endangered or threatened that were received in March and April 1999. In June 1999, the agency declared the petitioned actions to be warranted and requested additional information on whether or not to list the species under the ESA. At the 30th Stock Assessment Workshop (SAW 30) held in November 1999, the Stock Assessment Research Committee (SARC) reviewed the status of the barndoor skate stock relative to the five listing criteria of the ESA. The SARC provided their report to the NMFS in the SAW 30 document (NEFSC 2000). NMFS published a decision on the petitions on September 27, 2002 (67FR61055-61061) that the petitioned actions are not warranted at this time. However, NMFS is leaving barndoor skate on the agency's list of candidate species due to remaining uncertainties regarding the status and population structure of the species

The barndoor skate occurs from Newfoundland, the Gulf of St. Lawrence, off Nova Scotia, the Gulf of Maine, and the northern sections of the Mid-Atlantic Bight down to North Carolina. It is one of the largest skates in the Northwest Atlantic and is presumed to be a long-lived, slow growing species. Barndoor skates inhabit mud and sand/gravel bottoms along the continental shelf, generally at depths greater than 150 meters. They are believed to feed on benthic invertebrates and fishes (Bigelow and Schroeder 1953).

The barndoor skate is often caught as a bycatch species in the offshore trawl and sink gillnet fisheries that target multispecies. When landed, barndoor skate are often used in the skate wing fishery.

The abundance of barndoor skate declined continuously through the 1960's. Since 1990, their abundance has increased slightly on Georges Bank, the western Scotian shelf, and in Southern New England, although the current NEFSC autumn survey biomass index is less than 5% of the peak observed in 1963. The species was identified as an overfished species at the SAW 30 (NEFSC 2000). Skates are sensitive to overutilization generally because of their limited reproductive capacity. This is a characteristic of all of the larger species in the Northeast skate complex that are relatively slow-growing, long-lived, and late maturing.

Minke Whale

Minke whales have a cosmopolitan distribution in polar, temperate, and tropical waters. The Canadian east coast population is one of four populations recognized in the North Atlantic. Minke whales off the eastern coast of the U.S. are considered to be part of the population that extends from Davis Strait off Newfoundland to the Gulf of Mexico. The species is common and widely distributed along the U.S. continental shelf. They show a certain seasonal distribution with spring and summer peak numbers, falling off in the fall to very low winter numbers. Like all baleen whales, the minke whale generally occupies the continental shelf proper.

Minke whales are known to be taken in sink gillnet gear that is also used to catch monkfish, although no mortalities have been recorded since 1991. Takes have also been documented in trawl fisheries. Waring et al. (2002) has described the estimated total take of minkes in all fisheries to be below the PBR established for that species.

Harbor Porpoise
Harbor porpoise are found primarily in the Gulf of Maine in the summer months. However, they migrate seasonally through regions where multispecies finfish are caught. For example, they move through the southern New England area where the multispecies fishery occurs in the spring (March and April). Harbor porpoise also move through the Massachusetts Bay and Jeffrey's Ledge region in the spring (April and May) and the fall (October November).

Harbor porpoise are taken in sink gillnet gear used to catch monkfish. The historic level of serious injury and mortality of this species in this gear was known to be high relative to the estimated population level. The Harbor Porpoise Take Reduction Plan (HPTRP) was implemented in 1998 to reduce takes in the Northeast and Mid-Atlantic gillnet fisheries, including the monkfish fishery, through a series of time/area closures and required use of acoustical deterrents that have reduced the take to acceptable levels.

NMFS recently reported (67FR51234 dated August 7, 2002) that the estimated incidental take of harbor porpoise in U.S. waters for 2001 was 80 animals. The minimum population estimate for 1999 was established at 74,695, and the potential biological removal (PBR) for the harbor porpoise is now set at 747. Although the current mortality estimate is below the latest PBR level, the stock is still considered a strategic stock requiring continued measures to reduce human-caused mortality from commercial fishing. This is due to the fact that there are insufficient data to determine population trends for this species.

Atlantic White-Sided Dolphin
White-sided dolphins are found in the temperate and sub-polar waters of the North Atlantic, primarily on the continental shelf waters out to the 100-meter depth contour. The species is distributed from central western Greenland to North Carolina, with the Gulf of Maine stock commonly found from Hudson Canyon to Georges Bank and into the Gulf of Maine to the Bay of Fundy. A minimum population estimate for the white-sided dolphin 37,904 has been derived for U.S. waters (Waring et al. 2002) from several survey estimates.

