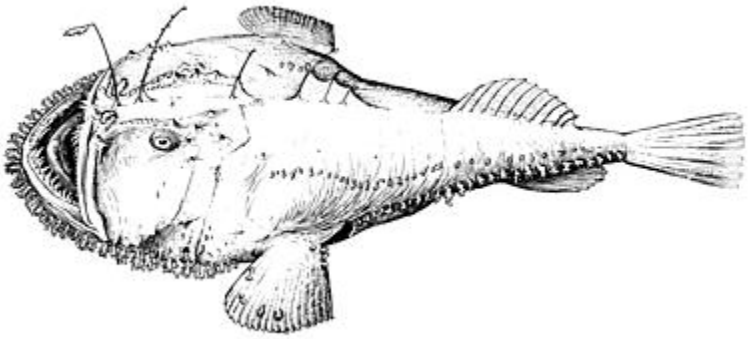
Monkfish Fishery Management Plan
Framework Adjustment 8

Incorporating Stock Assessment and Fishery Evaluation (SAFE) Report
For the 2012 Fishing Year
and the Environmental Assessment



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and Mid-Atlantic Fishery Management Council

in consultation with
NOAA Fisheries Service

DRAFT

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List of Acronyms

ABC	Acceptable Biological Catch
ACL	Annual Catch Limit
ALWTRP	Atlantic Large Whale Take Reduction Plan
AM	Accountability Measure
APA	Administrative Procedures Act
ASMFC	Atlantic States Marine Fisheries Commission
CPUE	catch per unit of effort
DAM	Dynamic Area Management
DAS	days-at-sea
DPS	Distinct Population Segments
DPWG	Data Poor Working Group
DSEIS	Draft Supplemental Environmental Impact Statement
EA	Environmental Assessment
EEZ	exclusive economic zone
EFH	essential fish habitat
EIS	Environmental Impact Statement
ESA	Endangered Species Act
F	Fishing mortality rate
FEIS	Final Environmental Impact Statement
FMP	fishery management plan
FW	framework
FY	fishing year
GB	Georges Bank
GOM	Gulf of Maine
HAPC	habitat area of particular concern
HPTRP	Harbor Porpoise Take Reduction Plan
IFQ	individual fishing quota
ITQ	individual transferable quota
IVR	interactive voice response reporting system
LOA	letter of authorization
MA	Mid-Atlantic
MAFAC	Marine Fisheries Advisory Committee
MAFMC	Mid-Atlantic Fishery Management Council
MMPA	Marine Mammal Protection Act
MPA	Marine Protected Area
MSFCMA	Magnuson-Stevens Fishery Conservation and Management Act
MSRA	Magnuson-Stevens Reauthorization Act of 2007
MSY	maximum sustainable yield
NEFMC	New England Fishery Management Council

NEFSC	Northeast Fisheries Science Center
NEPA	National Environmental Policy Act
GARFO	Greater Atlantic Regional Fisheries Office
NMA	Northern Management Area (Monkfish)
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
OLE	Office for Law Enforcement (NMFS)
OY	optimum yield
PBR	Potential Biological Removal
PDT	Plan Development Team
PRA	Paperwork Reduction Act
PREE	Preliminary Regulatory Economic Evaluation
RFA	Regulatory Flexibility Act
RMA	Regulated Mesh Area
RPA	Reasonable and Prudent Alternatives
SA	Statistical Area
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
SIA	Social Impact Assessment
SMA	Southern Management Area (monkfish)
SNE	southern New England
SSB	spawning stock biomass
SSC	Scientific and Statistical Committee
TAC	total allowable catch
TED	turtle excluder device
TTAC	Target Total Allowable Catch
TTAL	Target Total Allowable Landings
VEC	Valued Ecosystem Component
VMS	vessel monitoring system
VPA	virtual population analysis
VTR	vessel trip report
WGOM	Western Gulf of Maine
YPR	yield per recruit

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1.0 Executive Summary

The monkfish fishery in the EEZ is jointly managed under the Monkfish Fishery Management Plan (FMP) by the New England Fishery Management Council (NEFMC) and the Mid-Atlantic Fishery Management Council (MAFMC), with the NEFMC having the administrative lead. The fishery extends from Maine to North Carolina out to the continental margin. The Councils manage the fishery as two stocks; with the Northern Fishery Management Area (NMA) covering the Gulf of Maine (GOM) and northern part of Georges Bank (GB), and the Southern Fishery Management Area (SMA) extending from the southern flank of GB through the Mid-Atlantic Bight to North Carolina (Figure 1.1). The monkfish fishery is primarily managed by landing limits in conjunction with a yearly allocation of days-at-sea (DAS) calculated to enable vessels participating in the fishery to catch, but not exceed, the target total allowable landings (TAL) and annual catch target (ACT; landings plus discards) specified for the NMA and SMA for each fishing year (FY).

Amendment 5 (NEFMC 2011a) and Framework Adjustment (FW) 7 (NEFMC 2011b) established existing monkfish catch levels, DAS allocations, and landing limits for the SMA and NMA, respectively, beginning in 2011. Current regulations specify that catch levels should be set every three years, but also allow catch levels to be continued or revised at any time based upon updated stock assessments or other relevant information, as appropriate, through the framework adjustment process. Further, based on the yearly evaluation of the monkfish fishery, the Councils may revise existing management measures, including DAS allocations and landing limits, to better achieve the goals and objectives of the FMP. In recent years, the monkfish fishery has failed to fully harvest the ACT specified for each year, particularly in the NMA, and monkfish fishing industry members have indicated that existing regulations reduce their ability to maximize available fishing opportunities and land more monkfish.

An operational assessment for monkfish was conducted in April 2013 (NEFSC 2013) to update the status of monkfish stocks, and provide projections to assist with setting future catch levels based on additional survey and catch data available since the last formal assessment (Stock Assessment Workshop (SAW) 50 in 2010; NEFSC 2010). The Monkfish Operational Assessment Review Panel concluded that both stock components are currently neither overfished, nor subject to overfishing. The NEFMC's Scientific and Statistical Committee (SSC) met in May and August 2013 to evaluate results of the stock assessment update, and develop recommendations for specifying Acceptable Biological Catch (ABC) in each management area beginning in FY 2014. The SSC recommended revising the estimates of the Overfishing Limits (OFL) for both monkfish stocks, but maintaining status quo ABCs for both the northern (7,592 mt) and southern (12,316 mt) stocks for FY 2014-2016. These recommendations were based on seemingly conflicting considerations in stock status (e.g., stocks are above biomass targets and stable or increasing survey trends, but continuing retrospective patterns in the stock assessment and below average recruitment) that suggest that neither drastic increases, nor decreases to existing catch levels are warranted at this time.

In this framework action, the Councils propose revising existing monkfish DAS allocations and landing limits to more fully harvest monkfish catch levels specified in each area. Monkfish DAS

allocations would be increased from 40 to 46 DAS, with the limit of monkfish DAS that may be used in the SMA increased from 28 to 32 DAS. For vessels fishing under a Northeast (NE) multispecies DAS in the NMA, monkfish landing limits would be increased from 300 lb to 600 lb tail weight/DAS for limited access monkfish Category C permits, and 500 lb tail weight/DAS for monkfish Category D permits. In the SMA, monkfish landing limits would be increased from 550 lb tail weight/DAS and 450 lb tail weight/DAS to 610 lb tail weight/DAS and 500 lb tail weight/DAS for Category A/C and B/D/H monkfish permits, respectively, when fishing under a monkfish DAS. This action would also allow vessels issued a limited access monkfish Category H permit to fish throughout the SMA, and enable vessels to use allocated monkfish-only DAS at any time throughout the fishing year. Finally, this action updates monkfish biological and management reference points, including the OFL, based upon the most recent scientific information available.

Summary of Environmental Consequences

The preferred DAS allocations and landing limits alternatives from the NMA (Alternative 3) and the SMA (Alternative 2) can be considered in combination to summarize overall impacts of the preferred alternatives under FW 8. The expected level of landings and total catch would likely be below the NMA and SMA monkfish TAL or ACT (landings plus discards) during FYs 2014-2016. Both scientific and management uncertainty are accounted for in these catch levels, so the risks of negative biological impacts have been minimized. Increasing DAS allocations and landing limits may result in greater fishing effort and greater catch of monkfish and other groundfish stocks caught concurrently. Increased monkfish effort may also slightly increase the interactions of groundfish gear with protected resources compared to recent years. However, the scope of this increase is expected to be negligible compared to interactions in previous years when more DAS were used. Similarly, an increase in fishing effort resulting from the preferred alternatives would slightly increase the interactions of groundfish gear with EFH. However, these impacts are also expected to be negligible. Finally, increasing monkfish DAS allocations and landing limits for the monkfish fishery in the NMA and SMA is expected to increase fishing revenue by approximately $2.3 million beginning in FY 2014, assuming projected prices reflect actual landing price. If this action enables the fishery to harvest more of the monkfish TAL in the NMA and the SMA, fishing revenues may be increased by over 11% across all monkfish ports and between 15 to 18% for all vessel size classes compared to existing measures (i.e., the No Action Alternative).

The preferred alternative for DAS usage requirements would allow vessels issued both monkfish and groundfish DAS to use monkfish-only DAS at any time in the fishing year. This alternative does not increase fishing effort, and is not likely to affect gear usage in either the NMA or the SMA. Therefore, the preferred alternative is likely to have negligible impacts on the monkfish stock, non-target species and protected resources. This alternative could increase the efficiency of the directed monkfish fishery to optimize harvest of monkfish during the early part of the fishing year, and therefore increase revenues to the fishery. This alternative is likely to generate positive economic and social impacts.

The preferred alternative for the permit Category H fishing boundary revises the location of the current boundary at $38^{o}40'$N to match the northern boundary of the SMA. This alternative does not increase fishing effort, and is not likely to affect gear usage in the SMA. Therefore, the

preferred alternative is likely to have negligible impacts on the monkfish stock and non-target species. The alternative allows Category H vessels to fish in regions of the SMA that have lower abundance of sea turtles and harbor porpoises, so there may be a minor positive impact on protected species from the preferred alternative. This alternative could increase the efficiency of Category H permit holders to optimize harvest of monkfish in the SMA, and therefore increase revenues to the fishery. This alternative is likely to generate positive economic and social impacts.

2.0 Background, Purpose and Need

2.1 Background

2.1.1 History of the Fishery Management Plan

The Monkfish FMP was initially implemented in 1999, and has been amended several times, most recently in 2011 with the implementation of Amendment 5 and FW 7. Amendment 6 is currently under development, with the intent to consider catch share management in the monkfish fishery, among other measures. The documents pertaining to previous management actions are available on the NEFMC website, www.nefmc.org. A synoptic discussion, focusing on the science and management aspects of the FMP up to FW 4 (2007) is also contained in an article "*The monkfish fishery and its management in the Northeastern USA*", (Haring and Maguire 2008), which is available on the NEFMC website. Below is a summary of recent management actions beginning with FW 4.

For management purposes, the monkfish fishery is divided into two areas; the NMA and SMA (see Figure 1.1). While scientific evidence for two biological stocks is uncertain, and additional research, including archival tagging, is ongoing, fisheries in the two areas are clearly distinct. As a result, stock assessments are completed for the two areas separately to be able to support the management plan. The NMA monkfish fishery is closely integrated with the multispecies fishery, and is primarily a trawl fishery, while the SMA fishery is primarily a gillnet fishery targeting monkfish almost exclusively. These differences have resulted in some differences in management measures, such as landing limits and DAS allocations, between the two areas.

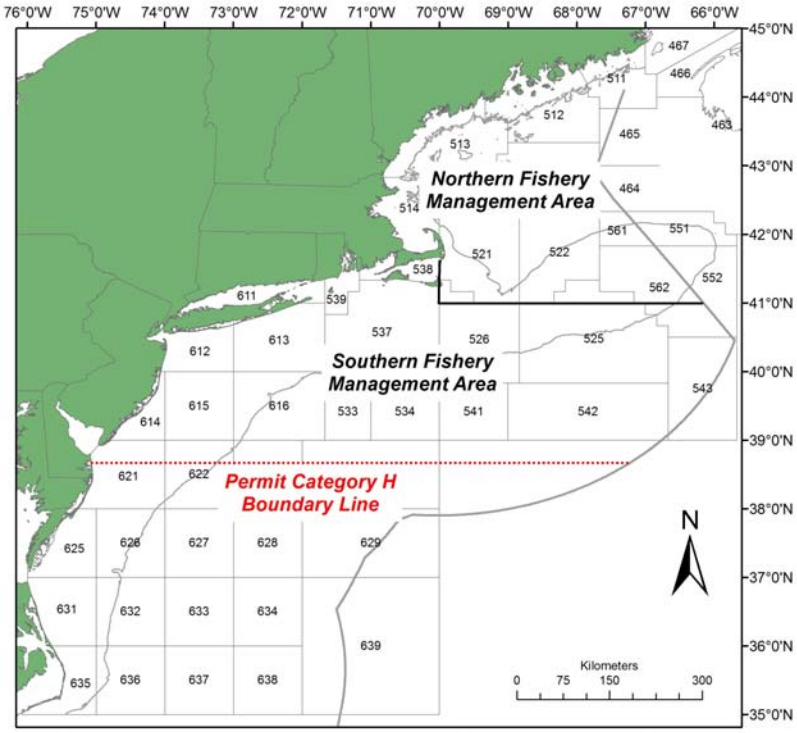


Figure 1.1. Monkfish fishery management areas and statistical areas.

2.1.1.1 Monkfish Framework 4

FY 2006 was year 7 of the 10-year rebuilding plan implemented under the original Monkfish FMP in 1999. The goal of the rebuilding plan was to achieve the biomass target reference points in 2009, as measured by the Northeast Fisheries Science Center (NEFSC) autumn trawl survey three-year average biomass indices. Following several years of increases in the biomass indices for both stocks, the indices lagged behind the rebuilding schedule, and in 2006 were both below their minimum biomass thresholds, indicating both stocks were overfished, and approximately 50% below their biomass index targets. As a result, the Councils revised the management program so that the goals of the 10-year rebuilding program could be met in 2009 with FW 4, which was submitted to NMFS in February 2007.

In FW 4, target total allowable catch levels (TTACs) were set at 5,000 mt and 5,100 mt for the NMA and SMA, respectively. These TTACs were the basis for calculating the monkfish landing limits and DAS allocations for vessels targeting monkfish. FW 4 also established the requirement that vessels that exceeded the monkfish incidental catch limit while fishing in the NMA on a multispecies DAS, must declare they were using a monkfish DAS, which could be done by Vessel Monitoring Systems (VMS) any time prior to returning to port. Vessels in the SMA were already required to declare a monkfish DAS when exceeding the incidental limit. FW 4 also reduced the monkfish incidental limit in the NMA from 400 lb tail weight/DAS or 50% of the weight of fish on board, whichever is less, to 300 lb tail weight/DAS or 25% of the total weight of fish on board, whichever is less. The Councils increased the incidental limit under FW 2, when the northern stock appeared to be nearly rebuilt, but restored the original incidental limit because the stock status had returned to being overfished in 2006.

FW 4 retained the 550 lb and 450 lb tail weight/DAS SMA monkfish landing limit for permit categories A, C, G and B, D, H, respectively. Vessels were allocated 31 monkfish DAS, but vessels were limited to an allowance of 23 DAS in the SMA out of the total allocation. In the NMA, landing limits were set at 1,250 lb and 470 lb tail weight/DAS for permit category A and C and B and D, respectively. FW 4 established that the DAS allocations would remain in effect through FY 2009, with extension into FY 2010 in absence of any regulatory change, unless the TTAC was exceeded in an area during the 2007 fishing year. In that case, the TTAC overage backstop provision established in FW 4 would have taken effect and would have resulted in a recalculation of the DAS allocations based on catch and effort data from the 2007 fishing year to keep landings below the TTAC. The backstop provision would have made no adjustment if the TTAC overage was 10% or less, and would have closed the directed fishery in a management area if the overage exceeded 30%, resulting in zero monkfish DAS being allocated, and the application of monkfish incidental limits to all vessels. Other measures adopted under FW 4 included a change in the northern boundary of the Category H fishery from 38°20'N Latitude to 38°40'N Latitude, and a change to the monkfish incidental limit on limited access scallop vessels fishing in the closed area access programs.

On April 27, 2007, NMFS published a temporary rule implementing interim measures, while deferring a decision on FW 4 pending the results of a stock assessment scheduled for July (72 *Federal Register* 20952, April 27, 2007). The interim rule implemented the TTACs and most measures proposed in FW 4, except the 23 DAS allowance for SMA vessels (retaining the 12 DAS from the prior year), and prohibited the use of carryover DAS. The 2007 Northeast Data Poor Stocks Working Group (DPWG) completed an assessment of monkfish which included estimates of absolute biomass and recommended revisions to existing biomass reference points from a survey index basis to an absolute biomass basis. Based on that assessment, both stocks were above the recommended biomass targets, and were, therefore, "rebuilt". The assessment report also emphasized the uncertainty in the model and results, and contained strong cautionary statements. As a result of the assessment, NMFS approved FW 4 and published an interim final rule with an effectiveness date of October 22 (72 *Federal Register* 53942, September 21, 2007).

2.1.1.2 Monkfish Framework 5

As a result of the 2007 DPWG assessment, the Councils initiated FW 5 primarily to adopt the recommended biomass reference points, as well as to address the concerns of the NMFS Greater Atlantic Regional Administrator about the effect of carryover DAS on the management program's ability to constrain landings to the TTAC. In addition, the Councils implemented revisions to other measures to ensure that the management program succeeds in keeping landings within the TTAC levels. FW 5, which was implemented prior to the start of the 2008 fishing year (73 *Federal Register* 22831, April 28, 2008), reduced the number of unused DAS that could be carried over to the next fishing year from 10 to 4; revised the DAS accounting method for gillnet vessels such that all trips less than 15 hours would be counted as 15 hours, eliminating the provision that trips less than 3 hours would be counted as time used; and, revised the monkfish incidental catch allowance applicable to vessels in the Southern New England Regulated Mesh Area (SNE RMA) fishing with large mesh but not on a monkfish, scallop or multispecies DAS, from 5% of the total weight of fish on board (with no landings cap) to 5% of total weight of fish on board not to exceed 50 lb per day, up to 150 lb maximum, and also applied this revision to all vessels fishing under a Skate Bait Letter of Authorization (LOA) east of 74°00'W. In addition,

FW 5 modified the Monkfish LOA requirement for vessels fishing under the less restrictive measures for the NMA such that vessels using a VMS would no longer be required to obtain the LOA, but could make the declaration via the VMS.

2.1.1.3 Monkfish Framework 6

One of the elements of the FMP adopted in FW 4 was a backstop provision that would have adjusted, and possibly closed the directed monkfish fishery in a management area if the landings in FY2009 exceeded the TTAC by more than 30%. With the adoption of new biological reference points and revised stock status as a result of the DPWG assessment, as well as the measures adopted in FW 5 designed to reduce the likelihood of TTAC overages, the Councils concluded that the backstop provision was no longer necessary. They submitted the regulatory change in FW 6 in April 2008, and the final rule become effective on October 10, 2008, approximately seven months before the start of FY 2009 (73 *Federal Register* 52635, September 10, 2008). This was the only action taken in FW 6.

2.1.1.4 Amendment 5

The Councils submitted Amendment 5 on September 23, 2010, with a target implementation date of May 1, 2010. The Councils developed Amendment 5 primarily to bring the Monkfish FMP into compliance with the requirements of the reauthorized Magnuson-Stevens Fishery Conservation and Management Act (MSA) which contained several new requirements at that time including the requirement that all fisheries adopt annual catch limits (ACLs) to prevent overfishing by either 2010 (if subject to overfishing) or 2011 (if not subject to overfishing), and also measures to ensure accountability. Since neither monkfish stock had been subject to overfishing in 2010, the FMP was not required to have ACLs and accountability measures (AMs) in place until the start of the 2011 fishing year.

Amendment 5 was also developed to bring the Monkfish FMP into compliance with recently revised National Standard 1 (NS1) Guidelines (74 FR 3178; January 16, 2009), which not only established a process for setting ACLs and guidance for establishing AMs, but also provided updated guidelines for establishing reference points and control rules (i.e., maximum sustainable yield (MSY), optimum yield (OY), OFL, ABC, ACLs, and ACTs) and clarified the relationship between them. Amendment 5 implemented two different types of AMs to ensure that overfishing does not occur. First, ACTs were set sufficiently below the ACL for each area to account for management uncertainty (ability of management measures to control catch). Management measures were then developed to achieve this lower level of catch. Amendment 5 also implemented reactive AMs that deduct any overages of the ACL on a pound for pound basis from the ACT specified for the year following the overage. Management measures must then be revised to achieve, but not exceed the revised ACT for that area. In doing so, these measures were implemented to ensure that sufficient protections are in place to prevent overfishing. Amendment 5 also established biological and management reference points consistent with NS1 guidelines using the most recent scientific information available at the time it was developed, from the 2007 DPWG assessment.

Given the timing of SAW 50 (July 2010) and the Councils' final action on Amendment 5 in June 2010, Amendment 5 provided new biomass reference points, recalculated the fishing mortality rate (F) corresponding to the overfishing threshold, F_{max}, and concluded that the stock status

would not change, even under the new reference points. Furthermore, the Councils addressed two primary purposes regarding Amendment 5: 1) to implement the MSA mandated ACLs and accountability measures (AMs), and 2) to set the specifications of DAS, landing limits and other management measures to replace those adopted in FW 4. The Councils also proposed modifications to the FMP to improve the Research Set Aside (RSA) Program, to minimize bycatch resulting from trip limit overages, and to allow the landing of monkfish heads.

2.1.1.5 Monkfish Framework 7

In 2011 FW 7 proposed a reduction in the ACT for the NMA below the proposed ACL. This change also required a revision to the specifications for DAS and trip limits based on the ACT. The ACT for the NMA proposed in Amendment 5 was above the ACL based on SSC recommendations following SAW 50 and was updated as a result of revised scientific information and recommendations of the SSC. As a result, FW 7 addressed the inconsistency seen in Amendment 5, since NS1 Guidelines state that an ACT cannot exceed the ACL established for a stock.

2.1.1.6 Amendment 6

Amendment 6 is currently under development. The Councils' intent is to consider catch shares management in the monkfish fishery and changes to the current management system, including DAS leasing as part of this action. Members of both the NEFMC and the MAFMC have discussed the catch share program extensively, and have recognized that there could be an individual transferrable quota (ITQ) or individual fishing quota (IFQ) or group allocation system incorporating monkfish into groundfish sectors, which can be area-based or catch-based.

2.1.1.7 2013 Emergency Action

On May 1, 2013, NMFS implemented an emergency rule that temporarily suspended existing monkfish landing limits for vessels issued both a Federal limited access Northeast Multispecies permit and a limited access monkfish Category C or D permit that are fishing under a monkfish DAS in the NMA. This emergency action was continued through the end of the 2013 fishing year, with the suspension of monkfish landing limits expanded to apply to Category C or D permits fishing exclusively on a groundfish DAS in the NMA. This action was necessary to help mitigate expected adverse economic and social harm resulting from substantial reductions to the 2013 ACLs for several stocks managed under the Northeast Multispecies FMP. The intent was to provide additional fishing opportunities to vessels affected by reductions to groundfish catch limits, without resulting in overfishing monkfish within the NMA or SMA.

2.1.2 Standardized Bycatch Reporting Methodology (SBRM) Omnibus Amendment (Amendment 3)

On September 15, 2011, upon the order of the U.S. Court of Appeals for the District of Columbia Circuit, the U.S. District Court for the District of Columbia, in the case of Oceana, Inc. v. Locke (Civil Action No. 08-318), vacated the Northeast Region Standardized Bycatch Reporting Methodology (SBRM) Omnibus Amendment and remanded the case to NMFS for further proceedings consistent with the D.C. Circuit Court's decision.

To comply with the ruling, NMFS announced on December 29, 2011 (76 FR 81844) that the Northeast Region SBRM Omnibus Amendment is vacated and all regulations implemented by

the SBRM Omnibus Amendment final rule (73 FR 4736, January 28, 2008) are removed. This action removed the SBRM section at § 648.18 and removes SBRM-related items from the lists of measures that can be changed through the FMP framework adjustment and/or annual specification process for the Atlantic mackerel, squid, and butterfish; Atlantic surfclam and ocean quahog; Northeast multispecies, monkfish; summer flounder; scup; black sea bass; bluefish; Atlantic herring; spiny dogfish; deep-sea red crab; and tilefish fisheries. This action also makes changes to the regulations regarding observer service provider approval and responsibilities and observer certification. The SBRM Omnibus Amendment had authorized the development of an industry-funded observer program in any fishery, and the final rule modified regulatory language in these sections to apply broadly to any such program. This action revises that regulatory language to refer specifically to the industry-funded observer program in the scallop fishery, which existed prior to the adoption of the SBRM Omnibus Amendment.

NMFS, NEFMC and MAFMC are developing a new omnibus amendment to bring Northeast fishery management plans into compliance with Magnuson-Stevens Act requirements for a standardized bycatch reporting methodology. A SBRM Fishery Management Action Team has been constituted and has begun development of the new amendment.

2.1.3 Essential Fish Habitat Omnibus Amendment (Amendment 4)

The NEFMC began development of Phase 1 of the Essential Fish Habitat (EFH) Omnibus Amendment in 2004, which includes Amendment 4 to the Monkfish FMP. The primary purpose of Phase 1 was to review EFH designations, consider Habitat Areas of Particular Concern (HAPC) alternatives, describe prey species, and evaluate non-fishing impacts. This action is an amendment to all FMPs in this region. The NEFMC approved the DSEIS for Phase 1 at the February 2007 NEFMC meeting, which then was submitted to NMFS in March 2007. The NEFMC made final decisions on Phase 1 topics at their June 2007 meeting. While public hearings were held, final action on Phase 1 measures was never taken. Phase 2 of the EFH Amendment began in September 2007 to consider the effects of fishing gear on EFH and move to minimize, mitigate or avoid those impacts that are more than minimal and temporary in nature. Phase 2, which is still under development, will also reconsider measures in place to protect EFH in the Greater Atlantic Region. EFH designations, including HAPCs, will be integrated with measures included in Phase 2 under Omnibus Essential Fish Habitat Amendment 2.

The Omnibus EFH Amendment is currently in development and likely to be implemented in the November 2014. This amendment could affect monkfish via increased protection of benthic habitats used by the species from the adverse effects of various regional fisheries.

2.1.4 Other Fishery Management Plans Affecting the Monkfish Fishery

A majority of monkfish limited access vessels also hold limited access permits in either the Northeast Multispecies or Atlantic Sea Scallop fisheries. Both of those fisheries continue to undergo changes in their respective management programs, which have direct and indirect effects on the monkfish fishery. In large part due to the success of the Scallop FMP and the profitability of the fishery, scallop vessels that also have monkfish limited access permits use their allocated effort to target scallops rather than monkfish, since they would be required to use a scallop DAS to target monkfish, and be prohibited from using a dredge on those trips. As a

result, a substantial portion of the allocated monkfish effort (DAS) is not used. In contrast, while some multispecies stocks have responded positively to management actions (e.g., haddock and redfish) others remain overfished and in need of rebuilding. Consequently, the Multispecies FMP continues to constrain fishing effort and recently underwent major changes, most notably the adoption of catch shares through the allocation of quota to sectors.

2.1.4.1 Multispecies FMP

Groundfish stocks have been managed under the MSA beginning with the adoption of a management plan for cod, haddock, and yellowtail flounder in 1977, called the "FMP for Atlantic Groundfish". This plan relied on hard quotas (total allowable catches, or TACs), and proved unworkable. The quota system was rejected in 1982 with the adoption of the Interim Groundfish Plan, which relied on minimum fish sizes and codend mesh regulations for the GOM and GB to control fishing mortality. The interim plan was replaced by the Northeast Multispecies FMP in 1986, which established biological targets in terms of percentage of maximum spawning potential and continued to rely on gear restrictions, including minimum mesh size to control fishing mortality. A more detailed discussion of the history of this management plan up to 1994 can be found in Amendment 5 to the Northeast Multispecies FMP (NEFMC 1994).

Amendment 5 was a major revision to the NE Multispecies FMP. Adopted in 1994, it implemented a moratorium on new permits (limited access), established effort controls in the form of limits on the number of days most vessels could fish (DAS), and expanded closed areas to reduce fishing mortality. Amendment 5 also increased the minimum mesh size, set limits on vessel upgrading, and implemented a mandatory landings reporting requirement. Amendment 7 (NEFMC 1996), adopted in 1996, expanded the DAS program and accelerated the reduction in fishing effort (i.e., DAS) first adopted in Amendment 5 and made the mortality closures year-round. Since the implementation of Amendment 7, there were a series of amendments and smaller changes (framework adjustments) that are detailed in Amendment 13 to the NE Multispecies FMP (NEFMC 2003).

Amendment 13 was developed over a four-year period to meet the MSA requirement to adopt rebuilding programs for stocks that are overfished and to end overfishing. Amendment 13 also brought the FMP into compliance with other provisions of the MSA. Subsequent to the implementation of Amendment 13, FW 40A provided opportunities to target healthy stocks, FW 40B improved the effectiveness of the effort control program, and FW 41 expanded the vessels eligible to participate in a Special Access Program (SAP) targeting GB haddock. FW 42 included measures to implement a biennial adjustment to the FMP, as well as a GB yellowtail flounder rebuilding strategy, several changes to the Category B (regular) DAS Program, two Special Access Programs, an extension of the DAS leasing program, and introduced the differential DAS system. FW 43 adopted haddock catch caps for the herring fishery and was implemented August 15, 2006. FW 46 modified the bycatch regulations for the herring fishery and adjusted the cap on the amount of haddock that could be caught by midwater trawl herring vessels.

FW 47 modified the Ruhle trawl definition and clarified the regulations for charter/party vessels fishing in groundfish closed areas and Amendment 17 defined and facilitated the effective operation of state-operated permit banks by recognizing these permit banks under provisions of the Multispecies FMP.

Amendment 16 implemented major changes to the NE Multispecies FMP. Notably, it greatly expanded the sector program and implemented ACLs and AMs in compliance with 2006 revisions to the MSA. The amendment also included a host of mortality reduction measures for "common pool" (i.e. non-sector) vessels and the recreational component of the fishery. Amendment 16 became effective on May 1, 2010. In 2011, the NEFMC approved Amendment 17, which allowed for NOAA-sponsored state-operated permit banks to function within the structure of Amendment 16.

FW 48 was implemented in May 2013, and continued to modify management measures and ensure that overfishing does not occur. That action eliminated dockside monitoring requirements, reduced minimum fish sizes for several stocks, adjusted the allocation of GB yellowtail flounder to the scallop fishery, established ACLs for several groundfish stocks caught in other fisheries, and revised existing AMs for other stocks. FW 50 was also implemented in May 2013, and included a range of measures designed to achieve mortality targets and net benefits from the fishery, including setting catch levels for FY 2013-2015, revising the rebuilding program for Southern New England/Mid-Atlantic winter flounder, and revising sector carry-over provisions.

The NEFMC has adopted FW 51 for implementation during FY 2014. This action would update catch levels for several stocks, revise management measures for GB yellowtail flounder, establish a quota trading mechanism for transboundary GB stocks that are jointly managed with Canada (cod, haddock, and yellowtail flounder), and revise common pool and recreational measures. That action is scheduled to become effective May 1, 2014. Finally, Amendment 18 is under development, and is focused on addressing concerns over excessive shares and improving the efficiency of sector and Handgear A measures. The target date for implementation of this action is May 1, 2015.

2.1.4.2 Atlantic Sea Scallop FMP

The Council established the Scallop FMP in 1982. A number of Amendments and FW Adjustments have been implemented since that time to adjust the original plan. Amendment 4 was implemented in 1994 and introduced major changes in scallop management, including a limited access program, a DAS reduction plan to reduce mortality and prevent recruitment overfishing, new gear regulations to improve size selection and reduce bycatch, and a VMS requirement to track a vessel's fishing effort. Amendment 4 also created the general category scallop permit for vessels that did not qualify for a limited access permit.

In 1998, the Council developed Amendment 7 to the Scallop FMP which established two new scallop closed areas (Hudson Canyon and VA/NC Areas) in the Mid-Atlantic to protect concentrations of small scallops until they reached a larger size and reduced DAS allocations. In 1999, FW 11 allowed the first scallop fishing within portions of the Georges Bank groundfish closed areas since 1994. Scallop resource surveys and experimental fishing activities had identified areas where scallop biomass was high due to no fishing in the intervening years. These surveys and experimental fisheries provided more precise estimates of total biomass, as well as the distribution and amount of finfish bycatch, and allowed the Council to open the southern part of Closed Area II to scallop fishing. In 2000, FW 13 expanded the closed area access program.

In 2004, Amendment 10 introduced rotational area management and changed the way that the Atlantic Sea Scallop FMP allocates fishing effort for limited access scallop vessels. Instead of allocating an annual pool of DAS for limited vessels to fish in any area, vessels had to use a portion of their total DAS allocation in the controlled access areas defined by the plan, or exchange them with another vessel to fish in a different controlled access area. Vessels could fish their open area DAS in any area that was not designated a controlled access area. Subsequent actions have focused on controlling fishing mortality, and have made annual adjustments to the rotational area management program and DAS allocations, as well as other provisions, such as bycatch reduction measures, improved catch monitoring and habitat protections. Notably, Amendment 11, which became effective on June 1, 2008, was designed to control capacity and mortality in the general category scallop fishery. Since 1999, there has been considerable growth in fishing effort and landings by vessels with general category permits, primarily as a result of resource recovery and higher scallop prices. Among other provisions, Amendment 11 implemented a limited entry program for the previously open-access general category fishery. Vessels that qualified are under an ITQ program that has been allocated 5% of the total projected scallop catch.

Other scallop actions that could have affected the monkfish fishery include Amendment 15 (July 2011), FW 21 (effective on June 28, 2010), and FW 22 (2011). Frameworks 21 and 22 set specifications for FY 2010-2012. Amendment 15 brought the scallop FMP in compliance with the new requirements of the MSA (namely ACLs and AMs); permit stacking and leasing alternatives for limited access vessels were considered but not selected; overall, Amendment 15 considered measures to adjust several aspects of the overall program to make the scallop management plan more effective. FW 21 set specifications and area access programs for FY 2010. FW 22 was implemented in 2011 and proposed a specific ABC level as required by the MSA, 31,279 mt in 2011, 33,234 mt in 2012, and 32,935 mt in 2013 (the values include estimated discard mortality). This action also included specific measures to comply with reasonable and prudent measures developed by NMFS in the 2012 BO on this fishery regarding impacts on sea turtles.

The most recent scallop actions include FW 23 with a final submission to NMFS in November 2011 and FW 25 currently under development. FW 23 developed measures to minimize impacts on sea turtles through the requirement of a turtle deflector dredge starting in 2013 in the Mid-Atlantic in the summer and fall. FW 23 also has provisions to improve the effectiveness of the accountability measure adopted under Amendment 15 for the yellowtail flounder sub-ACL, to consider specific changes to the general category Northern GOM management program to address potential inconsistencies, and to consider modifications to the vessel monitoring system to improve fleet operations. FW 25 set specifications to adjust the DAS allocations and an area rotation schedule for FY 2014, default measures for FY 2015, inclusion of accountability measures for SNE/MA windowpane flounder, and measures to reduce mortality of juvenile scallops. FW 25 proposed a specific ABC level as required by the MSA, 26,240 mt in 2014 and 29,683 mt in 2015 (the values include estimated discard mortality), and will be implemented in summer 2014.

2.1.4.3 Skate Complex FMP

The final rule for Amendment 3 to the Northeast Skate Complex FMP was published on June 16, 2010. This amendment establishes ACLs, AMs, seasonal bait fishery quotas, and skate wing, bait, and incidental skate landing limits to address the following issues:

- Overfished status of thorny skate
- Overfishing of thorny skate
- Implementation of ACLs and AMs, as mandated by the reauthorized MSA, and
- A baseline review process that has become obsolete and less meaningful.

The final action established an incidental skate landing limit of 500 lb of wing weight (1,135 lb whole weight), established a 20,000 lb whole weight landing limit for vessels with a Skate Bait Letter of Authorization, reduced the skate wing landing limit to 5,000 lb wing weight (11,350 lb whole weight), and adopted a three-season annual quota system for the skate bait fishery. In-season AMs will reduce allowable skate landing landings to the incidental limit (500 lb of skate wing weight, 1,135 lb whole weight) when landings approach 80-90% of allowable levels.

An annual monitoring report and a bi-annual specification process replaced the obsolete baseline review procedures. The report will describe the expected impacts of recent regulations and pending management alternatives in other fisheries that impact the skate resource. The first annual monitoring report was published in June 2010 and is available at: http://www.nefmc.org/skates/annual_reviews/2010%20Annual%20Monitoring%20Report%20Final.pdf.

FW 1 was published by NMFS on May 17, 2011. This framework established the need to extend the length of the targeted skate wing fishery and to improve the economic benefits derived from the skate fishery. The facilitation measure for this action was to implement seasonal trip limits for the skate wing fishery to prolong the fishery because the limits implemented in Amendment 3 were caught in less than 3 months (Amendment 3 was implemented on July 16, 2010).

The 2012-2013 Northeast Skate Complex Specifications were implemented in May 2012. This action set the annual catch limit specifications (ABC, ACL, ACT, and TALs) to maintain the skate fisheries while adequately minimizing the risk of overfishing the seven skate stocks. Two stocks (smooth and thorny skates) are currently overfished or the biomass is very close to the minimum threshold. Barndoor skate has been in a rebuilding program since 2003 but has not yet met the target. ACLs (and associated in-season and post-season AMs) prevent fishing from increasing to unsustainable levels and enhance prospects for rebuilding of barndoor, smooth, and thorny skates (all landings of these species being prohibited). The skate specifications also include an adjustment to the skate wing landing limits to be consistent with the updated ACL and with new estimates of daily landings rates under current fishery conditions (through July 2011). Lastly, because skates are primarily used as bait they are considered the largest component of at-sea transfers and are reported in VTRs, but not reported by shoreside dealers, and the at-sea transfers of skates are a significant component of total skate catch. Thus, it is proposed that these at-sea transfers on VTR reports will count against the skate bait TAL.

FW 2 to the Skate FMP proposes skate fishery specifications for FYs 2014-2015. This action would also modify skate reporting requirements for vessels and dealers. The ACL and TAL for the skate complex would decline by 30%. However, skate landing limits would remain unchanged from current levels. Changes to skate reporting requirements are expected to improve

species-specific landings data from the fishery. This action, if approved, would become effective in early summer 2014.

2.1.4.4 Spiny Dogfish FMP

Amendment 3 to the Spiny Dogfish FMP is being developed by the MAFMC and NEFMC to address four issues in the management of the spiny dogfish fishery. This action would implement a research set-aside funding program for spiny dogfish, update spiny dogfish essential fish habitat definitions, allow rollover of management measures from one year to the next until replaced via rulemaking, and eliminate the seasonal allocation of the commercial quota to improve alignment of management measures with those of the Atlantic States Marine Fisheries Commission's (ASMFC) interstate management plan for spiny dogfish. If approved, this action would become effective during the summer of 2014.

In 2013, NOAA Fisheries implemented specifications for the spiny dogfish fishery for FY 2013-2015. However, based on an updated review of stock status, the Councils adopted revised specifications for FY 2014-2015. Proposed specifications would increase the FY 2014 ACL and commercial quota to 60.695 million lb (+10 pe rcent) and 49.037 million lb (+17 percent), respectively. For FY 2015, the ACL and commercial quota would be increased to 62.269 million lb (+13 percent) and 50.611 million lb (+22 percent), respectively. The Councils did not agree on the appropriate possession limit, with the MAFMC recommending maintaining existing possession limits of 4,000 lb/trip, while the NEFMC suggested eliminating the possession limit. If approved, this action would become effective during the summer of 2014.

2.1.5 Actions to Minimize Interactions with Protected Species

Many of the factors that serve to mitigate the impacts of the monkfish fishery on protected species are currently being implemented in the Greater Atlantic Region under either the Atlantic Large Whale Take Reduction Plan (ALWTRP) or the Harbor Porpoise Take Reduction Plan (HPTRP). In addition, the Monkfish FMP has undergone repeated consultations pursuant to Section 7 of the Endangered Species Act (ESA) for each regulatory action. The most recent Biological Opinion (BO) addressing the impacts of the Monkfish FMP on protected species is dated December 16, 2013 (NMFS 2013).

A previous BO for the Monkfish FMP, dated June 14, 2001, concluded that continued authorization of the fishery was likely to jeopardize the continued existence of ESA-listed right whales as a result of entanglement in gillnet gear used in the fishery. A Reasonable and Prudent Alternative (RPA) was provided to remove the likelihood of jeopardy. The RPA included, in part, implementation of a Seasonal Area Management (SAM) program and a Dynamic Area Management (DAM) program to reduce the likelihood of right whale interactions with gillnet gear used in the monkfish fishery. The RPA measures were implemented as part of the ALWTRP. On October 5, 2007, NMFS published a final rule in the *Federal Register* (72 FR 57104) that made many changes to the ALWTRP affecting the use of fixed gillnet gear in the monkfish fishery, amongst others. These changes included elimination of the DAM program as of April 7, 2008, and elimination of the SAM program as of October 6, 2008. The changes to the

ALWTRP, therefore, modified the monkfish fishery in a manner that causes an effect to listed species not considered in the June 14, 2001 BO for the fishery.

NMFS reinitiated formal consultation in accordance with the regulations at 50 CFR 402.16 to consider the effects of the continued authorization of the monkfish fishery on ESA-listed cetaceans and sea turtles. The resulting October 29, 2010, BO concluded that the continuation of the monkfish fishery is likely to adversely affect, but not jeopardize the continued existence of these species. An incidental take statement was prepared for the monkfish fishery. Reasonable and prudent measures (RPMs) were developed, including requirements to ensure handling techniques minimize stress on sea turtles captured in the monkfish fishery, investigate gear modifications to minimize the bycatch of sea turtles, and improve monitoring of turtle encounters, takes, and mortality.

On February 9, 2012, NMFS reinitiated formal consultation to reconsider the effects of the continued authorization of several fisheries, including the monkfish fishery, on distinct population segments (DPSs) of Atlantic sturgeon listed as threatened or endangered under the ESA on February 6, 2012. An updated batched BO was issued for seven fisheries in the Northeast, including the monkfish fishery, on December 16, 2013 (NMFS 2013). The BO reviewed the current status of large marine mammals, sea turtles, and Atlantic sturgeon, the environmental baseline, and cumulative effects in the action area, including the effects of the continued operation of the Monkfish FMP and other FMPs over the next 10 years. The BO concluded that the continuation of these fisheries "may adversely affect, but is not likely to jeopardize, the continued existence of" North Atlantic right whales, humpback whales, fin whales, sei whales, the Northwest Atlantic DPS of loggerhead sea turtles, leatherback turtles, Kemp's ridley turtles, green sea turtles, any of the five DPSs of Atlantic sturgeon, or the GOM DPS for Atlantic salmon. This BO also concluded that these fisheries will not adversely affect hawksbill sea turtles, shortnose sturgeon, smalltooth sawfish DPS, *Acroporid* corals, Johnson's seagrass, sperm whales, blue whales, designated critical habitat for right whales in the Northwest Atlantic, or designated critical habitat for GOM DPS Atlantic salmon (NMFS 2013). An incidental take statement was developed for the seven combined fisheries.

For Northwest Atlantic DPS of loggerhead sea turtles, NMFS anticipates the following incidental takes:

- Gillnet gear: Annual take of up to 269 individuals over a five-year average, of which up to 167 per year may be lethal;
- Bottom trawl gear: Annual take of up to 213 individuals over a four-year average, of which up to 71 per year may be lethal; and
- Trap/pot gear: Annual take of up to one individual, which may be lethal or non-lethal.

For leatherback sea turtles, NMFS anticipates the following takes:

- Gillnet gear: Annual observed take of up to four individuals, of which up to three per year may be lethal;
- Bottom trawl gear: Annual observed take of up to four individuals, of which up to two per year may be lethal; and
- Trap/pot gear: Annual observed take of up to four individuals, which may be lethal or non-lethal.

For Kemp's ridley sea turtles, NMFS anticipates an annual observed take of up to four individuals in gillnet gear, of which up to three per year may be lethal; and the annual observed take of up to three individuals in bottom trawl gear, of which up to two per year may be lethal. For green sea turtles, NMFS anticipates the annual observed take of up to four individuals in gillnet gear, of which up to three per year may be lethal, and the annual observed take of up to three individuals in bottom trawl gear, of which up to two per year may be lethal.

NMFS anticipates the following incidental take for Atlantic sturgeon:

- GOM DPS: Annual take of up to 137 individuals over a five-year average in gillnet gear, of which up to 17 adult equivalents per year may be lethal; and an annual take of up to 148 individuals over a five-year average in bottom trawl gear, of which up to five adult equivalents per year may be lethal.
- New York Bight DPS: Annual take of up to 632 individuals over a five-year average in gillnet gear, of which up to 79 adult equivalents per year may be lethal; and an annual take of up to 685 individuals over a five-year average in bottom trawl gear, of which up to 21 adult equivalents per year may be lethal.
- Chesapeake Bay DPS: Annual take of up to 162 individuals over a five-year average in gillnet gear, of which up to 21 adult equivalents per year may be lethal; and the annual take of up to 175 individuals over a five-year average in bottom trawl gear, of which up to six adult equivalents per year may be lethal.
- Carolina DPS: Annual take of up to 25 individuals over a five-year average in gillnet gear, of which up to four adult equivalents per year may be lethal; and an annual take of up to 27 individuals over a five-year average in bottom trawl gear, of which up to one adult equivalent per year may be lethal.
- South Atlantic DPS: Annual take of up to 273 individuals over a five-year average in gillnet gear, of which up to 34 adult equivalents per year may be lethal; and an annual take of up to 296 individuals over a five-year average in bottom trawl gear, of which up to nine adult equivalents per year may be lethal.

For the GOM DPS of Atlantic salmon, NMFS anticipates an observed take of up to five individuals over a five-year average in gillnet gear, of which up to two takes may be lethal; and an observed take of up to five individuals over a five-year average in bottom trawl gear, of which up to three takes may be lethal.

RPMs were established for all seven fisheries as a means of minimizing interactions with protected species and to generate the information necessary in the future to continue to minimize incidental takes. The following RPMs are non-discretionary and must be implemented by NMFS, consistent with the terms and conditions specified in the BO.

- NMFS must work to ensure that any sea turtles, Atlantic sturgeon, and Atlantic salmon incidentally taken in gears used in these fisheries (e.g., gillnet, bottom trawl, trap/pot, and hook and line gear) are handled in a way as to minimize stress to the animal and increase its survival rate.
- NMFS must continue to investigate and implement, within a reasonable time frame following the completion of ongoing and future research, modifications to gears used in

these fisheries to reduce incidental takes of sea turtles, Atlantic sturgeon, and Atlantic salmon and the severity of the interactions that occur.

- NMFS must continue to review available data to determine whether there are areas or conditions within the action area where sea turtles, Atlantic sturgeon, and Atlantic salmon interactions with fishing gears used in these fisheries are more likely to occur.
- NMFS must ensure that monitoring and reporting of any sea turtles, Atlantic sturgeon, and Atlantic salmon encountered in fishing gear utilized in the seven fisheries: (1) detects any adverse effects such as serious injury or mortality; (2) detects whether the anticipated level of take has occurred or been exceeded; and (3) collects necessary data from individual encounters (e.g., photos, species identification, date and geographic location).

As described below, the regulatory measures of the ALWTRP and the HPTRP must be adhered to by any vessel fishing for monkfish with gillnet gear.

2.1.5.1 Harbor Porpoise Take Reduction Plan

NMFS published the rule implementing the Harbor Porpoise Take Reduction Plan (HPTRP) on December 1, 1998. The HPTRP includes measures for gear modifications and area closures based on area, time of year, and gillnet mesh size. In general, the New England component of the HPTRP includes time and area closures, some of which are complete closures; others are closures to gillnet fishing unless pingers (acoustic deterrent devices) are used in the prescribed manner. The Mid-Atlantic component includes time and area closures in which gillnet fishing is prohibited regardless of the gear specifications. Based on an increase in harbor porpoise takes in the overall sink gillnet fishery in recent years, the Harbor Porpoise Take Reduction Team has developed options to reduce takes, and NMFS published a proposed rule on July 21, 2009 (74 *Federal Register* 36058) with four alternatives, including no action. The comment period ended on August 20, 2009.

NMFS published the final rule for the HPTRP on February 19, 2010 (75 *Federal Register* 7383). The changes contained in the new rule address the two primary causes of a recent increase in harbor porpoise bycatch in gillnets: increased bycatch in places where measures to prevent it are not currently required, and gaps in compliance with current management measures, such as improper use of pingers. To address these problems, the measures expanded when and where "pingers" are required on gillnets off New England, added new seasonal management measures off New Jersey, and defined areas off New England that would close to gillnetters ("consequence closures") if harbor porpoise bycatch exceeded the target rate for each area for two consecutive seasons. In the Mid-Atlantic, a new management area was created off the coast of New Jersey, encompassing waters where high bycatch has been observed recently. The area is closed to gillnetting from February 1 to March 15, and gear modified to reduce the risk of bycatch will be required to fish there between January 1 and April 30 every year when gillnet fishing is allowed.

On October 1, 2012, the Coastal GOM Consequence Closure Area, which spans the coast from Massachusetts to Maine, would have closed to sink gillnets from October 1 through November 30, but then NMFS shifted the closure to February 1 through October 1, 2013 (NOAA Greater Atlantic Regional Fisheries Office (GARFO) Bulletin, September 28, 2012) for FY 2012-2013 only. The seasonal closure (October-November) was to remain in effect until bycatch levels achieve the zero mortality rate goal (ZMRG) established for harbor porpoises or until the HPTRT and NMFS develop and implement new measures.

On October 4, 2013 NMFS published a final rule to amend the regulations implementing the HPTRP. This rule revised the Plan by eliminating the consequence closure strategy enacted in 2010 based on deliberations by the Harbor Porpoise Take Reduction Team. This action was necessary to prevent the improper triggering of consequence closure areas based on target harbor porpoise rates that no longer accurately reflected actual bycatch in New England sink gillnets due to fishery-wide changes in fishing practices. For more information on the HPTRP including time and area closures visit: www.nero.noaa.gov/hptrp.

2.1.5.2 Atlantic Large Whale Take Reduction Plan

The ALWTRP contains a series of regulatory measures designed to reduce the likelihood of fishing gear entanglements of right, humpback, and fin whales, and acknowledges benefits to minke whales in the North Atlantic. The main tools of the plan include a combination of broad gear modifications and time/area closures (which are being supplemented by progressive gear research), expanded disentanglement efforts, and extensive outreach efforts in key areas.

Key regulatory changes implemented in 2002 included: 1) new gear modifications; 2) implementation of a DAM system of short-term closures to protect unexpected concentrations of right whales in the GOM; and 3) establishment of a SAM system of additional gear modifications to protect known seasonal concentrations of right whales in the southern GOM and GB.

On June 21, 2005, NMFS published a proposed rule (70 *Federal Register* 35894) for changes to the ALWTRP, and published a final rule on October 5, 2007 (72 *Federal Register* 57104). The new ALWTRP measures expanded the gear mitigation measures by: (a) including additional trap/pot and net fisheries (*i.e.*, gillnet, driftnet) to those already regulated by the ALWTRP, (b) redefining the areas and seasons within which the measures would apply, (c) changing the buoy line requirements, (d) expanding and modifying the weak link requirements for trap/pot and net gear, and (e) requiring (within a specified timeframe) the use of sinking and/or neutrally buoyant groundline in place of floating line for all fisheries regulated by the ALWTRP on a year-round or seasonal basis.

In October 2007, NMFS issued a final rule implementing broad-based gear modifications largely to replace the SAM and DAM programs. This broad-based gear modification strategy includes expanded weak link and sinking groundline requirements, additional gear marking requirements, changes in management area boundaries, seasonal restrictions for gear modifications, expanded exempted areas, and regulatory language changes for the purposes of clarification and consistency.

On July 16, 2013 NMFS provided a proposed rule to amend the regulations implementing the ALWTRP. This proposed rule revises the management measures for reducing the incidental mortality and serious injury to the North Atlantic right whale, humpback whale, and fin whale in commercial trap/pot and gillnet fisheries to meet the goals of the Marine Mammal Protection Act (MMPA) and the Endangered Species Act (ESA).

For further information on the ALWTRP regulations, please visit www.nero.noaa.gov/whaletrp.

2.1.5.3 Atlantic Trawl Gear Take Reduction Strategy (ATGTRS)

In September 2006, NMFS convened the Atlantic Trawl Gear Take Reduction Team (ATGTRT) under the MMPA. The ATGTRT was convened to address incidental mortality and serious injury of long-finned pilot whales, short-finned pilot whales, common dolphins, and Atlantic white-sided dolphins in several trawl gear fisheries operating in the Atlantic Ocean. These marine mammal species are known to interact with the Mid-Atlantic Mid-Water Trawl, Mid-Atlantic Bottom Trawl, Northeast Mid-Water Trawl and Northeast Bottom Trawl fisheries.

Because none of the marine mammal stocks of concern to the ATGTRT are classified as a "strategic stock", and none currently interact with a Category I fishery it was determined that development of a take reduction plan (TRP) was currently not necessary.

In lieu of a TRP, the ATGTRT agreed to develop an Atlantic Trawl Gear Take Reduction Strategy (ATGTRS). The ATGTRS identifies informational and research tasks as well as education and outreach needs the ATGTRT believes are necessary to provide the basis for achieving the ultimate MMPA goal of achieving the ZMRG. The ATGTRS also identified several potential voluntary measures that can be adopted by certain trawl fishing sectors to potentially reduce the incidental capture of marine mammals. These voluntary measures are as follows:

- Reducing the numbers of turns made by the fishing vessel and tow times while fishing at night; and
- Increasing radio communications between vessels about the presence and/or incidental capture of a marine mammal to alert other fishermen of the potential for additional interactions in the area.

2.1.5.4 Final Rule to Minimize Monkfish Gillnet Interaction with Sea Turtles

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 of that year. The basis of this rule was that sea turtles migrate northward as water temperatures warm. 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, NMFS published a final rule on April 26, 2006 (71 *Federal Register* 24776) that included modifications to the large-mesh gillnet restrictions. Specifically, the new final rule revised the gillnet restrictions to apply to gillnets having 7" stretched mesh or greater, versus the 8" stretched mesh defined in the 2002 final rule, but did not apply this new rule in state waters as considered in the proposed rule. State waters, and Federal waters north of Chincoteague, VA remain unaffected by the large-mesh gillnet restrictions.

2.2 Purpose and Need

The need for this action is to revise existing management measures to achieve, but not exceed, catch limits specified based on the most recent monkfish stock assessment update and more effectively harvest OY, as required by the MSA.

The primary purpose of this action is to establish new specifications for the monkfish fishery, including DAS and landing limits for the NMA and SMA. These specifications were most recently established in Amendment 5 (for the SMA) and FW 7 (for the NMA) in 2011, and this action is needed to update these allotments consistent with the most recent scientific advice and the need to achieve OY in the fishery. No action is currently being taken to change the catch limits in the fishery based on the advice of the NEFMC's SSC to maintain existing ABCs following the 2013 monkfish assessment update.

A second purpose for this action is to provide flexibility to vessels by modifying the DAS usage requirements. This action is needed because the existing requirement for monkfish Category C or D permits to use monkfish DAS in conjunction with any available groundfish DAS before any monkfish-only DAS could be used restricts the seasonal targeting of monkfish at the start of the fishing year.

The third purpose for this action is to provide flexibility for permit Category H fishermen, who currently fish in a small area south of the $38^{o}40'$N Latitude line. This action is needed because earlier northerly migration of monkfish out of the area, earlier arrival of sea turtles in the area and sea turtle closures constrain their ability to fully use their allocated monkfish DAS.

2.3 Goals and Objectives

The original FMP specified the following management objectives:

1. To end and prevent overfishing; rebuilding and maintaining a healthy spawning stock;
2. To optimize yield and maximize economic benefits to the various fishing sectors;
3. To prevent increased fishing on immature fish;
4. To allow the traditional incidental catch of monkfish to occur.

The goals and objectives for this framework supplement the basic FMP objectives. As discussed in the Purpose and Need Section above, this framework is intended to address identified needs consistent with these FMP objectives.

3.0 Alternatives under Consideration

The alternatives under consideration in FW 8 include modifications to the DAS allocations and landings limits in both the NMA and SMA, as well as modifications to the DAS usage requirements and permit Category H fishery boundary. The DAS allocations and landings limits alternatives are based on OFL, and ABC/ACL values recommended from the SSC (September 2013).

The biological and management reference points currently in the Monkfish FMP are used to determine if overfishing is occurring on either stock (i.e., current F is above $F_{Threshold}$), if either

stock is overfished (current biomass (B) is above $B_{Threshold}$), or if either stock is rebuilt (B is equal to or above B_{Target}). The methods used to calculate these reference points were adopted under Amendment 5 in 2011. This action proposes to maintain the methods used to calculate these reference points, but update the resultant values based on the best available scientific information from the 2013 Monkfish Operational Assessment update (Table 3.1). Under Amendment 5, OFL was calculated by multiplying $T_{hreshold}$ by the current estimate of biomass. Because complete data for FY 2012 were not available, the most recent estimate of biomass from the 2013 assessment update was 2011. This results in "current" biomass estimates that are 3 years old when used to calculate OFL for each stock. Therefore, at its August 2013 meeting, the SSC recommended using the 2014 exploitable biomass projected from the terminal year of the assessment (2011) as the current biomass rather than estimated biomass from 2011. This gives a more recent estimate of exploitable biomass compared to the Amendment 5 methods for the determination of OFL.

The SSC recommended updating the OFLs for both stocks and set the values at 17,805 mt for the NMA and 23,204 mt for the SMA. The SSC also recommended status quo levels for the ABC/ACL for both stocks based on results from the assessment, including increasing or stable survey trends that were balanced by persistent retrospective patterns. The Councils agreed with the SSC's recommendations to maintain existing monkfish ABC for both monkfish stocks. Therefore, no action to revise monkfish ABC would be taken under this proposed action, and values would remain at 7,592 mt for the NMA and 12,316 mt for the SMA. Although the Councils considered alternative estimates of management uncertainty (a reduction in catch levels based on a consideration of the effectiveness of management measures at achieving desired catch levels), they determined that existing management uncertainty buffers (Table 3.2) provide sufficient assurance that ACLs would not be exceeded in either area. Since the ABCs and, therefore, ACLs (monkfish ACLs were set equal to the ABCs under Amendment 5) would not change as part of this action, the ACT and TAL values for both stocks would also remain at status quo levels of 6,567 mt and 5,854 mt, respectively, for the NMA, and 11,513 mt and 8,925 mt, respectively, for the SMA (Table 3.2).

Table 3.1. Comparison of monkfish biological reference points between SAW 50 (2010) and the 2013 Monkfish Operational Assessment update.

Monkfish Management Area	Biological Reference Point	SAW 50	2013 Assessment Update
NMA	F_{MAX}	0.43	0.44
	B_{Target}	52,930 mt	46,074 mt
	$B_{Threshold}$*	26,465 mt	23,037 mt
	OFL	19,557 mt	17,805 mt
	Maximum Sustainable Yield (MSY)	10,745 mt	9,383 mt
SMA	F_{MAX}	0.46	0.37
	B_{Target}	74,490 mt	71,667 mt
	$B_{Threshold}$*	37,245 mt	35,834 mt
	OFL	36,245 mt	23,204 mt
	MSY	15,279 mt	14,328 mt

*$B_{Threshold}$ is equal to ½ of B_{Target}.

Table 3.2. Monkfish management reference points for FY 2014-2016.

FY 2014-2016	NMA	SMA
ABC/ACL	7,592 mt	12,316 mt
ACT	6,567 mt	11,513 mt
Management Uncertainty Buffer	13.5%	6.5%
TAL	5,854 mt	8,925 mt

3.1 NMA DAS Allocations and Landing Limits Alternatives

This section describes the range of alternatives, including No Action, for the NMA (Table 3.3). Alternative 1 is No Action, and would maintain landing limits in effect before the 2013 Emergency Action and current DAS allocations. Alternative 2 adjusts the allocation of DAS in the NMA to a level at which projected landings approximate the FY 2014 directed fishery allocation of the NMA TAL. Alternative 3 increases incidental landing limits for permit categories C and D when fishing under a groundfish DAS, and increases the allocation of DAS in the NMA to 46 DAS.

Table 3.3. NMA monkfish DAS and landing limit alternatives. (Landing limits in tail weight)

Management Area	Alternative	Incidental Landing Limit (lb/DAS)	A,C daily landing limit (lb/DAS)	B,D daily landing limit (lb/DAS)	DAS
NMA	1 - No Action	Status quo*	1,250	600	40
	2	Status quo*	1,250	600	64
	3 (Preferred)	600 for C permit and 500 for D permit when fishing under a groundfish DAS (elimination of 25% landings threshold), status quo all others	1,250	600	46

*Existing incidental landing limits vary based on permit issued, gear type used, area fished, and DAS type used, and range from 50 lb to 450 lb/DAS. A summary of current monkfish incidental landing limits can be found at: http://www.nero.noaa.gov/regs/infodocs/monkfish_fishery_info-final.pdf

3.1.1 NMA Alternative 1 – No Action

For the purpose of this action, the No Action Alternative is defined as those measures which would remain in effect during FY 2014 if no further action were taken. Landing limits for permit categories A, C and B, D would remain at 1,250 lb tail weight/DAS and 600 lb tail weight/DAS, respectively. Incidental landing limits would remain at 25% of landings onboard, not to exceed 300 lb tail weight/DAS while fishing on a groundfish DAS and status quo for all other permits. For all limited access monkfish permits, allocated monkfish DAS would remain at 40 DAS.

Rationale:

The No Action Alternative would continue existing measures implemented since 2011, providing consistency to the fishery that would help to minimize market fluctuations and changes to existing business plans. Based on recent fishing operations, these measures are not likely to

result in an overage of the total ACT, as catch observed in FY 2011-2012 did not approach the ACT. However, these measures are also unlikely to achieve OY.

3.1.2 NMA Alternative 2 – Modified DAS Allocations

Alternative 2 adjusts the allocation of DAS in the NMA to a level at which projected landings approximate the FY 2014 directed fishery allocation of the TAL (Hermsen 2013; Appendix 1). Under NMA Alternative 2, monkfish DAS allocation would increase from 40 to 64 DAS beginning in FY 2014.

Rationale:
Because the NMA TAL was not achieved in FY 2011-2012, this alternative increases DAS allocations as the primary means of increasing landings in the directed fishery. This alternative could provide incentives to participate in the directed monkfish fishery. Additional monkfish DAS may encourage vessels fishing on groundfish DAS to switch to a monkfish DAS, enabling them to retain more monkfish and potentially reducing monkfish discards that are above the incidental limit while fishing on a groundfish DAS alone.

3.1.3 NMA Alternative 3 – Modified DAS Allocations and Incidental Landing Limits (Preferred)

Alternative 3 considers the incidental landing limits for monkfish when a vessel is on a groundfish DAS. This action would increase the monkfish incidental landing limits while on a groundfish DAS in the NMA to 600 lb tail weight/DAS for monkfish limited access Category C permits, and 500 lb tail weight/DAS for Category D permits. This action would also increase monkfish DAS allocations from 40 to 46 DAS.

Rationale:
In the NMA, incidental landings of monkfish by limited access monkfish Category C and D vessels not fishing on a monkfish DAS were approximately three times higher than landings on directed monkfish trips (i.e., those under a monkfish DAS; Hermsen 2013). Currently, monkfish catch when under a groundfish DAS in the NMA is constrained by incidental landing limits of 300 lb tail weight/groundfish DAS. Increasing the incidental landing limits may provide more opportunity to harvest monkfish in the NMA for those vessels fishing under a groundfish DAS, while increasing DAS by 15% from 40 to 46 DAS would increase opportunities to target monkfish under a monkfish DAS in the NMA. Thus, NMA Alternative 3 would provide modest increases in monkfish fishing opportunities for both the incidental and directed monkfish fisheries in the NMA to better achieve OY compared to existing measures.

3.2 SMA DAS Allocations and Landing Limits Alternatives

This section describes the range of alternatives, including No Action, for the SMA (Table 3.4). Alternative 1 is No Action, and would maintain existing landing limits and DAS allocations. Alternative 2 modifies landing limits to account for tail-weight conversion corrections and adjusts the allocation of DAS in the SMA from 28 to 32 DAS. Alternative 3 maintains current landing limits, but adjusts the allocation of DAS in the SMA to a level at which projected landings approximate the FY 2014 directed fishery allocation of the SMA TAL. Alternative 4 maintains current DAS allocations, but adjusts landing limits to account for tail-weight conversion corrections.

Table 3.4. SMA monkfish DAS and landing limit alternatives. (*Landing limits in tail weight)

Management Area	Alternative	Incidental Landing Limit* (lb)	A,C Daily Landing Limit* (lb)	B,D,H Daily Landing Limit* (lb)	SMA DAS Cap
SMA	1 -No Action	Status quo	550	450	28
	2 (Preferred)	Status quo	610	500	32
	3	Status quo	550	450	51
	4	Status quo	610	500	28

3.2.1 SMA Alternative 1 – No Action

For the purpose of this action, the No Action Alternative is defined as those measures currently in effect in the SMA that would remain in effect if no further action is taken. Landing limits for monkfish limited access permit Categories A, C and B, D, H fishing on a monkfish DAS would remain at 550 lb tail weight/DAS and 450 lb tail weight/DAS, respectively. Incidental landing limits would remain at status quo limits, and DAS would remain at 28 DAS.

Rationale:
Maintaining existing trip limits and DAS allocations provides consistency to the fishery that would help to minimize market fluctuations and changes to existing business plans. Existing measures are not likely to result in an overage of the ACT based on recent fishing operations. However, catch observed in FY 2011-2012 did not achieve OY.

3.2.2 SMA Alternative 2 – Modified DAS Allocations and Directed Landing Limits (Preferred)

Alternative 2 modifies monkfish daily directed landings limits in the directed fishery to account for the tail-to-head-on, gutted conversion clarification adopted in Amendment 5, and accordingly increases the limits to 610 lb tail weight/DAS and 500 lb tail weight/DAS for limited access monkfish permit Categories A,C and B, D, H, respectively. In addition to increasing the landing limits, this action increases the SMA DAS usage cap to 32 DAS.

Rationale:
Amendment 5 clarified daily landing limits in this fishery to address the fact that some monkfish were landed with heads-on and partially-gutted instead of intact (i.e. whole or round). The effect of this clarification was that landing limits, which had previously been expressed in both tail weight and whole weight, declined by about 14% for vessels that land head-on, gutted fish, which comprise a significant number of SMA gillnet vessels. This action also increases DAS allocations by 15%, which will provide increased opportunity to harvest monkfish in the SMA because the TAL was not achieved in FY 2011-2012.

3.2.3 SMA Alternative 3 – Modified DAS Allocations

Alternative 3 adjusts the allocation of DAS in the SMA to a level at which projected landings approximate the FY 2014 directed fishery allocation of the SMA TAL (Hermsen 2013; Appendix 1). The number of monkfish DAS that could be used in the SMA would increase from 28 to 51 DAS. This would mean that all monkfish permits would be allocated 51 DAS, with an

NMA monkfish DAS usage cap specified according to one of the NMA alternatives described in Section 3.1 above.

Rationale:
Because the SMA TAL was not achieved in FY 2011-2012, this alternative increases DAS allocations as the primary means of increasing landings in the directed fishery that attempts to fully achieve the SMA TAL starting in FY 2014. By maintaining existing landing limits, this alternative attempts to maintain the same daily volume of landings and, therefore, existing market prices, while increasing opportunities to land more monkfish throughout the FY. Allocating more monkfish DAS in the SMA and fewer in the NMA would essentially reverse the monkfish management regimes that have been in place for the two areas since the implementation of the FMP.

3.2.4 SMA Alternative 4 – Modified Directed Landing Limits

Alternative 4 adjusts the daily directed landing limits in the SMA to account for the tail-to-head-on, gutted conversion clarification adopted in Amendment 5 and accordingly increases the limits to 610 lb tail weight/DAS and 500 lb tail weight/DAS for permit categories A,C and B, D, H, respectively (Table 3.2). Unlike SMA Alternative 2, this alternative would maintain the SMA monkfish DAS usage cap at 28 DAS.

Rationale:
The rationale for Alternative 4 is the same as Alternative 2 for increasing the landing limits. The rationale for maintaining status quo DAS is to provide an alternative that incorporates the tail-to-whole fish conversion correction and maintains current fishing operations in the SMA. However, by keeping the SMA monkfish DAS usage cap at 28 DAS, any increase in monkfish landings would be due to increased landing limits rather than additional fishing DAS.

3.3 Monkfish DAS Usage Requirements

This section describes alternatives for refining DAS usage requirements between the monkfish and groundfish fisheries. Alternative 1 is No Action, and Alternative 2 modifies the DAS usage requirements.

3.3.1 DAS Usage Alternative 1 – No Action

Under the No Action Alternative, vessels allocated both monkfish and groundfish DAS must use groundfish DAS in combination with their monkfish DAS. Once a vessel's allocation of groundfish DAS is used, a vessel may then use monkfish-only DAS.

Rationale:
Existing regulations require the use of groundfish and monkfish DAS in combination until all groundfish DAS are used as a means to ensure that monkfish fishing effort does not inadvertently increase fishing effort and, therefore, mortality on groundfish stocks.

3.3.2 DAS Usage Alternative 2 – Modified Monkfish DAS Usage Requirements (Preferred)

Under Alternative 2, vessels allocated both monkfish and groundfish DAS can use monkfish-only DAS (in excess of allocated groundfish DAS at the start of the FY) at any time throughout

the FY. Once a vessel's allocation of groundfish DAS equals the remaining monkfish DAS (i.e., once a vessel's monkfish-only DAS have been used), the vessel must use both monkfish and groundfish DAS in combination.

Rationale:
The requirement to use monkfish DAS in conjunction with groundfish DAS at the start of the FY was originally developed as a means of ensuring that monkfish effort does not unintentionally increase fishing effort and mortality on groundfish stocks. However, since recent groundfish measures have substantially reduced groundfish fishing effort and control effort through sector quotas and hard total allowable catch amounts for common pool vessels, such restrictions on monkfish fishing effort may no longer be as necessary as they were before. This alternative addresses concerns that existing requirements to use groundfish DAS in combination with monkfish DAS at the start of the FY prevented efficient utilization of monkfish and groundfish DAS allocations. By allowing monkfish-only DAS to be used at any time throughout the FY, vessels can more effectively target monkfish earlier in the FY when monkfish are more prevalent, and preserve monkfish-groundfish combination DAS until groundfish are more readily available later in the FY, particularly in the SMA. This could increase vessel returns and improve economic efficiency for monkfish Category C and D vessels.

3.4 Permit Category H Fishery Boundary

This section describes alternatives for the region that permit Category H vessels may use monkfish DAS (Figure 1.1). Alternative 1 is No Action, and Alternative 2 modifies the fishing region available to permit Category H vessels.

3.4.1 Permit Category H Alternative 1 – No Action

Under the no action alternative, vessels issued a monkfish Category H permit may only fish on a monkfish DAS south of 38°40' N Latitude.

Rationale:
Permit Category H vessels were historically restricted to fishing south of 38°20'N to reflect the locations where they historically operated and to restrict the amount of catch that could be harvested by the permit class due to not qualifying for limited access permits in the initial FMP. FW 4 (2007) to the FMP adjusted the permit Category H fishing boundary to south of 38°40'N to account for the constraints imposed on the fishery by closures to protect sea turtles.

3.4.2 Permit Category H Alternative 2 – Modified Permit Category H Fishery Boundary (Preferred)

This action would allow vessels issued a monkfish Category H permit to fish a monkfish DAS throughout the SMA.

Rationale:
Existing regulations designed to reduce bycatch and mortality of turtles and harbor porpoises under the ESA and the MMPA limit where monkfish Category H vessels can target monkfish in the SMA. To ensure that such vessels can maximize opportunities to harvest available monkfish, this alternative would enable such vessels to fish throughout the SMA. This would increase fishing opportunities for such vessels.

3.5 Considered but Rejected

During the development of this action, the Monkfish Committee considered implementing a management uncertainty buffer of 14% in both areas to be consistent with the more precautionary management uncertainty buffer implemented for the NMA under FW 7. Management uncertainty buffers are a measure of the effectiveness of management measures to achieve desired catch levels, and help reduce the risk that overfishing will occur in a particular area. In Amendment 5, the SMA ACT was set 6.5% below the SMA ABC/ACL to reflect lower management uncertainty in the area due to the fact that the majority of monkfish caught in the area is attributable to the directed fishery. In FW 7, the NMA ACT was set 13.5% below the ACL to reflect additional management uncertainty associated with the fact that the majority of monkfish landings in the NMA come from the less tightly controlled incidental catch of monkfish in the groundfish fishery. Upon further consideration and analysis by the PDT, the Monkfish Committee concluded that the existing management uncertainty buffers adequately reduce the risk of overfishing in each area, and that changes to the buffers were not warranted at this time.

The Monkfish Committee considered an alternative that included increased incidental landing limits for C and D permits of 600 lb tail weight/DAS and 500 lb tail weight/DAS, respectively, and 53 allocated DAS in the NMA. The Monkfish Committee and NEFMC considered that this was too large of an increase in fishing opportunity given concerns over the state of the NMA monkfish stock and the potential for fishing effort to shift into the SMA. The NEFMC also considered, but rejected an alternative for the NMA that included increased incidental landing limits for C and D permits of 600 lb tail weight/DAS and 500 lb tail weight/DAS, respectively, and status quo DAS allocations. The NEFMC believed that monkfish effort could be further increased without increasing the risk of overfishing. Both of these alternatives would have produced monkfish landings that are within the bounds of the biological and economic impacts analyses conducted for this action. These alternatives were replaced with Alternative 3 for the NMA (Section 3.1.3) as a compromise to increase operational flexibility to harvest more of the available TAL, while considering uncertainty in the monkfish stock assessment.
The Monkfish Committee also considered, but rejected two alternatives for the SMA. The first rejected alternative included increased directed landing limits for A and C permits and B, D, and H permits of 610 lb tail weight/DAS and 500 lb tail weight/DAS, respectively, and 46 DAS. The second alternative included increased directed landing limits for A and C permits and B, D, and H permits of 1,000 lb tail weight/DAS and 860 lb tail weight/DAS, respectively, and status quo DAS allocations. Both alternatives were designed to achieve, but not exceed, catch limits beginning in FY 2014, with impacts within the bounds of the biological and economic impacts analyses of other alternatives considered in this action. The first alternative increased directed landing limits to account for the tail-to-whole fish conversion factor and relied on increases in DAS to achieve the SMA TAL, while the second alternative relied on increased directed landing limits as the primary measure to achieve the SMA TAL. The first alternative was replaced with SMA Alternative 2 (Section 3.2.2), and the second alternative was replaced by SMA Alternative 4 (Section 3.2.4) as a compromise to increase operational flexibility to harvest more of the available TAL, while considering uncertainty in the monkfish stock assessment. Overall, the Councils were concerned with dramatically increasing monkfish landings, and preferred to adopt an alternative that produced more moderate increases in monkfish landings in the SMA.

4.0 Affected Environment (SAFE Report for 2012)

4.1 Biological Environment and Stock Status

4.1.1 Monkfish Life History

Information about monkfish life history is incomplete, although ongoing cooperative research projects continue to improve the understanding of the species biology and population dynamics. Richards et al. (2008) examined data from resource surveys spanning the period 1948-2007, and noted that "monkfish exhibited seasonal onshore-offshore shifts in distribution, migrated out of the southern MAB in mid-spring, and re-appeared there in autumn". This observation is reflected in the seasonal pattern of fishing activity, particularly in the SMA. The authors also observed that "sex ratios at length for fish 40-65 cm long were skewed toward males in the southern Mid-Atlantic Bight (MAB), but approximated unity elsewhere, suggesting that a portion of the population resides outside sampled areas. Growth was linear at 9.9 cm per year, and did not differ by region or sex. Maximum observed size was 138 cm for females and 85 cm for males. Length at 50% maturity for males was 35.6 cm (4.1 yrs. old) in the north and 37.9 cm (4.3 yrs. old) in the south. Length at 50% maturity for females was 38.8 cm (4.6 yrs. old) in the north and 43.8 cm (4.9 yrs. old) in the south. Ripe females were found in shallow (<50 m) and deep (>200 m) water in the south, and in shallow (<50 m) water in the north."

4.1.2 Monkfish Stock Status

NMFS conducted an updated assessment for monkfish in 2013 (NEFSC 2013), with a terminal year of 2011 (Table 4.1). Long-term assessments of total biomass at F_{max} were recommended in SAW 50 (NEFSC 2010) and utilized for management purposes in 2011 and updated in the current assessment. The 2013 assessment indicates that monkfish are not overfished in the NMA or the SMA (Figures 4.1 and 4.2), however there are high levels of uncertainty regarding Biological Reference Points (BRPs) due to gaps in the input data and a persistent retrospective pattern that underestimates F and overestimates B in each area. The 2013 assessment states:

> "results continue to be uncertain due to cumulative effects of under-reported landings, unknown discards during the 1980's, uncertainty in survey indices, and incomplete understanding of key biological parameters such as age and growth, longevity, natural mortality and stock structure contributing to retrospective patterns primarily in the NMA."

Table 4.1. Monkfish reference points and stock status from the 2013 Monkfish Operational Assessment.

	North	South	Comment
$F_{threshold}$	0.44	0.37	F_{MSY} proxy based on F_{max}
$F_{current}$ (2011)	0.08	0.11	Overfishing Not Occurring
B_{target}	46,074 mt	71,667 mt	B_{msy} proxy
$B_{threshold}$	23,037 mt	35,834 mt	$0.5*B_{target}$
$B_{current}$ (2011)	60,500 mt	111,100 mt	Not Overfished

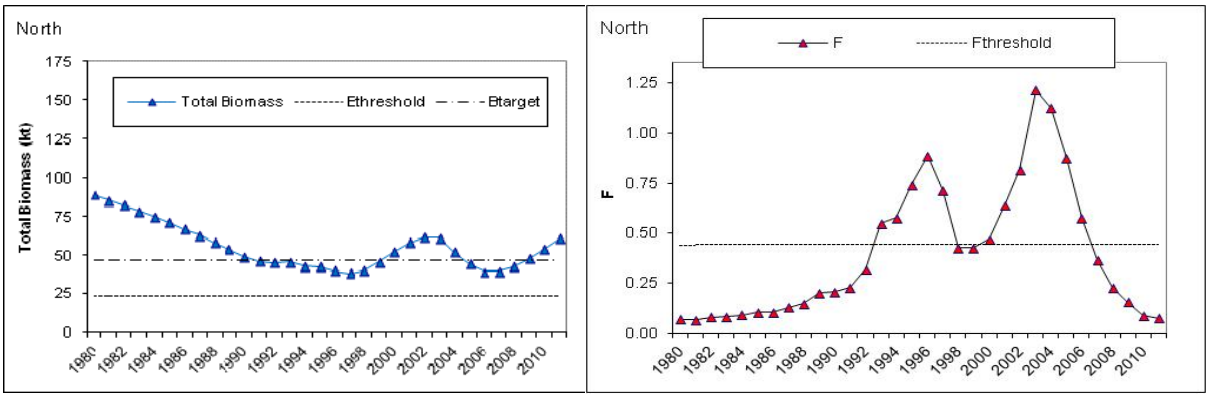


Figure 4.1. Northern monkfish biomass and fishing mortality estimated from the 2013 Monkfish Operational Assessment.

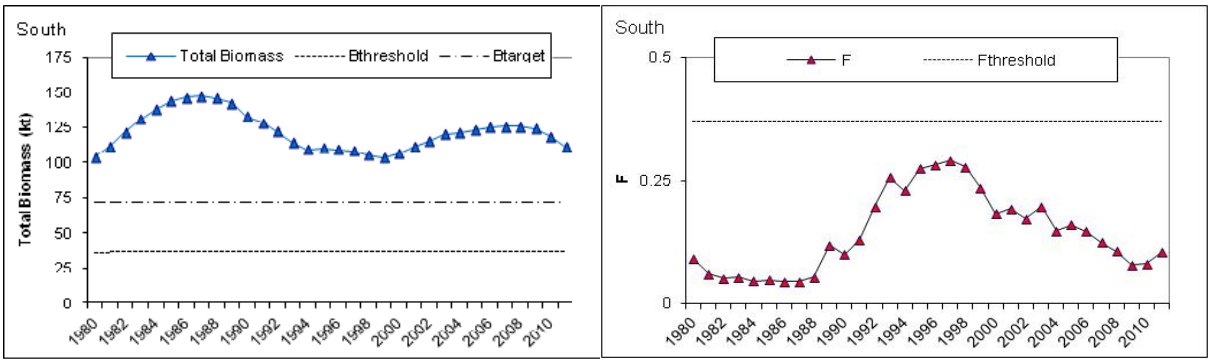


Figure 4.2. Southern monkfish biomass and fishing mortality estimated from the 2013 Monkfish Operational Assessment.

4.1.3 Bycatch of Non-target Species in the Fishery

The monkfish fishery is closely associated with the catch of several species managed by other FMPs, specifically the groundfish, skate, and spiny dogfish fisheries. Particularly in the NMA, monkfish are both targeted and caught as incidental bycatch during trips in which groundfish are also caught. Further, skates and spiny dogfish are often caught when targeting monkfish in the both areas, particularly in the SMA.

The status of all managed groundfish stocks were most recently updated in 2012. Several stocks have been assessed since then, including yearly updates for GB yellowtail flounder and eastern GB portions of haddock and cod stocks. These assessments are summarized in recent management actions under the Northeast Multispecies FMP, including FW 48 (NEFMC 2013a), FW 50 (NEFMC 2013b), and FW 51 (NEFMC 2014a). Several groundfish stocks are overfished, while others are subject to overfishing (Table 4.2).

Table 4.2. Current status of groundfish stocks managed under the Northeast Multispecies FMP.

Stock Status	Stock (assessment source)
Overfished and Overfishing Biomass < ½ B_{MSY} and F > F_{MSY}	GB Cod (GARM III) GOM Cod (SARC 54) Cape Cod/GOM Yellowtail Flounder (assessment update) White Hake (GARM III,) Witch Flounder (assessment update) Northern Windowpane (operational assessment) GB Yellowtail Flounder (2012 TRAC)
Overfished but not Overfishing Biomass < ½ B_{MSY} and F ≤ F_{MSY}	Ocean Pout (assessment update) Atlantic Halibut (assessment update) GOM Winter Flounder (SARC 52)[b] Atlantic wolffish (assessment update) SNE/MA Winter Flounder
Not Overfished but Overfishing Biomass ≥ ½ B_{MSY} and F >	GOM Haddock (assessment update)
Not Overfished and not Overfishing Biomass ≥ ½ B_{MSY} and F ≤ F_{MSY}	Pollock (SARC 50) Acadian Redfish (assessment update) SNE/MA yellowtail flounder (SARC 54) American Plaice (assessment update) GB Haddock (assessment update) GB Winter Flounder(SARC 52) Southern Windowpane (assessment update)

The 2013-2013 Skate Specifications document (NEFMC 2012) detailed skate discards by gear type (Table 4.3). FW 2 to the Skate FMP indicates that over 8.6 million lb of skates (whole and wings) landed during FY 2012 were attributed to monkfish directed trips (Table 22 of NEFMC 2014b). The monkfish fishery accounted for a very small portion (< 1%) of the bait fishery (whole skates) during that year, but represented approximately 44 % of skate wing landings during FY 2012 in both the NMA and SMA combined once unmatched trips were assigned to an FMP based on the proportion of matched landings. Matched skate landings on directed monkfish trips were further broken down to evaluate skate landings by gear and monkfish management area (Table 4.4). During both FYs 2011 and 2012, the monkfish SMA gillnet fishery was responsible for 92-94 % of skate wing landings from the directed monkfish fishery, with very little skate landings attributable to either the monkfish trawl or gillnet fisheries in the NMA. Skate landings while on a monkfish research set aside (RSA) DAS could not be parsed by gear or area during these FYs, but it is likely to reflect skate landings under a conventional monkfish DAS due to the nature of the monkfish RSA program. In general, total skate discards are proportional to fishing effort in the monkfish and groundfish fisheries; as effort increases in these fisheries, skate discards are expected to increase. Discard mortality is low for skates caught in all gear types (less than 50 percent for most species), with discard mortality ranging from 9-23 percent for winter, little, and thorny skates, and 60 percent for smooth skates (see NEFMC 2014b).

Table 4.3. Skate discard rates on observed tows for vessels using large mesh trawl and gillnets.

		1989-2009				2010-2011			
		Skate complex	Barndoor Skate	Smooth skate	Thorny skate	Skate complex	Barndoor skate	Smooth skate	Thorny skate
Large mesh trawl (Fleets 6,8)	No. observed tows	N=79700 tows				N=29006 tows			
	Mean	1.084	0.028	0.006	0.012	1.194	0.054	0.010	0.020
	Median	0.215	0.031	0.016	0.026	0.115	0.025	0.009	0.016
	90th percentile	2.313	0.236	0.108	0.163	2.185	0.226	0.062	0.132
Sink gillnets (Fleets 21,24)	No. observed tows	N=8132				N=2344			
	Mean	0.118	0.016	0.010	0.006	0.459	0.091	0.010	0.009
	Median	0.037	0.029	0.000	0.028	0.062	0.054	0.000	0.025
	90th percentile	0.249	0.215	0.051	0.135	0.941	0.547	0.043	0.149

Table 4.4. Total skate incidental landings (whole skate and wings in lb, live weight) from directed monkfish trips by gear type for FYs 2011 and 2012.

FY	**NFMA**			**SFMA**			**RSA**	**Unmatched***
	Gillnet	**Trawl**	**Unknown**	**Gillnet**	**Trawl**	**Unknown**		
2011	154,321	152,563	272	9,516,446	474,054	0	1,106,841	11,773,896
2012	41,562	164,147	0	7,393,757	293,097	329	738,249	9,004,566

*At least a portion of the "unmatched" landings would be attributed to the monkfish fishery.

Spiny dogfish are neither overfished, nor subject to overfishing. A vast majority of spiny dogfish discards (over 72 %) occur from gillnet gear, 16 % from bottom trawl gear, and 12 percent from hook and line gear (MAFMC 2014). Most spiny dogfish catch occurs inside and adjacent to the Delaware Bay, Block Island, and Massachusetts Bay and just east of Cape Cod (see Figure 12 in MAFMC 2014).

4.1.4 Marine Mammals and Protected Species

There are numerous protected species that inhabit the environment within the Monkfish FMP management unit. These species are afforded protection under the ESA, for those designated as threatened or endangered or the MMPA. Thirteen of these species are classified as endangered or threatened under the ESA, while the others are protected by the provisions of the MMPA. Actions previously taken to minimize the interaction of the fishery with protected species are described in Section 2.1.5 of this document.

On February 9, 2012, NMFS reinitiated formal consultation to reconsider the effects of the continued authorization of several fisheries, including the monkfish fishery, on DPSs of Atlantic sturgeon listed as threatened or endangered under the ESA on February 6, 2012. An updated

batched BO was issued for seven fisheries in the Northeast, including the monkfish fishery, on December 16, 2013 (NMFS 2013). The BO reviewed the current status of large marine mammals, sea turtles, and Atlantic sturgeon, the environmental baseline, and cumulative effects in the action area, including the effects of the continued operation of the Monkfish FMP and other FMPs over the next 10 years. The BO concluded that the continuation of these fisheries "may adversely affect, but is not likely to jeopardize, the continued existence of" North Atlantic right whales, humpback whales, fin whales, sei whales, the Northwest Atlantic DPS of loggerhead sea turtles, leatherback turtles, Kemp's ridley turtles, green sea turtles, any of the five DPSs of Atlantic sturgeon, or the GOM DPS for Atlantic salmon. This BO also concluded that these fisheries will not adversely affect hawksbill sea turtles, shortnose sturgeon, smalltooth sawfish DPS, *Acroporid* corals, Johnson's seagrass, sperm whales, blue whales, designated critical habitat for right whales in the Northwest Atlantic, or designated critical habitat for GOM DPS Atlantic salmon (NMFS 2013). An incidental take statement was developed for the seven combined fisheries.

4.1.4.1 Species Protected Under the Endangered Species Act and/or Marine Mammal Protection Act that May Occur in the Operations Area for the 2014-2016 Monkfish and Groundfish Fisheries

MMPA Listed

Species*	Status
North Atlantic right whale (*Eubalaena glacialis*)	Endangered
Humpback whale (*Megaptera novaeangliae*)	Endangered
Fin whale (*Balaenoptera physalus*)	Endangered
Sei whale (*Balaenoptera borealis*)	Endangered
Blue whale (*Balaenoptera musculus*)	Endangered
Sperm whale (*Physeter macrocephalus*	Endangered
Minke whale (*Balaenoptera acutorostrata*)	Protected
Risso's dolphin (*Grampus griseus*)	Protected
Long-finned pilot whale (*Globicephala melas*)	Protected
Short-finned pilot whale (*Globicephala macrorhynchus*)	Protected
Atlantic white-sided dolphin (*Lagenorhynchus acutus*)	Protected
Common dolphin (*Delphinus delphis*)	Protected
Bottlenose dolphin (*Tursiops truncatus*)[a]	Protected
Harbor porpoise (*Phocoena phocoena*)	Protected
Spotted dolphin (*Stenella frontalis*)	Protected

Pinnipeds

Species	Status
Harbor seal (*Phoca vitulina*)	Protected
Gray seal (*Halichoerus grypus*)	Protected
Hooded seal (*Cystophora cristata*)	Protected
Harp seal (*Phoca groenlandicus*)	Protected

Sea Turtles

Species	Status
Leatherback sea turtle (*Dermochelys coriacea*)	Endangered

Kemp's ridley sea turtle (*Lepidochelys kempii*)	Endangered
Green sea turtle (*Chelonia mydas*)[b]	Endangered
Hawksbill sea turtle (*Eretmochelys imbricata*)	Endangered
Loggerhead sea turtle (*Caretta caretta*)	Threatened

Fish

Species	Status
Shortnose sturgeon (*Acipenser brevirostrum*)	Endangered
Atlantic salmon (*Salmo salar*)[c]	Endangered
Atlantic sturgeon (*Acipenser oxyrinchus*)	Proposed
Gulf of Maine DPS	Threatened
New York Bight DPS, Chesapeake Bay DPS, Carolina DPS & South Atlantic DPS	Endangered
Cusk (*Brosme brosme*)	Candidate
Dusky shark (*Carcharhinus obscurus*)	Candidate

Note:

a Bottlenose dolphin (*Tursiops truncatus*), Western North Atlantic coastal stock is listed as depleted.

b Green turtles in U.S. waters are listed as threatened except for the Florida breeding population which is listed as endangered. Due to the inability to distinguish between these populations away from the nesting beach, green turtles are considered endangered wherever they occur in U.S. waters.

c Gulf of Maine distinct population segment (DPS)

* MMPA-listed species occurring on this list are only those species that have a history of interaction with similar gear types within the action area of the monkfish fishery, as defined in the 2012 List of Fisheries.

Candidate species are those petitioned species that NMFS is actively considering for listing as endangered or threatened under the ESA. Candidate species also include those species for which NMFS has initiated an ESA status review through an announcement in the Federal Register. Candidate species receive no substantive or procedural protection under the ESA; however, NMFS recommends that project proponents consider implementing conservation actions to limit the potential for adverse effects on candidate species from any proposed project. NMFS has initiated review of recent stock assessments, bycatch information, and other information for these candidate/proposed species. The results of those efforts are needed to accurately characterize recent interactions between fisheries and the candidate/proposed species in the context of stock sizes. Any conservation measures deemed appropriate for these species will follow the information reviews. Once a species is proposed for listing the conference provisions of the ESA apply (see 50 CFR 402.10).

Cusk (*Brosme brosme*) are a NMFS "species of concern," as well as a "candidate species" under the ESA as NMFS is currently conducting a review of the species. NMFS initiated a status review due to concerns over the status of and threats to cusk, particularly bycatch. NMFS is involved in various proactive conservation initiatives to obtain more information on this data poor species to assess its status and further conservation efforts. These initiatives involve cooperative efforts with industry, scientists, and other partners to learn more about cusk. NMFS is especially interested in the investigation and identification of methods to reduce bycatch or discard mortality of cusk, and, in particular, studies of how to alleviate barotrauma effects in released cusk are of high interest. In the Northeastern U.S., cusk are predominantly caught in the GOM in commercial bottom trawl, bottom longline, gillnet, lobster trap, and handline/rod and reel gears, as well recreational handline gear (Hare et al. 2012; GMRI 2012). Additional

information on cusk and some conservation efforts can be found athttp://www.nero.noaa.gov/prot_res/CandidateSpeciesProgram/CuskSOC.html.

4.1.4.2 Species Not Likely to be Affected

NMFS has determined that the action being considered in this EA is not likely to adversely affect shortnose sturgeon, hawksbill sea turtles, blue whales, or sperm whales, all of which are listed as endangered species under the ESA. Further, the action considered in this EA is not likely to adversely affect North Atlantic right whale critical habitat. The following discussion provides the rationale for these determinations.