White-sided dolphins have been observed taken in sink gillnets, pelagic drift gillnets, and several mid-water and bottom trawl fisheries. While is unclear whether sink gillnets with takes of white-sided dolphins were engaged in the monkfish fishery, the inference can be made that the gear type is capable of interactions with this species. Waring et al. (2002) described the estimated total take of white-sided dolphins in all fisheries (including those that catch multispecies) to be below the PBR established for that species.

Risso's Dolphin
Risso's dolphins are distributed along the continental shelf edge of North America from Cape Hatteras to Georges Bank. A minimum population estimate of 29,110 was derived from limited survey estimates in northern U.S. waters. Observers have documented takes in the pelagic drift gillnet, pelagic longline, and mid-water trawl fisheries, but have not reported this species in monkfish gear (Waring et al. 2002), although takes have been documented in the Northeast multispecies sink gillnet fishery. Since both fisheries use similar gear, Risso's dolphin could be vulnerable to entanglement in the directed monkfish fishery, although it may be a rare occurrence. This conclusion is based on their preference for pelagic prey species (squid and

schooling fishes) and because their general distribution makes encounters with monkfish gear unlikely. Therefore although takes in this fishery could occur, they should not that compromise the ability of this species to maintain optimum sustainable population levels, or cause their serious injury and mortality levels to exceed the PBR levels allowed for commercial fisheries under the MMPA.

Pantropical Spotted Dolphins
The two species of spotted dolphin in the Western North Atlantic, *Stenella frontalis* and *S. attenuata*, are difficult to differentiate at sea resulting in combined abundance estimates prior to 1998. The best estimate of abundance currently available is 13, 117. Data is insufficient to determine population trends for this species. Sightings from 1990-1998 occurred almost exclusively on the continental shelf edge and slope areas west of Georges Bank (Waring et al. 2002). While takes are documented in pelagic drift gillnet and pelagic longline gear, NOAA's *2003 MMPA List of Fisheries* lists this species as taken Northeast sink gillnet, gear that is also used in the monkfish fishery. Despite some level of interactions, the pelagic prey species of these animals and their habitat preferences make it unlikely that takes in this fishery will occur at levels that compromise their ability to maintain optimum sustainable population levels, or cause their serious injury and mortality levels to exceed the PBR levels allowed for commercial fisheries under the MMPA.

Coastal Bottlenose Dolphins
The coastal form of the bottlenose dolphin occurs in the shallow, relatively warm waters along the U.S. Atlantic coast from New Jersey to Florida and the Gulf of Mexico. They rarely range beyond the 25-meter depth contour north of Cape Hatteras. Although they are taken in coastal sink gillnet operations (bluefish, croaker, spiny and smooth dogfish, kingfish, Spanish mackerel, spot, striped bass and weakfish) these fisheries occur in the more shallow range of the coastal bottlenose dolphin. A complete list of fishery interactions is provided in Waring et al. (2002) and infers that anchored set gillnets and drift gillnets used in the monkfish fishery may take this species.

Although one or more of the management units of this stock may be depleted, at this writing all units retain the depleted designation. The stock is considered strategic under the MMPA because fishery-related mortality and serious injury exceed PBR. Because encounters generally occur inshore of the monkfish fishery, its continued operation as well as the proposed measures are not expected to affect the status of coastal bottlenose dolphins.

Pelagic Delphinids (Pilot whales, offshore bottlenose and common dolphins)
The pelagic delphinid complex is made up of small odontocete species that are broadly distributed along the continental shelf edge where depths range from 200 - 400 meters. They are commonly found in large schools feeding on schools of fish. The minimum population estimates for each species number in the tens of thousands. They are known to be taken in pelagic and sink gillnets gear as well as mid-water and bottom trawl gear. Although takes have occurred in the bottom trawl fishery and gillnet fisheries, their pelagic prey species suggest they do not forage near the bottom, making it unlikely that interactions in the monkfish fishery would compromise the ability of these species to maintain optimum sustainable population levels, or cause their

serious injury and mortality levels to exceed the PBR levels allowed for commercial fisheries under the MMPA.