Shortnose sturgeon are benthic fish that mainly occupy the deep channel sections of large rivers. They occupy rivers along the western Atlantic coast from St. Johns River in Florida, to the Saint John River in New Brunswick, Canada. Although, the species is possibly extirpated from the Saint Johns River system. The species is anadromous in the southern portion of its range (i.e., south of Chesapeake Bay), while some northern populations are amphidromous (NMFS 1998). Since the monkfish fishery would not operate in or near the rivers where concentrations of shortnose sturgeon are most likely found, it is highly unlikely that monkfish operations would affect shortnose sturgeon.

The hawksbill turtle is uncommon in the waters of the continental U.S. Hawksbills prefer coral reefs, such as those found in the Caribbean and Central America. Hawksbills feed primarily on a wide variety of sponges, but also consume bryozoans, coelenterates, and mollusks. The Culebra Archipelago of Puerto Rico contains especially important foraging habitat for hawksbills. Nesting areas in the western North Atlantic include Puerto Rico and the Virgin Islands. There are accounts of hawksbills in south Florida and individuals have been sighted along the east coast as far north as Massachusetts; however, east coast sightings north of Florida are rare (NMFS 2009a). Since the Monkfish FMP regulates fishing operations north of North Carolina, fishing would not occur in waters that are typically used by hawksbill sea turtles. Therefore, it is highly unlikely that monkfish operations would affect this turtle species.

Blue whales do not regularly occur in waters of the U.S. EEZ (Waring et al. 2002). In the North Atlantic region, blue whales are most frequently sighted from April to January (Sears 2002). No blue whales were observed during the Cetacean and Turtle Assessment Program surveys of the mid- and North Atlantic areas of the outer continental shelf (Cetacean and Turtle Assessment Program 1982). Calving for the species occurs in low latitude waters outside of the area where the monkfish fishery would operate. Blue whales feed on euphausiids (krill) that are too small to be captured in fishing gear. There were no observed fishery-related mortalities or serious injuries to blue whales between 1996 and 2000 (Waring et al. 2002). The species is unlikely to occur in areas where the monkfish fishery would operate, and monkfish operations would not affect the availability of blue whale prey or areas where calving and nursing of young occurs. Therefore, the Proposed Action would not be likely to adversely affect blue whales.

Unlike blue whales, sperm whales do regularly occur in waters of the U.S. EEZ. However, the distribution of the sperm whales in the U.S. EEZ occurs on the continental shelf edge, over the continental slope, and into mid-ocean regions (Waring et al. 2007). Sperm whale distribution is

typically concentrated east-northeast of Cape Hatteras in winter and shifts northward in spring when whales are found throughout the Mid-Atlantic Bight (Waring et al. 2006). 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. 1999). In contrast, the monkfish fishery mainly operates in continental shelf waters. The average depth over which sperm whale sightings occurred during the Cetacean and Turtle Assessment Program surveys was 5,879 ft (1,792 m) (Cetacean and Turtle Assessment Program 1982). Female sperm whales and young males almost always inhabit open ocean, deep water habitat with bottom depths greater than 3,280 ft (1,000 m) and at latitudes less than 40° N (Whitehead 2002). Sperm whales feed on large squid and fish that inhabit the deeper ocean regions (Perrin et al. 2002). There were no observed fishery-related mortalities or serious injuries to sperm whales between 2001 and 2005 (Waring et al. 2007). Sperm whales are unlikely to occur in water depths where the monkfish fishery would operate, and monkfish operations would not affect the availability of sperm whale prey or areas where calving and nursing of young occurs. Therefore, the Proposed Action would not be likely to adversely affect sperm whales.

North Atlantic right whales occur in coastal and shelf waters in the western North Atlantic (NMFS 2005). Section 4.5.2.2 discusses potential fishery entanglement and mortality interactions with North Atlantic right whale individuals. The western North Atlantic population in the U.S. primarily ranges from winter calving and nursery areas in coastal waters off the southeastern U.S. to summer feeding grounds in New England waters (NMFS 2005). North Atlantic Right Whales use five well-known habitats annually, including multiple in northern waters. These northern areas include the Great South Channel (east of Cape Cod); Cape Cod and Massachusetts Bays; the Bay of Fundy; and Browns and Baccaro Banks, south of Nova Scotia. NMFS designated the Great South Channel and Cape Cod and Massachusetts Bays as Northern Atlantic right whale critical habitat in June 1994 (59 FR 28793). NMFS has designated additional critical habitat in the southeastern U.S. Monkfish gear operates in the ocean at or near the bottom rather than near the surface. It is not known whether the bottom-trawl, or any other type of fishing gear, has an impact on the habitat of the Northern right whale (59 FR 28793). As discussed further in Section 5.1, the monkfish fishery would result in a negligible effect on physical habitat. Therefore, monkfish operations would not result in a significant impact on Northern right whale critical habitat. Further, mesh sizes used in the monkfish are very large (10-14”) and do not significantly impact the Northern right whale’s planktonic food supply (59 FR 28793). Therefore, Northern right whale food sources in areas designated as critical habitat would not be adversely affected by the monkfish fishery. For these reasons, Northern right whale critical habitat will not be considered further in this EA.

Although marine turtles and large whales could be potentially affected through interactions with fishing gear, NMFS has determined that the continued authorization of several fisheries, including the monkfish fishery, would not have any adverse effects on the availability of prey for these species. Sea turtles feed on a variety of plants and animals, depending on the species. However, none of the turtle species are known to feed upon monkfish. Right whales and sei whales feed on copepods (Horwood 2002, Kenney 2002). The monkfish fishery will not affect the availability of copepods for foraging right and sei whales because copepods are very small organisms that will pass through monkfish fishing gear rather than being captured in it.

Humpback whales and fin whales also feed on krill as well as small schooling fish such as sand lance, herring and mackerel (Aguilar 2002, Clapham 2002). Monkfish fishing gear operates on or very near the bottom. Fish species caught in monkfish gear are species that live in benthic habitat (on or very near the bottom). As a result, this gear does not typically catch schooling fish such as herring and mackerel that occur within the water column. Therefore, the continued authorization of the monkfish fishery will not affect the availability of prey for foraging humpback or fin whales.

4.1.4.3 Species Potentially Affected

It is expected that the sea turtle, cetacean, and pinniped species discussed below have the potential to be affected by the operation of the monkfish fishery. Background information on the range-wide status of sea turtle and marine mammal species that occur in the area and are known or suspected of interacting with fishing gear (demersal gear including trawls, gillnets, and longline types) can be found in a number of published documents. These include sea turtle status reviews and biological reports (NMFS and USFWS 1995; Marine Turtle Expert Working Group (TEWG) 1998, 2000; NMFS and USFWS 2007a, 2007b; Leatherback TEWG 2007), recovery plans for ESA-listed cetaceans and sea turtles (NMFS 1991; NMFS and USFWS 1991a, 1991b; NMFS and USFWS 1992), the marine mammal stock assessment reports (e.g., Waring et al. 2006; 2007), and other publications (Clapham et al. 1999, Perry et al. 1999, Best et al. 2001).

Loggerhead, leatherback, Kemp's ridley, and green sea turtles occur seasonally in southern New England and Mid-Atlantic continental shelf waters north of Cape Hatteras, North Carolina. In general, turtles move up the coast from southern wintering areas as water temperatures warm in the spring (James et al. 2005, Morreale and Standora 2005, Braun-McNeill and Epperly 2004, Morreale and Standora 1998, Musick and Limpus 1997, Shoop and Kenney 1992, Keinath et al. 1987). The trend is reversed in the fall as water temperatures cool. By December, turtles have passed Cape Hatteras, returning to more southern waters for the winter (James et al. 2005, Morreale and Standora 2005, Braun-McNeill and Epperly 2004, Morreale and Standora 1998, Musick and Limpus 1997, Shoop and Kenney 1992, Keinath et al. 1987). Hard-shelled species are typically observed as far north as Cape Cod whereas the more cold-tolerant leatherbacks are observed in more northern GOM waters in the summer and fall (Shoop and Kenney 1992, STSSN database http://www.sefsc.noaa.gov/seaturtleSTSSN.jsp).

In general, sea turtles are a long-lived species and reach sexual maturity relatively late (NMFS SEFSC 2001; NMFS and USFWS 2007a, 2007b, 2007c, 2007d). Sea turtles are injured and killed by numerous human activities (NRC 1990; NMFS and USFWS 2007a, 2007b, 2007c, 2007d). Nest count data are a valuable source of information for each turtle species since the number of nests laid reflects the reproductive output of the nesting group each year. A decline in the annual nest counts has been measured or suggested for four of five western Atlantic loggerhead nesting groups through 2004 (NMFS and USFWS 2007a); however, data collected since 2004 suggests nest counts have stabilized or increased (TEWG 2009). Nest counts for

Kemp's ridley sea turtles as well as leatherback and green sea turtles in the Atlantic demonstrate increased nesting by these species (NMFS and USFWS 2007b, 2007c, 2007d).

Sea turtles are known to be captured in gillnet and trawl gear; gear types that are used in the monkfish fishery. Table 4.5 provides recent information on observed turtle interactions with the monkfish fishery for the period 2003 – Dec. 2006. Gillnet gear is the most prevalent gear used in the SMA monkfish fishery.

Table 4.5 Turtle interactions in gillnet gear targeting monkfish, 2003-Dec. 2006.

Year	**Month**	**Species**	**Statistical Area**	**Gear Type**
2003	August	Unknown	537	Sink gillnet
2003	August	Unknown	537	Sink gillnet
2003	August	Unknown	537	Sink gillnet
2004	May	Loggerhead	621	Sink gillnet
2004	June	Loggerhead	612	Sink gillnet
2004	October	Leatherback	615	Sink gillnet
2004	November	Leatherback	613	Sink gillnet
2006	December	Leatherback	537	Sink gillnet

Sea Turtles

The loggerhead sea turtle is listed as threatened throughout its worldwide range. On July 12, 2007, NMFS and USFWS (Services) received a petition from Center for Biological Diversity and Turtle Island Restoration Network to list the ''North Pacific populations of loggerhead sea turtle'' as an endangered species under the ESA. In addition, on November 15, 2007, the Services received a petition from Center for Biological Diversity and Oceana to list the ''Western North Atlantic populations of loggerhead sea turtle'' as an endangered species under the ESA. NMFS published notices in the *Federal Register*, concluding that the petitions presented substantial scientific information indicating that the petitioned actions may be warranted (72 FR 64585, November 16, 2007; 73 FR 11849, March 5, 2008). In 2008, a Biological Review Team (BRT) was established to assess the global population structure to determine whether DPSs exist and, if so, the status of each DPS. The BRT identified nine loggerhead DPSs, distributed globally (Conant et al. 2009). On March 16, 2010, the Services announced 12-month findings on the petitions to list the North Pacific populations and the Northwest Atlantic populations of the loggerhead sea turtle as DPSs with endangered status and published a proposed rule to designate nine loggerhead DPSs worldwide, seven as endangered (North Pacific Ocean DPS, South Pacific Ocean DPS, Northwest Atlantic Ocean DPS, Northeast Atlantic Ocean DPS, Mediterranean Sea DPS, North Indian Ocean DPS, and Southeast Indo-Pacific Ocean DPS) and two as threatened (Southwest Indian Ocean DPS and South Atlantic Ocean DPS). On March 22, 2011, the timeline for the final determination was extended for six months until September 16, 2011 (76 FR 15932)."

On September 22, 2011, NMFS and USFWS issued a final rule (76 FR 58868), determining that the loggerhead sea turtle is composed of nine DPSs (as defined in Conant et al., 2009) that constitute species that may be listed as threatened or endangered under the ESA. Five DPSs were listed as endangered (North Pacific Ocean, South Pacific Ocean, North Indian Ocean, Northeast Atlantic Ocean, and Mediterranean Sea), and four DPSs were listed as threatened

(Northwest Atlantic Ocean, South Atlantic Ocean, Southeast Indo-Pacific Ocean, and Southwest Indian Ocean). Note that the Northwest Atlantic Ocean (NWA) DPS and the Southeast Indo-Pacific Ocean DPS were original proposed as endangered. The NWA DPS was determined to be threatened based on review of nesting data available after the proposed rule was published, information provided in public comments on the proposed rule, and further discussions within the agencies. The two primary factors considered were population abundance and population trend. NMFS and USFWS found that an endangered status for the NWA DPS was not warranted given the large size of the nesting population, the overall nesting population remains widespread, the trend for the nesting population appears to be stabilizing, and substantial conservation efforts are underway to address threats.

The September 2011 final rule also noted that critical habitat for the two DPSs occurring within the U.S. (NWA DPS and North Pacific DPS) will be designated in a future rulemaking. Information from the public related to the identification of critical habitat, essential physical or biological features for this species, and other relevant impacts of a critical habitat designation was solicited.

This action would only occur in the Atlantic Ocean. As noted in Conant et al. (2009), the range of the four DPSs occurring in the Atlantic Ocean are as follows: NWA DPS – north of the equator, south of 60° N latitude, and west of 40° W longitude; Northeast Atlantic Ocean (NEA) DPS – north of the equator, south of 60° N latitude, east of 40° W longitude, and west of 5°36' W longitude; South Atlantic DPS – south of the equator, north of 60° S latitude, west of 20° E longitude, and east of 60° W longitude; Mediterranean DPS – the Mediterranean Sea east of 5°36' W longitude. These boundaries were determined based on oceanographic features, loggerhead sightings, thermal tolerance, fishery bycatch data, and information on loggerhead distribution from satellite telemetry and flipper tagging studies. Previous literature has suggested that there is the potential, albeit small, for some juveniles from the Mediterranean DPS to be present in U.S. Atlantic coastal foraging grounds. These data should be interpreted with caution however, as they may be representing a shared common haplotype and lack of representative sampling at Eastern Atlantic rookeries. Given that updated, more refined analyses are ongoing and the occurrence of Mediterranean DPS juveniles in U.S. coastal waters is rare and uncertain, if even occurring at all, for the purposes of this assessment we are making the determination that the Mediterranean DPS is not likely to be present in the action area. Sea turtles of the South Atlantic DPS do not inhabit the action area of this subject fishery (Conant et al. 2009). As such, the remainder of this assessment will only focus on the NWA DPS of loggerhead sea turtles, listed as threatened.

Large Cetaceans

The most recent Marine Mammal Stock Assessment Report (SAR; Waring et al. 2012) reviewed the current population trend for each of these large cetacean species within U.S. EEZ waters, as well as providing information on the estimated annual human-caused mortality and serious injury, and a description of the commercial fisheries that interact with each stock in the U.S. Atlantic. Information from the SAR is summarized below.

The western North Atlantic baleen whale species (North Atlantic right, humpback, fin, sei, and minke) follow a general annual pattern of migration from high latitude summer foraging

grounds, including the GOM and GB, and low latitude winter calving grounds (Perry et al. 1999, Kenney 2002). However, this is an oversimplification of species movements, and the complete winter distribution of most species is unclear (Perry et al. 1999, Waring et al. 2011). Studies of some of the large baleen whales (right, humpback, and fin) have demonstrated the presence of each species in higher latitude waters even in the winter (Swingle et al. 1993, Wiley et al. 1995, Perry et al. 1999, Brown et al. 2002). Blue whales are most often sighted along the east coast of Canada, particularly in the Gulf of St. Lawrence. They occur only infrequently within the U.S. EEZ (Waring et al. 2011).

For North Atlantic right whales, the available information suggests that the population is increasing at a rate of 2.4 % per year between 1990 and 2007, and the total number of North Atlantic right whales is estimated to be at least 396 animals in 2006 (Waring et al. 2012). The minimum rate of annual human-caused mortality and serious injury to right whales averaged 2.4 per year during 2005 to 2009 (Waring et al. 2011). Of these, an average of 0.8 per year resulted from fishery interactions. Recent mortalities included six female right whales, including three that were pregnant at the time of death (Waring et al. 2009).

The North Atlantic population of humpback whales is estimated to be 7,698, although the estimate is considered to be conservative (Waring et al. 2012). The best estimate for the GOM stock of humpback whales is 847 whales (Waring et al. 2012). The population trend was considered positive for the GOM population, but there are insufficient data to estimate the trend for the larger North Atlantic population. Based on data available for selected areas and time periods, the minimum population estimates for other western North Atlantic whale stocks are 3,269 fin whales, 208 sei whales, 3,539 sperm whales, and 6,909 minke whales (Waring et al. 2009). Current data suggest that the GOM humpback whale stock is steadily increasing in size (Waring et al. 2011). Insufficient data exist to determine trends for any other large whale species.

Gillnet gear is known to pose a risk of entanglement causing injury and death to large cetaceans. Right whale, humpback whale, and minke whale entanglements in gillnet gear have been documented (Waring et al. 2009). However, it is often not possible to attribute the gear to a specific fishery. Bottom trawl gear is also known to pose a risk of entanglement causing injury or death to large whales.

The ALWTRP was revised with publication of a new final rule (72 FR 57104, October 5, 2007) that is intended to continue to address entanglement risk of large whales (right, humpback, fin, and acknowledges benefits to minke whales) in commercial fishing gear and to reduce the risk of death and serious injury from entanglements that do occur. Further revisions to the ALWTRP were proposed on July 16, 2013, that are intended to reduce the risk of serious injury and mortality of large whales due to entanglements in vertical lines. This proposed rule would revise the management measures for reducing the incidental mortality and serious injury to the North Atlantic right whale, humpback whale, and fin whale in commercial trap/pot and gillnet fisheries to meet the goals of the MMPA and the ESA. The measures identified in the ALWTRP are also intended to benefit minke whales, which are not strategic, but are known to be taken incidentally in commercial fisheries.

Small Cetaceans
Numerous small cetacean species (dolphins, pilot whales, and harbor porpoise) occur within the area from Cape Hatteras through the GOM that are known to interact with monkfish fishing gear. Seasonal abundance and distribution of each species in Mid-Atlantic, GB, and/or GOM, GB, and southern New England/Mid-Atlantic waters varies with respect to life history characteristics. Some species primarily occupy continental shelf waters (e.g., white sided dolphins and harbor porpoise), while others are found primarily in continental shelf edge and slope waters (e.g., Risso's dolphin), and still others occupy all three habitats (e.g., common dolphin and spotted dolphin). Information on the western North Atlantic stocks of each species is summarized in Waring et al. (2011). Small cetaceans are known to interact with gillnet and trawl gear (Waring et al. 2009).

With respect to harbor porpoise specifically, the most recent Stock Assessment Reports show that the number of harbor porpoise takes is increasing, moving closer to the Potential Biological Removal level calculated for this species (706 animals/year from 2011) rather than declining toward the long-term ZMRG, which is 10 % of PBR (approximately 75 animals). Recent observer information has indicated an increase in porpoise bycatch throughout the geographic area covered by the HPTRP in both the GOM and Mid-Atlantic regions and in monkfish gear specifically (NMFS, Discussion Paper on Planned Amendments to the Harbor Porpoise TRP 2007). The Harbor Porpoise Take Reduction Team developed options to reduce takes, and NMFS published a proposed rule on July 21, 2009 (74 *Federal Register* 36058) with four alternatives including No Action. As a result, the HPTRP was amended on 19 February 2010 (75 FR 7383), which expanded management areas and seasons in which pingers are required, as well as to increased efforts to monitor and enforce the plan. In addition, the New England portion of the HPTRP now includes consequence closure areas as a management measure strategy.

On October 1, 2012, the Coastal Gulf of Maine Consequence Closure Area was shifted to February 1 through March 31, 2013 (GARFO Bulletin, January 18, 2013) for 2012-2013 only. This seasonal closure (October-November) will remain in effect until bycatch levels achieve the ZMRG established for harbor porpoises or until the HPTRT and NMFS develop and implement new measures. Consequentially, on August 26, 2013 NMFS published a proposed rule to amend the regulations implementing the HPTRP. This action was necessary due to the New England sink gillnets fishery-wide changes in fishing practices.

Pinnipeds
Of the four species of seals expected to occur in the area, harbor seals have the most extensive distribution with sightings occurring as far south as 30° N (Katona et al. 1993, Waring et al. 2009). Gray seals are the second most common seal species in U.S. EEZ waters, occurring primarily off New England (Katona et al. 1993; Waring et al. 2009). Pupping for both species occurs in both U.S. and Canadian waters of the western North Atlantic with the majority of harbor seal pupping likely occurring in U.S. waters and the majority of gray seal pupping in Canadian waters, although there are at least three gray seal pupping colonies in U.S. waters as well. Harp and hooded seals are less commonly observed in U.S. EEZ waters. Both species form aggregations for pupping and breeding off eastern Canada in the late winter/early spring, and then travel to more northern latitudes for molting and summer feeding (Waring et al. 2009). Both species have a seasonal presence in U.S. waters from Maine to New Jersey, based on

sightings, stranding, and fishery bycatch (Waring et al. 2009). All four species of seals are known to interact with gillnet and/or trawl gear (Waring et al. 2009).

Although harbor seals may be more likely to occur in the operations area between fall and spring, harbor and gray seals are year-round residents; therefore, interactions could occur year-round. The uncommon occurrences of hooded and harp seals in the operations area are more likely to occur during the winter and spring, allowing for an increased potential for interactions during the winter.

Atlantic Sturgeon DPSs

Atlantic sturgeon is an anadromous species that spawns in relatively low salinity, river environments, but spends most of its life in the marine and estuarine environments from Labrador, Canada to the Saint Johns River, Florida (Holland and Yelverton 1973, Dovel and Berggen 1983, Waldman et al. 1996, Kynard and Horgan 2002, Dadswell 2006, ASSRT 2007). Tracking and tagging studies have shown that subadult and adult Atlantic sturgeon that originate from different rivers mix within the marine environment, utilizing ocean and estuarine waters for life functions such as foraging and overwintering (Stein et al. 2004a, Dadswell 2006, ASSRT 2007, Laney et al. 2007, Dunton et al. 2010). Fishery-dependent data as well as fishery-independent data demonstrate that Atlantic sturgeon use relatively shallow inshore areas of the continental shelf; primarily waters less than 50 m (Stein et al. 2004b, ASMFC 2007, Dunton et al. 2010). The data also suggest regional differences in Atlantic sturgeon depth distribution with sturgeon observed in waters primarily less than 20 m in the Mid-Atlantic Bight and in deeper waters in the GOM (Stein et al. 2004b, ASMFC 2007, Dunton et al. 2010). Information on population sizes for each Atlantic sturgeon DPS is very limited. Based on the best available information, NMFS has concluded that bycatch, vessel strikes, water quality and water availability, dams, lack of regulatory mechanisms for protecting the fish, and dredging are the most significant threats to Atlantic sturgeon.

Atlantic sturgeon are known to be captured in sink gillnet, drift gillnet, and otter trawl gear (Stein et al. 2004a, ASMFC 2007). Of these gear types, sink gillnet gear poses the greatest known risk of mortality for sturgeon caught as bycatch (ASMFC 2007). Sturgeon deaths were rarely reported in the otter trawl observer dataset (ASMFC 2007). However, the level of mortality after release from the gear is unknown (Stein et al. 2004a). In a review of the Northeast Fishery Observer Program (NEFOP) database for the years 2001-2006, observed bycatch of Atlantic sturgeon was used to calculate bycatch rates that were then applied to commercial fishing effort to estimate overall bycatch of Atlantic sturgeon in commercial fisheries. This review indicated sturgeon bycatch occurred in statistical areas abutting the coast from Massachusetts (statistical area 514) to North Carolina (statistical area 635; ASMFC 2007). Based on the available data, participants in an ASMFC bycatch workshop concluded that sturgeon encounters tended to occur in waters less than 50 m throughout the year, although seasonal patterns exist (ASMFC 2007). The ASMFC analysis determined that an average of 650 Atlantic sturgeon mortalities occurred per year (during the 2001-2006 timeframe) in sink gillnet fisheries. Stein et al (2004a), based on a review of the NMFS Observer Database from 1989-2000, found clinal variation in the bycatch rate of sturgeon in sink gillnet gear with lowest rates occurring off of Maine and highest rates off of North Carolina for all months of the year.

In an updated analysis, the NEFSC was able to use data from the NEFOP database to provide updated estimates for the 2008 through May of 2013. Data were limited by observer coverage to waters outside the coastal boundary and north of Cape Hatteras, NC. Sturgeon included in the data set were those identified by Federal observers as Atlantic sturgeon, as well as those categorized as unknown sturgeon. The frequency of encounters on observed trips were expanded by total landings recorded in VTR rather than dealer data, since the dealer data does not include information on mesh sizes. Originally the data were to be evaluated by year, month, three-digit statistical area, gear type and mesh size. Unfortunately the level of observer coverage did not support that degree of partitioning in the data. Therefore, data were combined into division (identified as the first two digits in area codes), quarter, gear type (otter trawl, fish and sink gillnet) and mesh categories. Mesh sizes were categorized for otter trawl as small (<5.5") or large (greater than or equal to 5.5") and small (<5.5"), large (between 5.5" and 8") and extra large (>8") in sink gillnets.

Monkfish are primarily harvested using large mesh bottom otter trawl gear and extra large mesh sink gillnet gear. The majority of the monkfish trawl fishery occurs in conjunction with the Northeast multispecies fishery in the NMA, which is comprised mostly of the GOM and GB. Conversely, the monkfish fishery is primarily a gillnet fishery in the SMA, which is comprised mainly of Southern New England and the Mid-Atlantic regions.

Although based upon 1999 and 2001 VTR data, Figures 69 and 70 in Amendment 2 to the Monkfish FMP graphically display how directed monkfish otter trawl and gillnet effort are distributed. Given that monkfish regulations have not changed dramatically since the implementation of the FMP in November 1999, it is unlikely that this effort pattern has changed. However, it should be noted that directed monkfish trawl effort has declined in the SMA in recent years. As indicated in Figure 69 of Amendment 2, the majority of monkfish otter trawl effort in the Southern New England region occurs in NE statistical area 537, and tends to occur in deeper waters further offshore. Conversely, directed monkfish gillnet effort in the Southern New England region occurs primarily in the in the inshore waters of NE statistical areas 537, 612, 613, 614, and 621. Given that nearly all observed takes of Atlantic sturgeon in large mesh otter trawl gear during the 2008-May 2013 time period occurred in NE statistical areas 612 and 621 (Table 4.6), it is highly unlikely that these vessels were targeting monkfish. Observed takes associated with extra large mesh sink gillnet gear during this time period were distributed across several inshore statistical areas across Southern New England and the Mid-Atlantic regions (Table 4.7). Thus, it is highly likely that the majority of these observed takes occurred in sink gillnet gear targeting monkfish. As a result, the analysis contained in the Addendum to Amendment 5 focused on the impacts to Atlantic sturgeon associated with extra large sink gillnet gear in the SMA since recent NEFOP data indicate that no interactions have occurred between the gear used in the monkfish fishery and Atlantic sturgeon in the NMA in recent years.

Table 4.6. Sturgeon encounters in observed large mesh otter trawl trips, 2008-May 2013.

	Month												
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**Total**
Area													
513	1												1
514		1	1		1	1				2	2		8
521													0
537						2	1				1		4
539	1												1
611				1	2	1							4
612		1		10	56	11	6		34	4		2	124
613				1			2						3
614				1									1
615													0
621					1	2			1	2	8	2	16
622													0
625												10	10
626													0
631	1	2											3
635	2											2	4
Total	5	4	1	13	60	17	9	0	35	8	11	16	**179**

Table 4.7. Sturgeon encounters in observed extra large sink gillnet trips, 2008-May 2013.

	Month												
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**Total**
Area													
513							1						1
514	2	1			5	5	3				7	3	26
521	1					2	2				3		8
537	1	1	1	1	6	2				1	3	2	18
539				4	7								11
611													0
612	8	2		1	5						3	10	29
613		1			4	1					8	2	16
614					1						2		3
615	2				2	2					4	18	28
621													0
622	1												1
625			2	6	14						1	1	24
626			1	4	12								17
631		7	2									2	11
635			8	47									55
Total	**15**	**12**	**14**	**63**	**56**	**12**	**6**	**0**	**0**	**1**	**31**	**38**	**248**

Table 4.8 shows the number of estimated annual takes (total encounters) of Atlantic sturgeon in extra large mesh sink gillnet gear ranging from 20 to 70 sturgeon annually, with an average of 43 individuals (2008-2012). As such, these data indicate that monkfish gillnet gear is likely to interact with Atlantic sturgeon during the time period covered by this action, FY 2014-2016. Based upon this information, it appears that nearly half of Atlantic sturgeon die as a result of an encounter with extra-large mesh sink gillnet gear, most likely due to the length of time this gear is soaked and the bagging effect associated with this type of gear, the latter of which would make it unlikely that a sturgeon could free itself once entangled. However, in recent years, the percentage of takes resulting in death has declined. This could be in part due to incomplete observer data for 2013, or other factors affecting fishing behavior such as weather, water temperature or abundance of bycatch species such as skate and dogfish.

Table 4.8. Sturgeon encounters in observed extra large mesh gillnet gear, 2008-May 2013.

Year	Total Encounters	Dead Encounters	%Dead
2008	20	14	70%
2009	70	23	33%
2010	50	33	66%
2011	37	16	43%
2012	39	21	54%
May 2013	32	12	38%
Total	248	119	48

Comprehensive information on current abundance of Atlantic sturgeon is lacking for all of the spawning rivers (ASSRT 2007). Based on data through 1998, an estimate of 863 spawning adults per year was developed for the Hudson River (Kahnle et al. 2007), and an estimate of 343 spawning adults per year is available for the Altamaha River, GA, based on data collected in 2004-2005 (Schueller and Peterson 2006). Data collected from the Hudson River and Altamaha River studies cannot be used to estimate the total number of adults in either subpopulation, since mature Atlantic sturgeon may not spawn every year, and it is unclear to what extent mature fish in a non-spawning condition occur on the spawning grounds. Nevertheless, since the Hudson and Altamaha Rivers are presumed to have the healthiest Atlantic sturgeon subpopulations within the United States, other U.S. subpopulations are predicted to have fewer spawning adults than either the Hudson or the Altamaha (ASSRT 2007). It is also important to note that the estimates above represent only a fraction of the total population size as spawning adults comprise only a portion of the total population (e.g., this estimate does not include subadults and early life stages).

On October 6, 2010, NMFS proposed listing these five DPSs of Atlantic sturgeon along the U.S. East Coast as either threatened or endangered species (75 FR 61872 and 75 FR 61904). Two final rules confirming the listings proposed for each DPS were published in the Federal Register on February 6th, 2012 (77 FR 5880 and 75 FR 5914). The GOM DPS of Atlantic sturgeon has been listed as threatened, and the New York Bight, Chesapeake Bay, Carolina, and South Atlantic DPSs of Atlantic sturgeon have been listed as endangered.

Since the ESA listing of Atlantic sturgeon, new stock assessment efforts have been completed. Atlantic sturgeon are frequently sampled during the Northeast Area Monitoring and Assessment (NEAMAP) survey. NEAMAP has been conducting trawl surveys from Cape Cod, Massachusetts to Cape Hatteras, North Carolina in nearshore waters at depths to 18.3 meters (60 feet) during the fall since 2007 and depths up to 36.6 meters (120 feet) during the spring since 2008 using a spatially stratified random design with a total of 35 strata and 150 stations per survey. The information from this survey can be directly used to calculate minimum swept area population estimates. During the fall, the swept area population estimates range from 6,980 to 42,160 individual Atlantic sturgeon, with coefficients of variation between 0.02 and 0.57. During the spring, the swept area population estimates range from 25,540 to 52,990 individual Atlantic sturgeon, with coefficients of variation between 0.27 and 0.65. These are considered minimum estimates because the calculation makes the unlikely assumption that the gear will capture 100% of the sturgeon in the water column along the tow path. Efficiencies less than

100% will result in estimates greater than the minimum. The true efficiency depends on many things, including the availability of the species to the survey and the behavior of the species with respect to the gear. True efficiencies much less than 100 percent are common for most species. The 50% efficiency assumption seems to reasonably account for the robust, yet not complete sampling of the Atlantic sturgeon oceanic temporal and spatial ranges and the documented high rates of encounter with NEAMAP survey gear and Atlantic sturgeon. For this analysis, we have determined that the best available data at this time are the population estimates derived from NEAMAP swept area biomass. We have determined that using the median value of the 50% efficiency as the best estimate of the Atlantic sturgeon ocean population is most appropriate at this time. This results in a total population size estimate of 67,776 fish, which is considerably higher than the estimates that were available at the time of listing of Atlantic sturgeon under the ESA in February 2012.

Atlantic Salmon (Gulf of Maine DPS)

The wild populations of Atlantic salmon are listed as endangered under the ESA. Their freshwater range occurs in the watersheds from the Androscoggin River northward along the Maine coast to the Dennys River. Juvenile salmon in New England rivers typically migrate to sea in spring after a one- to three-year period of development in freshwater streams. They remain at sea for two winters before returning to their U.S. natal rivers to spawn (Kocik and Sheehan 2006). The marine range of the GOM DPS extends from the GOM, throughout the Northwest Atlantic Ocean, to the coast of Greenland. Results from a 2001-2003 post-smolt trawl survey in the nearshore waters of the Gulf of Maine indicate that Atlantic salmon post-smolts are prevalent in the upper water column throughout this area in mid to late May (Lacroix, Knox, and Stokesbury 2005). The trend in abundance of Atlantic salmon in the GOM DPS has been low and either stable or declining over the past several decades. The number of returning naturally-reared adults continues at low levels due to poor marine survival.

Adult Atlantic salmon may be present in the action area year-round, however they are rarely captured in the marine environment. NEFOP data from 1989 through August 2013 show records of incidental Atlantic salmon bycatch in 7 of 24 years, with a total of 15 individuals caught. Of the observed incidentally caught Atlantic salmon, 10 were listed as “discarded,” which is assumed to be a live discard (Kocik, pers comm, Feb 11, 2013). Five of the 15 were listed as mortalities. The incidental takes of Atlantic salmon occurred using sink gillnets (11) and bottom otter trawls (4). Observed captures occurred in November (6), June (3), March (2), April (2), August (1) and May (1). The most recent data, from 2004 through August 2013, show incidental captures in the multispecies and monkfish fisheries during the spring months in areas offshore (statistical areas 522 and 525) and in the spring and summer months in the Gulf of Maine (statistical areas 513, 514, and 515).

4.1.4.4 Interactions between Gear and Protected Resources

This section focuses on the interaction between gear used in the groundfish fishery and protected resources. As noted above, because the vessels fishing under both a monkfish and groundfish DAS are required to use gear, including mesh size, that is consistent if not larger than what is required by current groundfish regulations, the gear used in the groundfish fishery is appropriate to consider when assessing the impacts of this action. In addition, all vessels issued a Federal limited access monkfish Category C or D permit are, by definition, already included in the

groundfish fishery because of their concurrent issuance of a Federal limited access NE multispecies permit. Therefore, evaluation of gear interactions for the groundfish fishery is sufficient to characterize potential interactions with protected resources for this action.

Marine Mammals

NMFS categorizes commercial fisheries based on a two-tiered, stock-specific fishery classification system that addresses both the total impact of all fisheries on each marine mammal stock as well as the impact of individual fisheries on each marine mammal stock. NMFS bases the system on the numbers of animals per year that incur incidental mortality or serious injury due to commercial fishing operations relative to a marine mammal stock's Potential Biological Removal (PBR) level. PBR is the maximum number of animals, not including natural mortalities, which may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population. Tier 1 takes into account the cumulative mortality and serious injury to marine mammals caused by commercial fisheries. Tier 2 considers marine mammal mortality and serious injury caused by the individual fisheries. This EA uses Tier 2 classifications to indicate how each type of gear proposed for use in the preferred alternative may affect marine mammals. Table 4.9 identifies the classifications used in the final List of Fisheries (for FY 2012 (76 FR 73912; November 29, 2011), which are broken down into Tier 2 Categories I, II, and III.

Table 4.9. Descriptions of the Tier 2 Fishery Classification categories.

Category	Category Description
Category I	A commercial fishery that has frequent incidental mortality and serious injury of marine mammals. This classification indicates that a commercial fishery is, by itself, responsible for the annual removal of 50 percent or more of any stock's PBR level.
Category II	A commercial fishery that has occasional incidental mortality and serious injury of marine mammals. This classification indicates that a commercial fishery is one that, collectively with other fisheries, is responsible for the annual removal of more than 10 percent of any marine mammal stock's PBR level and that is by itself responsible for the annual removal of between 1 percent and 50 percent, exclusive of any stock's PBR.
Category III	A commercial fishery that has a remote likelihood of, or no known incidental mortality and serious injury of marine mammals. This classification indicates that a commercial fishery is one that collectively with other fisheries is responsible for the annual removal of: a. Less than 50 percent of any marine mammal stock's PBR level, or b. More than 1 percent of any marine mammal stock's PBR level, yet that fishery by itself is responsible for the annual removal of 1 percent or less of that stock's PBR level. In the absence of reliable information indicating the frequency of incidental mortality and serious injury of marine mammals by a commercial fishery, the Assistant Administrator would determine whether the incidental serious injury or mortality is "remote" by evaluating other factors such as fishing techniques, gear used, methods used to deter marine mammals, target species, seasons and areas fished, qualitative data from logbooks or fisher reports, stranding data, and the species and distribution of marine mammals in the area or at the discretion of the Assistant Administrator.

Interactions between gear and a given species occur when fishing gear overlaps both spatially and trophically with the species' niche. Spatial interactions are more "passive" and involve inadvertent interactions with fishing gear when the fishermen deploy gear in areas used by

protected resources. Trophic interactions are more "active" and occur when protected species attempt to consume prey caught in fishing gear and become entangled in the process. Spatial and trophic interactions can occur with various types of fishing gear used by the multispecies fishery through the year. Whales are found throughout the GOM year round and varying levels of abundance. These include North Atlantic right, humpback, fin, sei and minke. In addition, small cetaceans are also present throughout the GOM year round including Atlantic white-sided and common dolphins, pilot whales and harbor porpoise. Many large and small cetaceans and sea turtles are more prevalent within the operations area during the spring and summer. However, they are also relatively abundant during the fall and would have a higher potential for interaction with sector activities that occur during these seasons. Although harbor seals may be more likely to occur in the operations area between fall and spring, harbor and gray seals are year-round residents. Therefore, interactions could occur year-round. The uncommon occurrences of hooded and harp seals in the operations area are more likely to occur during the winter and spring, allowing for an increased potential for interactions during these seasons.

Although interactions between protected species and gear deployed by the monkfish and groundfish fisheries would vary, interactions generally may include:

- Entanglement in the vertical lines that connect gear to the surface and surface systems (gillnets, traps/pots, and bottom longlines)
- Entanglement in the float line (gillnets and trawls)
- Entanglement in the groundline (gillnets, trawls, and bottom longlines)
- Entanglement in mesh (gillnets and trawls)
- Entanglement in anchor lines (gillnets and bottom longlines), or
- Becoming caught on hooks (bottom longlines)

NMFS assumes the potential for entanglements to occur is higher in areas where more gear is set and in areas with higher concentrations of protected species.

Table 4.10 lists the marine mammals known to have had interactions with gear used by the groundfish fishery. This gear includes sink gillnets, traps/pots, bottom trawls, and bottom longlines within the Northeast multispecies region, as excerpted from the List of Fisheries for FY 2012 (76 FR 73912; November 29, 2011), also see Waring et al. (2009). Sink gillnets have the greatest potential for interaction with protected resources, followed by bottom trawls. There are no observed reports of interactions between longline gear and marine mammals in FY 2009 through FY 2011. However, interactions between the pelagic longline fishery and both pilot whales and Risso's dolphins led to the development of the Pelagic Longline Take Reduction Plan.

Marine mammals are taken in gillnets, trawls, and trap/pot gear used in the Northeast multispecies area. Documented protected species interactions in Northeast sink gillnet fisheries include harbor porpoise, white-sided dolphin, harbor seal, gray seal, harp seal, hooded seal, long-finned pilot whale, offshore bottlenose dolphin, Risso's dolphin, and common dolphin. Not mentioned here are possible interactions with sea turtles and sea birds. Monkfish and groundfish vessels would be required to adhere to measures in the ALWTRP to minimize potential impacts to certain cetaceans. The ALWTRP was developed to address entanglement risk to right, humpback, and fin whales, and to acknowledge benefits to minke whales in specific Category I

or II commercial fishing efforts that utilize traps/pots and gillnets. The ALWTRP calls for the use of gear markings, area restrictions, weak links, and sinking groundline. Fishing vessels would be required to comply with the ALWTRP in all areas where gillnets were used. Fishing vessels would also need to comply with the Bottlenose Dolphin Take Reduction Plan and the HPTRP within the Northeast multispecies area. The Bottlenose Dolphin Take Reduction Plan restricts night time use of gillnets in the Mid-Atlantic gillnet region. The HPTRP aims to reduce interactions between the harbor porpoise and gillnets in the GOM. The HPTRP implements seasonal area closures and the seasonal use of pingers (acoustic devices that emit a sound) to deter harbor porpoises from approaching the nets.

Table 4.10. Marine mammals impacts based on groundfishing gear and Northeast Multispecies fishing areas.

Fishery Category	Fishery Type	Estimated Number of Vessels/Persons	Marine Mammal Species and Stocks Incidentally Killed or Injured
Category I	Mid-Atlantic gillnet	6,402	Bottlenose dolphin, Northern Migratory coastal [a] Bottlenose dolphin, Southern Migratory coastal [a] Bottlenose dolphin, Northern NC estuarine system [a] Bottlenose dolphin, Southern NC estuarine system [a] Bottlenose dolphin, WNA offshore Common dolphin, WNA Gray seal, WNA Harbor porpoise, GOM/Bay of Fundy Harbor seal, WNA Harp seal, WNA Humpback whale, Gulf of Maine Long-finned pilot whale, WNA Minke whale, Canadian east coast Short-finned pilot whale, WNA White-sided dolphin, WNA
	Northeast sink gillnet	3,828	Bottlenose dolphin, WNA, offshore Common dolphin, WNA Fin whale, WNA Gray seal, WNA Harbor porpoise, GOM/Bay of Fundy Harbor seal, WNA Harp seal, WNA Hooded seal, WNA Humpback whale, GOM Minke whale, Canadian east coast North Atlantic right whale, WNA Risso's dolphin, WNA White-sided dolphin, WNA
Category II	Mid-Atlantic bottom trawl	1,388	Bottlenose dolphin, WNA offshore Common dolphin, WNA [a] Long-finned pilot whale, WNA [a] Risso's dolphin, WNA Short-finned pilot whale, WNA [a] White-sided dolphin, WNA
	Northeast bottom trawl	2,584	Common dolphin, WNA Harbor porpoise, GOM/ Bay of Fundy Harbor seal, WNA Harp seal, WNA Long-finned pilot whale, WNA Short-finned pilot whale, WNA White-sided dolphin, WNA [a]
	Atlantic mixed species trap/pot	3,526	Fin whale, WNA Humpback whale, GOM
Category III	Northeast/Mid-Atlantic bottom longline/hook-and-line	>1,281	None documented in recent years

[a] Fishery classified based on serious injuries and mortalities of this stock, which are greater than 50 percent (Category I) or greater than 1 percent and less than 50 percent (Category II) of the stock's PBR.

Sea Turtles

Sea turtles have been caught and injured or killed in multiple types of fishing gear, including gillnets, trawls, and hook and line gear. However, impact due to inadvertent interaction with trawl gear is almost twice as likely to occur when compared with other gear types. Interaction with trawl gear is more detrimental to sea turtles as they can be caught within the trawl itself and will drown after extended periods underwater. A study conducted in the Mid-Atlantic region

showed that bottom trawling accounts for an average annual take of 616 loggerhead sea turtles, although Kemp's ridleys and leatherbacks were also caught during the study period (Murray 2006). Sea turtles generally occur in more temperate waters than those in the Northeast multispecies area.

Atlantic Sturgeon

Atlantic sturgeon are known to be captured in sink gillnet, drift gillnet, and otter trawl gear (Stein et al. 2004a, ASMFC 2007). Of these gear types, sink gillnet gear poses the greatest known risk of mortality for bycaught sturgeon (ASMFC 2007). Sturgeon deaths were rarely reported in the otter trawl observer dataset (ASMFC 2007). However, the level of mortality after release from the gear is unknown (Stein et al. 2004a). In a review of the Northeast Fishery Observer Program (NEFOP) database for the years 2001-2006, observed bycatch of Atlantic sturgeon was used to calculate bycatch rates that were then applied to commercial fishing effort to estimate overall bycatch of Atlantic sturgeon in commercial fisheries. This review indicated sturgeon bycatch occurred in statistical areas abutting the coast from Massachusetts (statistical area 514) to North Carolina (statistical area 635; ASMFC 2007). Based on the available data, participants in an ASMFC bycatch workshop concluded that sturgeon encounters tended to occur in waters less than 50 m throughout the year, although seasonal patterns exist (ASMFC 2007). The ASMFC analysis determined that an average of 650 Atlantic sturgeon mortalities occurred per year (during the 2001-2006 timeframe) in sink gillnet fisheries. Stein et al. (2004a), based on a review of the NMFS Observer Database from 1989-2000, found clinal variation in the bycatch rate of sturgeon in sink gillnet gear with lowest rates occurring off of Maine and highest rates off of North Carolina for all months of the year.

In an updated, preliminary analysis, the Northeast Fisheries Science Center (NEFSC) was able to use data from the NEFOP database to provide updated estimates for the 2006 to 2010 timeframe. Data were limited by observer coverage to waters outside the coastal boundary and north of Cape Hatteras, NC. Sturgeon included in the data set were those identified by federal observers as Atlantic sturgeon, as well as those categorized as unknown sturgeon.

The preliminary analysis apportioned the estimated total sturgeon takes to specific fishery management plans. The analysis estimates that between 2006 and 2010, a total of 15,587 Atlantic sturgeon were captured and discarded in bottom otter trawl (7,740 sturgeon) and sink gillnet gear (7,848 sturgeon). The analysis results indicate that 8.4 % (650 sturgeon) of sturgeon discards in bottom otter trawl gear could be attributed to the large mesh bottom trawl fisheries if a correlation of FMP species landings (by weight) was used as a proxy for fishing effort. Additionally, the analysis results indicate that 30 % (2,354 sturgeon) of sturgeon discards in sink gillnet gear could be attributed to the large mesh monkfish gillnet fisheries if a correlation of FMP species landings (by weight) was used as a proxy for fishing effort.