Harbor seal

The harbor seal is found in all nearshore waters of the Atlantic Ocean above about 30 degrees latitude (Waring et al. 2001). In the western North Atlantic they are distributed from the eastern Canadian Artic and Greenland south to southern New England and New York, and occasionally the Carolinas (Boulva and McLaren 1979; Gilbert and Guldager 1998). It is believed that the harbor seals found along the U.S. and Canadian east coasts represent one population (Waring et al. 2001). Harbor seals are year-round inhabitants of the coastal waters of eastern Canada and Maine, and occur seasonally along the southern New England and New York coasts from September through late-May. However, breeding and pupping normally occur only in waters north of the New Hampshire/Maine border. Since passage of the MMPA in 1972, the number of seals found along the New England coast has increased nearly five-fold with the number of pups seen along the Maine coast increasing at an annual rate of 12.9 percent during the 1981-1997 period (Gilbert and Guldager 1998). The minimum population estimate for the harbor seal is 30,990 based on uncorrected total counts along the Maine coast in 1997 (Waring et al. 2002).

Harbor seals are taken in sink gillnet gear used to catch monkfish. Waring et al. (2002) has described the estimated total take of harbor seals in all fisheries to be below the PBR of 1,859 established for that species.

Gray seal

The gray seal is found on both sides of the North Atlantic, with the western North Atlantic population occurring from New England to Labrador. There are two breeding concentrations in eastern Canada; one at Sable Island and one that breeds on the pack ice in the Gulf of St. Lawrence. There are several small breeding colonies on isolated islands along the coast of Maine and on outer Cape Cod and Nantucket Island in Massachusetts (Waring et al. 2001). The population estimates for the Sable Island and Gulf of St Lawrence breeding groups was 143,000 in 1993. The gray seal population in Massachusetts has increased from 2,010 in 1994 to 5,611 in 1999, although it is not clear how much of this increase may be due to animals emigrating from northern areas. Approximately 150 gray seals have been observed on isolated island off Maine.

Gray seals are taken in sink gillnet gear used to catch monkfish. Waring et al. (2002) has described the estimated total take of gray seals from 1959 to 1999 in all fisheries to be between 50 and 155 animals which is well below the PBR of 8,850 established for that species. The monkfish fishery, therefore, is not likely to adversely affect this species.

Harp seal

The harp seal occurs throughout much of the North Atlantic and Arctic Oceans, and have been increasing off the East Coast of the United States from Maine to New Jersey. Harp seals are usually found off the U.S. from January to May when the western stock of harp seals is at their most southern point of migration (Waring et al. 2002). This species congregates on the edge of the pack ice in February through April when breeding and pupping takes place. The harp seal is highly migratory, moving north and south with the edge of the pack ice. Non-breeding juveniles will migrate the farthest south in the winter, but the entire population moves north toward the

Artic in the summer. The minimum population estimate for the western North Atlantic is 5.2 million seals.

A large number of harp seals are killed in Canada, Greenland and the Artic. The Canadian kill is controlled by DFO who set the allowed kill at 275,000 in 1997. Mortality in Greenland and the Artic may exceed 100,000 (Waring et al. 2002). Harp seals are also taken in sink gillnet gear used to catch multispecies. Waring et al. (2001) has described the estimated total take of harp seals from 1959 to 1999 in all fisheries to range between 78 and 694 animals depending on the location of the pack ice edge which drives the seals farther south into the range of the sink gillnet fishery. Even with the highest takes observed, the take is well below the PBR of 156,000 established for that species. .

Additional background information on the range-wide status of these species can be found in a number of published documents, including sea turtle status reviews and biological reports (NOAA Fisheries and USFWS 1995; Marine Turtle Expert Working Group (TEWG) 1998 & 2000), recovery plans for the humpback whale (NOAA Fisheries 1991a), right whale (1991b), loggerhead sea turtle (NOAA Fisheries and USFWS 1991a), Kemp's ridley sea turtle (USFWS and NOAA Fisheries 1992), green sea turtle (NOAA Fisheries and USFWS 1991b) and leatherback sea turtle (NOAA Fisheries and USFWS 1992), the Marine Mammal Stock Assessment Reports (SAR) (Waring *et al.* 2000; Waring *et al.* 2001), and other publications (*e.g.*, Perry *et al.* 1999; Clapham *et al.* 1999; IWC 2001a). A draft recovery plan for fin and sei whales is available at http://www.NOAA Fisheries.noaa.gov/prot_res/PR3/recovery.html (NOAA Fisheries 1998b, unpublished). An updated draft recovery plan for right whales (Silber and Clapham 2001) is also available at the same web address.