4.2 Physical and Biological Environment

The Northeast U.S. Shelf Ecosystem has been described as including the area from the GOM south to Cape Hatteras, extending from the coast seaward to the edge of the continental shelf, including the slope sea offshore to the Gulf Stream (Sherman et al. 1996). The continental slope includes the area east of the shelf, out to a depth of 2,000 m. Four distinct sub-regions comprise the NOAA Fisheries Greater Atlantic Region: the Gulf of Maine, Georges Bank, the Mid-

Atlantic Bight, and the continental slope. Occasionally another sub-region, Southern New England, is described; however, we incorporated discussions of any distinctive features of this area into the sections describing GB and the MAB.

The GOM is an enclosed coastal sea, characterized by relatively cold waters and deep basins, with a patchwork of various sediment types. GB is a relatively shallow coastal plateau that slopes gently from north to south and has steep submarine canyons on its eastern and southeastern edge. It is characterized by highly productive, well-mixed waters and strong currents. The MAB is comprised of the sandy, relatively flat, gently sloping continental shelf from southern New England to Cape Hatteras, NC. The continental slope begins at the continental shelf break and continues eastward with increasing depth until it becomes the continental rise. It is fairly homogenous, with exceptions at the shelf break, some of the canyons, the Hudson Shelf Valley, and in areas of glacially rafted hard bottom.

Pertinent physical and biological characteristics of each of these sub-regions are described in the Physical and Biological Environment section of Amendment 5 (Section 4.2), along with a short description of the physical features of coastal environments. Monkfish habitats are described in Section 4.4.1 of Amendment 5 and summarized below. Information on the affected physical and biological environments included in Amendment 5 was extracted from Stevenson et al. (2004).

4.3 Fishing Effects on EFH

A detailed discussion of monkfish fishing on EFH is contained in the Affected Environment Section of Amendment 5 (NEFMC 2011a). Since monkfish EFH has been determined to not be vulnerable to any fishing gear (Stevenson, et al. 2004), the discussion focuses on gears used in the directed monkfish fishery (trawls and gillnets) that potentially could impact EFH of other fisheries. The discussion in Amendment 5 cites several important peer-reviewed studies in describing the potential biological and physical effects of fishing on various substrates (mud, sand, gravel and rocky substrates). With regard to the gears used in the monkfish fishery, the discussion focuses on trawling, since gillnets are stationary or static, and have been determined to not have an adverse effect on EFH. Since vessels are prohibited from using a dredge while on a monkfish DAS, discussion of the effects of dredges is not pertinent. Generally, trawling reduces habitat complexity and productivity by removing or altering physical (boulders, sand waves or cobble piles) and biological (structure forming invertebrates) habitat components and mixing sediments (ICES 2000). These impacts are more discernable with repeated trawl use and in low energy environments (NRC 2002).

4.4 Essential Fish Habitat

Section 4.4 of Amendment 5 contains a detailed description of monkfish EFH, EFH of other species vulnerable to bottom trawl gear, the effect of the monkfish fishery on EFH (monkfish and other species, all life stages), and measures to minimize adverse effects of the monkfish fishery on EFH. The document describes habitat protection measures taken in the monkfish FMP, as well as the Atlantic Sea Scallop and NE Multispecies FMPs (namely habitat closed areas).

In summary, the discussion notes that monkfish EFH has been determined to only be minimally vulnerable to bottom-tending mobile gear (bottom trawls and dredges) and bottom gillnets. Therefore, the effects of the monkfish fishery and other fisheries on monkfish EFH do not

require any management action. However, 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 not 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., 2004):

Species and life stages with EFH more than minimally vulnerable to otter trawl gear:

American plaice (Juvenile (J), Adult (A)), Atlantic cod (J, A), Atlantic halibut (J, A), haddock (J, A), pollock (A), ocean pout (Egg (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 gillnets (Stevenson et al., 2004). Table 4.7 identifies the species, life stages and geographic area of their EFH, for those species whose EFH is vulnerable to bottom trawling.

Table 4.11. EFH descriptions for all benthic life stages of federally-managed species in the U.S. Northeast Shelf Ecosystem with EFH vulnerable to bottom tending gear (Stevenson et al. 2004).

Species	Life Stage	Geographic Area of EFH	Depth (meters)	EFH Description
American plaice	juvenile	GOME and estuaries from Passamaquoddy Bay to Saco Bay, ME and from Mass. Bay to Cape Cod Bay, MA	45 - 150	Bottom habitats with fine grained sediments or a substrate of sand or gravel
American plaice	adult	GOME and estuaries from Passamaquoddy Bay to Saco Bay, ME and from Mass. Bay to Cape Cod Bay, MA	45 - 175	Bottom habitats with fine grained sediments or a substrate of sand or gravel
Atlantic cod	juvenile	GOME, GB, eastern portion of continental shelf off southern NE and following estuaries: Passamaquoddy Bay to Saco Bay; Mass. Bay, Boston Harbor, Cape Cod Bay, Buzzards Bay	25 - 75	Bottom habitats with a substrate of cobble or gravel
Atlantic cod	adult	GOME, GB, eastern portion of continental shelf off southern NE and following estuaries: Passamaquoddy Bay to Saco Bay; Mass. Bay, Boston Harbor, Cape Cod Bay, Buzzards Bay	10 - 150	Bottom habitats with a substrate of rocks, pebbles, or gravel
Atlantic halibut	juvenile	GOME, GB	20 - 60	Bottom habitats with a substrate of sand, gravel, or clay
Atlantic halibut	adult	GOME, GB	100 - 700	Bottom habitats with a substrate of sand, gravel, or clay
Atlantic herring	eggs	GOME, GB and following estuaries: Englishman/Machias Bay, Casco Bay, and Cape Cod Bay	20 – 80	Bottom habitats attached to gravel, sand, cobble or shell fragments, also on macrophytes

Species	Life Stage	Geographic Area of EFH	Depth (meters)	EFH Description
Atlantic sea scallop	juvenile	GOME, GB, southern NE and middle Atlantic south to Virginia-North Carolina border and following estuaries: Passamaquoddy Bay to Sheepscot R.; Casco Bay, Great Bay, Mass Bay, and Cape Cod Bay	18 - 110	Bottom habitats with a substrate of cobble, shells, and silt
Atlantic sea scallop	adult	GOME, GB, southern NE and middle Atlantic south to Virginia-North Carolina border and following estuaries: Passamaquoddy Bay to Sheepscot R.; Casco Bay, Great Bay, Mass Bay, and Cape Cod Bay	18 - 110	Bottom habitats with a substrate of cobble, shells, coarse/gravelly sand, and sand
Haddock	juvenile	GB, GOME, middle Atlantic south to Delaware Bay	35 - 100	Bottom habitats with a substrate of pebble and gravel
Haddock	adult	GB and eastern side of Nantucket Shoals, throughout GOME, *additional area of Nantucket Shoals, and Great South Channel	40 - 150	Bottom habitats with a substrate of broken ground, pebbles, smooth hard sand, and smooth areas between rocky patches
Monkfish	juvenile	Outer continental shelf in the middle Atlantic, mid-shelf off southern NE, all areas of GOME	25 - 200	Bottom habitats with substrates of a sandshell mix, algae covered rocks, hard sand, pebbly gravel, or mud
Monkfish	adult	Outer continental shelf in the middle Atlantic, mid-shelf off southern NE, outer perimeter of GB, all areas of GOME	25 - 200	Bottom habitats with substrates of a sandshell mix, algae covered rocks, hard sand, pebbly gravel, or mud
Ocean pout	eggs	GOME, GB, southern NE, and middle Atlantic south to Delaware Bay, and the following estuaries: Passamaquoddy Bay to Saco Bay, Massachusetts and Cape Cod Bay	<50	Bottom habitats, generally in hard bottom sheltered nests, holes, or crevices
Ocean pout	juvenile	GOME, GB, southern NE, middle Atlantic south to Delaware Bay and the following estuaries: Passamaquoddy Bay to Saco Bay; Mass. Bay, and Cape Cod Bay	< 50	Bottom habitats in close proximity to hard bottom nesting areas
Ocean pout	adult	GOME, GB, southern NE, middle Atlantic south to Delaware Bay and the following estuaries: Passamaquoddy Bay to Saco Bay; Mass. Bay, Boston Harbor, and Cape Cod Bay	< 80	Bottom habitats, often smooth bottom near rocks or algae
Offshore hake	juvenile	Outer continental shelf of GB and southern NE south to Cape Hatteras, NC	170 - 350	Bottom habitats
Offshore hake	adult	Outer continental shelf of GB and southern NE south to Cape Hatteras, NC	150 - 380	Bottom habitats
Pollock	juvenile	GOME, GB, and the following estuaries: Passamaquoddy Bay to Saco Bay; Great Bay to Waquoit Bay; Long Island Sound, Great South Bay	0 – 250	Bottom habitats with aquatic vegetation or a substrate of sand, mud, or rocks
Pollock	adult	GOME, GB, southern NE, and middle Atlantic south to New Jersey and the following estuaries: Passamaquoddy Bay, Damariscotta R., Mass Bay, Cape Cod Bay, Long Island Sound	15 – 365	Hard bottom habitats including artificial reefs

Species	Life Stage	Geographic Area of EFH	Depth (meters)	EFH Description
Red hake	juvenile	GOME, GB, continental shelf off southern NE, and middle Atlantic south to Cape Hatteras and the following estuaries: Passamaquoddy Bay to Saco Bay; Great Bay, Mass. Bay to Cape Cod Bay; Buzzards Bay to Conn. R.; Hudson R./ Raritan Bay, and Chesapeake Bay	< 100	Bottom habitats with substrate of shell fragments, including areas with an abundance of live scallops
Red hake	adult	GOME, GB, continental shelf off southern NE, and middle Atlantic south to Cape Hatteras and the following estuaries: Passamaquoddy Bay to Saco Bay; Great Bay, Mass. Bay to Cape Cod Bay; Buzzards Bay to Conn. R.; Hudson R./ Raritan Bay, Delaware Bay, and Chesapeake Bay	10 - 130	Bottom habitats in depressions with a substrate of sand and mud
Redfish	juvenile	GOME, southern edge of GB	25 - 400	Bottom habitats with a substrate of silt, mud, or hard bottom
Redfish	adult	GOME, southern edge of GB	50 - 350	Bottom habitats with a substrate of silt, mud, or hard bottom
Silver hake	juvenile	GOME, GB, continental shelf off southern NE, middle Atlantic south to Cape Hatteras and the following estuaries: Passamaquoddy Bay to Casco Bay, Mass. Bay to Cape Cod Bay	20 – 270	Bottom habitats of all substrate types
Winter flounder	adult	GB, inshore areas of GOME, southern NE, middle Atlantic south to Delaware Bay and the following estuaries: Passamaquoddy Bay to Chincoteague Bay	1 - 100	Bottom habitats including estuaries with substrates of mud, sand and gravel
Witch flounder	juvenile	GOME, outer continental shelf from GB south to Cape Hatteras	50 - 450 to 1500	Bottom habitats with fine grained substrate
Witch flounder	adult	GOME, outer continental shelf from GB south to Chesapeake Bay	25 - 300	Bottom habitats with fine grained substrate
Yellowtail flounder	adult	GB, GOME, southern NE continental shelf south to Delaware Bay and the following estuaries: Sheepscot R., Casco Bay, Mass. Bay to Cape Cod Bay	20 - 50	Bottom habitats with substrate of sand or sand and mud
Black sea bass	juvenile	Demersal waters over continental shelf from GOME to Cape Hatteras, NC, also includes estuaries from Buzzards Bay to Long Island Sound; Gardiners Bay, Barnegat Bay to Chesapeake Bay; Tangier/ Pocomoke Sound, and James River	1 - 38	Rough bottom, shellfish and eelgrass beds, manmade structures in sandy-shelly areas, offshore clam beds, and shell patches may be used during wintering
Black sea bass	adult	Demersal waters over continental shelf from GOME to Cape Hatteras, NC, also includes estuaries: Buzzards Bay, Narragansett Bay, Gardiners Bay, Great South Bay, Barnegat Bay to Chesapeake Bay; Tangier/ Pocomoke Sound, and James River	20 - 50	Structured habitats (natural and manmade), sand and shell substrates preferred
Scup	juvenile	Continental shelf from GOME to Cape Hatteras, NC includes the following estuaries: Mass. Bay, Cape Cod Bay to Long Island Sound; Gardiners Bay to Delaware Inland Bays; and Chesapeake Bay	(0 - 38)	Demersal waters north of Cape Hatteras and inshore on various sands, mud, mussel, and eelgrass bed type substrates

Species	Life Stage	Geographic Area of EFH	Depth (meters)	EFH Description
Tilefish	juvenile	US/Canadian boundary to VA/NC boundary (shelf break, submarine canyon walls, and flanks: GB to Cape Hatteras)	76 - 365	Rough bottom, small burrows, and sheltered areas; substrate rocky, stiff clay, human debris
Tilefish	adult	US/Canadian boundary to VA/NC boundary (shelf break, submarine canyon walls, and flanks: GB to Cape Hatteras)	76 - 365	Rough bottom, small burrows, and sheltered areas; substrate rocky, stiff clay, human debris
Barndoor skate	juvenile	Eastern GOME, GB, Southern NE, Mid-Atlantic Bight to Hudson Canyon	l0 - 750, mostly < 150	Bottom habitats with mud, gravel, and sand substrates
Barndoor skate	adult	Eastern GOME, GB, Southern NE, Mid-Atlantic Bight to Hudson Canyon	l0 - 750, mostly < 150	Bottom habitats with mud, gravel, and sand substrates
Clearnose skate	juvenile	GOME, along shelf to Cape Hatteras, NC; includes the estuaries from Hudson River/Raritan Bay south to the Chesapeake Bay mainstem	0 – 500, mostly < 111	Bottom habitats with substrate of soft bottom along continental shelf and rocky or gravelly bottom
Clearnose skate	adult	GOME, along shelf to Cape Hatteras, NC; includes the estuaries from Hudson River/Raritan Bay south to the Chesapeake Bay mainstem	0 – 500, mostly < 111	Bottom habitats with substrate of soft bottom along continental shelf and rocky or gravelly bottom
Little skate	juvenile	GB through Mid-Atlantic Bight to Cape Hatteras, NC; includes the estuaries from Buzzards Bay south to the Chesapeake Bay mainstem	0 - 137, mostly 73 - 91	Bottom habitats with sandy or gravelly substrate or mud
Little skate	adult	GB through Mid-Atlantic Bight to Cape Hatteras, NC; includes the estuaries from Buzzards Bay south to the Chesapeake Bay mainstem	0 - 137, mostly 73 - 91	Bottom habitats with sandy or gravelly substrate or mud
Rosette skate	juvenile	Nantucket shoals and southern edge of GB to Cape Hatteras, NC	33 - 530, mostly 74 - 274	Bottom habitats with soft substrate, including sand/mud bottoms, mud with echinoid and ophiuroid fragments, and shell and pteropod ooze
Rosette skate	adult	Nantucket shoals and southern edge of GB to Cape Hatteras, NC	33 - 530, mostly 74 - 274	Bottom habitats with soft substrate, including sand/mud bottoms, mud with echinoid and ophiuroid fragments, and shell and pteropod ooze
Smooth skate	juvenile	Offshore banks of GOME	31 – 874, mostly 110 - 457	Bottom habitats with a substrate of soft mud (silt and clay), sand, broken shells, gravel and pebbles
Smooth skate	adult	Offshore banks of GOME	31 – 874, mostly 110 - 457	Bottom habitats with a substrate of soft mud (silt and clay), sand, broken shells, gravel and pebbles

Species	Life Stage	Geographic Area of EFH	Depth (meters)	EFH Description
Thorny skate	juvenile	GOME and GB	18 - 2000, mostly 111 - 366	Bottom habitats with a substrate of sand, gravel, broken shell, pebbles, and soft mud
Thorny skate	adult	GOME and GB	18 - 2000, mostly 111 - 366	Bottom habitats with a substrate of sand, gravel, broken shell, pebbles, and soft mud
Winter skate	juvenile	Cape Cod Bay, GB, southern NE shelf through Mid-Atlantic Bight to North Carolina; includes the estuaries from Buzzards Bay south to the Chesapeake Bay mainstem	0 - 371, mostly < 111	Bottom habitats with substrate of sand and gravel or mud
Winter skate	adult	Cape Cod Bay, GB southern NE shelf through Mid-Atlantic Bight to North Carolina; includes the estuaries from Buzzards Bay south to the Chesapeake Bay mainstem	0 - 371, mostly < 111	Bottom habitats with substrate of sand and gravel or mud
White hake	juvenile	GOME, southern edge of GB, southern NE to middle Atlantic and the following estuaries: Passamaquoddy Bay to Great Bay; Mass. Bay to Cape Cod Bay	5 - 225	Pelagic stage - pelagic waters; demersal stage - bottom habitat with seagrass beds or substrate of mud or fine grained sand

4.5 Human Environment, Vessels, Ports and Communities

This section updates information provided in the annual SAFE Report for the Monkfish FMP, adding data for FY2012.

4.5.1 Vessels and Fishery Sectors

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

4.5.1.1 Permits

In 2012, there were 675 monkfish limited access permits, of which 296 were Category C permits holding limited access permits in either the multispecies (55%) or scallop (54%) fisheries, and 296 were Category D permits, primarily (98%) holding limited access multispecies permits (Table 4.12). Overall, 69% of monkfish limited access permit holders also hold multispecies limited access permits. Vessels in all monkfish permit categories also hold limited access permits in a number of New England and Mid-Atlantic fisheries. The number and percent of monkfish vessels has decreased slightly from the 2009 SAFE Report (see Section 4.5, Monkfish FMP FW 7). Since Amendment 2, there were an additional seven Category H limited access permits issued for vessels fishing off the North Carolina/Virginia coast (Table 4.12).

Table 4.12. Number and percent of monkfish limited access vessels also issued a limited access permit in other fisheries in 2012, by permit category.

MONKFISH PERMIT CATEGORY	NUMBER OF MONKFISH PERMITS	NUMBER OF MONKFISH VESSELS ALSO ISSUED A LIMITED ACCESS PERMIT FOR:										
		BLACK SEA BASS	SUMMER FLOUNDER	HERRING	LAGC IFQ SCALLOP	LOBSTER	MULTI-SPECIES	OCEAN QUAHOG	RED CRAB	SCALLOP	SCUP	SQUID/ MACKEREL/ BUTTERFISH
A	22	14	10	1	5	15	2				14	5
B	44	21	8		3	22	3				13	6
C	296	111	230	19	154	244	163			161	120	104
D	296	114	185	24	128	267	290			17	140	100
F	9	9	9	4	3	9	9			1	9	9
H	8	2	1		1							2
TOTAL	675	271	443	48	294	557	467	0	0	179	296	226

MONKFISH PERMIT CATEGORY	NUMBER OF MONKFISH PERMITS	PERCENT OF MONKFISH VESSELS ALSO ISSUED A LIMITED ACCESS PERMIT FOR:										
		BLACK SEA BASS	SUMMER FLOUNDER	HERRING	LAGC IFQ SCALLOP	LOBSTER	MULTI-SPECIES	OCEAN QUAHOG	RED CRAB	SCALLOP	SCUP	SQUID/ MACKEREL/ BUTTERFISH
A	22	64%	45%	5%	23%	68%	9%	0%	0%	0%	64%	23%
B	44	48%	18%	0%	7%	50%	7%	0%	0%	0%	30%	14%
C	296	38%	78%	6%	52%	82%	55%	0%	0%	54%	41%	35%
D	296	39%	63%	8%	43%	90%	98%	0%	0%	6%	47%	34%
F	9	100%	100%	44%	33%	100%	100%	0%	0%	11%	100%	100%
H	8	25%	13%	0%	13%	0%	0%	0%	0%	0%	0%	25%
TOTAL	675	40%	66%	7%	44%	83%	69%	0%	0%	27%	44%	33%

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 4.13 shows that an increase in the number of category E permits during the first few years of the FMP, followed by a decline since 2005, from 2,379 permits to 1,763 permits in 2012.

Table 4.13. Monkfish open-access (Category E) permits issued each year since implementation of the FMP in 1999.

Fishing Year	Number of permits
1999	1,466
2000	1,882
2001	1,991
2002	2,142
2003	2,120
2004	2,256
2005	2,379
2006	2,310
2007	2,265
2008	2,163
2009	2,066
2010	1,998
2011	1,827
2012	1,763
TOTAL	**4,651**

4.5.1.2 Landings and Revenues

Table 4.14 shows monthly landings for FY2012 by area and gear, as well as total monthly landings since FY 2002. Table 4.15 shows annual landings by management area FY 1999-2012. Landings in both areas combined have declined each year since FY 2005, with the peak fishing year in FY 2003, and were at the lowest level since the inception of the FMP in 1999 (Figure 4.3). Monkfish landings increased between FY 2002 and FY 2003, principally due to the increased trip limits in the SMA, then declined in FY 2004 as trip limits and DAS allocations

were reduced in that area. In FY 2005 total landings increased by 1,272 mt, ~ 7%, due to an increase in SMA landings as a result of increased trip limits and DAS allocations, despite a decline of 20% in NMA landings from the previous year. NMA landings have declined each year since FY 2001, although trip limits were only established in FY 2007, and in FY 2008 were about 24% of what they were at the peak. The NMA harvest was below the target TAL for FY 2011 (63%) and FY 2012 (67%); the SMA harvest was also below the target TAL for FY 2011 (65%) and FY 2012 (58%).

Table 4.16 shows monthly landings by gear from the dealer reports for FY 2012, 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, gutted fish. The lower ratio of landed weight to live weight for otter trawls (0.35), compared to gillnets (0.80), is the result of a greater proportion of tails being landed by otter trawls, while gillnet vessels land mostly whole fish. Table 4.16 includes all landings in the dealer database, while other tables reporting landed weights are filtered by permit category, and, therefore, may not include some dealer landings for which there is no permit number associated. There is no available data for hook gear in FY 2012 from November through February in both live weight and landed weight.

Table 4.17 is based on fishing year and landed weights, and indicates a decreasing trend in revenues and landings. Figure 4.4 shows the long-term trend in landings and revenues based on a fishing year. While landings have declined since the pre-FMP peak in 1997, nominal revenues have declined to a lesser degree since that time. According to Table 4.17, the monkfish market fluctuates annually with periods of increasing and decreasing landings leading to both revenue increases and decreases.

Table 4.14. Monkfish landings by area, gear and month for FY2012 (converted to live weight).

	MAY - 2012	JUN - 2012	JUL - 2012	AUG - 2012	SEP - 2012	OCT - 2012	NOV - 2012	DEC - 2012	JAN - 2013	FEB - 2013	MAR - 2013	APR - 2013	MAY 2012 - APR 2013		2012*		2011*		Fishing Year* Landings
															May-Apr FY'12 as a % of Target TAL	Target TAL	May-Apr FY '11 as a % of Target TAL	Target TAL	
													Metric Tons	Percent of Area		Metric Tons		Metric Tons	Metric Tons
NORTHERN	208	277	309	304	374	407	305	339	346	315	317	418	3,920	43%	67%	5,854	63%	5,854	
OTTER TRAWL	188	200	190	205	329	358	279	327	332	314	312	412	3,449	38%	59%		53%		
GILLNET	18	74	102	84	34	32	16	7	3	1	3	5	379	4%	6%		9%		
HOOK	0	0	0	0	0	0	0	0	0	0	0	0	0	0%	0%		0%		
OTHER GEARS	1	2	17	16	10	17	11	4	11	0	1	1	92	1%	2%		1%		
SOUTHERN	1,366	988	193	90	65	265	242	467	387	215	337	570	5,184	57%	58%	8,925	65%	8,925	
OTTER TRAWL	29	9	12	26	11	31	79	206	97	109	217	159	984	11%	11%		15%		
GILLNET	1,240	856	119	9	20	214	125	222	280	96	96	369	3,645	40%	41%		45%		
HOOK	0	0	0	0	0	0	0	0	0	0	0	0	0	0%	0%		0%		
OTHER GEARS	98	124	62	55	33	20	37	39	10	10	24	41	554	6%	6%		5%		
ALL AREAS	1,574	1,266	502	394	439	672	547	806	733	530	654	988	9,104	100%					
OTTER TRAWL	217	209	202	230	341	390	358	533	429	423	529	571	4,433	49%					
GILLNET	1,258	930	221	93	55	245	141	229	282	97	100	374	4,025	44%					
HOOK	0	0	0	0	0	0	0	0	0	0	0	0	0	0%					
OTHER GEARS	99	126	80	71	43	37	48	43	21	11	25	43	646	7%					
LANDINGS - ALL AREAS																			
Fishing Year 2012	1,574	1,266	502	394	439	672	547	806	733	530	654	988	9,104						9,104
Fishing Year 2011	1,044	1,066	542	338	385	530	809	982	867	1,000	929	1,008	9,499						9,499
Fishing Year 2010	928	839	422	306	282	350	561	643	716	712	730	830	7,318						7,318
Fishing Year 2009	1,253	1,182	647	396	331	479	554	418	753	696	644	795	8,148						8,148
Fishing Year 2008	1,641	1,359	674	537	539	665	808	812	1,084	703	634	824	10,279						10,279
Fishing Year 2007	1,413	1,206	917	776	695	934	1,163	1,314	1,088	897	737	1,090	12,230						12,230
Fishing Year 2006	1,314	1,490	1,181	909	880	1,104	1,140	1,130	967	671	951	848	12,586						12,586
Fishing Year 2005	2,040	3,040	1,862	1,487	1,343	1,100	1,616	1,413	1,523	1,143	1,309	1,313	19,189						19,189
Fishing Year 2004	1,806	1,979	1,581	1,380	1,304	1,243	1,803	1,681	1,264	1,173	1,235	1,478	17,927						17,927
Fishing Year 2003	2,681	3,199	1,913	1,746	1,420	2,253	2,823	1,907	1,976	2,386	2,172	1,797	26,273						26,273
Fishing Year 2002	1,574	2,093	1,489	1,382	1,524	1,643	1,937	2,203	2,015	1,762	2,631	1,553	21,807						21,807

Table 4.15. NMA and SMA monkfish landings, FY 1999-2012.

Year	NFMA (metric tons)	SFMA (metric tons)
1999	9,720	14,311
2000	11,859	7,960
2001	14,853	11,069
2002	14,491	7,478
2003	14,155	12,198
2004	11,750	6,193
2005	9,533	9,656
2006	6,677	5,909
2007	5,050	7,180
2008	3,528	6,751
2009	3,344	4,800
2010	2,834	4,484
2011	3,699	5,801
2012	3,920	5,184

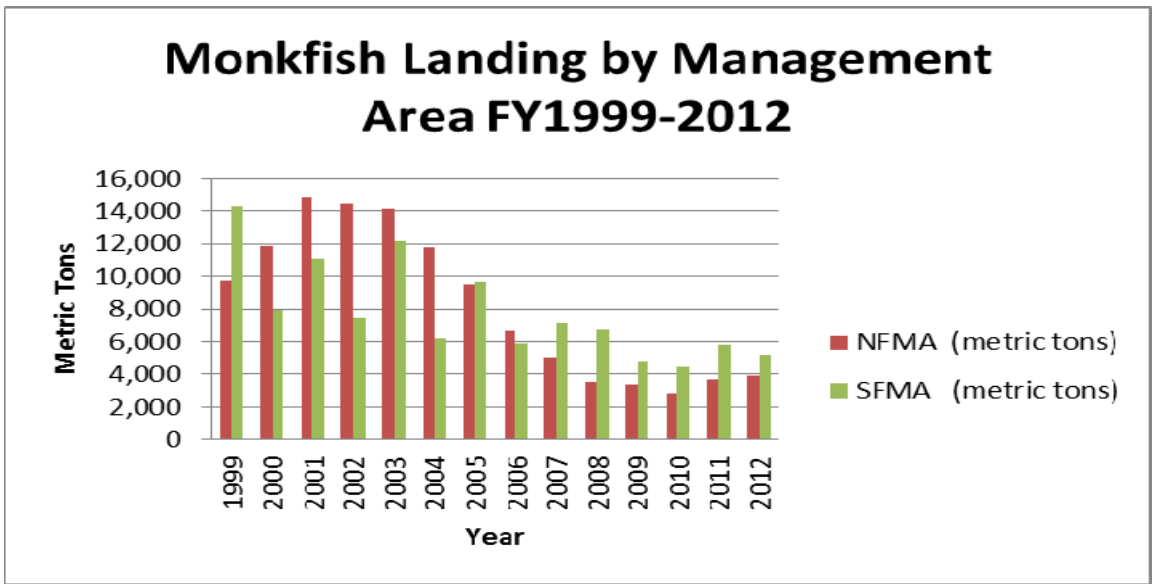


Figure 4.3. NMA and SMA monkfish landings, FY 1999-2012.

Table 4.16. FY 2012 monkfish landings from dealer reports, showing live weight (top) and landed weights (bottom).

Live Weight for FY 2012

Month	Otter Trawl	Scallop Dredge	Gillnet	Hook	Other	Total Pounds
May	534,378	92,917	2,343,810	7,243	367,273	3,345,621
June	356,874	111,385	1,828,446	4,421	378,126	2,679,252
July	328,336	90,368	404,560	3,603	261,156	1,088,023
August	350,815	73,510	165,126	3,599	263,330	856,380
September	475,218	69,163	109,040	544	302,699	956,664
October	584,165	55,088	484,952	211	352,600	1,477,016
November	543,917	68,620	254,923		323,227	1,190,687
December	850,601	28,706	519,343		366,125	1,764,775
January	746,393	13,136	586,099		272,893	1,618,521
February	713,356	7,223	194,050		244,118	1,158,747
March	921,864	30,487	213,344	46	252,894	1,418,635
April	998,743	52,068	761,972	20	352,349	2,165,152
TOTAL	**7,404,660**	**692,671**	**7,865,665**	**19,687**	**3,736,790**	**19,719,473**

Landed Weight for FY2012

Month	Otter Trawl	Scallop Dredge	Gillnet	Hook	Other	Total Pounds
May	241,350	31,079	1,926,915	5,855	172,372	2,377,571
June	114,129	34,308	1,486,037	2,175	153,367	1,790,016
July	102,720	28,275	277,706	1,278	95,831	505,810
August	110,965	23,602	78,359	1,264	82,925	297,115
September	158,519	22,651	56,968	180	94,605	332,923
October	206,192	20,483	399,127	126	119,476	745,404
November	187,966	25,055	194,190		115,513	522,724
December	296,797	10,766	432,778		131,536	871,877
January	264,552	4,121	518,004		93,452	880,129
February	241,806	2,176	165,836		82,948	492,766
March	309,617	9,233	170,150	14	78,453	567,467
April	346,751	15,963	625,224	6	123,011	1,110,955
TOTAL	**2,581,364**	**227,712**	**6,331,294**	**10,898**	**1,343,489**	**10,494,757**

Note: Table does not include landings in the dealer database for which there is no permit number associated, while other tables reporting landed weights are not filtered by permit category, and, therefore, include all dealer landings.

Table 4.17. FY landings (in landed weights) and revenues, and revenue per landed weight (1995-2012).

Fishing Year (May 1 - April 30)	Landings* (1,000 lbs. landed wt.)	Revenues* ($1,000)
1995	18,416	$24,759
1996	20,733	$26,188
1997	21,774	$30,127
1998	24,156	$34,682
1999	26,077	$48,714
2000	23,423	$46,123
2001	30,520	$42,354
2002	25,312	$35,256
2003	29,321	$37,471
2004	18,377	$30,945
2005	22,818	$42,640
2006	14,751	$28,559
2007	14,223	$29,145
2008	11,714	$23,307
2009	9,652	$18,599
2010	8,725	$20,252
2011	11,456	$28,886
2012	10,332	$22,025

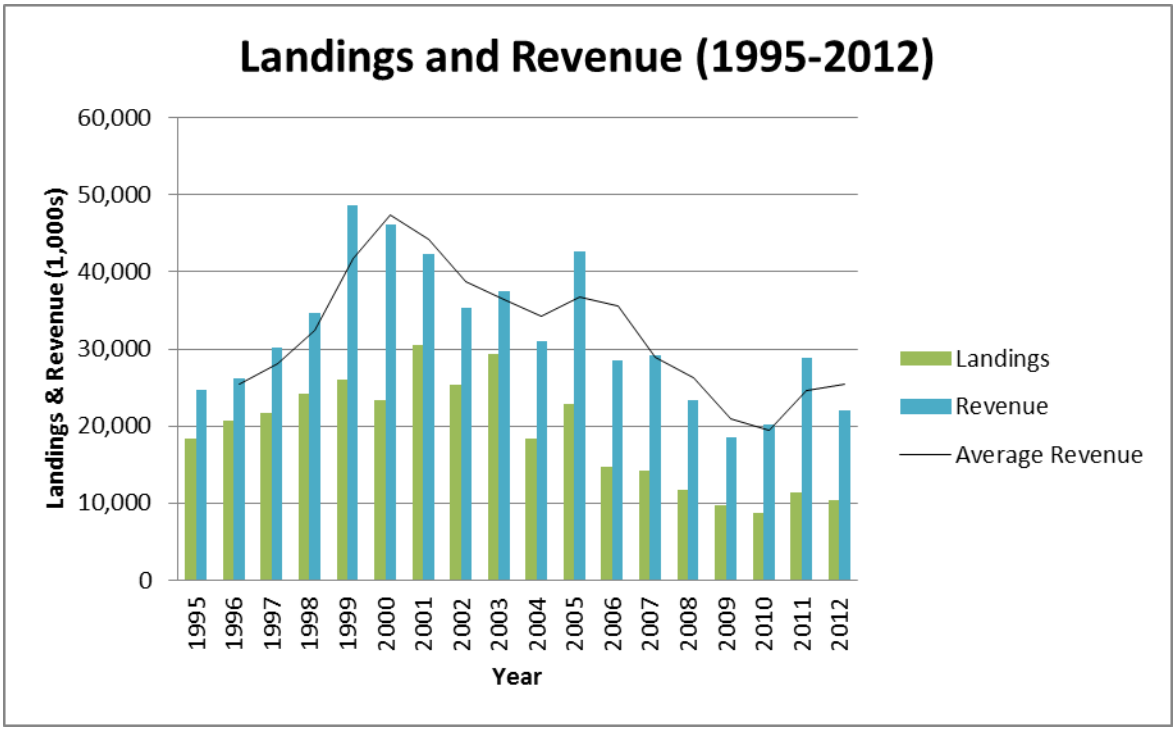


Figure 4.4. Monkfish landings and revenue, 1995-2012.

Figure 4.5 illustrates the seasonal pattern of monkfish landings in FY 2012 by month and gear type. The predominant gears are gillnet, landing approximately 2.3 million lb in May, and otter trawl landing approximately 998,000 lb in April. A small proportion of landings occur during the winter months, but a much larger proportion during the spring/early summer months when fish are migrating from deeper water.

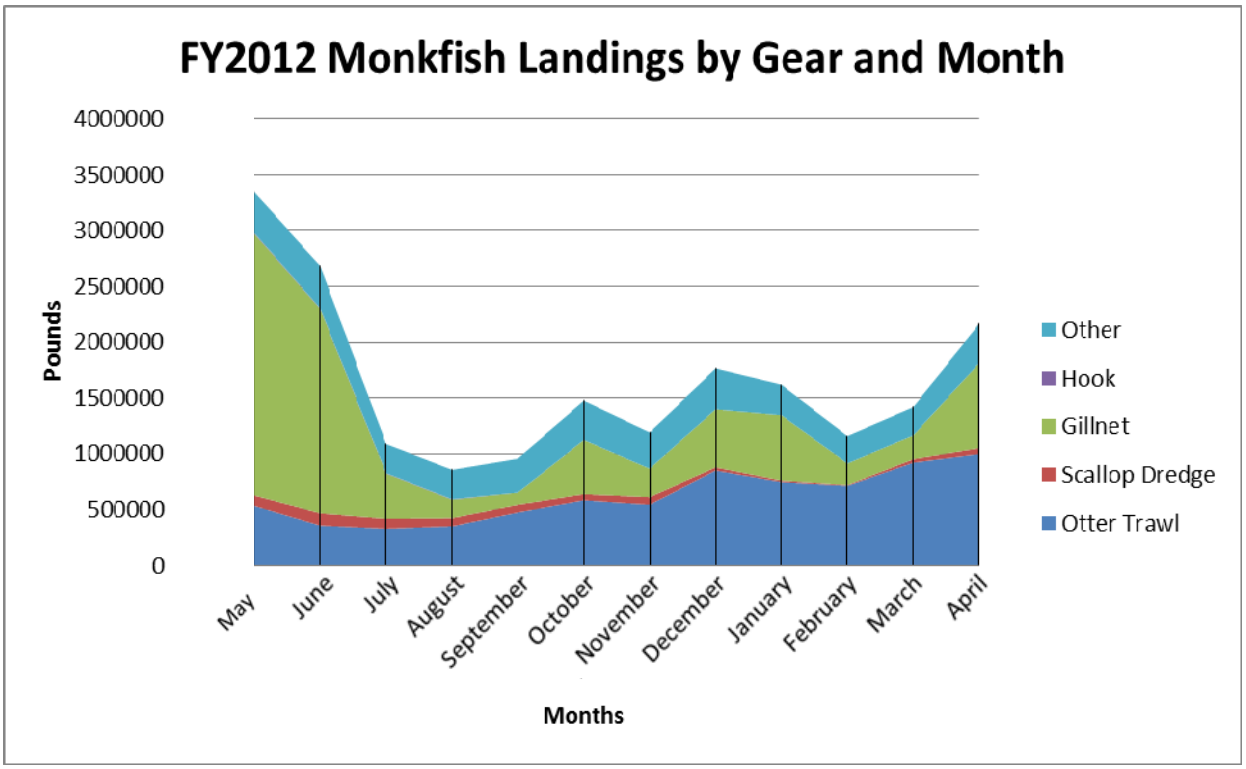


Figure 4.5. Monkfish landings by gear and month (FY2012) in pounds (live weight).

While Massachusetts continues to account for the greatest proportion of all monkfish landings, all states have seen an overall decline in monkfish landings (Table 4.18) in recent years. The states with the largest decline have been Maine, New Hampshire and North Carolina, which used to be among the top landings ports. New Hampshire continues to show a marked decline after rising in importance through the early years of the FMP. Landings in Maine and New Hampshire are nearly entirely from the northern stock component, and the recent decline in those states' landings is reflective of the overall decline in landings from the northern stock component.

Tables 4.19 and 4.20 show monkfish landings and revenues as a percentage of total landings and revenues by permit categories for FY 2006-2012 (data for earlier years are available in the FW7 document). Data for Connecticut is shown separately to facilitate comparison with earlier landings data summarized in previous monkfish management actions that account for different ways that Connecticut reported state landings to NMFS.

Table 4.18. Total monkfish landings (landed weight), 2006-2012, by state

STATE	Thousands of Pounds of Monkfish						
	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
CT*	294	315	298	410	420	565	945
MA	7,265	6,137	4,842	4,182	3,811	4,964	4,303
MD	106	158	132	48	83	98	60
ME	987	526	303	178	115	257	345
NC	99	56	55	30	24	7	2
NH	442	200	157	125	86	74	38
NJ	2,523	3,021	2,670	1,637	1,418	1,676	1,389
NY	739	1,150	842	807	766	1,058	1,183
RI	1,833	2,099	1,890	1,733	1,598	2,116	1,500
VA	463	560	524	501	404	638	566
TOTAL	**14,751**	**14,223**	**11,714**	**9,652**	**8,725**	**11,455**	**10,332**

* CT data may include landings from vessels without a 2006-2012 Monkfish permit

Category A and B vessels continue to show a proportionally higher dependence on monkfish than Category C and D vessels, which also hold limited access permits in either scallops or multispecies. Category C vessels, of which 52% also hold scallop limited access permits, have seen their dependence on monkfish revenues decline steadily as revenues from scallops have increased. In FY 2012, these vessels obtained only 2.4% of their total revenues from monkfish compared to approximately 13% prior to the implementation of the FMP and the rebound in the scallop resource.

Table 4.19. Monkfish landings, 2006-2012, as a percentage of total landings by permit category.

Monkfish Permit Category	1,000 pounds, landed weight						
	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
A	631	932	992	731	775	951	934
% of Total A Landings	9.8%	8.3%	8.7%	9.1%	10.1%	7.3%	14.8%
B	1,204	1,627	1,555	1,118	1,209	1,579	1,428
% of Total B Landings	37.4%	43.1%	46.8%	27.4%	27.3%	28.3%	29.1%
C	5,569	4,948	3,785	3,272	2,951	3,800	3,262
% of Total C Landings	6.1%	5.2%	3.8%	3.3%	3.0%	3.9%	3.9%
D	5,831	5,348	4,496	3,736	3,182	4,303	3,534
% of Total D Landings	8.0%	7.2%	5.7%	4.3%	4.6%	4.7%	4.2%
H	242	202	228	217	142	295	231
% of Total H Landings	19.4%	20.0%	18.3%	21.8%	12.3%	29.3%	26.2%
E (Open Access)	979	905	603	422	280	340	418
% of Total E Landings	0.3%	0.3%	0.2%	0.1%	0.1%	0.1%	0.1%
F			1.59		23	98	123
% of Total F Landings			0.2%		0.7%	0.8%	0.7%
CT	294	262	53	156	166	90	402
% of Total CT Landings	2.8%	3.1%	1.9%	4.1%	3.5%	3.4%	7.9%
TOTAL MONK LANDED	14,751	14,223	11,714	9,652	8,725	11,456	10,332

Note: If necessary, Category F landings have been allocated to prior permit categories to protect confidentiality (Tables 4.19 and 4.20).

Table 4.20. Monkfish revenues, 2006-2012, as a percentage of total revenues by permit category.

Monkfish Permit Category	$1,000, nominal (not discounted)						
	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
A	$1,006	$1,296	$1,405	$995	$1,344	$1,905	$1,634
% of Total A Revenues	36.7%	40.6%	36.2%	35.1%	27.7%	31.8%	35.5%
B	$1,787	$2,277	$2,088	$1,564	$2,187	$3,211	$2,588
% of Total B Revenues	41.8%	45.3%	50.7%	36.6%	38.5%	40.2%	35.7%
C	$11,774	$12,247	$8,973	$7,667	$8,233	$11,125	$7,856
% of Total C Revenues	4.6%	4.8%	3.7%	3.2%	2.6%	3.0%	2.4%
D	$11,239	$10,338	$8,840	$6,846	$7,003	$10,642	$7,428
% of Total D Revenues	12.2%	11.6%	9.6%	8.0%	8.0%	9.4%	7.4%
H	$338	$242	$251	$228	$181	$512	$401
% of Total H Revenues	38.1%	29.7%	28.4%	33.7%	22.8%	47.5%	62.7%
E (Open Access)	$2,082	$2,320	$1,604	$1,040	$824	$1,049	$1,140
% of Total E Revenues	0.7%	0.7%	0.5%	0.3%	0.2%	0.2%	0.3%
F			$4		$73	$247	$237
% of Total F Revenues			1.3%		2.5%	2.6%	1.7%
CT	$333	$425	$141	$259	$407	$194	$740
% of Total CT Revenues	0.9%	1.1%	3.4%	3.1%	2.8%	4.1%	7.9%
TOTAL MONK REVENUE	$28,559	$29,145	$23,307	$18,599	$20,252	$28,886	$22,025

Vessel length category data (Tables 4.21 and 4.22) indicate a decreased reliance on monkfish for all size classes since peaking in 1999-2001, especially in most recent years. However, since FY 2009 the landings and revenues increased slightly in FY 2011 in some areas.

Table 4.21. Monkfish landings, 2006-2012, as a percentage of total landings by vessel length.

Vessel Length Category	1,000 pounds, landed weight						
	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
0-29 Feet	1	2	7	3	1	1	0
% of Total 0-29 Landings	0.1%	0.4%	1.4%	0.6%	0.2%	0.1%	0.1%
30-49 Feet	7,557	8,302	7,157	5,873	5,112	6,736	5,647
% of Total 30-49 Landings	14.4%	15.0%	11.7%	9.1%	8.0%	10.5%	9.8%
50-69 Feet	2,235	2,073	1,656	1,428	1,407	1,836	1,439
% of Total 50-69 Landings	3.8%	3.5%	2.6%	1.9%	2.0%	2.4%	1.5%
70-89 Feet	4,261	3,085	2,516	1,933	1,842	2,515	2,540
% of Total 70-89 Landings	2.2%	1.6%	1.3%	1.1%	1.0%	1.2%	1.4%
90+ Feet	403	498	324	259	197	278	304
% of Total 90+ Landings	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.2%
CT	294	262	53	156	166	90	402
% of Total CT Landings	2.8%	3.1%	1.9%	4.1%	3.5%	3.4%	7.9%
TOTAL MONK LANDED	14,751	14,223	11,714	9,652	8,725	11,456	10,332

Table 4.22. Monkfish revenues, 2006-2012, as a percentage of total revenues by vessel length.

Vessel Length Category	$1,000, nominal (not discounted)						
	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
0-29 Feet	$2	$6	$18	$8	$2	$2	$1
% of Total 0-29 Revenues	0.1%	0.4%	1.5%	0.8%	0.2%	0.1%	0.1%
30-49 Feet	$12,074	$12,403	$11,015	$8,782	$9,189	$13,694	$10,498
% of Total 30-49 Revenues	14.1%	14.1%	12.0%	10.7%	10.4%	13.3%	11.7%
50-69 Feet	$5,094	$5,403	$4,004	$3,454	$3,831	$5,385	$3,305
% of Total 50-69 Revenues	5.3%	5.7%	4.1%	3.8%	3.6%	4.2%	2.9%
70-89 Feet	$10,032	$9,403	$7,237	$5,423	$6,187	$8,675	$6,710
% of Total 70-89 Revenues	2.7%	2.4%	2.1%	1.5%	1.4%	1.6%	1.4%
90+ Feet	$1,024	$1,505	$891	$672	$634	$937	$770
% of Total 90+ Revenues	1.0%	1.4%	0.8%	0.6%	0.5%	0.6%	0.6%
CT	$333	$425	$141	$259	$407	$194	$740
% of Total CT Revenues	0.9%	1.1%	3.4%	3.1%	2.8%	4.1%	7.9%
TOTAL MONK REVENUE	$28,559	$29,145	$23,307	$18,599	$20,252	$28,886	$22,025

When viewed in aggregate, vessels that hold a monkfish permit are not significantly reliant on monkfish, as monkfish has accounted for approximately 2%-4.1% of total revenues since FY 2006 (Tables 4.23 and 4.24). While prior to FY 2004 the proportion of monkfish remained relatively constant (4-5% of landings, 7-11% of revenues, it has declined in recent years. The proportion of most other species remained relatively constant, although the proportion of scallop and dogfish landings and revenues has increased, reflecting continued improvements in both fisheries in recent years.

Table 4.23. Landings of monkfish and other species, 2006-2012, as a percent of total landings.

Species Category	1,000 pounds, landed weight						
	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
Dogfish	4,503	3,020	4,356	9,059	10,558	13,572	17,881
Dogfish % of Total Landings	0.9%	0.6%	0.8%	1.7%	2.1%	2.4%	3.4%
Fluke	10,353	7,263	7,966	9,836	13,735	12,280	11,680
Fluke % of Total Landings	2.0%	1.4%	1.4%	1.8%	2.8%	2.2%	2.2%
Monkfish	14,751	14,223	11,714	9,652	8,725	11,456	10,332
Monkfish % of Total Landings	2.9%	2.7%	2.1%	1.8%	1.8%	2.0%	2.0%
Multispecies	48,648	59,073	66,641	64,434	57,665	61,768	49,027
Multispecies % of Total Landings	9.4%	11.4%	11.8%	11.8%	11.6%	10.8%	9.4%
Scallops	59,365	59,026	51,593	54,739	55,230	57,651	51,866
Scallops % of Total Landings	11.5%	11.3%	9.1%	10.0%	11.1%	10.1%	9.9%
Skates	15,858	21,006	20,135	20,124	12,630	15,575	15,984
Skates % of Total Landings	3.1%	4.0%	3.6%	3.7%	2.5%	2.7%	3.1%
Other	361,855	356,853	402,589	379,632	337,797	398,307	365,549
Other % of Total Landings	70.2%	68.6%	71.3%	69.3%	68.1%	69.8%	70.0%
TOTAL LBS. LANDED	515,333	520,464	564,995	547,476	496,340	570,609	522,320

Table 4.24. Revenues of monkfish and other species, 2006-2012, as a percent of total revenues.

Species Category	$1,000, nominal (not discounted)						
	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
Dogfish	$ 1,178	$ 899	$ 1,378	$ 2,527	$ 2,887	$ 3,432	$ 4,186
Dogfish % of Total Revenues	0.2%	0.1%	0.2%	0.4%	0.4%	0.4%	0.5%
Fluke	$ 22,279	$ 17,578	$ 15,333	$ 18,626	$ 23,810	$ 25,697	$ 26,361
Fluke % of Total Revenues	3.2%	2.4%	2.3%	2.9%	3.0%	2.7%	3.1%
Monkfish	$ 28,559	$ 29,145	$ 23,307	$ 18,599	$ 20,252	$ 28,886	$ 22,025
Monkfish % of Total Revenues	4.1%	4.1%	3.5%	2.9%	2.5%	3.1%	2.6%
Multispecies	$ 74,460	$ 81,539	$ 82,539	$ 77,225	$ 81,408	$ 89,444	$ 71,759
Multispecies % of Total Revenues	10.7%	11.4%	12.6%	12.0%	10.2%	9.5%	8.5%
Scallops	$ 379,709	$ 389,638	$ 353,138	$ 358,771	$ 476,234	$ 573,828	$ 519,893
Scallops % of Total Revenues	54.5%	54.2%	53.7%	55.6%	59.9%	61.1%	61.5%
Skates	$ 5,460	$ 6,507	$ 5,458	$ 5,660	$ 4,749	$ 4,411	$ 4,403
Skates % of Total Revenues	0.8%	0.9%	0.8%	0.9%	0.6%	0.5%	0.5%
Other	$ 185,154	$ 192,953	$ 176,521	$ 163,566	$ 185,728	$ 213,016	$ 197,137
Other % of Total Revenues	26.6%	26.9%	26.8%	25.4%	23.4%	22.7%	23.3%
TOTAL REVENUE	$696,799	$718,260	$657,674	$644,975	$795,068	$938,713	$845,764

4.5.1.3 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. Beginning in FY 2005 seven vessels qualified for a permit Category H fishery under the provisions adopted in Amendment 2, for vessels fishing exclusively in the southernmost area of the fishery.

Until FW 4 which took effect in FY 2007, vessels were not required to use a monkfish DAS in the NMA, as there was no monkfish landing limits when a limited access vessel was on a multispecies DAS. Therefore, DAS usage was well below the total DAS allocated, and primarily reflected monkfish fishing activity in the SMA. Starting in FY 2007, vessels in both areas were required to use a monkfish DAS when exceeding the applicable incidental limit. The effect of this requirement shows the total DAS has remained reasonably the same from FY 2009-2012, with FY 2011 showing some slight increases. DAS used by permit category since 2009 is shown in Figure 4.6.

As shown in Table 4.25, only about 15% of the limited access vessels used at least one monkfish DAS in FY 2012, and the total DAS used was only about 15.4% of the total allocated. This represents a substantial amount of latent effort in the fishery. Even among active vessels (those that used at least one monkfish DAS), not all allocated DAS are used. Only about 47% of allocated DAS were used by active vessels. Part of this latent effort can be explained by the fact that nearly one-half of the permit category C vessels, 161 vessels, are limited access scallop vessels who choose not to use a scallop DAS to target monkfish under the monkfish DAS usage requirements because of the greater profitability of using scallop DAS to target scallops (Tables 4.12 and 4.26).

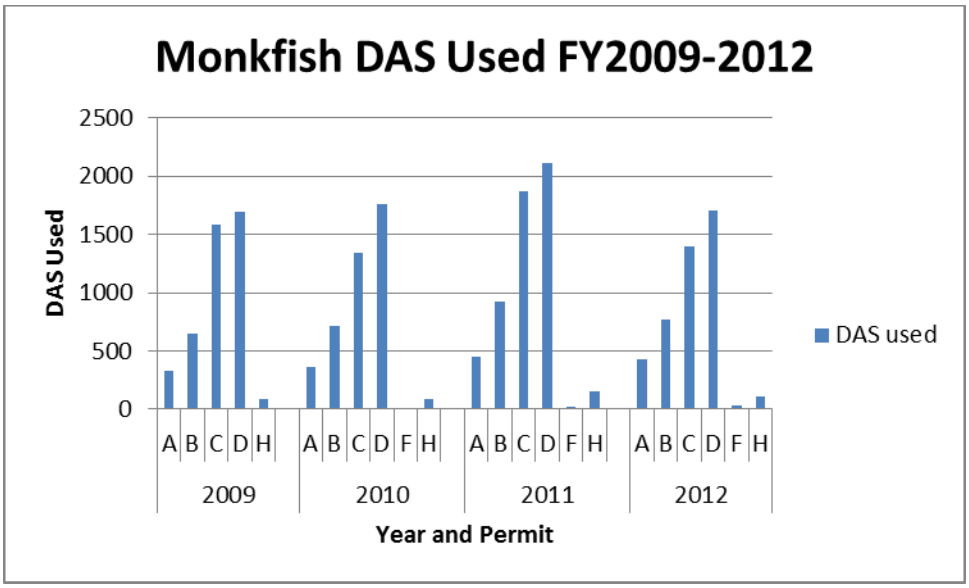


Figure 4.6. DAS used by permit category, FY 2009-2012.

A second reason for the unused DAS, even among active vessels, appears to be the result of the low monkfish DAS usage rate by vessels fishing in the NMA. For active vessels, (i.e., those that used at least one DAS) in FY 2012, the DAS usage rate is distinctly different between the two management areas. Of the 81 active vessels in the NMA, most were not constrained by the allocation of 40 DAS, plus four carryover DAS, and the average number of DAS used in the NMA was 14 DAS (Figure 4.7 and Table 4.26). In contrast, among the 175 active vessels in the SMA the average number of DAS used was 18.8 of their 32 available DAS, (28 plus four carryover) (Figure 4.8 and Table 4.26). The usage rate declined in the SMA from an average of 23.2 DAS during FY 2011. The usage rate for the NMA remained the same from the previous year, and has steadily increased since FY 2009, which had an average DAS usage rate of eight DAS.

Table 4.25. Monkfish DAS usage, FY 2012.

Permit Category	All Vessels			Active Vessels*		
	Total Number of Permits	DAS Allocated	DAS Used	Number of Active Vessels	DAS Allocated	DAS Used
A	22	946	429	20	859	429
B	44	1,905	773	34	1,472	773
C	296	12,796	1,393	68	2,941	1,393
D	296	12,771	1,705	89	3,852	1,705
F	9	90	38	5	50	38
H	8	346	110	8	346	110
TOTAL	**675**	**28,854**	**4,448**	**224**	**9,520**	**4,448**

* Active = vessels that used >0 monkfish DAS
Note: Permit Category A active vessel NMA DAS used are not included due to confidentiality.

Table 4.26. Monkfish-only, monkfish/multispecies and monkfish/scallop DAS usage by active vessels by area, FY 2012.

Permit Category	Area	Number of Active Vessels	Monkfish	Monkfish/ Multispecies	Monkfish/ Scallop	DAS Used	Average DAS Usage
A	NMA	4	4	0	0	4	1.0
B	NMA	5	23	0	0	23	4.6
C	NMA	37	0	686	0	686	18.5
D	NMA	35	0	451	0	451	12.9
Total		**81**	**27**	**1,137**	**0**	**1,164**	**14**
A	SMA	20	425	0	0	425	21.3
B	SMA	34	750	0	0	750	22.1
C	SMA	42	0	707	0	707	16.8
D	SMA	66	0	1,254	0	1,254	19.0
F	SMA	5	0	38	0	38	7.6
H	SMA	8	0	110	0	110	13.8
Total		**175**	**1,175**	**2,109**	**0**	**3,284**	**18.8**

* Active = vessels that used >0 monkfish DAS

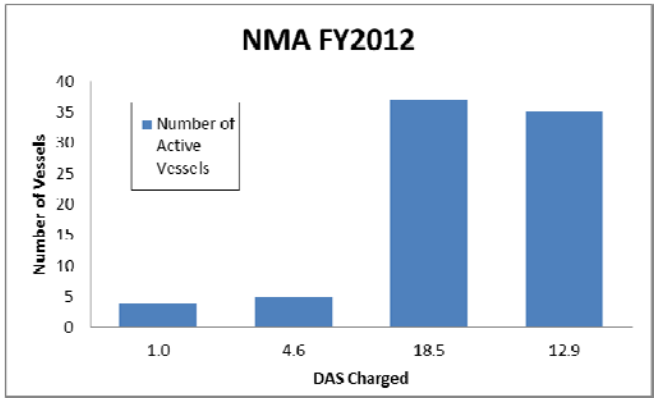


Figure 4.7. FY 2012 NMA monkfish DAS usage frequency distribution.

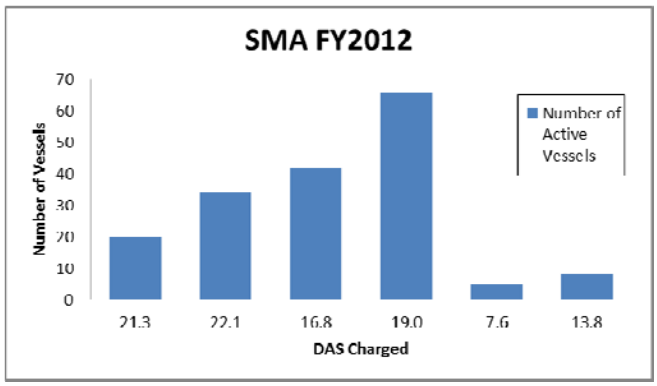


Figure 4.8. FY 2012 SMA monkfish DAS usage frequency distribution.

4.5.2 Ports and communities

This section updates information contained in the EA for Amendment 5. The Monkfish FMP references Amendments 5 and 7 to the Northeast Multispecies FMP and Amendment 4 to the 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 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 multispecies or scallop fisheries. For the purposes of this SAFE Report, "primary" and "secondary" monkfish ports are defined based on the dealer weighout data presented in Table 45 of the Monkfish FMP. "Primary monkfish ports" are those averaging more than $1,000,000 in monkfish revenues from 1994-1997, while "Secondary monkfish ports" are defined as those averaging more than $50,000 in monkfish revenues from 1994-1997.

Primary monkfish ports include:

- Portland, ME
- Boston, MA
- Gloucester, MA
- New Bedford, MA
- Long Beach/Barnegat Light, NJ
- 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
- Newport News, VA

Table 4.27 shows the distribution of monkfish permit holders by homeport and monkfish permit category for the six primary, 18 secondary, and "other" monkfish ports for FY 2006 and FY 2012. Table 4.28 shows monkfish 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 NMA, while the proportion of NMA landings in New Bedford has declined from previous years. Nearly all of Pt. Judith landings are from the SMA.

Portland and Boston landings are almost entirely from otter trawls. Otter trawls make up about 63% New Bedford landings, with the remainder split nearly even between gillnets and “other gear” (scallop dredge). New Hampshire, New York and New Jersey landings are predominately (>79%) caught by gillnet gear, while Rhode Island and Connecticut landings are about 60% and 77%, respectively, gillnets. This is similar to the distribution by gear for each port in previous fishing years, as reported in earlier SAFE reports, except that in FY 2003 New Bedford monkfish landings by scallop dredge (included in “other gear” in the table) were 18% of the port’s monkfish landings, while in FY 2004 those declined to 12% and in FY 2005 to 9%, before returning to 2003 levels in FY 2006 and increasing to current levels beginning in FY 2007.

Port landings and revenue data based on the May-April fishing year is presented in Tables 4.29 and 4.30, for primary and secondary ports (as identified in the original FMP), respectively, for FY 2010-2012. Data is based on the vessel’s homeport, but for FY 2012, on the vessel’s principal port of landing as indicated on the permit application. Vessels home ported in New Bedford recorded the highest monkfish landings and revenues from 1995-1999, and, although its share has declined in recent years, it remained the top port in 2012. In FY 2010, the port of Boston, MA, emerged as the homeport with the highest landings, but declined below New Bedford in 2011 and 2012. Portland, ME, which averaged nearly 1.8 million lb from 1995-2003 has declined steadily, and since 2009 has remained between 400-500 lb, with 494 lb being landed in FY 2012.

There has been an overall decline in landings and revenues from FY 2006-2012 that is reflected in the port data. In nearly all cases, the revenues from monkfish as a percentage of total revenues by port also declined, which is prominently observed in Portsmouth, NH and Boston, MA. However, Port Clyde, ME has had an increase from 3.8% in FY 2006 to 18.9% in FY 2012 (Table 4.31). While some of these effects could be due to increases in revenues from other fisheries (such as scallops in New Bedford), in most cases it can be attributed to declines in monkfish landings.

Table 4.27. Monkfish permits by port, FY 2006 and FY 2012

HOMEPORT		FY 2006 by Category								FY 2012 by Category							
		A	B	C	D	E	F	H	TOTAL	A	B	C	D	E	F	H	TOTAL
PRIMARY PORTS		7	16	208	173	381	X	X	785	9	19	198	134	311	X	X	672
Portland	ME	X	X	12	22	22	X	X	56	X	X	10	18	14	X	X	42
Boston	MA	X	X	32	29	65	X	X	127	X	X	27	12	31	X	X	71
Gloucester	MA	X	X	23	41	128	X	X	192	X	X	27	38	127	X	X	192
New Bedford	MA	X	X	111	46	90	X	X	250	X	X	112	43	73	X	X	230
Barnegat Light	NJ	X	15	11	17	27	X	X	73	6	19	9	4	23	X	X	61
Point Judith	RI	X	X	19	18	49	X	X	87	X	X	13	19	43	X	X	76
SECONDARY PORTS		X	10	61	76	515	X	X	664	X	9	47	82	416	7	X	564
Rockland	ME	X	X	X	X	7	X	X	8	X	X	X	X	X	X	X	5
Port Clyde	ME	X	X	4	4	X	X	X	11	X	X	X	4	X	X	X	6
South Bristol	ME	X	X	X	6	5	X	X	13	X	X	X	X	5	X	X	9
Ocean City	MD	X	X	X	X	26	X	X	26	X	X	X	X	21	X	X	22
Chatham	MA	X	X	X	15	58	X	X	73	X	X	X	17	55	X	X	72
Provincetown	MA	X	X	X	X	11	X	X	14	X	X	X	X	10	X	X	13
Scituate	MA	X	X	X	5	25	X	X	31	X	X	X	7	20	X	X	29
Plymouth	MA	X	X	X	X	19	X	X	23	X	X	X	X	11	X	X	12
Westport	MA	X	X	X	X	17	X	X	19	X	X	X	X	9	X	X	14
Portsmouth	NH	X	X	X	9	38	X	X	49	X	X	X	5	16	X	X	23
Point Pleasant	NJ	X	X	X	6	49	X	X	58	X	X	X	7	46	X	X	58
Cape May	NJ	X	X	25	7	123	X	X	156	X	X	25	12	99	X	X	138
Greenport	NY	X	X	X	X	6	X	X	7	X	X	X	X	X	X	X	4
Montauk	NY	X	4	7	8	77	X	X	96	X	4	X	9	80	6	X	101
Hampton Bay	NY	X	X	X	X	12	X	X	15	X	X	X	X	9	X	X	11
Newport	RI	X	X	7	7	15	X	X	31	X	X	X	7	12	X	X	22
Hampton	VA	X	X	X	X	10	X	X	12	X	X	X	X	5	X	X	6
Newport News	VA	X	X	8	X	14	X	X	22	X	X	7	X	11	X	X	19
OTHER PORTS		6	13	79	108	1,402	1	7	1,616	10	16	51	80	1,030	1	8	1,196
TOTAL		**14**	**39**	**348**	**357**	**2,298**	**2**	**7**	**3,065**	**22**	**44**	**296**	**296**	**1,757**	**9**	**8**	**2,432**

Note: Ports where there are fewer than three permits are marked "X" for confidentiality reasons.

Table 4.28. FY2012 monkfish landings by primary port (excluding Barnegat Light, NJ) and state, by gear.

PORT/ STATE	MAY - APRIL FY'12	STOCK AREAS				GEAR							
		NORTHERN		SOUTHERN		OTTER TRAWL		GILLNET		HOOK		OTHER GEARS	
	Metric Tons	Metric Tons	Percent	Metric Tons	Percent	Metric Tons	Percent	Metric Tons	Percent	Metric Tons	Percent	Metric Tons	Percent
Portland, ME	387	387	100%	0	0%	347	90%	38	10%	0	0%	3	1%
Gloucester, MA	1,247	1,242	100%	6	0%	1,049	84%	195	16%	0	0%	3	0%
Boston, MA	740	732	99%	8	1%	739	100%	0	0%	0	0%	0	0%
New Bedford, MA	2,202	1,276	58%	925	42%	1,394	63%	424	19%	0	0%	383	17%
Point Judith, RI	687	7	1%	679	99%	430	63%	241	35%	0	0%	15	2%
MAINE	489	489	100%	0	0%	443	91%	43	9%	0	0%	3	1%
NEW HAMPSHIRE	57	57	100%	0	0%	6	11%	51	89%	0	0%	0	0%
MASSACHUSETTS	4,663	3,352	72%	1,311	28%	3,214	69%	1,059	23%	0	0%	390	8%
RHODE ISLAND	1,155	10	1%	1,145	99%	434	38%	688	60%	0	0%	33	3%
CONNECTICUT	606	6	1%	600	99%	79	13%	469	77%	0	0%	59	10%
NEW YORK	796	2	0%	794	100%	96	12%	695	87%	0	0%	5	1%
NEW JERSEY	918	0	0%	918	100%	50	5%	729	79%	0	0%	139	15%
OTHER NORTHEAST	420	3	1%	416	99%	110	26%	291	69%	0	0%	18	4%
TOTAL	**9,104**	**3,920**	**43%**	**5,184**	**57%**	**4,433**	**49%**	**4,025**	**44%**	**0**	**0%**	**646**	**7%**

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. Gear data are based on vessel trip reports.

Table 4.29. Monkfish landing and revenues for monkfish primary ports, in FY 2010-2012.

HOME PORT	Monkfish Landings and Revenue			
		FY2010	FY2011	FY2012
Portland, ME	1,000 Lbs.	398.4	469.6	494.6
	$1,000	$1,461.1	$1,816.0	$1,448.8
Boston, MA	1,000 Lbs.	987.1	1,194.6	1,015.9
	$1,000	$2,661.0	$3,359.5	$2,527.0
Gloucester, MA	1,000 Lbs.	527.5	859.2	923.7
	$1,000	$1,599.3	$2,407.4	$2,064.7
New Bedford, MA	1,000 Lbs.	888.3	1,275.0	1,180.8
	$1,000	$2,667.0	$4,214.8	$2,933.8
Long Beach/Barnegat Light, NJ	1,000 Lbs.	905.1	1,059.3	912.4
	$1,000	$2,010.7	$2,483.5	$1,797.9
Point Judith, RI	1,000 Lbs.	308.2	437.5	297.3
	$1,000	$999.7	$1,571.8	$714.8

Table 4.30. Monkfish landing and revenues for monkfish secondary ports, in FY 2010-2012.

HOME PORT	Monkfish Landings and Revenue			
		FY2010	FY2011	FY2012
Rockland, ME	1,000 Lbs.	0.0	0.0	0.0
	$1,000	$0.0	$0.0	$0.0
Port Clyde, ME	1,000 Lbs.	20.4	42.8	38.4
	$1,000	$59.7	$144.0	$101.9
South Bristol, ME	1,000 Lbs.	67.9	95.8	68.4
	$1,000	$229.7	$330.8	$181.1
Ocean City, MD	1,000 Lbs.	0.8	0.5	1.3
	$1,000	$2.2	$1.7	$3.7
Chatham, MA	1,000 Lbs.	449.7	577.3	438.0
	$1,000	$725.3	$1,211.4	$729.0
Provincetown, MA	1,000 Lbs.	1.8	0.9	0.3
	$1,000	$5.8	$3.5	$0.8
Scituate, MA	1,000 Lbs.	87.6	102.2	81.4
	$1,000	$163.5	$228.0	$181.6
Plymouth, MA	1,000 Lbs.	30.6	23.4	36.5
	$1,000	$56.8	$39.6	$71.2
Westport, MA	1,000 Lbs.	152.1	297.9	136.9
	$1,000	$238.3	$539.2	$199.1
Portsmouth, NH	1,000 Lbs.	29.1	74.0	71.4
	$1,000	$67.3	$165.8	$143.1
Point Pleasant, NJ	1,000 Lbs.	77.9	118.2	83.8
	$1,000	$172.6	$274.5	$181.5
Cape May, NJ	1,000 Lbs.	63.1	72.2	104.5
	$1,000	$131.6	$182.8	$221.7
Greenport, NY	1,000 Lbs.	10.0	19.3	17.3
	$1,000	$31.3	$71.2	$44.3
Montauk, NY	1,000 Lbs.	420.7	623.6	713.5
	$1,000	$671.8	$1,216.7	$1,392.3
Hampton Bays, NY	1,000 Lbs.	72.0	102.7	121.5
	$1,000	$222.3	$244.1	$251.5
Newport, RI	1,000 Lbs.	408.1	522.4	337.6
	$1,000	$670.9	$1,040.6	$587.1
Hampton, VA	1,000 Lbs.	2.7	2.9	4.2
	$1,000	$5.9	$7.2	$11.8
Newport News, VA	1,000 Lbs.	7.0	2.9	7.1
	$1,000	$16.9	$7.5	$14.7

Table 4.31. Monkfish revenues, FY 2006-2012, as a percentage of total revenues by port.

HOME PORT		Number of Vessels (FY2012)	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012
1	Westport, MA	15	8.9%	8.7%	13.4%	23.7%	28.0%	37.1%	13.1%
2	Port Clyde, ME	18	3.8%	7.5%	3.3%	4.4%	12.9%	20.5%	18.9%
3	Plymouth, MA	10	13.6%	4.9%	0.0%	0.0%	0.0%	0.0%	0.0%
4	South Bristol, ME	10	0.9%	0.0%	0.0%	0.0%	0.0%	5.6%	2.1%
5	Portsmouth, NH	38	16.5%	8.7%	9.5%	6.8%	4.5%	4.9%	3.7%
6	Scituate, MA	33	6.5%	7.2%	9.1%	5.5%	7.2%	7.1%	3.4%
7	Boston, MA	41	24.1%	18.6%	14.7%	14.2%	12.5%	14.0%	12.1%
8	Portland, ME	76	19.2%	14.0%	9.2%	4.9%	3.9%	6.5%	6.6%
9	Rockland, ME	11	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
10	Long Beach/Barnegat Light, NJ	69	11.2%	12.8%	11.6%	8.3%	7.1%	7.7%	7.4%
11	Gloucester, MA	219	11.1%	10.5%	7.5%	6.5%	7.4%	8.0%	6.7%
12	Point Judith, RI	126	5.2%	8.4%	7.4%	6.8%	6.4%	8.2%	4.0%
13	Newport, RI	39	3.4%	6.6%	6.3%	7.7%	7.5%	8.9%	4.7%
14	Chatham, MA	101	14.6%	11.2%	9.7%	8.8%	9.6%	13.3%	9.3%
15	Point Pleasant, NJ	128	3.3%	3.3%	3.5%	2.9%	2.5%	2.6%	1.8%
16	New Bedford, MA	403	2.6%	2.8%	2.5%	1.8%	1.4%	1.6%	1.2%
17	Hampton Bays, NY	52	8.4%	14.9%	7.4%	11.1%	11.6%	11.6%	8.9%
18	Ocean City, MD	61	1.4%	1.9%	1.2%	0.9%	1.7%	2.7%	2.9%
19	Provincetown, MA	24	2.4%	2.1%	0.8%	0.6%	0.4%	0.4%	0.1%
20	Montauk, NY	101	3.4%	5.7%	4.9%	4.5%	4.3%	5.7%	7.8%
21	Cape May, NJ	190	0.8%	0.7%	0.3%	0.2%	0.2%	0.2%	0.2%
22	Greenport, NY	3	0.4%	1.4%	0.2%	4.1%	0.7%	0.1%	1.5%
23	Hampton, VA	46	0.3%	0.6%	0.3%	0.3%	0.5%	0.4%	0.7%
24	Newport News, VA	80	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.2%

5.0 Environmental Consequences of the Alternatives

Monkfish landings under each alternative were projected to evaluate the impacts of alternatives considered. Additional monkfish landings are associated with vessels issued an open access monkfish Category E permit, and those vessels operating in state waters. During FY 2012, Category E and state-permitted only vessels landed 956,918 lb of monkfish from the NMA and 1,387,474 lb from the SMA. Because this action would not revise fishing opportunities for Category E and state-permitted vessels, these landings are presumed to continue at similar levels starting in FY 2014. These landings must be added to directed/incidental landings by limited access monkfish permits to estimate total catch under each alternative and compare it to the TAL in each area. Total landings are then multiplied by an estimated discard rate to evaluate total catch under each alternative. This is then compared to ACT, ABC/ACL and OFL in each area to determine if total monkfish catch would remain within established catch limits. Table 5.1 summarizes expected monkfish landings and catch under each alternative, and compares such catch to established catch levels.

Table 5.1. Monkfish landings and catch (in lb) for each alternative considered in Monkfish Framework 8 compared to specified catch levels.

	NMA			SMA			
	No Action	**Alt 2**	**Alt 3 (Preferred)**	**No Action**	**Alt 2 (Preferred)**	**Alt 3**	**Alt 4**
Expected Limited Access Landings	8,285,639	11,553,347	10,665,481	9256932	11,710,117	17,441,459	10,074,079
Cat. E and state landings	956,918	956,918	956,918	1387474	1,387,474	1,387,474	1,387,474
Total Landings	9,242,557	12,510,265	11,622,399	10,644,406	13,097,591	18,828,933	11,461,553
Total Catch	10,481,060	14,186,641	13,179,800	13,411,952	16,502,965	23,724,456	14,441,557
TAL	12,905,861	12,905,861	12,905,861	19,676,257	19,676,257	19,676,257	19,676,257
% of TAL	72%	97%	90%	54%	67%	96%	58%
ACT	14,477,757	14,477,757	14,477,757	25,381,820	25,381,820	25,381,820	25,381,820
% of ACT	72%	98%	91%	53%	65%	93%	57%
ABC/ACL	16,737,495	16,737,495	16,737,495	27,152,132	27,152,132	27,152,132	27,152,132
% of ABC/ACL	63%	85%	79%	49%	61%	87%	53%
OFL	39,253,306	39,253,306	39,253,306	51,156,063	51,156,063	51,156,063	51,156,063
% of OFL	27%	36%	34%	26%	32%	46%	28%

5.1 Biological Impacts of Alternatives on Monkfish, Non-Target Species and Protected Species

5.1.1 Impact of DAS and Landing Limits Alternatives

5.1.1.1 NMA DAS and Landing Limit Alternatives

The Councils considered three DAS allocations and landing limits options for the NMA, including No Action, maintaining current monkfish landing limits and increasing monkfish DAS allocations, and increasing incidental monkfish landing limits for permit Categories C and D while fishing on a groundfish DAS combined with increased monkfish DAS allocations. The DAS allocations under the three alternatives range from 40 to 64 DAS, with the preferred alternative (Alternative 3) allocating 46 monkfish DAS. The No Action Alternative and Alternative 2 maintain status quo incidental monkfish landing limits, while Alternative 3 increases incidental monkfish landing limits for C and D permits to 600 lb tail weight/DAS and 500 lb tail weight/DAS, respectively. Status quo monkfish landing limits when fishing under a monkfish DAS that were implemented under FW 7 (NEFMC 2011b) for permit Categories A and C (1,250 lb tail weight/DAS) and B and D (600 lb tail weight/DAS) would apply to all alternatives.

5.1.1.1.1 No Action

Under the No Action Alternative described in Section 3.1.1, no revisions would be made to the current monkfish DAS allocations or landing limits in the NMA. The existing NMA monkfish landing limits would revert to those specified in FW 7(NEFMC 2011b) beginning in FY 2014, as summarized in Table 3.3 and described at http://www.nero.noaa.gov/regs/infodocs/monkfish_fishery_info-final.pdf. Further, the existing catch limits implemented under FW 7 would also continue under the No Action Alternative. Because the NMA catch limits would not change under the No Action Alternative, monkfish fishing effort and associated catch are not expected to differ dramatically from those observed in recent years.

Monkfish

NMA monkfish landings decreased during FY 2003-2010 (Table 5.2; Appendix 1). In FY 2011, FW 7 increased monkfish DAS allocations from 31 to 40 DAS in the NMA. Landings subsequently increased from 2,834 mt to 3,698 mt (63% of the 5,854 mt TAL) in 2011 and to 3,920 mt (67% of the TAL) in 2012 (Table 5.2). Monkfish landings in the NMA in FY 2013 through December 2013 have followed similar patterns to those observed in recent years. Total NMA monkfish landings through December 2013 are 21% below landings observed through December 2012 (Table 5.3 and Figure 5.1).

Table 5.2. NMA target monkfish TALs, trip limits, DAS allocations, and landings (FY 2000-2012).

Fishing Year	Target TAL (mt)	Trip Limits (lb)*		DAS Restrictions **	Landings (mt)	Percent of TAL
		Cat. A & C	Cat. B & D			
2000	5,673	n/a	n/a	40	11,859	209%
2001	5,673	n/a	n/a	40	14,853	262%
2002	11,674	n/a	n/a	40	14,491	124%
2003	17,708	n/a	n/a	40	14,155	80%
2004	16,968	n/a	n/a	40	11,750	69%
2005	13,160	n/a	n/a	40	9,533	72%
2006	7,737	n/a	n/a	40	6,677	86%
2007	5,000	1,250	470	31	5,050	101%
2008	5,000	1,250	470	31	3,528	71%
2009	5,000	1,250	470	31	3,344	67%
2010	5,000	1,250	470	31	2,834	57%
2011	5,854	1,250	600	40	3,698	63%
2012	5,854	1,250	600	40	3,920	67%
2013	5,854	1,250	600	40		

* Trip limits in pounds tail weight per DAS
** Excluding up to 10 DAS carryover, which was reduced to four DAS in 2007

Table 5.3. NMA Monkfish total landings in FY 2013 (May – December 2013).

NMA Landings	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Through Dec
2013	224	299	282	253	252	279	227	262	2,078
2012	208	277	309	304	374	407	305	339	2,523
% Difference Compared to 2012	**7%**	**7%**	**-10%**	**-20%**	**-48%**	**-46%**	**-34%**	**-29%**	**-21%**

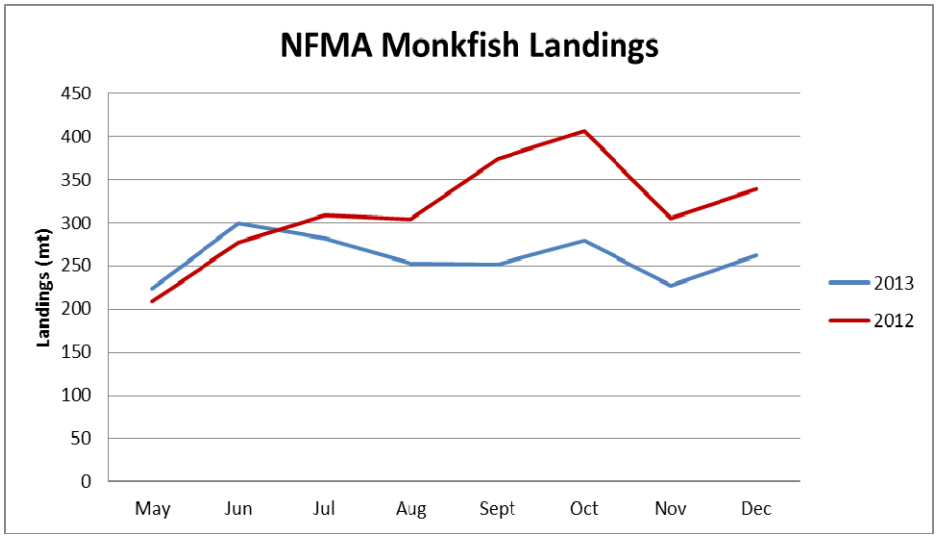


Figure 5.1. NMA monthly monkfish landings FY 2012 and 2013.

Recent DAS usage patterns suggest that monkfish vessels operating in the NMA have not used very many monkfish DAS in the NMA. For example, since FY 2009, monkfish DAS usage in the NMA has hovered around 25% of monkfish DAS used in both areas and 4% of total monkfish DAS allocated, averaging only 1,132 DAS used during FY 2009 - 2012 (Table 5.4; Figure 5.2). The potential for NMA monkfish vessels to redirect effort into the SMA has existed. However, as highlighted in Figure 5.2, monkfish DAS usage has remained static in the SMA in recent years as well. Given that approximately 30% of vessels routinely fish both in the NMA and SMA within the same FY (NEFMC 2011c), it is expected that effort may occur in both management areas. DAS usage patterns observed in recent years are not expected to change under the No Action Alternative.

Table 5.4. NMA DAS usage in FY 2009-2012.

Fishing year	NMA DAS Used	% of NMA DAS Used in NMA	% Total DAS Used in NMA
2009	1097	25%	4%
2010	1109	26%	5%
2011	1157	21%	4%
2012	1164	26%	4%
Average 2009 - 2012	1132	25%	4%

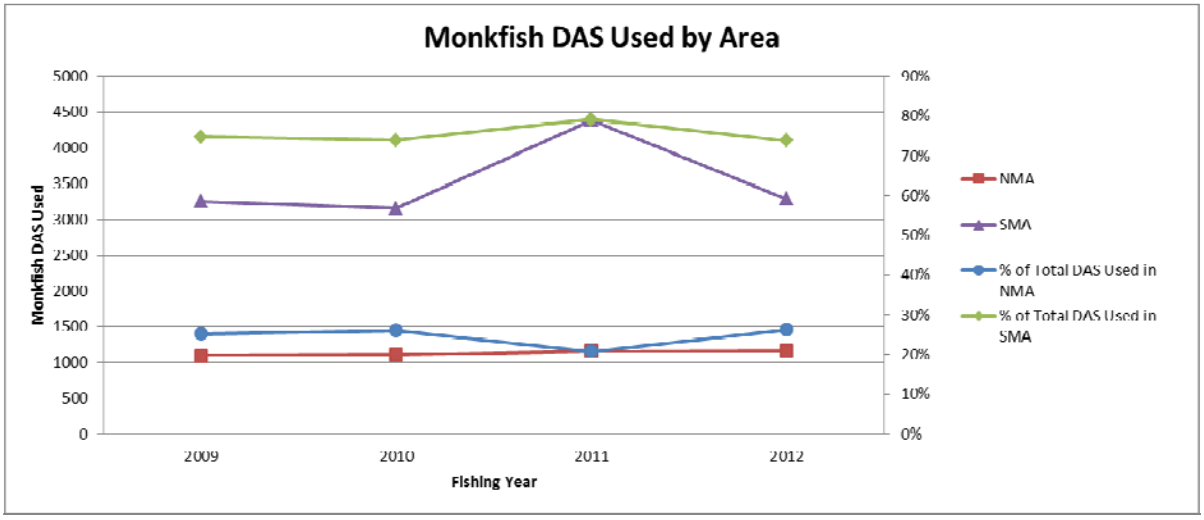


Figure 5.2. Monkfish DAS usage by area in FY 2009 – 2012.

To fully evaluate the impacts of the No Action Alternative, landings by both the directed fishery and incidental fishery need to be combined with discards to evaluate total monkfish catch against the NMA ACL. As noted above in Table 5.1, projected total monkfish landings by limited access monkfish permits under the No Action Alternative are estimated at 8,285,639 lb. When combined with an additional 956,918 lb of incidental monkfish landings by Category E and state-permitted vessels, total monkfish landings under the No Action Alternative are expected to be 9,242,557 lb, or 72 percent of the NMA TAL. The Monkfish FMP does not actively monitor discards, but rather applies a discard rate in each management area derived from the most recent stock assessment. The most recent discard rate was calculated to be 13.4% for the NMA (NEFSC 2013). Applying a 13.4% discard rate to FY 2014 projected landings results in overall

expected monkfish catch under the No Action Alternative of 10,481,059 lb from the NMA. This level of catch would be 72% of the NMA ACT, and 63% of the NMA ACL. Expected catch under the No Action Alternative would be approximately 27% of the updated NMA OFL proposed in this action (17,805 mt; Table 3.1). Although there is some uncertainty with the specification of biological and management reference points, as noted by the SSC, this amounts to an approximate buffer between expected catch and the OFL of nearly 75%. Thus, there is a low probability that the No Action Alternative would result in catch that exceeds the NMA ACT, ACL, or either specification of OFL, and a very low risk that overfishing will occur on monkfish in the NMA beginning in FY 2014.

As noted above, Amendment 5 implemented a reactive AM to ensure that excessive catch is accounted for and overages are prevented in the future. Under Amendment 5, ACL overages would be deducted from the applicable ACT during the second FY following the FY in which the overage occurred on a pound-for-pound basis. In addition, the Councils would be required to develop measures to ensure the reduced ACT is not exceeded. Therefore, the FMP contains adequate measures to not only minimize the likelihood that the NMA ACL would be exceeded, to mitigate the impacts of any overages that occur, and to prevent future overages from occurring. This should provide adequate protection that overfishing the NMA monkfish stock will not occur.

Based on the above, the No Action Alternative is unlikely to have negative biological impacts on the NMA monkfish stock for several reasons. First, the NMA monkfish stock is not overfished, and overfishing is not occurring. Second, there is a low probability that expected catch under the No Action Alternative would exceed the NMA TAL, ACT, ACL, or OFL specified to continue in FY 2014. This low level of catch would likely result in an F that would continue to remain below $F_{threshold}$. Since F dropped below $F_{threshold}$ starting in FY 2007 (Figure 4.1), monkfish biomass in the NMA has continued to increase. Therefore, if catch remains below the NMA TAL and ACT, it is likely that biomass will continue to increase above B_{target}, or at least remain stable around B_{MSY}. Finally, reactive AMs would be triggered if the ACL specified for this stock is exceeded, minimizing the potential for future excessive catch and mitigating any adverse impacts resulting from excessive harvest. As a result, the No Action Alternative is expected to result in negligible biological impacts on the NMA monkfish stock compared to Alternatives 2 and 3.

Non-Target Species

Section 4.1.3 reviews bycatch of non-target species in the monkfish fishery. Trawl gear is the primary gear used to harvest monkfish in the NMA. Section 5.1.5 of the 2012-2013 Skate Specifications document (NEFMC 2012) indicates an observed discard rate of the skate complex from large mesh trawls of 1.194, with lower discard rates for barndoor (0.054), smooth (0.010) and thorny skates (0.020).

FW 2 to the Skate FMP indicates that over 8.6 million lb of skates (whole and wings) landed during FY 2012 were attributed to monkfish directed trips (Table 22 of NEFMC 2014b). The monkfish fishery accounted for a very small portion (<1%) of the bait fishery (whole skates) during that year, but represented approximately 44% of skate wing landings during FY 2012 in both the NMA and SMA combined once unmatched trips were assigned to a FMP based on the

proportion of matched landings. Matched skate landings on directed monkfish trips were further broken down to evaluate skate landings by gear and monkfish management area (Table 4.4). During both FY 2011 and 2012, very little skate landings were attributable to either the monkfish trawl or gillnet fisheries in the NMA.

The No Action Alternative does not change current fishing effort, practices or distribution. However, due to recent increases in biomass of species managed in the skate complex under the Skate FMP, increased discarding of these species may occur under the No Action Alternative, as has been observed in recent years (Table 4.3). However, any increases in skate discards in the monkfish fishery due to skate biomass increases would not be attributable to any measure in the No Action Alternative, and would be lower than discards that would be attributable to the other alternatives considered in this action.

Section II of the 2013 Spiny Dogfish FMP Review (Skomal et al. 2013) details the status of the spiny dogfish stock, including commercial landings and dead discards from the directed fishery in recent years. The spiny dogfish stock is not overfished, overfishing is not occurring, and stock size has been above the biomass target since 2007 (Figure 5.3). The No Action Alternative would likely have negligible impacts on spiny dogfish due to increased discards of dogfish as a result of the increases in dogfish stock size.

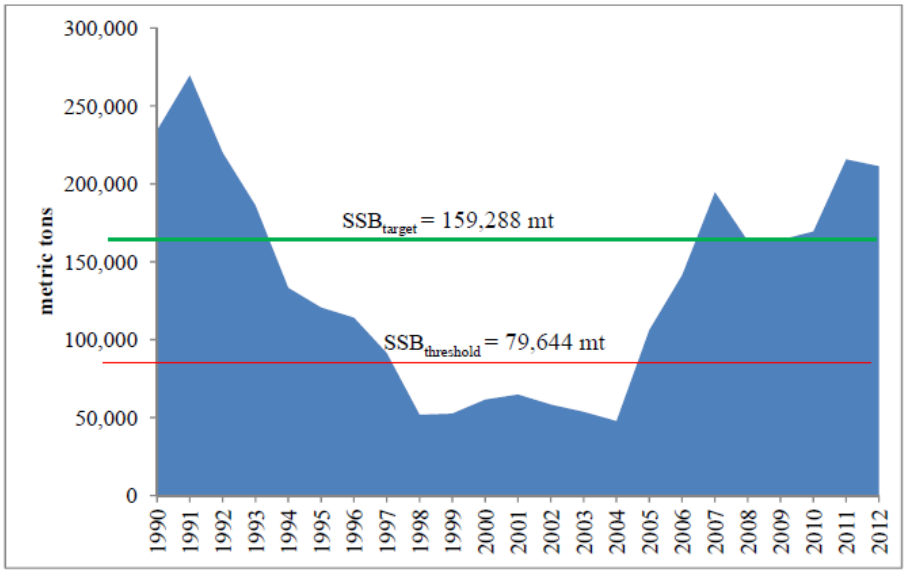


Figure 5.3. Spiny dogfish spawning stock biomass, 1990-2012.

The No Action Alternative would also not likely have any negative impacts on groundfish stocks managed under the Northeast Multispecies FMP. Existing groundfish measures, including ACLs and AMs established for each stock, along with sector and common pool effort controls are expected to ensure that overfishing does not occur and overfished stocks are rebuilt. Because groundfish landings and discards are tightly controlled under the Northeast Multispecies FMP, the No Action Alternative is likely to have neutral impacts on groundfish stocks.

Protected Species
The No Action Alternative would not alter the expected interactions of either monkfish or groundfish gear with protected resources. Therefore, the impacts on protected resources would be the same as those identified in the EA developed for FW 7 (Section 5.1.3.1 NEFMC 2011b). That analysis noted that impacts to protected species are correlated to fishing effort, suggesting that if fishing effort increases, then interactions and, therefore, impacts to protected species would also increase. Based on recent fishing patterns, the analysis concluded that FW 7 measures would not likely have an impact on protected species. Because recent fishing patterns would likely continue under the No Action Alternative, no additional impacts on protected species are expected. As noted above, the 2013 BO indicated that the monkfish fishery does not jeopardize the continued existence of any protected species, including Atlantic sturgeon, and no additional measures affecting monkfish fishing operations were necessary under the ESA. Thus, the No Action Alternative would have minor negative impacts on protected species as discussed in Section 4.1.4 and in the BO.

5.1.1.1.2 Alternative 2

Alternative 2 would increase allocated monkfish DAS to 64 DAS for vessels issued a Federal limited access monkfish permit. None of the catch limits (ABC, ACL, ACT, or TAL) specified under either Amendment 5 or FW 7 would be revised as part of Alternative 2. These catch limits, along with status quo incidental and directed landing limits, would be preserved. Alternative 2 would also maintain the AMs established in Amendment 5 to the Monkfish FMP to account for any overage of the ACL and prevent future fishing operations from compromising the conservation objectives of the monkfish fishery.

Monkfish
A method that modeled fleet-wide monkfish landings in the NMA with an increase in DAS and/or incidental daily landing limits was employed to calculate the allocation of DAS and landing limits in the NMA to a level at which projected landings approximated the FY 2014 directed fishery allocation of the NMA TAL (Hermsen 2013; Appendix 1). Data from the 2012 fishing year were used as the baseline for projections of DAS and landing limits (see Appendix 1 for the methods and assumptions used in the analysis). Results from the analysis indicated an increase in DAS allocation from 40 to 64 DAS, with no change to landing limits, would produce landings approximately equal to the directed allocation of the FY 2014-2016 NMA monkfish TAL (Table 5.1 and Figure 5.4). Projected landings under Alternative 2 are 11,553,347 lb. Alternative 2 would increase monkfish landings and associated impacts compared to the No Action Alternative and Alternative 3.

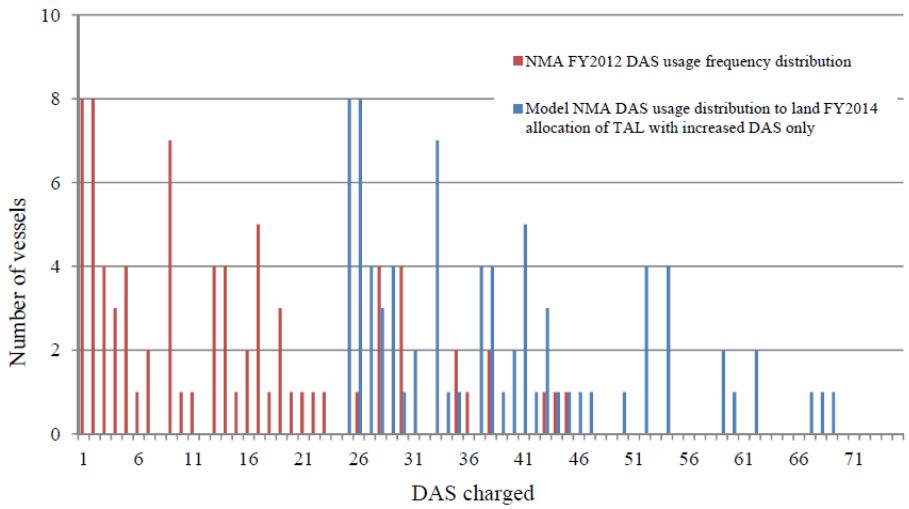


Figure 5.4. Monkfish NMA FY 2012 actual and modeled DAS usage frequency distribution.

Alternative 2 represents the maximum number of DAS that could be allocated to the NMA to achieve the TAL without exceeding it. Based on the projected landings under Alternative 2, expected monkfish landings are estimated to be 97% of the NMA TAL. Adding an assumed discard rate of 13.4% to expected landings results in anticipated total catch of 14,477,757 lb under Alternative 2, or about 98% of the NMA ACT. Compared to the ACL and OFL, total catch under Alternative 2 would be approximately 85% of the NMA ACL and 36% of the updated NMA OFL (17,805 mt). Thus, assuming the TAL, ACT, and OFL were specified correctly, Alternative 2 is expected to maintain monkfish catch and landings within acceptable limits and have negligible biological impacts on the NMA monkfish stock.

The 2013 Monkfish Operational Assessment review panel identified several uncertainties in the available information for monkfish and the overall results of the assessment, including possible misspecification of growth and natural mortality, possible misspecification of stock structure, uncertain catch series data, low catchability of monkfish in operational surveys, difficulty in fitting recent catch length frequencies in the models and a prominent retrospective pattern, especially for the northern stock. Accordingly, biomass and catch projections likely are optimistic due to the retrospective patterns. Thus, it is possible that existing catch levels are set too high. However, the assessment review panel concluded that despite the major uncertainties, the assessment was acceptable for determining stock status and catch advice. Further, the SSC considered incorporating adjustments to account for these retrospective patterns, but did not recommend adjusting catch levels due to difficulties and inconsistencies with such analysis. Since the SSC did not recommend adjusting existing catch limits, these catch limits are consistent with the best available science until an updated benchmark assessment, currently scheduled for 2015, is conducted. Therefore, since expected catch under Alternative 2 would not exceed catch limits that are specified to prevent overfishing based on the best available scientific information, Alternative 2 would not have any negative biological impacts on the NMA monkfish stock.

Some members of the Monkfish Committee and Advisory Panel cautioned that additional monkfish DAS allocated may provide incentives for vessels to use those additional monkfish DAS in the SMA. As described above, recent DAS usage patterns suggest that monkfish vessels

operating in the NMA have not used very many DAS in the NMA. The potential for NMA monkfish vessels to redirect effort into the SMA has existed in recent years. However, as highlighted in Figure 5.2, monkfish DAS usage has remained static in the SMA in recent years as well. Given that approximately 30% of vessels routinely fish both in the NMA and SMA within the same FY (NEFMC 2011c), it is expected that effort may occur in both management areas. Therefore, Alternative 2 is not likely to increase incentives to shift monkfish effort into the SMA and increase monkfish landings any more than previous management actions or the No Action Alternative. Compared to Alternative 3, Alternative 2 would have a higher likelihood of incentivizing effort shifts due to the greater number of monkfish DAS that would be allocated under Alternative 2. However, even if effort shifts do occur, monkfish landings and the risk of overfishing in the SMA would be contained by existing measures, including DAS usage and landing limit restrictions and AMs if the SMA ACL is exceeded.

Non-Target Species

Alternative 2 would increase the DAS available in the NMA and, therefore, could increase bycatch and associated discards of non-target species. Under Alternative 2 DAS would increase by 60% compared to the No Action Alternative, and 30% compared to Alternative 3. However, current DAS specifications do not seem to be constraining the fishery, as noted above, and it does not appear likely that allocating additional monkfish DAS will have a substantial impact on monkfish DAS usage. For example, in FY 2011, monkfish DAS allocations increased from 31 to 40 DAS under FW 7 without any corresponding increase in monkfish DAS usage (Figure 5.2). The majority of monkfish landings in the NMA (75% in recent years) are associated with incidental landings particularly in the groundfish fishery. While some vessels will likely increase their monkfish DAS usage in the NMA, it is unlikely that all vessels allocated 64 DAS in the NMA would use their full DAS allocation based on recent fishing patterns. Therefore, compared to the No Action Alternative and Alternative 3, Alternative 2 would result in increased fishing effort and associated bycatch and discards of non-target species, resulting in minor negative biological impacts to non-target species due to the potential for some vessels to utilize at least a portion of the 60% increase in DAS allocation.

As described above, existing skate, spiny dogfish, and groundfish measures, including ACLs, possession/landing limits, and AMs, would ensure that overfishing does not occur on these species, as required by the MSA. Groundfish sector vessels are constrained by sector-specific sub-ACLs for species managed under the Northeast Multispecies FMP, and fishing operations cease when those sub-ACLs are fully harvested. Because a majority of groundfish sector vessels are also issued a limited access monkfish permit, particularly in the NMA, such closures would prevent such vessels from targeting monkfish in the NMA for the remainder of the FY, resulting in lower monkfish landings than expected. Non-sector vessels are regulated by groundfish DAS and landing limits, backed up by trimester quotas for each stock. If the Regional Administrator projects that a non-sector allocation of a particular stock within the GOM or GB will be exceeded during a particular trimester, the Regional Administrator is required to close down portions of the GOM and GB to fishing with gear types that catch that stock for the remainder of that trimester. Similar to sector regulations, this would affect non-sector vessels' ability to target monkfish, and would reduce the amount of monkfish expected to be landed. Reactive AMs are also established for the groundfish fishery whereby overages of the ACL for a particular groundfish stock are deducted from either sector ACE or trimester quotas during the following

FY. Similar measures are also in place for skates and spiny dogfish. Therefore, any additional non-target species catch resulting from increased targeting of monkfish under Alternative 2 would be constrained to a level that ensures overfishing does not occur for these species, and would not result in adverse biological impacts on such stocks that are not already accounted for in existing measures.

Protected Species

Alternative 2 could alter the expected interactions of either monkfish or groundfish gear with protected resources. Section 5.1.3.1of FW 7 (NEFMC 2011b) noted that impacts to protected species are correlated to fishing effort, suggesting that if fishing effort increases, then interactions and, therefore, impacts to protected species would also increase. However, such additional impacts would not be proportionate to the increase in monkfish DAS allocations under Alternative 2 due to the likelihood that a vast majority of allocated monkfish DAS have not been used during recent FYs. Therefore, slight increases in interactions with protected species could be expected under this Alternative compared to either the No Action Alternative or Alternative 3. The monkfish fishery in the NMA predominantly uses trawl gear, which has minimal interactions with protected species. Therefore Alternative 2 is expected to have only slightly negative biological impacts on Atlantic sturgeon and other protected species. These impacts may be somewhat mitigated considering that existing measures designed to minimize protected species interactions and mortality under MMPA and ESA are not revised under this alternative. As noted above, the 2013 BO indicated that the monkfish fishery would not jeopardize the continued existence of Atlantic sturgeon and other protected species.

5.1.1.1.3 Alternative 3 (Preferred Alternative)

Alternative 3 would increase monkfish DAS in the NMA to 46 DAS for vessels issued a Federal limited access monkfish permit and increase incidental landing limits for vessels with Category C permits from 300 to 600 lb tail weight/DAS and vessels with Category D permits from 300 to 500 lb tail weight/DAS while fishing on a groundfish DAS. Similar to Alternative 2, none of the catch limits (ABC, ACL, ACT, or TAL), AMs, or directed monkfish landing limits specified under either Amendment 5 or FW 7 would be revised as part of Alternative 3.

Monkfish

The same methods described in Alternative 2 were used to calculate the allocation of DAS in the NMA to a level at which projected landings approximated the FY 2014 directed fishery allocation of the NMA TAL with increased incidental landing limits for C and D permitted vessels fishing under a groundfish DAS (Hermsen 2013; Appendix 1). Results from the analysis indicated an increase in DAS allocation from 40 to 46 DAS in the NMA, with increased incidental landing limits, would produce total monkfish landings estimated at 11,622,399 lb, or 90% of the FY 2014 NMA monkfish TAL.

Compared to the No Action Alternative, Alternative 3 is expected to increase NMA monkfish landings by nearly 2.4 million lb, or about 26%. Alternative 3 would not increase monkfish landings as much as Alternative 2, with Alternative 2 estimated to result in approximately 1.1 million lb more monkfish landings than Alternative 3. When adding an assumed 13.4% discard rate to landings estimated under Alternative 3, expected total monkfish catch under Alternative 3 is estimated to be 13,179,800 or approximately 91% of the NMA ACT, 79% of the NMA ACL,

and 34% of the revised NMA OFL. Compared to the No Action Alternative, Alternative 3 would result in slightly adverse impacts to monkfish stocks because it would increase monkfish landings. However, recent landing levels are well below OY and levels that would result in overfishing. Similar to Alternative 2, because Alternative 3 maintains catch at a level below the NMA ACT, ACL, and OFL, this alternative is expected to maintain monkfish catch and landings within acceptable limits. Assuming it does, this alternative would have neutral biological impacts on the NMA monkfish stock overall because landings would not exceed levels that would result in overfishing or deleterious effects to the population at large. Further, Alternative 3 will likely have minor positive biological impacts on the NMA monkfish stock because projected landings are less than the TAL, which could lead to a very low F and corresponding increases in monkfish biomass in the NMA, as observed in recent years.

Compared to the No Action Alternative, Alternative 3 includes a 15% increase in DAS combined with an increase in incidental landing limits for Category C and D vessels fishing under a groundfish DAS. As described in Appendix 1, in the NMA, incidental landings of monkfish by limited access monkfish Category C and D vessels not fishing on a monkfish DAS were approximately three times higher than landings on directed monkfish trips (i.e., those under a monkfish DAS; Table 5.5). Alternative 3 may convert some monkfish discards into landings because vessels issued a monkfish Category C and D permit would not be as constrained by monkfish incidental landing limits when fishing on a groundfish DAS. It is not likely that increasing the incidental landing limits would change fishing behavior, as monkfish catch greater than 300 lb tail weight/groundfish DAS has been common in recent years, leading to high levels of monkfish discards (see Figures 2 and 3 in Appendix 1).

Table 5.5. FY 2012 monkfish directed and incidental landings by permit category and management area.

Management Area	Permit Category	Incidental or Directed Landings	Prorated Total Live lbs	Percentage of directed fishery by permit category
NMA	AC	D	1,289,888	63%
		I	3,899,598	
	BD	D	761,726	37%
		I	2,334,427	
SMA	AC	D	2,505,224	36%
		I	1,380,396	
	BDH	D	4,499,649	64%
		I	871,663	

Compared to the No Action Alternative and Alternative 2, Alternative 3 represents a moderate increase in the number of DAS allocated to the NMA, but a substantial increase in incidental landing limits. Overall, Alternative 3 would result in higher monkfish catch than the No Action Alternative, but less monkfish catch than Alternative 2 (Table 5.1). Assuming monkfish catch levels are correct and based on the best available science, none of the alternatives would negatively impact the NMA monkfish stock. Similar to Alternative 2, Alternative 3 would also have the potential to increase incentives for vessels to shift monkfish effort into the SMA.

However, as noted above for Alternative 2, this potential has existed since the development of the FMP, and any associated biological impacts are limited by measures to ensure the ACL is not exceeded and overfishing does not occur.

Non-Target Species

Alternative 3 would increase the DAS available in the NMA and, therefore, could increase bycatch and associated discards of non-target species. Under Alternative 3, DAS would increase by 15% compared to the No Action Alternative, but would be about 28% less than the DAS allocated under Alternative 2. However, current DAS specifications do not seem to be constraining the fishery, as noted above, and it does not appear likely that allocating additional monkfish DAS will have a substantial impact on monkfish DAS usage (Figure 5.2). Therefore, compared to the No Action Alternative and Alternative 2, Alternative 3 would result in increased fishing effort and bycatch and associated discards of non-target species due to the potential for some vessels to utilize at least a portion of the 15% increase in DAS allocation.

Because monkfish DAS usage and associated bycatch of non-target stocks might increase under Alternative 3, this alternative would likely have slightly negative impacts on non-target stocks. As noted above, existing skate, spiny dogfish, and groundfish measures, including ACLs, possession/landing limits, and AMs, would ensure that overfishing does not occur on these species, as required by the MSA. Therefore, any additional non-target species catch resulting from increased targeting of monkfish under Alternative 3 would not result in adverse biological impacts on such stocks that are not already accounted for in existing measures and analyzed by previous actions under their respective FMPs.

Protected Species

Alternative 3 could alter the expected interactions of either monkfish or groundfish gear with protected resources. Section 5.1.3.1of FW 7 (NEFMC 2011b) noted that impacts to protected species are correlated to fishing effort, suggesting that if fishing effort increases, then interactions and, therefore, impacts to protected species would also increase. As noted above, however, such additional impacts would not be proportionate to the increase in monkfish DAS allocations under Alternative 3 due to the likelihood that a vast majority of allocated monkfish DAS are not used during recent FYs. Therefore, slight increases in interactions with protected species could be expected under this Alternative compared to the No Action Alternative, and slightly fewer increases in interactions could be expected compared to Alternative 2. Similar to Alternative 2, Alternative 3 is expected to have slightly negative biological impacts on Atlantic sturgeon and other protected species given expected effort increases. However, these impacts may be somewhat mitigated considering that this action would not revise existing measures designed to minimize protected species interactions and mortality under MMPA and ESA. As noted above, the 2013 BO indicated that the monkfish fishery would not jeopardize the continued existence of Atlantic sturgeon and other protected species.

<u>Overall Biological Impacts</u>

All of the NMA DAS allocation and landing limits alternatives considered in this action would result in total NMA monkfish landings and catch that are less than the NMA TAL, ACT, ACL,

and OFL (Table 5.1). Thus, all alternatives would ensure that catch stays within limits that should not adversely impact the NMA monkfish stock based upon the best available science. Such catch would likely result in very low F levels, which have corresponded to increasing biomass in recent years, and likely neutral or slightly positive biological impacts for the NMA monkfish stock. Alternative 3 could potentially convert monkfish discards to landings due to increased incidental landing limits, and would result in a moderate increase in monkfish catch compared to the No Action Alternative. Due to increases in abundance of some skate species and spiny dogfish, all of the NMA alternatives could potentially increase discards of skates and dogfish. Alternatives 2 and 3 would likely slightly increase non-target species catch due to increased monkfish effort, resulting in slightly negative impacts to such species. However, such impacts are minimized because there are existing measures that would ensure that overfishing does not occur on these stocks. The No Action Alternative will likely have a negligible impact on protected resources because there would be no change in fishing effort, practices or distribution. In contrast, Alternatives 2 and 3 increase fishing effort and, therefore, could produce minor negative impacts on protected species due to the correlation between impacts to protected resources and fishing effort.

5.1.1.2 SMA DAS and Landing Limits Alternatives

The Councils considered four DAS allocations and landing limits options for the SMA, including No Action, maintaining current monkfish landing limits and increasing monkfish DAS usage limit in the SMA, and increasing directed daily monkfish landing limits combined with increased monkfish DAS usage limit in the SMA. The DAS usage limit under the four alternatives range from 28 to 51 DAS, with the preferred alternative (Alternative 2) allowing up to 32 monkfish DAS to be used in the SMA. The No Action Alternative and Alternative 3 maintain status quo directed daily monkfish landing limits, while Alternatives 2 and 4 increase directed daily monkfish landing limits to 610 lb tail weight/DAS for A and C permits and 500 lb tail weight/DAS for B, D and H permits. Status quo incidental landing limits would apply to all alternatives.

5.1.1.2.1 No Action

Under the No Action Alternative described in Section 3.2.1, no revisions would be made to the current monkfish DAS usage limit or landing limits in the SMA. In FY 2014, the existing SMA monkfish landing limits would revert to those specified in Amendment 5 (NEFMC 2011a) beginning in FY 2014, as summarized in Table 3.4 and described at http://www.nero.noaa.gov/regs/infodocs/monkfish_fishery_info-final.pdf. Further, the existing catch limits implemented under Amendment 5 would also continue under the No Action Alternative. Because the SMA catch limits would not change under the No Action Alternative, monkfish fishing effort and associated catch are not expected to differ dramatically from those observed in recent years.

Monkfish

SMA monkfish landings have decreased variably since a high in FY 2003. (Table 5.6; Appendix 1). In FY 2011, Amendment 5 increased monkfish DAS usage limit from 23 to 28 DAS in the SMA. Landings subsequently increased to 5,801 mt (65% of the 8,925 mt TAL) in 2011 and to 5,184 mt (58% of the TAL) in 2012 (Table 5.6). Monkfish landings in the SMA in FY 2013 through December 2013 are following similar patterns to those observed in recent years. Total

SMA monkfish landings through December 2013 are 2% below landings observed through December 2012 (Table 5.7 and Figure 5.5).

Table 5.6. SMA target monkfish TALs, trip limits, DAS allocations, and landings (FY 2000-2012).

Fishing Year	Target TAL (mt)	Trip Limits (lb)*		DAS Restrictions **	Landings (mt)	Percent of TAL
		Cat. A & C	Cat. B & D			
2000	6,024	1500	1000	40	7,960	132%
2001	6,024	1500	1000	40	11,070	184%
2002	7,921	550	450	40	7,478	94%
2003	10,211	1250	1000	40	12,198	119%
2004	6,772	550	450	28	6,223	92%
2005	9,673	700	600	39.3	9,656	100%
2006	3,667	550	450	12	5,909	161%
2007	5,100	550	450	23	7,180	141%
2008	5,100	550	450	23	6,751	132%
2009	5,100	550	450	23	4,800	94%
2010	5,100	550	450	23	4,484	88%
2011	8,925	550	450	28	5,801	65%
2012	8,925	550	450	28	5,184	58%
2013	8,925	550	450	28		

* Trip limits in pounds tail weight per DAS
** Excluding up to 10 DAS carryover, which was reduced to four DAS in 2007

Table 5.7. SMA monkfish total landings in FY 2013 (May – December 2013).

SMA Landings	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Through Dec
2013	1,028	605	242	102	153	259	502	701	3,592
2012	1,366	988	193	90	65	265	242	467	3,676
% Difference Compared to 2012	**-33%**	**-63%**	**20%**	**12%**	**58%**	**-2%**	**52%**	**33%**	**-2%**

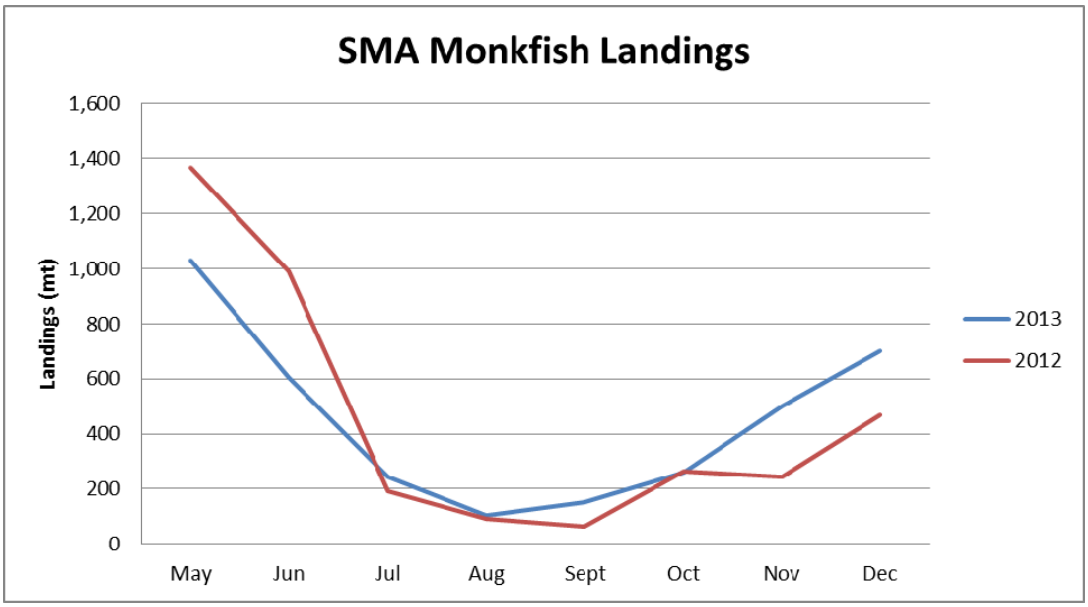


Figure 5.5. SMA monthly monkfish landings FY 2012 and 2013.

Recent DAS usage patterns suggest that monkfish vessels operating in the SMA have used the majority of the allocated monkfish DAS in the SMA. For example, since FY 2009, monkfish DAS usage in the SMA has hovered around 75% of monkfish DAS used in both areas and 12% of total monkfish DAS allocated, averaging 3,519 DAS used during FY 2009-2012 (Table 5.8; Figure 5.6). As described above, there has been potential for NMA monkfish vessels to redirect effort into the SMA. However, DAS usage has remained stable in the SMA in recent years. DAS usage patterns are not expected to change under the No Action Alternative.

Table 5.8. SMA DAS usage in FYs 2009 – 2012.

Fishing year	SMA DAS Used	% of SMA DAS Used in SMA	% Total DAS Used in SMA
2009	3252	13%	75%
2010	3151	13%	74%
2011	4389	14%	79%
2012	3284	10%	74%
Average 2009 - 2012	3519	12%	75%

To fully evaluate the impacts of the No Action Alternative, landings by both the directed fishery and incidental fishery need to be combined with discards to evaluate total monkfish catch against the SMA ACL. As mentioned above, the Monkfish FMP does not actively monitor discards, but rather applies a discard rate in each management area derived from the most recent stock assessment. The most recent discard rate was calculated to be 26% for the SMA (NEFSC 2013). It is expected that recent fishing and landings patterns would persist under the No Action Alternative, as observed in FY 2011 and 2012. Projected monkfish landings under the No Action Alternative were estimated at 10.6 million lb, or about 54% of the SMA TAL. Applying a 26% bycatch rate to FY 2012 SMA monkfish landings results in overall expected monkfish catch under the No Action Alternative of 13.4million lb from the SMA. This level of catch would be 53% of the SMA ACT, and 49% of the SMA ACL. Expected catch under the No Action Alternative would be approximately 26% of the updated SMA OFL outlined in this action (23,204 mt, Table 3.1). Although there is some uncertainty with the specification of biological and management reference points, as noted by the SSC, this amounts to an approximate buffer between expected catch and the OFL of nearly 75%. Thus, there is a low probability that the No Action Alternative would result in catch that exceeds the SMA ACT, ACL, or either specification of OFL, and a very low risk that overfishing will occur on monkfish in the SMA beginning in FY 2014.

As noted above, Amendment 5 implemented a reactive AM to ensure that excessive catch is accounted for and overages are prevented in the future. Under Amendment 5, ACL overages would be deducted from the applicable ACT during the second FY following the FY in which the overage occurred on a pound-for-pound basis. In addition, the Councils would be required to develop measures to ensure the reduced ACT is not exceeded. Therefore, the FMP contains adequate measures to not only minimize the likelihood that the SMA ACL would be exceeded, to mitigate the impacts of any overages that occur, and to prevent future overages from occurring. This should provide adequate protection that overfishing the SMA monkfish stock will not occur.

Based on the above, the No Action Alternative is unlikely to have negative biological impacts on the SMA monkfish stock for several reasons. First, the SMA monkfish stock is not overfished, and overfishing is not occurring. Second, there is a low probability that expected catch under the No Action Alternative would exceed the SMA TAL, ACT, ACL, or OFL specified to continue in FY 2014. This low level of catch would likely result in an F that would continue to remain below $F_{threshold}$. Since F has never been above $F_{threshold}$ (Figure 4.2), monkfish biomass in the SMA has remained stable with slight increases since 1994. Therefore, if catch remains below the SMA TAL and ACT, it is likely that biomass will continue to stay above B_{target}. Finally, reactive AMs would be triggered if the ACL specified for this stock is exceeded, minimizing the potential for future excessive catch and mitigating any adverse impacts resulting from excessive harvest. As a result, the No Action Alternative is expected to result in negligible biological impacts on the SMA monkfish stock compared to baseline conditions and Alternatives 2 through 4.

Non-Target Species

Section 4.1.3 reviews bycatch of non-target species in the monkfish fishery. Gillnet gear is the primary gear used to harvest monkfish in the SMA.

Section 5.1.5 of the 2012-2013 Skate Specifications document (NEFMC 2012) indicates an observed discard rate for the skate complex from sink gillnets of 0.12 - .046 (Table 4.4), with the highest level of discards off of Southern New England. Skate discard rates have been higher since 2010 when Amendment 3 was implemented. This increase in skate complex and barndoor skate discard rates from sink gillnets is related to the observed increases in barndoor and winter skate biomass. Additionally, discards of thorny skate by vessels using gillnets are rare (NEFMC 2012).

Section 5.4.1.3.7 of the 2012-2013 Skate Specifications document indicates:

> a mixed monkfish/skate fishery exists in Southern New England and the Mid-Atlantic regions, in which skate catch is limited by monkfish DAS allocations. Since 2007, monkfish DAS allocations for the southern management area (where the majority of skate fishing occurs) have remained constant. Monkfish DAS allocations for the 2011 fishing year increase from 23 to 28 DAS, but this minor change is not expected to have a significant direct effect on using monkfish DAS to target skates. There have been no reports or indications that vessels are using monkfish DAS to increase targeting of skates, particularly since the TALs and in-season AMs were implemented in 2010 by Amendment 3. In fact, the opposite probably occurred since the mixed monkfish/skate gillnet fishery primarily occurs in the spring. And since the incidental possession limits were in effect in the spring of 2011 (fishing year 2010), fishermen may have focused their fishing effort in areas where they can catch more monkfish and avoid catching skates.

FW 2 to the Skate FMP indicates that over 8.6 million lb of skates (whole and wings) landed during FY 2012 were attributed to monkfish directed trips (Table 22 of NEFMC 2014b). The monkfish fishery accounted for a very small portion (<1%) of the bait fishery (whole skates) during that year, but represented approximately 44% of skate wing landings during FY 2012 in

both the NMA and SMA combined once unmatched trips were assigned to a FMP based on the proportion of matched landings. Matched skate landings on directed monkfish trips were further broken down to evaluate skate landings by gear and monkfish management area (Table 4.4). During both FY 2011 and 2012, the monkfish SMA gillnet fishery was responsible for 92-94 % of skate wing landings from the directed monkfish fishery. Because the No Action Alternative is likely to continue recently observed fishing practices, this alternative is not expected to increase skate discards in the SMA.

As described above, Section II of the 2013 Spiny Dogfish FMP Review (Skomal et al. 2013) details the status of the spiny dogfish stock. The No Action Alternative would likely have negligible impacts on spiny dogfish as a result of changes to monkfish effort. Spiny dogfish discards in the monkfish may increase, however, but only as a result of the increases in dogfish stock size (Figure 5.3).

The No Action Alternative would also not likely have any negative impacts on groundfish stocks managed under the Northeast Multispecies FMP. Existing groundfish measures, including ACLs and AMs established for each stock, along with sector and common pool effort controls are expected to ensure that overfishing does not occur and overfished stocks are rebuilt. Because groundfish landings and discards are tightly controlled under the Northeast Multispecies FMP, the No Action Alternative is likely to have neutral impacts on groundfish stocks.

Protected Species

Because the No Action Alternative is not expected to alter fishing behavior or levels of monkfish effort compared to recent years, the expected interactions of either monkfish or groundfish gear with protected resources is not likely to change. Therefore, the impacts on protected resources would be the same as those identified in the EA developed for Amendment 5 (Section 5.1 NEFMC 2011a). That analysis noted that impacts to protected species are correlated to fishing effort, suggesting that if fishing effort increases, then interactions and, therefore, impacts to protected species would also increase. Based on recent fishing patterns, the analysis concluded that Amendment 5 measures would not likely have an impact on protected species. Because recent fishing patterns would likely continue under the No Action Alternative, no additional impacts on protected species are expected. As noted above, the 2013 BO indicated that the monkfish fishery does not jeopardize the continued existence of any protected species, including Atlantic sturgeon, and no additional measures affecting monkfish fishing operations were necessary under the ESA. Thus, the No Action Alternative would have minor negative impacts on protected species as discussed in Section 4.1.4 and in the BO.

5.1.1.2.2 Alternative 2 (Preferred Alternative)

Alternative 2 would increase the monkfish DAS usage limit in the SMA to 32 DAS for vessels issued a Federal limited access monkfish permit, and increase directed daily landing limits to 610 lb tail weight/DAS for A and C permits and 500 lb tail weight/DAS for B, D and H permits. None of the catch limits (ABC, ACL, ACT, or TAL) specified under Amendment 5 would be revised as part of Alternative 2. These catch limits, along with status quo incidental landing limits, would be preserved. Alternative 2 would also maintain the AMs established in Amendment 5 to the Monkfish FMP to account for any overage of the ACL and prevent future fishing operations from compromising the conservation objectives of the monkfish fishery.

Compared to the No Action Alternative, Alternative 2 includes a 15% increase in DAS combined with an increase in directed monkfish landing limits for Category A, B, C, D and H vessels. Amendment 5 corrected the tail-to-whole fish weight conversion ratio to address the fact that whole monkfish were landed already gutted instead of intact. To more accurately account for monkfish that are landed with their heads attached, but their guts removed, the old tail-to-whole-weight conversion factor of 3.32 was updated to 2.91. The effect of this correction was that landing limits, which are specified in tail weights, unintentionally declined by about 14% for vessels that land whole, gutted fish, which comprise a significant number of SMA gillnet vessels. The increases in SMA directed monkfish landing limits to 610 lb tail weight/DAS for permits A and C, and 500 lb tail weight/DAS for B, D and H permits account for this unintentional decline.

Monkfish

The same methods described above that modeled fleet-wide monkfish landings in the NMA with an increase in DAS and/or daily landing limits were employed to calculate the allocation of DAS and landing limits in the SMA (Hermsen 2013; Appendix 1). Data from the 2012 fishing year were used as the baseline for projections of DAS and landing limits (see Appendix 1 for the methods and assumptions used in the analysis). Results from the analysis indicated an increase in DAS allocation from 28 to 32 DAS, with increased directed daily landing limits, would increase monkfish landings to just over 13 million lb. of a (Figure 5.6).

Compared to the No Action Alternative, Alternative 2 is expected to increase total SMA monkfish landings by about 19% to 13.1 million lb, or 67% of the SMA TAL. Alternative 2 would result in about 5.7 million lb fewer landings than Alternative 3, but 1.6 million lb more monkfish landings than Alternative 4. When adding an assumed 26% discard rate to these landings from the 2013 operational assessment, expected total monkfish catch under Alternative 2 is estimated to be about 16.5 million lb, or approximately 65% of the SMA ACT, 61% of the SMA ACL, and 32% of the revised SMA OFL (see Table 5.1). Compared to the No Action Alternative, Alternative 2 would have slightly adverse impacts on monkfish stocks because it would increase landings. However, recent catch levels are well below OY and levels that would result in overfishing. Because Alternative 2 maintains catch at a level below the SMA ACT, ACL, and OFL, this alternative is expected to maintain monkfish catch and landings within acceptable limits, resulting inneutral biological impacts on the SMA monkfish stock overall because landings would not exceed levels that would result in overfishing or cause deleterious effects to this stock. Further, similar to the No Action Alternative, Alternative 2 will likely have minor positive biological impacts on the SMA monkfish stock overall because projected landings are less than the TAL, which could lead to a very low F that have resulted in relative stability in monkfish biomass in the SMA in recent years. Compared to the No Action Alternative and Alternative 4, Alternative 2 represents a moderate increase in the number of DAS allocated to the SMA. Overall, Alternative 2 would result in higher monkfish catch than the No Action Alternative and Alternative 4, but less monkfish catch than Alternative 3 (Table 5.9).

Non-Target Species

Under Alternative 2 monkfish DAS usage limits would increase by 15% compared to the No Action Alternative and Alternative 4, but increase the DAS usage limit by 37% less than under Alternative 3. However, as described above, an average of approximately 75% of the allocated

DAS have been used in the SMA in recent years, and there is no indication that increasing DAS allocation by 15% will alter overall DAS usage patterns (Table 5.8 and Figure 5.2). Therefore, compared to the No Action Alternative and Alternative 4, Alternative 2 would result in increased fishing effort and bycatch and associated discards of non-target species due to the potential for some vessels to utilize at least a portion of the 15% increase in DAS usage limit. In contrast, Alternative 2 would have less impact on discards of non-target species than Alternative 3, which proposes a 60% increase in the DAS usage limit.

Because monkfish DAS usage would likely increase under Alternative 2, bycatch of non-target stocks would also likely increase. As a result, this alternative would likely have minor negative impacts on non-target stocks. However, as noted above, existing skate, spiny dogfish, and groundfish measures, including ACLs, possession/landing limits, and AMs, would ensure that overfishing does not occur on these species, as required by the MSA. Therefore, the impacts associated with additional non-target species catch under Alternative 2 would not increase the risk of overfishing these stocks or result in adverse biological impacts on such stocks that are not already accounted for in existing measures and analyzed by previous actions under their respective FMPs.

Protected Species

Alternative 2 could alter the expected interactions of either monkfish or groundfish gear with protected resources. Section 5.1 of Amendment 5 (NEFMC 2011a) noted that impacts to protected species are correlated to fishing effort, suggesting that if fishing effort increases, then interactions and, therefore, impacts to protected species would also increase. However, such additional impacts would not be proportionate to the increase in monkfish DAS allocations under Alternative 2 due to the likelihood that only about 75% of the allocated monkfish DAS have been used during recent FYs. Therefore, slight increases in interactions with protected species could be expected under this Alternative compared to the No Action Alternative and Alternative 4, and slightly fewer additional interactions could be expected compared to Alternative 3. Similar to the other Alternatives, the impacts of such additional interactions under Alternative 2 may be mitigated considering that this action would not revise existing measures designed to minimize protected species interactions and mortality under MMPA and ESA. As noted above, the 2013 BO indicated that the monkfish fishery would not jeopardize the continued existence of Atlantic sturgeon and other protected species.

5.1.1.2.3 Alternative 3

Alternative 3 would increase allocated monkfish DAS to 51 DAS for vessels issued a Federal limited access monkfish permit as the primary means to increase monkfish landings under this action. None of the catch limits (ABC, ACL, ACT, or TAL) specified under Amendment 5 would be revised as part of Alternative 3. These catch limits, along with status quo incidental and directed landing limits, would be preserved. Alternative 3 would also maintain the AMs established in Amendment 5 to the Monkfish FMP to account for any overage of the ACL and prevent future fishing operations from compromising the conservation objectives of the monkfish fishery.

Monkfish

The same methods described above were employed to calculate the allocation of DAS in the SMA to a level at which projected landings approximated the FY 2014 directed fishery allocation of the SMA TAL (Hermsen 2013; Appendix 1). Results from the analysis indicated an increase in DAS allocation from 28 to 51 DAS, with no change to landing limits, would produce landings approximately equal to the directed allocation of the FY 2014 SMA monkfish TAL (Figure 5.6).

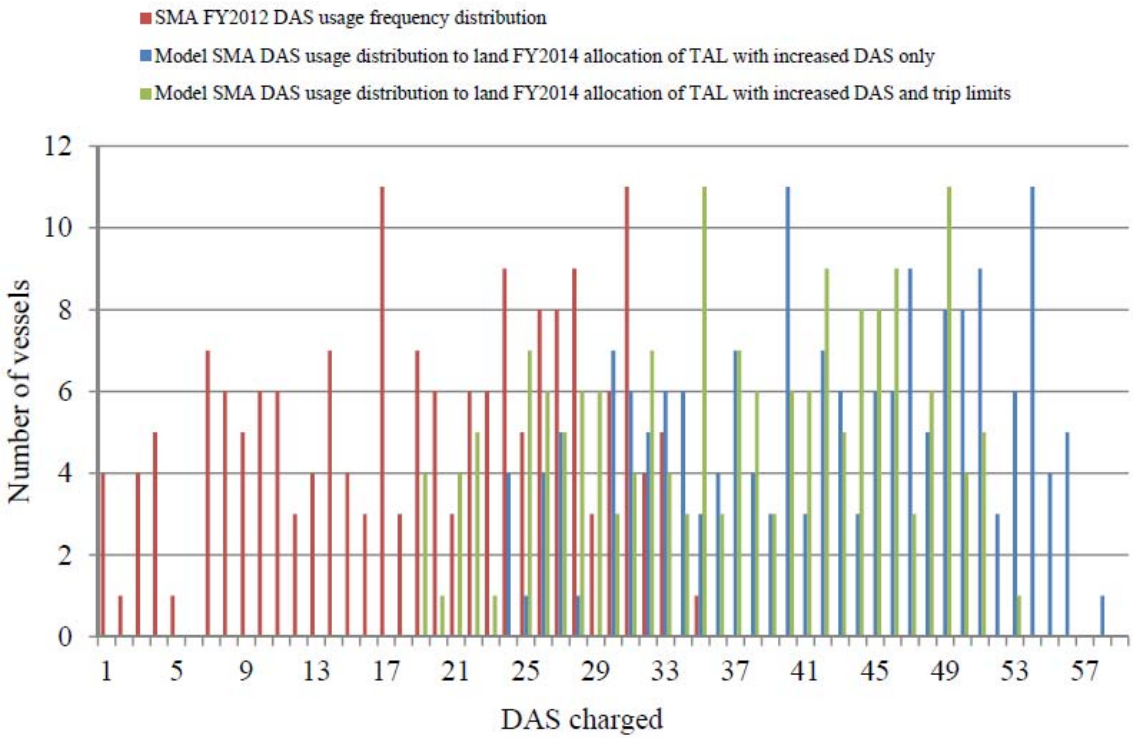


Figure 5.6. Monkfish SMA, FY 2012 actual and modeled DAS usage frequency distribution.

Projected landings under Alternative 3 are 18.8 million lb. Alternative 3 would increase monkfish landings and associated impacts compared to the No Action Alternative and Alternatives 2 and 4. Under Alternative 3, monkfish landings are expected to increase by 8.2 million lb compared to the No Action Alternative, 5.7 million lb compared to Alternative 2 (preferred alternative), and 4.4 million lb compared to Alternative 4.Alternative 3 represents the maximum number of DAS that could be allocated to the SMA to achieve the TAL without exceeding it. Based on the projected landings under Alternative 3, expected monkfish landings are estimated to be 96% of the SMA TAL. Adding an assumed discard rate of 26% to expected landings results in anticipated total catch of 23.7 million lb under Alternative 3, or about 93% of the SMA ACT, 87% of the SMA ABC/ACL, and 46% of the updated SMA OFL. Thus, assuming the TAL, ACT, and OFL were specified correctly, Alternative 3 is expected to maintain monkfish catch and landings within acceptable limits and have negligible biological impacts on the SMA monkfish stock.

As described above, the 2013 Monkfish Operational Assessment review panel identified several uncertainties in the available information for monkfish and the overall results of the assessment. Accordingly, biomass and catch projections likely are optimistic due to the retrospective patterns. Thus, it is possible that existing catch levels are set too high. However, the assessment

review panel concluded that despite the major uncertainties, the assessment was acceptable for determining stock status and catch advice. Therefore, since expected catch under Alternative 3 would not exceed catch limits that are specified to prevent overfishing based on the best available scientific information, Alternative 3 would not have any negative biological impacts on the SMA monkfish stock.

Non-Target Species
Alternative 3 would increase the DAS available in the SMA and, therefore, could increase bycatch and associated discards of non-target species. Under Alternative 3 DAS would increase by over 80% compared to the No Action Alternative and Alternative 4, and increase over 65% compared to Alternative 2. Therefore, compared to the No Action Alternative and Alternatives 2 and 4, Alternative 3 would result in the most increased fishing effort and bycatch and associated discards of non-target species due to the potential for some vessels to utilize at least a portion of the 80% increase in DAS allocation.

Although monkfish DAS usage might increase under Alternative 3, this alternative would likely have minor negative impacts on non-target stocks. As noted above, existing skate, spiny dogfish, and groundfish measures, including ACLs, possession/landing limits, and AMs, would ensure that overfishing does not occur on these species, as required by the MSA. Therefore, any additional non-target species catch resulting from increased targeting of monkfish under Alternative 3 would not result in significant biological impacts on such stocks that are not already accounted for in existing measures and analyzed by previous actions under their respective FMPs.

Protected Species
Alternative 2 could alter the expected interactions of either monkfish or groundfish gear with protected resources. Section 5.1 of Amendment 5 (NEFMC 2011a) noted that impacts to protected species are correlated to fishing effort, suggesting that if fishing effort increases, then interactions and, therefore, impacts to protected species would also increase. However, such additional impacts would not be proportionate to the increase in monkfish DAS allocations under Alternative 2 due to the likelihood that only about 75% of the allocated monkfish DAS have been used during recent FYs. Therefore, slight increases in interactions with protected species could be expected under this Alternative compared to the No Action Alternative and Alternative 4, and slightly fewer additional interactions could be expected compared to Alternative 3. Similar to the other Alternatives, the impacts of such additional interactions under Alternative 2 may be mitigated considering that this action would not revise existing measures designed to minimize protected species interactions and mortality under MMPA and ESA. As noted above, the 2013 BO indicated that the monkfish fishery would not jeopardize the continued existence of Atlantic sturgeon and other protected species.

Similar to the other Alternatives, the impacts of such additional interactions under Alternative 2 may be mitigated considering that this action would not revise existing measures designed to minimize protected species interactions and mortality under MMPA and ESA. As noted above, the 2013 BO indicated that the monkfish fishery would not jeopardize the continued existence of Atlantic sturgeon and other protected species.

5.1.1.2.4 Alternative 4

Alternative 4 would maintain status quo DAS usage limits in the SMA, but increase directed daily landing limits to 610 lb tail weight/DAS for A and C permits and 500 lb tail weight/DAS for B, D and H permits. None of the catch limits (ABC, ACL, ACT, or TAL) specified under Amendment 5 would be revised as part of Alternative 4. These catch limits, along with status quo incidental landing limits, would be preserved. Alternative 4 would also maintain the AMs established in Amendment 5 to the Monkfish FMP to account for any overage of the ACL and prevent future fishing operations from compromising the conservation objectives of the monkfish fishery.

Monkfish

Alternative 4 addresses the tail-to-whole fish conversion correction only. As described above, A5 corrected the tail-to-whole fish weight conversion ratio to address the fact that whole monkfish were landed already gutted instead of intact. To more accurately account for monkfish that are landed with their heads attached, but their guts removed, the old tail-to-whole-weight conversion factor of 3.32 was updated to 2.91. The effect of this correction was that landing limits, which are specified in tail weights, unintentionally declined by about 14% for vessels that land whole, gutted fish, which comprise a significant number of SMA gillnet vessels. The increases in SMA directed monkfish landing limits to 610 lb tail weight/DAS for permits A and C, and 500 lb tail weight/DAS for B, D and H permits account for this unintentional decline. Similar to Alternative 2, Alternative 4 would increase the monkfish directed landing limits to reflect the proper whole weight conversion factor. This is not expected to increase fishing effort, but would allow participating vessels to land more monkfish each trip.

Alternative 4 would increase monkfish landings and associated impacts compared to the No Action Alternative, but not compared to Alternatives 2 and 3. Projected total monkfish landings under Alternative 4 are estimated at about 11.5 million lb (Table 5.1). Based on the projected landings under Alternative 4, expected monkfish landings are estimated to be 58% of the SMA TAL. Adding an assumed discard rate of 26% to expected landings results in an anticipated total catch of about 14.4 million lb under Alternative 4, or about 57% of the SMA ACT, 53% of the SMA ACL, and 28% of the updated SMA OFL. Thus, assuming the TAL, ACT, and OFL were specified correctly, Alternative 4 is expected to maintain monkfish catch and landings within acceptable limits and have negligible biological impacts on the SMA monkfish stock.
As described above, the 2013 Monkfish Operational Assessment review panel identified several uncertainties in the available information for monkfish and the overall results of the assessment. Accordingly, biomass and catch projections likely are optimistic due to the retrospective patterns. Thus, it is possible that existing catch levels are set too high. However, the assessment review panel concluded that despite the major uncertainties, the assessment was acceptable for determining stock status and catch advice. Therefore, since expected catch under Alternative 4 would not exceed catch limits that are specified to prevent overfishing based on the best available scientific information, Alternative 4 would not have any negative biological impacts on the SMA monkfish stock.

Non-Target Species

Similar to the No Action Alternative, the monkfish DAS usage limit will not increase under Alternative 4. Therefore, this alternative would likely not increase monkfish effort and associated bycatch of non-target species. Thus, it is expected that Alternative 4 would have negligible

impacts on non-target stocks. As noted above, existing skate, spiny dogfish, and groundfish measures, including ACLs, possession/landing limits, and AMs, would ensure that overfishing does not occur on these species, as required by the MSA. Therefore, any additional non-target species catch resulting from increased directed landing limits under Alternative 4 would not result in significant biological impacts on such stocks that are not already accounted for in existing measures and analyzed by previous actions under their respective FMPs.

Protected Species

Alternative 4 could alter the expected interactions of either monkfish or groundfish gear with protected resources. Section 5.1 of Amendment 5 (NEFMC 2011a) noted that impacts to protected species are correlated to fishing effort, suggesting that if fishing effort increases, then interactions and, therefore, impacts to protected species would also increase. As noted above, however, Alternative 4 would not increase DAS usage limit in the SMA. Therefore, increases in monkfish effort and, therefore, interactions with protected species are not expected under this Alternative compared to the No Action Alternative. Unlike Alternatives 2 and 3, Alternative 4 is expected to have negligible biological impacts on Atlantic sturgeon and other protected species, especially considering that this action would not revise existing measures designed to minimize protected species interactions and mortality under MMPA and ESA. As noted above, the 2013 BO indicated that the monkfish fishery would not jeopardize the continued existence of Atlantic sturgeon and other protected species.

Overall Biological Impacts

All of the SMA DAS usage and landing limits alternatives considered in this action would result in total SMA monkfish landings and catch that are less than the SMA TAL, ACT, ACL, and OFL (Table 5.1). Thus, all alternatives would ensure that catch stays within limits that should not adversely impact the SMA monkfish stock based upon the best available science. Such catch would likely result in very low F levels, and likely neutral or slightly positive biological impacts for the SMA monkfish stock. Alternative 2 would result in a moderate increase in monkfish catch compared to the No Action Alternative and Alternative 4. Due to increases in abundance of some skate species and spiny dogfish, all of the SMA alternatives could potentially increase discards of skates and dogfish. Further, since Alternatives 2 and 3 would likely increase monkfish effort and associated bycatch of non-target species, including groundfish stocks, both alternatives may result in slightly negative impacts to non-target species. However, such impacts would be constrained by existing measures that would ensure that overfishing does not occur on these stocks. The No Action Alternative will likely have a negligible impact on protected resources because there would be no change in fishing effort, practices or distribution. Alternative 4 would not increase fishing effort and, therefore, would have similar impacts as the No Action Alternative. In contrast, Alternatives 2 and 3 increase fishing effort and, therefore, could produce minor negative impacts on protected species due to the correlation between impacts to protected resources and fishing effort.

5.1.2 Monkfish DAS Usage Requirements

The Councils considered two monkfish DAS usage options for vessels allocated both monkfish and groundfish DAS, including No Action and the potential to use a monkfish-only DAS at any time during the FY.

5.1.2.1 No Action

As described in Section 3.3.1, monkfish Category C and D vessels with a multispecies permit are required to use a multispecies Category A (groundfish) DAS in conjunction with a monkfish DAS until all of the vessel's multispecies DAS allocation are used up, at which point the vessel can fish on a monkfish-only DAS. The original intent of this requirement was to restrict the ability of vessels to increase overall effort by fishing monkfish DAS separately from groundfish DAS while still having an incidental or component catch of groundfish. The No Action Alternative does not change the amount of monkfish effort or groundfish effort allocated to each vessel, but it might indirectly reduce the amount of effort targeting monkfish since vessels fishing on a monkfish-only DAS are required to fish in a groundfish exempted fishery. There is only one seasonal exempted monkfish fishery in the NMA, and it only applies to gillnets, while there are 2 in the SMA that apply to trawl and gillnet gear. Therefore, trawl vessels (which are the predominant gear in the NMA monkfish fishery) with fewer groundfish DAS than monkfish DAS would not be able to use their full allocation of monkfish DAS in the NMA. This would likely contribute to recent trends of underharvesting monkfish, particularly in the SMA where monkfish can be more easily targeted without the concurrent catch of groundfish, and would likely result in positive impacts to the monkfish due to lower monkfish catch compared to Alternative 2.

Requiring a vessel to utilize a groundfish DAS in order to be able to fish for monkfish under the No Action Alternative, especially during times when groundfish are not available, could be viewed as indirectly positive for groundfish species, since allocated groundfish DAS would be used up without being used to target groundfish. This impact on non-target species would be greater in the SMA, where the directed groundfish fishery is primarily a winter fishery, taking place after most vessels have utilized their groundfish DAS while fishing for monkfish during the spring and early summer. This indirect approach, however, is not the most efficient way to control groundfish effort. Furthermore, vessels could delay fishing on a monkfish DAS until groundfish are available, which would negate the effort reduction described above.

The impact of the No Action Alternative on protected species and other non-target species is likely to be negligible since there is no overall change in the amount of monkfish or groundfish effort allocated compared to recent activities. However, because the No Action Alternative would offer fewer incentives to use monkfish-only DAS compared to Alternative 2, it may result in slightly higher bycatch and discards of non-target species due to the use of smaller mesh under on trips in which both groundfish and monkfish DAS are used.

5.1.2.2 Alternative 2 (Preferred)

Under Alternative 2, vessels allocated both monkfish and groundfish DAS can use monkfish-only DAS (in excess of allocated groundfish DAS at the start of the FY) at any time throughout the FY. Once a vessel's allocation of groundfish DAS equals the remaining monkfish DAS (i.e., once a vessel's monkfish-only DAS have been used), the vessel must use both monkfish and groundfish in combination. Since vessels are required to use extra-large mesh size (10-inch mesh or larger) when using a monkfish-only DAS, , this alternative would likely slightly reduce bycatch of non-target species by encouraging the use of monkfish-only DAS in areas and times (i.e. in exempted fisheries) where the bycatch of groundfish has been historically low. However, if vessels are able to increase their catch of groundfish because they can elect to use their combined DAS when groundfish species are more available to them, then this alternative could

be considered to have an indirect negative impact on groundfish species. This possible effect is mitigated, however, by the establishment of ACLs and AMs, as well as increased monitoring in the groundfish fishery. Compared to the No Action Alternative, Alternative 2 could slightly increase interactions with protected species because it would allow the more efficient utilization of monkfish effort and likely increase the use of monkfish-only DAS. However, as noted above for the DAS and landing limit alternatives, because this action would not revise existing measures designed to minimize interactions with protected species, this alternative would likely result in negligible impacts to protected species.

5.1.3 Monkfish Limited Access Category H Permit Boundary

The Councils considered two options for the fishing area boundary for permit Category H vessels in the SMA, including No Action and moving the fishing boundary to allow permit Category H vessels to fish throughout the entire SMA region.

5.1.3.1 No Action

Under the No Action Alternative, permit Category H vessels are restricted to fishing operations south of the 38°40' N latitude line. As described in Section 3.4.1, permit Category H vessels were historically restricted to fishing south of 38°20'N to reflect the locations where they historically operated, and to restrict the amount of catch that could be harvested by the permit class due to not qualifying for limited access permits in the initial FMP. FW 4 to the FMP adjusted the permit Category H fishing boundary to south of 38°40' N to account for the constraints imposed on the fishery by closures to protect sea turtles (NEFMC 2007).

Section 5.1.1.9 of Framework 4 indicated that there is likely no biological impact on monkfish or non-target species of having the permit Category H fishing boundary at 38°40' N. The No Action Alternative does not propose changing the fishing boundary and likely will have no biological impact on monkfish or non-target species.

The No Action Alternative does not increase effort for permit Category H vessels. Therefore, negligible impacts on protected species are expected from the No Action Alternative. However, by confining permit Category H vessels to the southernmost region of the SMA, where sea turtle protection measures are in place may have minor negative impacts to protected resources compared to Alternative 2 by restricting vessels to fish in the region with more observed sea turtle interactions.

5.1.3.2 Alternative 2 (Preferred)

Under Alternative 2, permit Category H vessels would be allowed to fish on a monkfish DAS throughout the entire SMA. Existing regulations designed to reduce bycatch and mortality of turtles and harbor porpoises under the ESA, including those imposed since FW 4 was implemented, severely limit where monkfish Category H vessels can target monkfish in the SMA. To ensure that such vessels can maximize opportunities to harvest available monkfish, this alternative would enable such vessels to fish throughout the SMA. This would increase fishing opportunities for such vessels.

As described in Section 5.1.1.9 of FW 4, there are a total of seven vessels that qualified for Category H permits, and only five or six that actively fish. These vessels are allocated the same

number of DAS and landing limits as Category B and D vessels in the SMA, and the vessels have been considered in the analysis of the SMA DAS and trip limit alternatives for FW 8. Compared to the No Action Alternative, Alternative 2 would likely increase monkfish fishing opportunities and, therefore, monkfish catch. However, Alternative 2 would have negligible biological impacts on monkfish and non-target species since the fishing effort associated with the Category H permits has already been included in the analyses used to calculate the DAS and landing limits alternatives.

Alternative 2 does not increase potential effort for monkfish Category H permits. There may be minor positive impacts for sea turtles from Alternative 2 by allowing Category H vessels to fish throughout the entire SMA and decreasing the concentration of fishing pressure south of 38°40' N, where sea turtles are more abundant. Effort may shift into areas where interactions with other species (Atlantic sturgeon) is greater. Thus, Alternative 2 may have both positive and negative impacts to protected species. It is unclear, however, where Category H effort may shift at this time, as they have historically not fished in more northerly portions of the SMA. As noted above, because this action would not revise existing measures designed to minimize protected species interactions and mortality under MMPA and ESA, overall impacts to protected species are expected to be negligible. Further, the 2013 BO indicated that the monkfish fishery would not jeopardize the continued existence of Atlantic sturgeon and other protected species.

5.2 Habitat Impacts

5.2.1 Impacts of DAS and Landing Limits Alternatives

5.2.1.1 NMA DAS and Landing Limits Alternatives

5.2.1.1.1 No Action

Under the No Action Alternative, there would be no change to the NMA DAS allocations or landing limits beginning in FY 2014. The No Action Alternative DAS and landing limits are consistent with the measures implemented under FW 7 to achieve, but not exceed, the TAL and ACT specified in that action. The NMA TAL and ACT would not change under the No Action Alternative, and neither fishing opportunities, nor effort would be changed by this action. Therefore, the impacts on EFH would be the same as those identified in the EA developed for FW 7 (NEFMC 2011b). That analysis concluded that because the monkfish DAS allocation, the primary metric used to evaluate habitat impacts, would be maintained at 40 DAS consistent with historic monkfish DAS allocations in the NMA, there would not be an adverse impact to EFH. In addition, because vessels operating in the NMA are predominantly groundfish vessels, monkfish fishing effort would likely be largely constrained by groundfish DAS or ACE allocations rather than monkfish DAS allocations. Thus, the No Action Alternative would not modify the expected interactions of monkfish or groundfish gear with EFH. Compared to Alternatives 2 and 3, the No Action Alternative would have the least impacts to EFH, as both other alternatives would increase monkfish fishing effort.

5.2.1.1.2 Alternative 2

Alternative 2 would increase DAS allocations to 64 DAS for vessels issued a Federal limited access monkfish permit beginning in FY 2014. None of the monkfish or groundfish catch limits would be revised as part of this alternative. These measures would continue to serve as restraints on fishing effort in the monkfish fishery, along with AMs that account for any overage of ACLs and prevent future fishing operations from compromising the conservation objectives of the fishery.

Alternative 2 is expected to increase monkfish landings by approximately 40% compared to the No Action Alternative. Fishing effort could increase by a substantial amount if all vessels fully utilize the increased DAS allocation. However, the majority of landings in the NMA are incidental landings from vessels with monkfish Category C and D permits while fishing on a groundfish DAS. Monkfish DAS have not been a constraint to the fishery in the NMA in recent years, and the majority of vessels have not utilized the full 40 DAS allocation implemented in FW 7. It is likely that Alternative 2 will increase monkfish landings and fishing effort beyond levels expected from either the No Action Alternative or Alternative 3. This will result in greater potential impacts to EFH compared to those alternatives. However, increases in fishing effort are constrained by existing catch limits, effort controls, or AMs in both fisheries. Alternative 2 is not expected to create incentives that would affect gear usage in either the monkfish or groundfish fisheries. Therefore, there may be minor negative impacts on EFH resulting from increased effort associated with the increase in DAS allocations, particularly since most monkfish effort is conducted using bottom trawl gear, gear known to adversely impact bottom habitat. Compared to the No Action Alternative and Alternative 3, Alternative 2 would result in the most adverse impacts to EFH out of the alternatives considered.

5.2.1.1.3 Alternative 3

Alternative 3 would increase monkfish DAS allocations to 46 DAS for vessels issued a Federal limited access monkfish permit, and increase incidental landing limits for Category C and D permits fishing under a groundfish DAS to 600 lb tail weight/DAS and 500 lb tail weight/DAS, respectively in the NMA beginning in FY 2014. None of the monkfish or groundfish catch limits would be revised as part of this alternative. These measures would continue to serve as restraints on fishing effort in the monkfish fishery, along with AMs that account for any overage of ACLs and prevent future fishing operations from compromising the conservation objectives of the fishery.

Impacts to EFH expected from Alternative 3 mirror those described above for Alternative 2 with the exception of scale. In general, the impacts of Alternative 3 on EFH will track the trend in fishing effort. An increase in fishing effort compared to the No Action Alternative would increase the interactions of monkfish and groundfish gear with EFH, although the scope of this increase with respect to the overall fishery is expected to be minor, especially compared with Alternative 2.

<u>Overall Habitat Impacts</u>

None of the NMA DAS and landing limits alternatives are likely to change current fishing locations. The No Action Alternative maintains current effort specifications, which have not had an adverse impact on EFH. Compared to the No Action Alternative, Alternatives 2 and 3 would increase fishing effort in the NMA. Impacts on EFH from these alternatives will track the trend

in fishing effort, and would increase the interactions of monkfish and groundfish gear with EFH. Alternative 2 includes the largest increase in fishing effort, and therefore, is likely to have the most impact on EFH compared to the other alternatives. However, it is unlikely that gear usage in either the monkfish or groundfish fisheries would be affected by the increased DAS allocations. Therefore, there would be only minor negative or neutral impacts on EFH due to the increased effort resulting from Alternatives 2 and 3.

Habitat management areas that were implemented as part of Amendment 13 to the Multispecies FMP in 2003 and prohibit the use of bottom trawls were designed to protect benthic habitats from the adverse impacts of fishing, as required by the MSA. These area closures are still in place and continue to minimize the adverse effects of bottom trawl and dredge gear on EFH for all the federally-managed species in the region. In addition, Amendment 2 to the Monkfish FMP closed portions of two offshore canyons to the use of monkfish DAS in 2007. Adverse impacts of the monkfish fishery on EFH will continue to be minimized by these habitat management measures once this action is implemented.

5.2.1.2 SMA DAS and trip limit options

5.2.1.2.1 No Action

Under the No Action Alternative, there would be no change to the SMA DAS allocations or landing limits beginning in FY 2014. The No Action Alternative DAS and landing limits are consistent with the measures implemented under Amendment 5 to achieve, but not exceed, the TAL and ACT specified in that action. The SMA TAL and ACT would not change under the No Action Alternative, and neither fishing opportunities, nor effort would be changed by this action. Therefore, the impacts on EFH would be the same as those identified in the EA developed for Amendment 5 (NEFMC 2011a). That analysis concluded that because the monkfish DAS usage limit, the primary metric used to evaluate habitat impacts, would be maintained at 28 DAS consistent with historic monkfish DAS allocations in the SMA, there would not be an adverse impact to EFH. Thus, the No Action Alternative would not modify the expected interactions of monkfish or groundfish gear with EFH. Compared to Alternatives 2 and 3, the No Action Alternative would have negligible impacts EFH, as both other alternatives would increase monkfish fishing effort, and would have similar impacts to Alternative 4, as that alternative would not increase fishing effort and only slightly modify landing limits.

5.2.1.2.2 Alternative 2 (Preferred)

Alternative 2 would increase DAS allocations to 32 DAS for vessels issued a Federal limited access monkfish permit and increase directed monkfish landing limits to account for the tail-to-whole fish conversion factor in the SMA beginning in FY 2014. None of the monkfish or groundfish catch limits would be revised as part of this alternative. These measures would continue to serve as constraints on fishing effort in the monkfish fishery, along with AMs that account for any overage of ACLs and prevent future fishing operations from compromising the conservation objectives of the fishery.

Alternative 2 is expected to increase monkfish landings by approximately 25% compared to the No Action Alternative. Fishing effort could also increase by a substantial amount if all vessels

fully utilize the increased DAS allocation, although a moderate increase in effort is expected based on historic fishing patterns. Overall, it is likely that Alternative 2 will increase monkfish landings and fishing effort beyond levels expected from either the No Action Alternative or Alternative 4. This will result in greater potential impacts to EFH compared to those alternatives. However, increases in fishing effort are constrained by existing catch limits, effort controls, or AMs in both fisheries. Alternative 2 is not expected to create incentives that would affect gear usage in either the monkfish or groundfish fisheries. Therefore, there may be minor negative impacts on EFH resulting from increased effort associated with the increase in DAS allocations, particularly since most monkfish effort is conducted using gillnet gear, gear known to cause only minor adverse impacts on bottom habitat. Compared to the No Action Alternative and Alternative 4, Alternative 2 would result in minor negative impacts to EFH, and the impact would be less than that expected under Alternative 3.

5.2.1.2.3 Alternative 3

Alternative 3 would increase monkfish DAS allocations to 51 DAS for vessels issued a Federal limited access monkfish permit in the SMA beginning in FY 2014. None of the monkfish or groundfish catch limits would be revised as part of this alternative. These measures would continue to serve as constraints on fishing effort in the monkfish fishery, along with AMs that account for any overage of ACLs and prevent future fishing operations from compromising the conservation objectives of the fishery.

Impacts to EFH expected from Alternative 3 mirror those described above for Alternative 2 with the exception of scale. In general, the impacts of Alternative 3 on EFH will track the trend in fishing effort. An increase in fishing effort compared to the No Action Alternative and Alternatives 2 and 4 would increase the interactions of monkfish gear with EFH, although the scope of this increase with respect to the overall fishery is expected to be minor because the predominant gillnet gear causes only minor adverse impacts on habitat. Overall, Alternative 3 would have the greatest potential adverse impacts among the alternatives considered.

5.2.1.2.4 Alternative 4

Alternative 4 would increase directed daily monkfish landing limits to 610 lb tail weight/DAS for A and C permits and 500 lb tail weight /DAS for B, D and H permits to account for the tail-to-whole fish conversion factor in the SMA beginning in FY 2014. None of the monkfish or groundfish catch limits would be revised as part of this alternative. These measures would continue to serve as constraints on fishing effort in the monkfish fishery, along with AMs that account for any overage of ACLs and prevent future fishing operations from compromising the conservation objectives of the fishery.

Impacts to EFH expected from Alternative 4 mirror those described above for the No Action Alternative. In general, the impacts of Alternative 4 on EFH will track the trend in fishing effort. Although Alternative 4 may increase fishing effort compared to the No Action Alternative, it would more likely increase monkfish landings on existing trips. If effort would increase, the interactions of monkfish gear with EFH would also increase. However, the scope of this increase with respect to the overall fishery is expected to be negligible because the predominant gillnet gear causes only minor adverse impacts on habitat and there are no changes to DAS

allocations. Compared to Alternatives 2 and 3, Alternative 4 would have fewer adverse impacts on EFH.

Overall Habitat Impacts

None of the SMA DAS and landing limits alternatives are likely to change current fishing locations. The No Action Alternative maintains current effort specifications, which have not had an adverse impact on EFH. Compared to the No Action Alternative, Alternatives 2 through 4 would increase fishing effort in the SMA. Impacts on EFH from these alternatives will track the trend in fishing effort, and would increase the interactions of monkfish and groundfish gear with EFH. Alternative 3 includes the largest increase in fishing effort, and, therefore, is likely to have the greatest impact on EFH compared to the other alternatives. However, it is unlikely that gillnet gear, the predominant gear used in the SMA, will be affected by the increased DAS allocations or trip limit allocations. Therefore, there would be negligible or only minor negative impacts on EFH due to the increased effort resulting from Alternatives 2 through 4. Existing closed area regulations will continue to minimize the adverse effects of the monkfish fishery once this action is implemented (see Section 5.2.1.1.3).

5.2.2 Monkfish DAS Usage Requirements

The No Action Alternative is unlikely to change current fishing locations, while Alternative 2 would likely increase monkfish effort in exempted fishing areas, areas already open to fishing activity. The No Action Alternative maintains current effort specifications, which have not had an adverse impact on EFH. Compared to the No Action Alternative, Alternative 2 would allow use of a monkfish-only DAS at the beginning of the fishing year. Impacts on EFH from this alternative will track the trend in fishing effort, and could alter the interactions of monkfish and groundfish gear with EFH by slightly increasing monkfish effort. However, it is unlikely that gear usage in either the monkfish or groundfish fisheries would be affected by the allowance of monkfish DAS earlier in the FY. Therefore, there would be only minor negative or negligible impacts on EFH due to changing the DAS usage requirements under Alternative 2.

5.2.3 Monkfish Limited Access Category H Permit Boundary

Neither of the alternatives for the Category H permit boundary will likely have negative impacts on EFH. The No Action Alternative maintains current fishing boundaries and effort specifications, which have not had an adverse impact on EFH. Compared to the No Action Alternative, Alternative 2 would modify the fishing boundary for Category H permits to allow fishing throughout the entire SMA. Impacts on EFH from this alternative will track the trend in fishing effort, and could alter the interactions of monkfish gear with EFH. There are only seven vessels with Category H permits, and currently only five or six of these vessels actively fish, with even fewer that will fish north of the existing boundary at $38^{o}40'$ N. Therefore, there would be negligible impacts on EFH due to changing the Category H permit fishing boundary under Alternative 2.

5.3 Economic Impacts

The realized economic impacts of this action will depend upon actual monkfish landings during FY 2014 and beyond, along with the landings of any other species caught concurrently, including groundfish stocks, and associated ex-vessel prices. The amount of additional monkfish landed beginning in FY 2014 will depend upon not only the catch rates of monkfish, but also the catch

rates of groundfish stocks. The economic value of monkfish landings depends upon the market category landed due to price variation among the various monkfish market categories and the volume of monkfish in the market. To more effectively compare the economic impacts among alternatives considered in this action, expected revenues associated with each alternative are estimated using the average price of monkfish landed when all landings of all market categories are converted to live weight equivalents using established conversion factors (Table 5.9). Realized revenues during future FYs will change proportionate to any deviation from the average price reported during the first part of FY 2012, as well as the amount of each monkfish market category that is landed.

Table 5.9. Average monkfish price per pound during fishing years 2000 – 2012.

Fishing Year	Average Price per lb (live weight equivalent)
2000	$1.04
2001	$0.78
2002	$0.69
2003	$0.63
2004	$0.67
2005	$0.95
2006	$0.99
2007	$1.02
2008	$1.04
2009	$0.95
2010	$1.10
2011	$1.30
2012	$1.22

Note: Based on dealer data, for data reported through December 14, 2012.

For the purposes of this section, analysis of economic impacts will focus on changes to monkfish landings associated with alternatives considered in this action. Because monkfish is sold both domestically and exported, it is important to note that ex-vessel price and, therefore, economic impacts of this alternative may be affected by monkfish landings outside of the U.S.

5.3.1 Impacts of DAS and Landing Limits Alternatives

Appendix 2 contains a detailed description of the methods and assumptions used to generate revenue predictions for this action (Kirkpatrick 2014). In general, landings by port and vessel size class were generated by increasing the total catch by port or size class by the proportional increase in FY 2012 landings needed to harvest the FY 2014 directed allocation of the TAL by fishery management area under the various alternatives considered in this action. An expected price was generated using the price flexibility for monkfish estimated by Lee and Thunberg (2013). The price flexibility was chosen where price flexibility equals the % change in expected price per 1% increase in landings. Based on Lee and Thunberg (2013), price flexibility for monkfish is estimated at -0.41. This means that for every 1% increase in landings, price is expected to decrease by 0.41%. It is important to note that the price flexibility analysis in Lee and Thunberg (2013) was estimated over much smaller changes in monkfish landings compared to the proposed increases in monkfish landings in this action. Over larger increases in landings, it

is expected that the price decrease would attenuate, becoming less of an influence on ex-vessel price. Furthermore, an examination of monkfish landings and prices over the past 10 years shows occasions where landings have been close to the volumes predicted under this action, but prices remained within the range of current prices. Therefore, the price flexibility of -0.41 should be considered an upper bound and likely underestimates economic benefits associated with increased monkfish landings. Because the lower bound would be 0 (price is not affected by domestic landings), the lower bound revenue estimates would simply be the increase in pounds of monkfish landed times the FY 2012 monkfish price. It is recognized that other variables (foreign markets, consumer preference, etc.) may alter realized revenue changes in this action (Kirkpatrick 2014).

The analysis does not separate effects to NMA prices from increases in SMA landings or vice-versa. The assumption is that monkfish prices move together across all ports along the Atlantic, and thus an increase in SMA landings would decrease prices in both areas. Each port has a slightly different average price for monkfish, and the reason for those differences is a combination of local demand, local processing capabilities, and dealer tastes. The calculations of changes in monkfish price due to changes in total fishery-wide landings maintain the differences between port prices.

Because this action would only revise monkfish DAS allocations/usage limits and landing limits applicable to vessels issued a limited access monkfish permit, the following analysis focuses on those entities. Thus, monkfish landing amounts and associated revenues described in this section do not include the estimated landings from Category E monkfish and state-only permitted vessels (956,918 lb and 1,387,474 lb, in the NMA and SMA, respectively). This allows relative comparisons among the options based only on the changes proposed in this action. However, because limited access vessels would be able to land more monkfish and, as noted above, result in decreased revenue for all vessels landing monkfish, Category E monkfish vessels landing incidental amounts of monkfish may experience overall monkfish revenue decreases. Therefore, even for landings whose type and area are not proposed to change, a decrease in revenue would be expected as a result of a change in ex-vessel price.

5.3.1.1 NMA DAS and Landing Limits Alternatives

5.3.1.1.1 No Action

The No Action Alternative would revert to the existing monkfish DAS allocations and landing limits in place, as implemented in FW 7 (Table 3.3). The No Action Alternative is expected to result in about 8.3 million lb of monkfish landings from the NMA beginning in FY 2014. Assuming that the average monkfish prices observed in FY 2012 continue into FY 2014 ($1.22 per pound when converted to live weight), this would result in monkfish revenues of $10,108,150 during FY 2014 (Table 5.10). This estimate is over $5 million lower than the maximum potential revenue that would be realized if the total FY 2014 NMA monkfish TAL (12.9 million lb) was landed during FY 2014 at an average ex-vessel price of $1.22, and $17 million lower over FY 2014-2016.

As noted above, the realized impacts of the No Action Alternative are difficult to predict, but may be expected to differ between the various segments of the monkfish fishery. Overall, it is likely that the No Action Alternative itself will not affect fishing operations; other factors

including the availability of fishing opportunities in other fisheries will more directly affect fishing operations and, therefore, resulting monkfish landings. In particular, the capacity of groundfish vessels to catch available groundfish without exceeding their groundfish ACE (for sectors) or trimester (for non-sectors) for any stock before the end of the year will most directly affect resulting monkfish landings. If groundfish vessels can avoid exceeding their ACE or trimester TACs, then monkfish landings will more closely approach the FY 2014 NMA monkfish TAL, resulting in greater economic benefits to affected vessels.

Table 5.10. Projected landings and revenues for the three NMA alternatives.

NMA Alternative	Projected Limited Access Monkfish Fishery Landings (pounds)	Projected Price per Pound	Projected Revenue
1 (No Action)	8,285,639	$1.22	$10,108,480
2	11,553,347	$0.98	$11,322,280
3 (Preferred)	10,665,481	$1.00	$10,665,481

5.3.1.1.2 Alternative 2

Alternative 2 would increase DAS allocations to vessels issued a Federal limited access monkfish permit fishing in the NMA to 46 DAS beginning in FY 2014. As noted above in Table 5.1, Alternative 2 is expected to result in 11,553,347 lb of monkfish landings from the NMA beginning in FY 2014. This represents an increase of approximately 3,267,708 lb of monkfish landings compared to the No Action Alternative (28%). Using the price assumptions and methods described in the introduction to this section, this alternative generates a projected price of $0.98/lb (19% decrease), resulting in monkfish revenues of approximately $11.3 million during FY 2014. Compared to the No Action Alternative, Alternative 2 would result in approximately $1.2 million more in revenue associated with increased monkfish landings alone (Table 5.11; Appendix 2). Compared to Alternative 3, Alternative 2 would produce approximately $650,000 in additional revenue from monkfish landings alone.

Because vessels would be allowed to land more monkfish, it is also likely that vessels will land additional amounts of other stocks, thereby further increasing fishing revenue beginning in FY 2014 compared to the No Action Alternative. The composition of such additional catch and associated ex-vessel price would dictate the degree of additional fishing revenue. It is difficult to estimate the potential ancillary benefits of increased monkfish fishing opportunities, but it is expected to contribute to greater economic benefits than the No Action Alternative.

5.3.1.1.3 Alternative 3 (Preferred)

Alternative 3 would increase DAS allocations and incidental landing limits to vessels issued a Federal limited access monkfish permit fishing in the NMA to 46 DAS and 600 lb tail weight/DAS for C permits and 500 lb tail weight/DAS for D permits while fishing on a groundfish DAS beginning in FY 2014. As noted above in Table 5.1, Alternative 3 is expected to result in 10,665,481 lb of monkfish landings from the NMA beginning in FY 2014. This represents an increase of approximately 2,379,842 lb of monkfish landings compared to the No Action Alternative (22%). Using the price assumptions and methods described in the introduction to this section, this alternative generates a projected price of $1.00/lb (22%

decrease), resulting in monkfish revenues of approximately $10.7 million during FY 2014. Compared to the No Action Alternative, Alternative 2 would result in approximately $0.6 million more in revenue associated with increased monkfish landings alone (Table 5.11; Appendix 2), but about $650,000 less than revenue associated with Alternative 2.

Similar to Alternative 2, under Alternative 3 vessels would be allowed to land more monkfish. Therefore, it is also likely that vessels will land additional amounts of other stocks, thereby further increasing fishing revenue beginning in FY 2014 compared to the No Action Alternative. It is difficult to estimate the potential ancillary benefits of increased monkfish fishing opportunities, but it is expected that Alternative 3 would generate greater economic benefits than the No Action Alternative and less than Alternative 2.

As noted above for the economic impacts of the No Action Alternative, benefits resulting from Alternatives 2 and 3 are expected to differ between the various segments of the monkfish fishery. The availability of fishing opportunities in other fisheries will more directly affect fishing operations and, therefore, resulting monkfish landings than just monkfish possession limits. In particular, the capacity of groundfish vessels to catch available groundfish without exceeding their groundfish ACE (for sectors) or trimester TAC (for non-sector vessels) for any stock before the end of the year will most directly affect resulting monkfish landings. If groundfish vessels can avoid exceeding their ACE or trimester TACs, then monkfish landings will more closely approach the NMA monkfish TAL and ACT beginning in FY2014, resulting in greater economic benefits to affected vessels.

5.3.1.2 SMA DAS and Landing Limits Alternatives

5.3.1.2.1 No Action

The No Action Alternative would revert to the existing monkfish DAS allocations and landing limits in place, as implemented in Amendment 5 (Table 3.4). The No Action Alternative is expected to result in about 9.2 million lb of monkfish landings from the SMA beginning in FY 2014. Assuming that the average monkfish prices observed in FY 2012 continue into FY 2014 ($1.22 per pound when converted to live weight), this would result in monkfish revenues of $11,293,457 during FY 2014 (Table 5.12). This estimate is over $12 million lower than the maximum potential revenue that would be realized if the total FY 2014 SMA monkfish TAL (about 19.7 million lb) was landed during FY 2014 at an average ex-vessel price of $1.22, and $25 million lower over FY 2014-2016.

As noted above, the realized impacts of the No Action Alternative are difficult to predict, but may be expected to differ between the various segments of the monkfish fishery. Overall, it is likely that the No Action Alternative itself will not affect fishing operations; other factors including the availability of fishing opportunities in other fisheries will more directly affect fishing operations and, therefore, resulting monkfish landings. In particular, the capacity of groundfish vessels to catch available groundfish without exceeding their groundfish ACE (for sectors) or trimester (for non-sectors) for any stock before the end of the year will most directly affect resulting monkfish landings. If groundfish vessels can avoid exceeding their ACE or trimester TACs, then monkfish landings will more closely approach the FY 2014 SMA monkfish TAL, resulting in greater economic benefits to affected vessels.

Table 5.11. Projected landings and revenues for the four SMA alternatives.

SMA Alternative	Projected Limited Access Monkfish Fishery Landings (pounds)	Projected Price per Pound	Projected Revenue
1 (No Action)	9,256,932	$1.22	$11,293,457
2 (Preferred)	11,710,117	$1.02	$11,944,319
3	17,441,459	$0.87	$15,174,069
4	10,074,079	$1.03	$10,376,301

5.3.1.2.2 Alternative 2 (Preferred)

Alternative 2 would increase DAS usage limit and daily directed landing limits to vessels issued a Federal limited access monkfish permit fishing in the SMA to 32 DAS and 610 lb tail weight/DAS for A and C permits and 500 lb tail weight/DAS for B, D and H permits beginning in FY 2014. As noted above in Table 5.1, Alternative 2 is expected to result in 11,710,117 lb of monkfish landings from the SMA beginning in FY 2014. This represents an increase of approximately 2,453,185 lb of monkfish landings compared to the No Action Alternative (21%). Using the price assumptions and methods described in the introduction to this section, this alternative generates a projected price of $1.02/lb (about 16% decrease), resulting in monkfish revenues of approximately $11.9 million during FY 2014. Compared to the No Action Alternative, Alternative 2 would result in approximately $0.7 million more in revenue associated with increased monkfish landings alone (Table 5.12; Appendix 2). Compared to Alternatives 3 and 4, Alternative 2 would result in $3.2 million less and $1.5 million more in monkfish revenue, respectively.

Similar to the NMA alternative, because vessels would be allowed to land more monkfish, it is also likely that vessels will land additional amounts of other stocks, thereby further increasing fishing revenue beginning in FY 2014 compared to the No Action Alternative. The composition of such additional catch and associated ex-vessel price would dictate the degree of additional fishing revenue. It is difficult to estimate the potential ancillary benefits of increased monkfish fishing opportunities, but it is expected to contribute to greater economic benefits than the No Action Alternative.

5.3.1.2.3 Alternative 3

Alternative 3 would increase DAS allocations to vessels issued a Federal limited access monkfish permit fishing in the SMA to 51 DAS beginning in FY 2014. As noted above in Table 5.8, Alternative 3 is expected to result in 17,441,459 lb of monkfish landings from the NMA beginning in FY 2014. This represents an increase of approximately 8,184,527 lb of monkfish landings compared to the No Action Alternative (47%). Using the price assumptions and methods described in the introduction to this section, this alternative generates a projected price of $0.87/lb (29% decrease), resulting in monkfish revenues of approximately $15.2 million during FY 2014. Compared to the No Action Alternative, Alternative 3 would result in approximately $3.9 million more in revenue associated with increased monkfish landings alone (Table 5.12; Appendix 2). Compared to Alternatives 2 and 4, Alternative 3 would result in about $3.2 million and $4.8 million lb more in monkfish revenue, respectively.

Similar to Alternatives 2 and 4, because vessels would be allowed to land more monkfish, it is also likely that vessels will land additional amounts of other stocks, thereby further increasing fishing revenue beginning in FY 2014 compared to the No Action Alternative. It is difficult to estimate the potential ancillary benefits of increased monkfish fishing opportunities, but it is expected that Alternative 3 would generate greater economic benefits than the No Action Alternative.

5.3.1.2.4 Alternative 4

Alternative 4 would increase daily directed landing limits to 610 lb/DAS tail weight for A and C permits and 500 lb tail weight/DAS for B, D and H permits beginning in FY 2014. As noted above in Table 5.8, Alternative 4 is expected to result in 10,074,079 lb of monkfish landings from the SMA beginning in FY 2014. This represents an increase of approximately 817,147 lb of monkfish landings compared to the No Action Alternative (8%). Using the price assumptions and methods described in the introduction to this section, this alternative generates a projected price of $1.03/lb (16% decrease), resulting in monkfish revenues of approximately $10.4 million during FY 2014. Compared to the No Action Alternative, Alternative 4 would result in approximately $0.9 million less in revenue associated with increased monkfish landings alone (Table 5.12; Appendix 2). Compared to Alternatives 2 and 3, Alternative 4 would result in and $1.5 million and $4.8 million in less monkfish revenue, respectively.

Alternative 4 results in less revenue than the No Action Alternative or Alternatives 2 and 3. However, similar to Alternatives 2 and 3, because vessels would be allowed to land more monkfish, it is also likely that vessels will land additional amounts of other stocks, thereby further increasing fishing revenue beginning in FY 2014 compared to the No Action Alternative. It is difficult to estimate the potential ancillary benefits of increased monkfish fishing opportunities, but it is expected that Alternative 4 would generate greater economic benefits than the No Action Alternative.

As noted above for the economic impacts of the No Action Alternative, benefits resulting from Alternatives 2 through 4 are expected to differ between the various segments of the monkfish fishery. The availability of fishing opportunities in other fisheries will more directly affect fishing operations and, therefore, resulting monkfish landings than just monkfish possession limits. In particular, the capacity of groundfish vessels to catch available groundfish without exceeding their groundfish ACE (for sectors) or trimester TAC (for non-sector vessels) for any stock before the end of the year will most directly affect resulting monkfish landings. If groundfish vessels can avoid exceeding their ACE or trimester TACs, then monkfish landings will more closely approach the NMA monkfish TAL and ACT beginning in FY2014, resulting in greater economic benefits to affected vessels.

5.3.2 Combined NMA and SMA DAS and Landing Limits Alternatives

As described in the introduction to this section, the analysis does not separate effects to NMA prices from increases in SMA landings or vice-versa. The assumption is that monkfish prices move together across all ports along the Atlantic, and thus an increase in SMA landings would decrease prices in both areas. Each port has a slightly different average price for monkfish, and the reason for those differences is a combination of local demand, local processing capabilities,

and dealer tastes. The calculations of changes in monkfish price due to changes in total fishery-wide landings maintain the differences between port prices. For these reasons, it is important to look at impacts of the combined alternatives. Appendix 2 shows prices and revenues for primary and secondary ports, as well as vessel length classes for combinations of all of the assessed alternatives in combination. In general, the larger increases in effort allocation impact ports and vessel length classes unequally.

The combination of the preferred alternatives from the NMA (Alternative 3) and the SMA (Alternative 2) is expected to result in 22,375,598 lb of monkfish landings from the NMA and SMA beginning in FY 2014. This represents an increase of approximately 4,833,297 lb of monkfish landings compared to the No Action Alternative (22%). Using the price assumptions and methods described in the introduction to this section, this alternative generates a projected price of $0.97/lb (about a 20% decrease), resulting in monkfish revenues of approximately $21.7 million during FY 2014. The combined preferred alternatives would result in approximately an 11.26% increase in revenue across all ports aggregated, with minor to significant positive economic impacts across all individual ports (Table 5.13; Appendix 2). Similarly, the combined preferred alternatives for the NMA (Alternative 3) and the SMA (Alternative 2) would result in increased revenues for all vessel size classes ranging from 15 to 18.5% (Table 5.14; Appendix 2). For analysis of the combined economic impacts of other combinations of alternatives considered in this action, refer to Appendix 2.

Table 5.12. Landings and revenues projections for primary and secondary ports under the combined preferred alternatives for the NMA (Alternative 3) and the SMA (Alternative 2).

Combined: NMA NE Council Revised Alternative 3 and SMA Committee Revised Alternative 2 (preferred)											
Home Port	**Alt N3CR-S2: Projected Directed Pounds - NMA (1,000's)**	**Alt N3CR-S2: Projected Incidental Pounds - NMA (1,000's)**	**Alt N3CR-S2: Projected Directed Pounds - SMA (1,000's)**	**Alt N3CR-S2: Projected Incidental Pounds - SMA (1,000's)**	**Alt N3-S2: Projected Total MF Pounds (1,000's)**	**Projected Price**	**Alt N3CR-S2: Projected Total MF Revenue**	**2012 MF Revenue**	**Alt N3CR-S2: % Change in MF Revenue**	**2012 Total Revenue**	**Alt N3CR-S2: % Change in Total Port Revenue**
Primary Ports											
ALL PORTS (AGGREGATE)	2757	8416	8495	2793	22461	$0.97	$21,688,801	$19,494,482	11.26	$1,197,422,710	0.1833
NEW BEDFORD, MA	724	2150	412	654	3941	$0.75	$2,963,567	$2,656,505	11.56	$403,852,675	0.076
BOSTON, MA	725	1848	331	152	3057	$0.88	$2,681,431	$2,325,415	15.31	$16,788,541	2.1206
GLOUCESTER, MA	318	1192	654	48	2212	$1.01	$2,238,433	$1,956,223	14.43	$53,308,775	0.5294
BARNEGAT LIGHT/LONG BEACH, NJ	0	11	1266	117	1394	$1.23	$1,712,411	$1,562,219	9.61	$28,976,790	0.5183
PORTLAND, ME	358	1576	0	0	1934	$0.80	$1,542,947	$1,326,544	16.31	$24,506,797	0.883
POINT JUDITH, RI	26	50	562	374	1012	$0.67	$678,195	$652,736	3.9	$39,481,758	0.0645
Secondary Ports											
MONTAUK, NY	0	6	919	151	1077	$1.30	$1,398,019	$1,290,433	8.3372	$21,671,545	0.496439
CHATHAM, MA	47	88	507	12	655	$1.19	$779,159	$693,032	12.4276	$11,017,199	0.781753
NEWPORT, RI	0	0	375	83	457	$1.30	$596,893	$555,531	7.4455	$10,078,413	0.410405
CAPE MAY, NJ	0	119	40	197	355	$0.59	$208,825	$207,663	0.5591	$74,434,677	0.00156
WESTPORT, MA	0	0	170	11	181	$1.13	$204,687	$185,981	10.0579	$2,229,106	0.839163
SOUTH BRISTOL, ME	50	222	0	0	272	$0.74	$201,632	$173,371	16.3011	$4,145,717	0.681701
SCITUATE, MA	4	49	41	58	152	$1.15	$175,189	$168,105	4.2142	$3,986,541	0.177704
PORTSMOUTH, NH	30	63	58	0	151	$1.07	$161,235	$139,705	15.4107	$4,976,643	0.432612
POINT PLEASANT, NJ	0	0	43	53	96	$1.00	$95,766	$95,825	-0.0614	$28,054,200	-0.00021
PORT CLYDE, ME	29	123	0	0	152	$0.72	$109,547	$94,117	16.394	$5,362,165	0.287748
NEWPORT NEWS, VA	0	10	0	16	27	$0.58	$15,544	$15,606	-0.3969	$30,394,302	-0.000204
HAMPTON, VA	0	2	0	12	14	$0.79	$11,189	$11,759	-4.8499	$12,743,525	-0.004475
PROVINCETOWN, MA	0	1	0	0	1	$0.95	$1,024	$926	10.6529	$4,559,584	0.002163

Note: Values are in nominal dollars (2012); Plymouth, MA and Chincoteague, VA are suppressed for confidentiality; all pounds are in whole weight

Table. 5.13. Landings and revenues projections for vessel length classes under the combined preferred alternatives for the NMA (Alternative 3) and the SMA (Alternative 2).

Combined: NMA NE Council Revised Alternative 3 and SMA Committee Revised Alternative 2 (preferred)									
Length Cat.	**Alt N3CR-S2: Projected Directed Pounds - NMA (1,000's)**	**Alt N3CR-S2: Projected Incidental Pounds - NMA (1,000's)**	**Alt N3CR-S2: Projected Directed Pounds - SMA (1,000's)**	**Alt N3CR-S2: Projected Incidental Pounds - SMA (1,000's)**	**Alt N3-S2: Projected Total MF Pounds (1,000's)**	**Projected Price**	**Alt N3CR-S2: Projected Total MF Revenue**	**2012 MF Revenue**	**Alt N3CR-S2: % Change in MF Revenue**
30 to 49 feet	384	926	6536	636	8482	$1.32	$11,232,223	$9,631,357	16.6
50 to 59 feet	424	1649	1124	660	3857	$0.94	$3,629,880	$3,128,205	16
70 to 89 feet	1878	5203	752	1306	9139	$0.78	$7,136,150	$6,021,239	18.5
90+ feet	71	429	81	137	719	$0.80	$578,080	$499,066	15.8
Unknown	0	208	1	48	256	$0.93	$238,987	$207,771	15

Note: Values are in nominal dollars (2012); all pounds are in whole weight

For the preferred combination of alternatives, the total change in landings is such that a price flexibility of -0.41 would result in an ex-vessel price decrease of approximately 7.8% across the entire fishery, including both limited access and open access (incidental) permits. Using these change in prices and the expected change in landings for each type and area, a net percentage change in expected total entity revenues were calculated. Of the 629 small entities that would be directly regulated under the proposed action, 309 would likely have a net decline in revenues, while 319 would likely have an increase in net revenues under the preferred combination of alternatives. The mean change would be +0.7 percent, suggesting that the distribution skews positively, despite reductions in overall monkfish revenue for individual vessels and ports such as Point Pleasant, NJ and Hampton, VA. Only one entity would have a decrease in expected

revenues greater than 5 %, and a total of 11 entities would have a decrease in expected revenues greater than 1%. A histogram of entities' net percent changes in revenue is presented in Figure 6.1. Overall, the magnitude of potential losses to individual vessels are small and not widespread, and the proposed increases in possession limits could allow impacted vessels to reallocate effort in a net-positive manner, particularly for Category E vessels landing incidental amounts of monkfish.

5.3.3 Monkfish DAS Usage Requirements

Alternative 2 is expected to increase monkfish landings and fishing effort in the directed monkfish fishery beginning in FY 2014. Compared to the No Action Alternative, Alternative 2 addresses concerns that existing requirements to use groundfish DAS in combination with monkfish DAS at the start of the FY prevented efficient utilization of monkfish and groundfish DAS allocations. By allowing monkfish-only DAS to be used at any time throughout the FY, vessels can more effectively target monkfish earlier in the FY when monkfish are more prevalent, and preserve monkfish-groundfish combination DAS until groundfish are more readily available later in the FY, particularly in the SMA. This could increase vessel returns and improve economic efficiency for monkfish Category C and D vessels. This would increase fishing opportunities and associated revenue for monkfish either directly or incidentally when fishing for groundfish, thereby providing economic relief and reducing disruptions in fishing income. Therefore, compared to the No Action Alternative, Alternative 2 would result in positive economic impacts overall, although precise economic benefits would depend upon the composition and volume of catch associated with any additional monkfish effort realized from this gain in efficiency.

5.3.4 Monkfish Limited Access Category H Permit Boundary

Amendment 2 established a new permit category, Category H, for some vessels that did not qualify for a limited access permit in the initial FMP. Seven vessels qualified for this fishery and currently five or six are actively fishing. These vessels were constrained by area closures to protect sea turtles, so that the area available to them for fishing was approximately 20 miles wide. This, coupled with the limited season when monkfish were available in the area, led the industry to request that the boundary for the fishery be moved northward 20 miles from 38°20' N to 38°40' N in FW 4 (NEFMC 2007). The proposed action, Alternative 2, would revise the Category H fishery boundary to include the entire SMA fishing region and increase the fishing opportunities available to Category H vessels. It is difficult to quantify the potential benefits of greater flexibility in fishing operations, as expected landings and associated revenue would depend upon the amount of monkfish and other species landed, and market category and associated price at the time of landing, which are impossible to predict at this time. Overall, increased fishing opportunities would likely generate minor positive economic impacts for Category H permits under Alternative 2 compared to the No Action Alternative.

5.4 Social Impacts Assessment (SIA)

All community level economic impacts must be examined in the context of the overall fishing dependence, gentrification and social vulnerability of each community. Indices of commercial fishing dependence allow assessment of individual communities in relation to other coastal

communities in the area and region (Jepson and Colburn 2013). Community boundaries can be identified based on US Census boundaries for Census Designated Places (CDPs) and county sub-divisions (MCDs).

NMFS data on total landings value and weight, and numbers of dealers and permits, were used to develop an index of commercial fishing engagement. By adjusting this index for the population size of a community, an index of commercial fishing reliance was derived (i.e., reliance is a per capita measure; Table 5.14). Social vulnerability in the NMFS social indicators includes components such as poverty, racial composition, unemployment, crime, home values, education, English fluency, and single female-headed households. Gentrification, which can affect available waterfront property for commercial fishing use, is measured using variables related to the number of retirees and urban sprawl (such as population density and cost of living) and natural amenities (such as percent water cover, housing rental vacancies, and number of boat launches).

High levels of any of these three measures (or social indicators), or high to moderate in two or three, mean a community is especially vulnerable to impacts from regulations and other issues/events. Table 5.15 shows the social vulnerability and gentrification vulnerability indices for selected monkfish ports.

Additionally, apart from the pre-existing vulnerabilities indicated by these measures, many communities in New Jersey and New York, especially, are still recovering from the impacts of Hurricane Sandy (that made landfall on October 29, 2012). Meanwhile communities with larger populations of fishermen who target both GOM groundfish and monkfish have been impacted by recent large reductions in GOM groundfish ACLs.

Similarly, several factors need to be considered when examining economic impacts by vessel size. First, smaller vessels often count for a larger percentage of total vessels in smaller and more rural communities, while larger vessels tend to concentrate in larger and more urban ports. Therefore impacts that more predominately affect small vessels vs. large vessels also have community-level impacts.

The presence of monkfish processors or dealers based primarily in the community also makes a difference in community impacts. Higher landings are good for dealers and processors as well as fishermen, allowing increased sales. Similarly, more DAS mean more benefits to all businesses that depend in part on trip or maintenance-related sales to the fishing industry (including ice suppliers, boat and gear repair companies, and even grocery stores).

Table 5.14. Fishing dependence indices for selected monkfish ports.

	Recreational Fishing Dependence Indices		**Commercial Fishing Dependence Indices**	
Community	Recreational Fishing Reliance Index	Recreational Fishing Engagement Index	Commercial Fishing Reliance Index	Commercial Fishing Engagement Index
Chatham, MA	High	High	High	High
Gloucester, MA	Low	High	High	High

New Bedford, MA	Low	Moderate	Moderate	High
Provincetown, MA	Moderate	High	Moderate	Moderate
Westport, MA	Low	High	Low	High
Scituate, MA	Low	Low	Low	High
Boston, MA	Low	High	Low	High
Portland, ME	Low	Low	Low	High
Saint George/Port Clyde-Tenants Harbor/Spruce Head, ME	Low	Low	High	High
South Bristol, ME	Low	Low	High	High
Portsmouth, NH	Low	Moderate	Low	High
Barnegat Light, NJ	High	High	High	High
Cape May, NJ	High	High	High	High
Point Pleasant, NJ	Low	High	Low	High
Point Pleasant Beach, NJ	Low	Low	Moderate	High
Montauk, NY	High	High	High	High
Newport, RI	Low	High	Low	High
Narragansett/Point Judith, RI	Low	High	High	High
Hampton, VA	Low	High	Low	High
Newport News, VA	Low	High	Low	High

Note: 1. Categories were assigned based on factor scores for each index: factor scores from the lowest-0.499 were coded as 'Low', scores 0.500-0.999 as 'Moderate', scores 1.000 and above as 'High'.

Table 5.15. Social vulnerability and gentrification vulnerability indices for selected monkfish ports.

	Social Vulnerability Indices					**Gentrification Vulnerability Indices**			
Community	Personal Disruption Index	Population Composition Index	Poverty Index	Labor Force Structure Index	Housing Characteristics Index	Housing Disruption Index	Retiree Migration Index	Urban Sprawl Index	Natural Amenities Index
Chatham, MA	Low	Low	Low	High	Low	High	High	Moderate	High
Gloucester, MA	Low	Low	Low	Low	Low	Low	Low	Low	Low
New Bedford, MA	High	High	High	Low	Moderate	Moderate	Low	Low	Low
Provincetown, MA	Low	Low	Low	Low	Moderate	Low	Low	Low	High
Westport, MA	Low	Low	Low	Low	Low	Low	Low	Low	Low
Scituate, MA	Low	Low	Low	Low	Low	Low	Low	Moderate	Low
Boston, MA	High	High	High	Low	Low	Low	Low	High	Low
Portland, ME	Moderate	Low	High	Low	Moderate	Low	Low	Low	Moderate
Saint George/Port Clyde-Tenants Harbor/Spruce Head, ME	Low	Low	Moderate	High	Moderate	Moderate	High	Low	High
South Bristol, ME	Low	Low	Low	High	Moderate	Low	High	Low	High
Portsmouth, NH	Low	Low	Low	Low	Low	Low	Low	Low	Low
Barnegat Light, NJ	Low	Low	Low	High	Low	Low	High	Moderate	High
Cape May, NJ	Low	Low	Low	High	Low	High	High	Low	High
Point Pleasant, NJ	Low	Low	Low	Low	Low	Low	Low	Low	Low
Point Pleasant Beach, NJ	Low	Low	Low	Low	Low	High	Low	Moderate	Moderate
Montauk, NY	Low	Low	Low	Moderate	Low	High	Low	Moderate	High
Newport, RI	Low	Low	Low	Low	Low	Moderate	Low	Low	Low
Narragansett/Point Judith, RI	Low	Low	Low	Low	Low	Moderate	Low	Low	High
Hampton, VA	Moderate	Moderate	Moderate	Low	Moderate	Low	Low	Low	Moderate
Newport News, VA	Moderate	Moderate	Moderate	Low	Moderate	Low	Low	Low	Low

Note: 1. Categories were assigned based on factor scores for each index: factor scores from the lowest-0.499 were coded as 'Low', scores 0.500-0.999 as 'Moderate', scores 1.000 and above as 'High'.
2. Recreational fisheries data from 2009, all other data from 2011.

5.4.1 Impacts of DAS and Landing Limits Alternatives

5.4.1.1 NMA DAS and Landing Limits Alternatives

5.4.1.1.1 No Action

The No Action Alternative would have a neutral to slightly negative social impact. The No Action Alternative represents measures that were developed in FW 7 in 2011. Existing trip limits, DAS allocations, and TAL/ACT in the NMA do not appear to be limiting a vast majority of the directed monkfish fishery. As described in Section 3.1.1, the No Action Alternative could provide consistency to the fishery that would help to minimize market fluctuations and changes to existing business plans. Vessels and associated communities are accustomed to these measures, and would not necessarily be affected if this alternative is adopted. However, these measures are also unlikely to achieve OY, and could be perceived as foregone fishing opportunities and associated potential economic benefits. Therefore, compared to both Alternative 2 and Alternative 3, the No Action Alternative would have minor negative social impacts.

5.4.1.1.2 Alternative 2 and Alternative 3 (Preferred)

As noted above, Alternatives 2 and 3 are both expected to increase NMA monkfish landings and fishing effort in the directed monkfish fishery beginning in FY 2014. This would increase fishing opportunities and associated revenue for monkfish either directly or incidentally when fishing for groundfish, thereby providing economic relief and reducing disruptions in fishing income, particularly for communities adversely affected by reductions in groundfish ACLs in recent years. Although increased fishing opportunities would also increase disruption from daily living by resulting in more fishing trips and time away from home, such negative social impacts are likely more than offset by the benefits of increased fishing revenue. Increased landings, while welcomed by most of the monkfish industry, could also be perceived to harm the health of monkfish stocks, negatively affect market price, and potentially jeopardize future fishing opportunities if landings are allowed to increase substantially compared to recent landing levels. As a result, substantial increases in landings expected from Alternative 2 could be perceived to result in greater harm to the monkfish stocks and industry than the more moderate increase in monkfish landings expected from Alternative 3 measures. Increasing monkfish incidental landing limits under Alternative 3 would likely reduce regulatory discards, allowing the combined monkfish and groundfish fisheries to more fully harvest the NMA TAL beginning in FY 2014. This could enhance public perceptions of the fishing industry, NMFS, the NEFMC, and management legitimacy in general due to public perception of wasted resources in commercial fisheries. Therefore, compared to the No Action Alternative, both Alternatives 2 and 3 would result in positive social impacts, with Alternative 3 likely resulting in the greatest overall benefits to fishing communities.

5.4.1.2 SMA DAS and Landing Limits Alternatives

5.4.1.2.1 No Action

The No Action Alternative would have a negligible to slightly negative social impact. The No Action Alternative represents measures that were developed in Amendment 5 in 2011. As

described in Section 3.1.2, the No Action Alternative could provide consistency to the fishery that would help to minimize market fluctuations and changes to existing business plans. Vessels and associated communities are accustomed to these measures, and would not necessarily be affected if this alternative is adopted. However, these measures are also unlikely to achieve OY, and could be perceived as foregone fishing opportunities and associated potential economic benefits. Therefore, compared to Alternatives 2 through 4, the No Action Alternative would have minor negative social impacts.

5.4.1.2.2 Alternative 2 (Preferred), Alternative 3 and Alternative 4

As noted above, Alternatives 2 through 4 are expected to increase SMA monkfish landings and fishing effort in the directed monkfish fishery beginning in FY 2014. This would increase fishing opportunities and associated revenue for monkfish either directly or incidentally when fishing for groundfish, thereby providing economic relief and reducing disruptions in fishing income, particularly for communities adversely affected by reductions in groundfish ACLs in recent years. Although increased fishing opportunities would also increase disruption from daily living by resulting in more fishing trips and time away from home, such negative social impacts are likely more than offset by the benefits of increased fishing revenue. As noted above, some members of the monkfish fleet, particularly in the SMA, were concerned that substantially increasing monkfish landings compared to recent levels would harm both monkfish stocks and markets. Therefore, they supported more moderate increases in monkfish landings such as those expected from Alternatives 2 and 4 over substantial increases in monkfish landings expected from Alternative 3. Increasing monkfish directed daily landing limits under Alternatives 2 and 4 would also increase opportunity for vessels that land gutted monkfish with heads attached, as implied by analyses conducted for Amendment 5. This could enhance public perceptions of the fishing industry, NMFS, the NEFMC, and management legitimacy in general due to public perception of wasted resources in commercial fisheries. Therefore, compared to the No Action Alternative, Alternatives 2 through 4 would result in positive social impacts. Alternative 2 offers a moderate increase in monkfish landings compared to other alternatives, striking a balance between the socioeconomic benefits associated with increasing monkfish landings and the potential harm to monkfish stocks and markets from excessive monkfish landings increases.

5.4.2 Monkfish DAS Usage Requirements

Alternative 2 is expected to increase monkfish landings and fishing effort in the directed fishery beginning in FY 2014. Compared to the No Action Alternative, Alternative 2 addresses concerns that existing requirements to use groundfish DAS in combination with monkfish DAS at the start of the FY prevented efficient utilization of monkfish and groundfish DAS allocations. By allowing monkfish-only DAS to be used at any time throughout the FY, vessels can more effectively target monkfish earlier in the FY when monkfish are more prevalent, and preserve combination DAS until groundfish are more readily available later in the FY, particularly in the SMA. This could increase operational flexibility and improve economic efficiency for monkfish Category C and D vessels. This would increase fishing opportunities and associated revenue for monkfish either directly or incidentally when fishing for groundfish, thereby providing economic relief and reducing disruptions in fishing income, particularly for communities adversely affected by reductions in groundfish ACLs in recent years. By allowing vessels the opportunity to use monkfish-only DAS when monkfish are available and groundfish are not, it is likely that vessels will be able to save their groundfish DAS to use later in the year when groundfish are available

and can be landed, thereby possibly converting some groundfish discards to landings. Although increased fishing opportunities would also increase disruption from daily living by resulting in more fishing trips and time away from home, such negative social impacts are likely more than offset by the benefits of increased fishing revenue. Therefore, compared to the No Action Alternative, Alternative 2 would result in positive social impacts.

5.4.3 Monkfish Limited Access Category H Permit Boundary

Alternative 2 is expected to increase monkfish fishing opportunities for permit Category H vessels beginning in FY 2014. Compared to the No Action Alternative, Alternative 2 addresses concerns that permit Category H vessels have been severely limited in their fishing opportunities due to restrictions on areas that can be fishing south of 38°40' N. This southern most region of the SMA includes closure area for ESA species and limits the ability of Category H vessels to target monkfish at all times of the year. By allowing Category H vessels to fish throughout the SMA, vessels can more effectively target monkfish throughout the FY in the SMA. This could increase vessel returns and improve economic efficiency for monkfish Category H vessels. This would increase fishing opportunities and associated revenue for monkfish, thereby providing economic relief and reducing disruptions in fishing income. Although increased fishing opportunities would also increase disruption from daily living by resulting in more fishing trips and time away from home, such negative social impacts are likely more than offset by the benefits of increased fishing revenue. Therefore, compared to the No Action Alternative, Alternative 2 would result in positive social impacts.

5.5 Cumulative Effects Analysis

5.5.1 Introduction

A cumulative effects assessment (CEA) is a required as part of an EIS or EA according to the Council on Environmental Quality (CEQ; 40 CFR part 1508.7) and NOAA's agency policy and procedures for NEPA, found in NOAA Administrative Order 216-6. The purpose of the CEA is to integrate into the impact analyses, the combined effects of many actions over time that would be missed if each action were evaluated separately. CEQ guidelines recognize that it is not practical to analyze the cumulative effects of an action from every conceivable perspective but rather, the intent is to focus on those effects that are truly meaningful. This section serves to examine the potential direct and indirect effects of the alternatives in this EA together with past, present, and reasonably foreseeable future actions that affect the monkfish environment. It should also be noted that the predictions of potential synergistic effects from multiple actions, past, present and/or future will generally be qualitative in nature.

5.5.2 Valued Ecosystem Components (VEC)

As noted in section 4.0 (Affected Environment), the VECs that exist within the monkfish fishery are identified and include the following:

1. Monkfish stocks (target and non-target);
2. Other stocks (incidental catch and bycatch);
3. Endangered and other protected species;
4. Habitat, including non-fishing effects; and
5. Human Communities (economic/social effects on fishery and fishing communities).

<u>Temporal Scope of the VECs</u>

While the effects of historical fisheries are considered, the temporal scope of past and present actions on monkfish stocks, other stocks, habitat/EFH and the human environment is primarily focused on actions that have taken place since implementation of the initial Monkfish FMP in 1999. An assessment using this timeframe demonstrates the changes to resources and the human environment that have resulted through management under the Council process. For endangered and other protected species, the context is largely focused on the 1980s and 1990s, when NMFS began generating stock assessments for marine mammals and turtles that inhabit waters of the U.S. EEZ. The CEA examines future actions through April 30, 2017. This is the end of FY 2016 and the likely period of effectiveness for this action. Therefore, the cumulative effects will need to be reassessed as part of the NEPA action taken for FY 2017 and beyond, as necessary.

Geographic Scope of the VECs

The geographic scope of the analysis of impacts to monkfish stocks, non-monkfish species and habitat for this action is the total range of these VECs in the Western Atlantic Ocean, as described in the Affected Environment section of the document (Section 4.0) and more fully in Amendment 5 (NEFMC 2011a). The result is a more limited geographic area used to define the core geographic scope within which the majority of harvest effort for the managed resources occurs. For endangered and protected species, the geographic range is the total range of each species.

Because the potential exists for far-reaching social or economic impacts on U.S. citizens who may not be directly involved in fishing for the managed resources, the overall geographic scope for human communities is defined as all U.S. human communities. Limitations on the availability of information needed to measure social and economic impacts at such a broad level necessitate the delineation of core boundaries for the human communities. Therefore, the geographic range for the human environment is defined as those primary and secondary ports bordering the range of the monkfish fishery from the U.S.-Canada border to, and including, North Carolina.

5.5.3 Evaluation Criteria

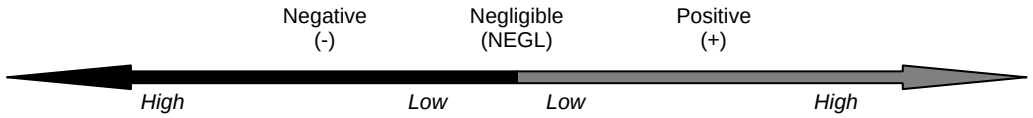
This EA evaluates the potential impacts of past, present, and reasonably foreseeable future actions using the criteria outlined in Table 5.16. Impacts from all alternatives are judged relative to the baseline conditions, as described in Section 4.0 and compared to each other.

A CEA ideally makes effect determinations based on the culmination of the following: (1) impacts from past, present and reasonably foreseeable future actions; (2) the baseline condition for resources and human communities (note, the baseline condition consists of the present condition of the VECs plus the combined effects of past, present and reasonably foreseeable future actions); and (3) impacts from the preferred alternative and alternatives.

Table 5.16. Criteria used to evaluate the potential impacts of past, present, and reasonably foreseeable future actions.

Impact Definition			
VEC	**Direction**		
	Positive (+)	**Negative (-)**	**Negligible (Negl)**

Allocated target species, other landed species, and protected resources	Actions that increase stock/population size	Actions that decrease stock/population size	Actions that have little or no positive or negative impacts to stocks/populations
Physical Environment/ Habitat/EFH	Actions that improve the quality or reduce disturbance of habitat	Actions that degrade the quality or increase disturbance of habitat	Actions that have no positive or negative impact on habitat quality
Human Communities	Actions that increase revenue and social well-being of fishermen and/or associated businesses	Actions that decrease revenue and social well-being of fishermen and/or associated businesses	Actions that have no positive or negative impact on revenue and social well-being of fishermen and/or associated businesses
Impact Qualifiers:			
Low (L, as in low positive or low negative)	To a lesser degree		
High (H; as in high positive or high negative)	To a substantial degree		
Likely	Some degree of uncertainty associated with the impact		



5.5.4 Past, Present and Reasonably Foreseeable Future Actions

A summary of past, present and reasonably foreseeable future actions is presented in Table 5.17. The baseline conditions of the resources and human community are subsequently summarized, although it is important to note that beyond the stocks managed under this FMP and protected species, quantitative metrics for the baseline conditions are not available. Finally, a brief summary of the impacts from the alternatives contained in this action is included. The culmination of all these factors is considered when making the cumulative effects assessment.

Table 5.18 summarizes the combined effects of other past, present and reasonably foreseeable future actions that affect the VECs (i.e., actions other than those alternatives under development in this document from 2014 onward). Most of the actions affecting this EA and considered in Table 5.18 come from fishery-related activities (e.g., Federal fishery management actions). As expected, these activities have fairly straightforward effects on environmental conditions, and were, are, or will be taken, in large part, to improve those conditions. MSA stipulates that management comply with a set of National Standards that collectively serve to optimize the conditions of the human environment. Under this regulatory regime, the cumulative impacts of past, present, and future Federal fishery management actions on the VECs should be expected to result in positive long-term outcomes. Nevertheless, these actions are often associated with offsetting impacts. For example, constraining fishing effort frequently results in negative short-term socio-economic impacts for fishery participants. However, these impacts are usually

necessary to bring about long-term sustainability of a given resource and as such, should, in the long-term, promote positive effects on human communities, especially those that are economically dependent upon the managed resource.

Non-fishing activities were also considered when determining the combined effects from past, present and reasonably foreseeable future actions. Activities that have meaningful effects on the VECs include the introduction of chemical pollutants, sewage, changes water temperature or acidification, salinity, dissolved oxygen, and suspended sediment into the marine environment. These activities pose a risk to the all of the identified VECs in the long term. Human induced non-fishing activities that affect the VECs under consideration in this document are those that tend to be concentrated in near shore areas. Examples of these activities include, but are not limited to agriculture, port maintenance, beach nourishment, coastal development, marine transportation, marine mining, dredging and the disposal of dredged material. Wherever these activities co-occur, they are likely to work additively or synergistically to decrease habitat quality and, as such, may indirectly constrain the sustainability of the managed resources, non-target species, and protected resources. Decreased habitat suitability would tend to reduce the tolerance of these VECs to the impacts of fishing effort. Mitigation of this outcome through regulations that would reduce fishing effort could then negatively impact human communities.

Table 5.17. Summary of effects on VECs from past, present, and reasonably foreseeable FMP and other fishery-related actions.

Action	Description	Impacts on Regulated Monkfish Stocks	Impacts on Non-target species	Impacts on Endangered and Other Protected Species	Impacts on Habitat – Including Non-fishing Effects	Impacts on Human Communities
MONKFISH FISHERY-RELATED ACTIONS						
Original FMP implemented in 1999	Limited entry, effort controls, gear restrictions and other measures designed to stop overfishing and rebuild stocks including default closure of the directed fishery in year 4	**Direct Positive** Provided slight effort reductions and regulatory tools available to rebuild and manage stocks	**Indirect Positive** Reduced directed fishing and associated impacts on non-target species	**Indirect Positive** Reduced fishing effort, thus reduced interactions with protected species	**Indirect Positive** Reduced fishing effort, thus reduced gear interactions with habitat	**Indirect Positive** Increased probability of long term sustainability **Potential direct negative** Default year 4 closure would adversely affect dependent communities
Amendment 1 (1999)	Designated EFH for monkfish and required Federal agencies to consult with NMFS on actions that may adversely affect EFH	**Indirect Low Positive** A consultation with NFMS that leads to the protection of monkfish EFH is beneficial to multispecies stocks	**Indirect Low Positive** A consultation with NFMS that leads to the protection of monkfish EFH is beneficial to other stocks that share the same EFH	**Indirect Low Positive** Consultation with NFMS that leads to the protection of monkfish EFH is beneficial to protected resources that share a need for the same habitat	**Direct High Positive** Consultation with NMFS on activities that may adversely affect habitat provides NMFS the opportunity to mitigate or even prevent EFH impacts	**Indirect Low Positive** Where NMFS consults on projects impacting monkfish EFH, the overall health of the stocks should improve which would lead to long term sustainability
Framework 1 to the Monkfish FMP (2002)	Specifications for FY2002, 1-year delay in year 4 closure; aligned gillnet and trawl trip limits per court order	**Mixed** Uncertain scientific information suggested end or reversal of stock declines; impact of closure of directed fishery not clear due to likely increased discards of monkfish bycatch	**Indirect Positive** Reduced directed fishing effort which resulted in discard/bycatch reductions	**Indirect Positive** Reduced fishing effort, thus reduced interactions with protected species	**Indirect Positive** Reduced fishing effort, thus reduced gear interactions with habitat	**Mixed** One-year delay in closure of directed fishery benefitted dependent communities; changes to trip limits reduced viability of offshore trawl fishery

Action	Description	Impacts on Regulated Monkfish Stocks	Impacts on Non-target species	Impacts on Endangered and Other Protected Species	Impacts on Habitat – Including Non-fishing Effects	Impacts on Human Communities
MONKFISH FISHERY-RELATED ACTIONS CONTINUED						
Framework 2 to the Monkfish FMP (2003)	Incorporated updated scientific information; revised reference points, adopted index-based TAC setting method; specifications for FY2003	**Direct Positive** Established a rebuilding program based on survey index relative to annual growth targets	**Indirect Positive** Reduced directed fishing effort which resulted in discard/bycatch reductions	**Indirect Positive** Reduced fishing effort, thus reduced interactions with protected species	**Indirect Positive** Reduced fishing effort, thus reduced gear interactions with habitat	**Indirect Positive** Increased probability of long term sustainability; eliminated year-4 closure of the directed fishery
Amendment 2 to the FMP (2005)	Addressed EFH and bycatch issues: a new limited access permit for NC-VA vessels; SFMA offshore monkfish fishery program); SFMA trawl roller limit; 2 deep-sea canyon closures; research DAS set-aside program, and other measures;	**Neutral** Measures did not have a direct impact on fishing effort or stock rebuilding	**Neutral** Measures did not have a direct impact on fishing effort or incidental catch of non-target species	**Neutral or indirect positive** Other than protection of deep-sea corals from future effort shifts, measures did not have a direct impact on fishing effort or interaction with protected species	**Direct Positive** Canyon area closures and gear restrictions reduced impact of fishery on EFH	**Direct positive** Provided access to NC-VA fishermen with historical participation; cooperative research program to improve science underlying management
Framework 3/ Multispecies FMP Framework 42 (joint, 2006)	Prohibited targeting monkfish on a Multispecies B DAS	**Direct Positive** Prevented expansion of directed fishing effort	**Indirect Positive** Prevented expansion of directed fishing effort which resulted in discard/bycatch reductions	**Indirect Positive** Prevented expansion of directed fishing effort, thus limited interactions with protected species	**Indirect Positive** Prevented expansion of directed fishing effort, thus limited gear interactions with habitat	**Mixed** Increased probability of long term sustainability but effort limitations result in short term lost revenues for fishermen and communities

Action	Description	Impacts on Regulated Monkfish Stocks	Impacts on Non-target species	Impacts on Endangered and Other Protected Species	Impacts on Habitat – Including Non-fishing Effects	Impacts on Human Communities
MONKFISH FISHERY-RELATED ACTIONS CONTINUED						
Framework 4 (2007)	Eliminated survey-based TAC setting; set 3-year specifications to achieve rebuilding, including trip limits and DAS for NFMA for 2007-2009 with automatic extension;	**Direct High Positive** Controlled directed fishing effort to achieve rebuilding in 3 years.	**Indirect Positive** controlled directed fishing effort which resulted in discard/bycatch reductions	**Neutral or Indirect Positive** controlled fishing effort, thus reduced interactions with protected species	**Neutral or Indirect Positive** controlled fishing effort, thus reduced gear interactions with habitat	**Mixed** Increased probability of long term sustainability but NFMA effort reductions result in short term lost revenues for some fishermen and communities; stability of 3-year specifications benefits fishermen;
Framework 5 (2008)	Revised biological reference points based on stock assessment; closed loopholes in DAS program; revised SFMA incidental catch limit	**Direct Positive** Improved effectiveness of DAS program	**Neutral** No major change to directed effort levels or incidental catch of non-target species	**Neutral** No major change to directed effort levels or interaction with protected species	**Neutral** No major change to directed effort levels or interactions with habitat	**Direct Positive** New reference points result in stock status improvement to rebuilt and no overfishing;
Framework 6 (2008)	Eliminated a backstop provision that would have adjusted and possibly closed the monkfish fishery in FY 2009 if landings exceeded the target total allowable catch by more than 30 percent	**Neutral** No change to directed fishing effort	**Neutral** No change to directed fishing effort	**Neutral** No change to directed fishing effort	**Neutral** No change to directed fishing effort	**Direct Positive** Eliminated the non-warranted closure of the directed fishery for TAC overages in excess of 30%, in light of rebuilt stock status

Action	Description	Impacts on Regulated Monkfish Stocks	Impacts on Non-target species	Impacts on Endangered and Other Protected Species	Impacts on Habitat – Including Non-fishing Effects	Impacts on Human Communities
MONKFISH FISHERY-RELATED ACTIONS CONTINUED						
Amendment 5 (2011)	Established ACLs, ACTs, AMs and DAS and trip limits to achieve, but not exceed catch limits	**Direct positive** ACTs prevent overfishing, AMs address overages of ACL, and DAS and trip limits achieve, but not exceed ACT	**Indirect Mixed** Increases ACTs and fishing effort in both areas, but establishes controls to limit overall effort			**Mixed** Increased probability of long term sustainability but reactive AMs may result in short term lost revenues for fishermen and communities
Framework 7 (2011)	Adjust NFMA ACT based on stock assessment and NFMA DAS and trip limits	**Direct positive** ACT prevents overfishing and measures achieve, but not exceed ACT	**Indirect Mixed** No change to directed fishing effort	**Neutral** No change to directed fishing effort	**Neutral** No change to directed fishing effort	**Direct positive** Increases ACT and possession limits
Emergency Action to Eliminate Monkfish Possession Limits in the NMA During FY 2013 (2013)	Eliminate monkfish possession limits for groundfish sector vessels fishing under a groundfish DAS in the NMA FY 2013	**Neutral** ACT prevents overfishing and measures achieve, but not exceed ACT	**Indirect Mixed** No change to directed fishing effort	**Neutral** No change to directed fishing effort	**Neutral** No change to directed fishing effort	**Direct positive** Mitigates the adverse economic impacts of reduced fishing opportunities in the groundfish fishery
Amendment 4 (in development)	Monkfish component of the Omnibus EFH Amendment; would revised EFH designations for all New England fisheries, possibly establish new HAPCs and consider measures to further protect critical habitat	**Unknown or potentially positive** Final measures not defined, but protection of monkfish EFH likely positive for monkfish stocks	**Unknown or potentially positive** Final measures not defined, but protection of monkfish and other species' EFH likely positive for non-target species	**Unknown** Final measures not defined,	**Likely Direct positive** Final measures not defined, but purpose of amendment is protection of monkfish and other species' EFH	**Unknown** Final measures not defined,

Action	Description	Impacts on Regulated Monkfish Stocks	Impacts on Non-target species	Impacts on Endangered and Other Protected Species	Impacts on Habitat – Including Non-fishing Effects	Impacts on Human Communities
MONKFISH FISHERY-RELATED ACTIONS CONTINUED						
Amendment 6 (in development)	Revise existing monkfish DAS system, integrate monkfish into groundfish sectors, or create a monkfish ITQ program	**Unknown or neutral** Final measures not defined, but measures would not undermine existing conservation measures, or measures to protect endangered and protected species or EFH				**Unknown** Measures are intended to address problems identified in scoping and increase efficiency of monkfish fishery
Action	**Description**	**Impacts on Regulated Monkfish Stocks**	**Impacts on Non-target species**	**Impacts on Endangered and Other Protected Species**	**Impacts on Habitat – Including Non-fishing Effects**	**Impacts on Human Communities**
OTHER FISHERY-RELATED ACTIONS						
Atlantic Sea Scallop FMP – a series of amendment and framework actions from the mid-1990s through the present	Implementation of the Atlantic Sea Scallop FMP and continued management of the fishery, primarily through effort controls	**Direct Positive** Effort reductions taken over time have resulted in a sustainable scallop fishery and reduction in both directed and incidental catch of monkfish	**Indirect Positive** Effort reductions taken over time also reduced bycatch, including gear modifications that improved bycatch escapement	**Mixed** Effort reductions taken over time reduced interactions with protected species however, turtle interactions remain problematic	**Indirect Positive** Effort reductions reduced gear contact with habitat and the current rotational access program focuses fishing effort on sandy substrates which are less susceptible to habitat impacts	**Indirect Positive** Initial negative impacts due to effort reductions have been supplanted by a sustainable, profitable fishery
Groundfish FMP – a series of amendment and framework actions from implementation of the FMP in 1977 through the present	Implementation of the NE Multispecies FMP and continued management of the fishery, primarily through effort controls, and, recently also through sectors	**Direct Positive** Multispecies FMP effort controls and reductions have resulted in a fishery that is no longer overfished, nor is overfishing occurring	**Indirect Positive** Effort reductions and gear controls taken over time also reduced bycatch	**Indirect Positive** Reducing effort and other measures reduced opportunities for interactions with protected species	**Indirect Positive** Reducing effort and other measures reduced opportunities for habitat interactions	**Indirect Positive** Reducing effort has created a sustainable fishery for some stocks, although ACL reductions have led to economic and social impacts and increased discards

Action	Description	Impacts on Regulated Monkfish Stocks	Impacts on Non-target species	Impacts on Endangered and Other Protected Species	Impacts on Habitat – Including Non-fishing Effects	Impacts on Human Communities
OTHER FISHERY-RELATED ACTIONS CONTINUED						
Atlantic Large Whale Take Reduction Plan Amendment (2008)	Removed the DAM program, implemented sinking ground lines for lobster gear, includes more trap/pot and gillnet fisheries, and requires additional markings on gear for information on entanglements ; future actions will minimize impact of vertical lines	**Negligible** Changes implemented through the amendment are not expected to have substantial changes on groundfish	**Negligible** Changes implemented through the amendment are not expected to have substantial changes on non-groundfish species	**Direct Positive** New regulations implemented to protect large whales are expected to have a positive impact on large whales by reducing incidental takes	**Negligible** Changes implemented through the amendment are not expected to have substantial changes to habitat	**Indirect Negative** Changes implemented through the amendment require some gear changes for gillnet fisheries which have minor negative economic impacts
Harbor Porpoise Take Reduction Plan Amendment (2010)	Actions to reduce takes of harbor porpoise toward the long-term zero mortality rate goal.	**Unknown** If current measures such as closure areas and the use of pingers are expanded upon or modified, it could impact groundfish	**Unknown** If current measures such as closure areas and the use of pingers are expanded upon or modified, it could impact non-groundfish species	**Direct Positive** Changes to protect harbor porpoise have a positive impact on protected species	**Unknown** If current measures such as closure areas and the use of pingers are expanded upon or modified, it could impact habitat	**Unknown** If current measures such as closure areas and the use of pingers are expanded upon or modified, it could impact human communities
Skate FMP	Actions to end overfishing, rebuild overfished stocks, establish ACLs/AMs, and landing limits to achieve catch levels	**Minor Negative** Lower skate possession limits and closures may cause vessels to use DAS for monkfish	**Mixed** Actions taken to reduce skate mortality; they could lead to increased targeting of non-monkfish species	**Unknown** If actions taken to reduce skate mortality, could impact protected species by shifting effort into other fisheries with interactions with protected species	**Unknown** If actions are taken to reduce skate mortality, they could impact habitat	**Minor negative** Actions taken to reduce skate mortality negatively impact human communities by reducing fishing opportunities and revenue

Action	Description	Impacts on Regulated Monkfish Stocks	Impacts on Non-target species	Impacts on Endangered and Other Protected Species	Impacts on Habitat – Including Non-fishing Effects	Impacts on Human Communities
OTHER FISHERY-RELATED ACTIONS CONTINUED						
Spiny Dogfish FMP	Implements quotas, possession limits and ACLs to regulate spiny dogfish catch; many groundfish regulations also control effort in this fishery	**Minor negative** Higher spiny dogfish quotas may result in higher indirect catch of monkfish that may have minor negative impact on monkfish	**Indirect positive** Gear requirements in the groundfish fishery help minimize bycatch of non-target species	**Mixed** Measures affecting spiny dogfish fishing in the groundfish fishery and gear regulations implemented under the ESA and MMPA should also help minimize impacts to protected species, although increased effort from higher quotas may increase interactions; both trawl gear and gillnets are used in this fishery	**Indirect positive** Measures affecting spiny dogfish fishing in the groundfish fishery should also help minimize impacts to habitat	**Mixed** Shore-term reductions in landings resulted in negative impact, but recent increases in yearly quotas likely mitigated those impacts
Omnibus Essential Fish Habitat Amendment	Phase 2 would consider effects of fishing gear on EFH and move to minimize, mitigate or avoid impacts that are more than minimal and temporary in nature. Further, Phase 2 would reconsider measures in place to protect EFH in the Northeast Region.	**Indirect positive** Protecting EFH would have indirect positive impacts on monkfish	**Indirect positive**	**Negligible**	**Direct positive** Protecting EFH would have indirect positive impacts on monkfish EFH	**Unknown** Possible negative impacts for vessels using trawl gear

Action	Description	Impacts on Monkfish Stocks	Impacts on Non-target species	Impacts on Endangered and Other Protected Species	Impacts on Habitat – Including Non-fishing Effects	Impacts on Human Communities
NON FISHERY-RELATED ACTIONS						
Agriculture runoff	Nutrients applied to agriculture land are introduced into aquatic systems	**Indirect Negative** Reduced habitat quality in the immediate project area	**Indirect Negative** Reduced habitat quality in the immediate project area	**Direct Negative** Reduced habitat quality in the immediate project area	**Indirect Negative** Reduced habitat quality in the immediate project area	**Indirect Negative** Reduced habitat quality negatively affects resource viability and can lead to reduced income from fishery resources
Port maintenance	Dredging of wetlands, coastal, port and harbor areas for port maintenance	**Indirect Negative** Localized decreases in habitat quality	**Indirect Negative** Localized decreases in habitat quality	**Direct Negative** Reduced habitat quality in the immediate project area	**Indirect Negative** Localized decreases in habitat quality in the immediate project area	**Indirect Negative** Reduced habitat quality negatively affects resource viability in the immediate project area
Offshore disposal of dredged materials	Disposal of dredged materials	**Indirect Negative** Localized decreases in habitat quality in the immediate project area	**Indirect Negative** Localized decreases in habitat quality in the immediate project area	**Direct Negative** Reduced habitat quality in the immediate project area	**Indirect Negative** Localized decreases in habitat quality in the immediate project area	**Indirect Negative** Reduced habitat quality negatively affects resource viability in the immediate project area
Beach nourishment	Offshore mining of sand for beaches	**Indirect Negative** Localized decreases in habitat quality in the immediate project area	**Indirect Negative** Localized decreases in habitat quality in the immediate project area	**Direct Negative** Reduced habitat quality in the immediate project area	**Indirect Negative** Localized decreases in habitat quality in the immediate project area	**Mixed** Positive for mining companies, possibly negative for fisheries
	Placement of sand to nourish beach shorelines	**Indirect Negative** Localized decreases in habitat quality in the immediate project area	**Indirect Negative** Localized decreases in habitat quality in the immediate project area	**Direct Negative** Reduced habitat quality in the immediate project area	**Indirect Negative** Localized decreases in habitat quality in the immediate project area	**Positive** Improves beaches and can help protect homes along the shore line

Action	Description	Impacts on Monkfish Stocks	Impacts on Non-target species	Impacts on Endangered and Other Protected Species	Impacts on Habitat – Including Non-fishing Effects	Impacts on Human Communities
NON FISHERY-RELATED ACTIONS CONTINUED						
Marine transportation	Expansion of port facilities, vessel operations and recreational marinas	**Indirect Negative** Localized decreases in habitat quality in the immediate project area	**Indirect Negative** Localized decreases in habitat quality in the immediate project area	**Direct Negative** Reduced habitat quality in the immediate project area	**Indirect Negative** Localized decreases in habitat quality in the immediate project area	**Mixed** Positive for some interests, potential displacement for others
Installation of pipelines, utility lines and cables	Transportation of oil, gas and energy through pipelines, utility lines and cables	**Indirect Negative** Initially localized decreases in habitat quality in the immediate project area	**Indirect Negative** Initially localized decreases in habitat quality in the immediate project area	**Indirect Negative** Initially localized decreases in habitat quality in the immediate project area	**Potentially Direct Negative** Initially reduced habitat quality in the immediate project area	**Mixed** End users benefit from improved pipelines, cables, etc., but reduced habitat quality may impact fisheries and revenues
Liquefied Natural Gas (LNG) terminals (w/in 5 years)	Transportation of natural gas via tanker to terminals located offshore and onshore (Several LNG terminals are proposed, including ME, MA, NY, NJ and MD)	**Indirect Negative** Initially localized decreases in habitat quality in the immediate project area	**Indirect Negative** Initially localized decreases in habitat quality in the immediate project area	**Indirect Negative** Initially localized decreases in habitat quality in the immediate project area	**Potentially Direct Negative** Localized decreases in habitat quality possible in the immediate project area	**Mixed** End users benefit from a steady supply of natural gas but reduced habitat quality may impact fisheries and revenues

Table 5.18. Summary effects of past, present and reasonably foreseeable future actions on the VECs.

VEC	Past Actions	Present Actions	Reasonably Foreseeable Future Actions	Combined Effects of Past, Present, Future Actions
Monkfish Stocks	**Positive** Combined effects of past actions have controlled effort, rebuilt stocks and improved habitat protection	**Positive** Current regulations continue to manage for sustainable stocks and increase likelihood that OY is achieved	**Positive** Future actions are anticipated to continue rebuilding and strive to maintain sustainable stocks and achieve OY	**Positive** Stocks are being managed to achieve optimum yield and prevent overfishing
Other Species	**Positive** Combined effects of past actions have decreased effort and bycatch and improved habitat protection	**Positive** Current regulations continue to manage for sustainable stocks, thus controlling effort on direct and discard/bycatch species	**Positive** Future actions are anticipated to continue control effort and minimize bycatch	**Positive** Continued management of directed stocks will also control incidental catch/bycatch
Endangered and Other Protected Species	**Mixed** Combined effects of past fishery actions have reduced effort and thus interactions with protected resources	**Mixed** Current regulations continue to control effort, but may result in some increases, thus increasing opportunities for interactions	**Mixed** Future regulations will likely control effort and thus protected species interactions, but may result in some effort increase, possibly increasing interactions	**Mixed** Continued effort controls along with protected species regulations will likely help stabilize or reduce protected species interactions, although additional controls may be needed for some species
Habitat	**Mixed** Combined effects of effort reductions, closed areas, and better control of non-fishing activities have been positive but some fishing activities and non-fishing activities continue to reduce habitat quality	**Mixed** Effort reductions and better control of non-fishing activities have been positive but fishing activities and non-fishing activities continue to reduce habitat quality	**Mixed** Future regulations will likely control effort and thus habitat impacts but may allow some effort increase along with additional non-fishing activities	**Mixed** Continued fisheries management will likely control effort and thus fishery related habitat impacts but fishery and non-fishery related activities will continue to reduce habitat quality
Human Communities	**Positive** Fishery management has resulted in rebuilt stocks and controlled, sustainable fishery which supports profitable industries and communities	**Positive** Fishery resources continue to support communities at a sustainable level	**Mixed** Continued management at sustainable levels provides a stable, profitable fishery, benefitting affected communities; changes to the management program may result in redistribution of the benefits among communities	**Positive** Sustainable fisheries should support viable communities and economies

Impact Definitions:

-Monkfish Stocks, Non-monkfish species, Endangered and Other Protected Species: positive=actions that increase stock size and negative=actions that decrease stock size

-Habitat: positive=actions that improve or reduce disturbance of habitat and negative=actions that degrade or increase disturbance of habitat

-Human Communities: positive=actions that increase revenue and well-being of fishermen and/or associated businesses negative=actions that decrease revenue and well-being of fishermen and/or associated businesses

5.5.5 Baseline Conditions for Resources and Human Communities

For the purposes of a CEA, the baseline conditions for resources and human communities is considered the present condition of the VECs plus the combined effects of the past, present, and reasonably foreseeable future actions. Table 5.19 illustrates the baseline conditions found as part of the FW 7 cumulative effects analysis (NEFMC 2011b). These conditions remain timely and relevant.

Table 5.19. Summary of baseline conditions for each VEC.

Valued Ecosystem Component	Cumulative Effects Assessment Baseline Condition
Monkfish Stocks, Non-monkfish species, Endangered and Other Protected Species	Positive = actions that maintain or increase stock size
	Negative = actions that decrease stock size
Habitat	Positive = actions that improve or reduce disturbance of habitat
	Negative = actions that degrade or increase disturbance of habitat
Human Communities	Positive = actions that maintain or increase revenue and well-being of fishermen and/or associated businesses
	Negative = actions that decrease revenue and well-being of fishermen and/or associated businesses
All VECs	Mixed=both positive and negative

5.5.6 Summary of the Impacts from the Preferred Alternatives

The preferred NMA DAS allocation and landing limits alternative increases monkfish DAS to 46 and increases incidental landing limits for Category C and D permits fishing on a groundfish DAS to 600 lb tail weight/DAS and 500 lb tail weight/DAS, respectively, in the NMA beginning in FY 2014. The preferred SMA DAS allocation and landing limits alternative increases DAS usage limit to 32 and increases daily directed landing limits for Category A/C and Category B/D/H to 610 lb tail weight/DAS and 500 lb tail weight/DAS, respectively. The preferred DAS allocations and landing limits alternatives from the NMA (Alternative 3) and the SMA (Alternative 2) can be considered in combination to summarize overall impacts of the preferred alternatives under FW 8. The expected level of landings and total catch would be restricted by the NMA and SMA monkfish TAL or ACT (landings plus discards), respectively, at a level consistent with sustaining the biomass over the long-term when fishing at a sustainable level of mortality (F_{MSY}). Both scientific and management uncertainty are accounted for in these catch levels, so the risks of negative biological impacts have been minimized. Increasing DAS allocations and landing limits may result in greater fishing effort and greater catch of monkfish and other groundfish stocks caught concurrently that may also increase slightly the interactions of groundfish gear with protected resources. However, the scope of this increase from the preferred alternatives with respect to the overall fishery is expected to be moderate. Similarly, an increase in fishing effort from the preferred alternatives would slightly increase the interactions of groundfish gear with EFH. However, with respect to the overall fishery these impacts are expected to be negligible. Finally, increasing monkfish DAS allocations and landing limits for the monkfish fishery in the NMA and SMA is expected to increase fishing revenue by

approximately $2.3 million beginning in FY2014, assuming projected prices reflect actual landing price. If this action enables the fishery to harvest more of the monkfish TAL in the NMA and the SMA, fishing revenues may be increased by over 11% across all monkfish ports and between 15 to 18% for all vessel size classes compared to existing measures (i.e., the No Action Alternative).

The preferred alternative for DAS usage requirements would allow vessels issued both monkfish and groundfish DAS to use monkfish-only DAS at any time in the fishing year. This alternative would slightly increase fishing effort, but is not likely to affect gear usage in either the NMA or the SMA. Therefore, the preferred alternative is likely to have slightly negative impacts on the monkfish stocks, non-target species and protected resources due to increased effort. This alternative could increase the efficiency of the direct monkfish fishery to optimize harvest of monkfish during the early part of the fishing year, and therefore increase revenues to the fishery. It would also possibly decrease discards of groundfish stocks by increasing the usage of monkfish-groundfish DAS during periods of increased bycatch of groundfish when groundfish could be landed. This alternative is likely to generate positive economic and social impacts overall.

The preferred alternative for the permit Category H fishing boundary revises the location of the current boundary at $38^{o}40'$ N to match the northern boundary of the SMA. This alternative would not increase fishing effort, and is not likely to affect gear usage in the SMA. The preferred alternative is likely to have negligible impacts on the monkfish stock and non-target species. The alternative allows Category H vessels to fish in regions of the SMA that have lower abundance of sea turtles and porpoises, so there may be a minor positive impact on protected species from the preferred alternative. This alternative could increase the efficiency of Category H permit holders to optimize harvest of monkfish in the SMA, and therefore increase revenues to the fishery. This alternative is likely to generate positive economic and social impacts.

5.5.7 Cumulative Effects Summary

The following analysis summarizes the cumulative effects on the VECs identified in this section through the consideration of past, present, and reasonably foreseeable future actions in combination with the baseline condition for resources and human communities and impacts from the preferred alternative.

Monkfish Stocks

As noted in the cumulative effects analysis for FW 7 to the Monkfish FMP (NEFMC 2011b), past actions in the Monkfish FMP have rebuilt monkfish stocks in both the NMA and SMA such that neither stock is subject to overfishing nor overfished. Both Amendment 5 and FW 7 implemented measures to comply with the MSA Reauthorization in 2007 that provide for the long-term sustainability of the stock, including implementing ABCs, ACLs, ACTs, and AMs. While the preferred alternatives would allow greater harvest of monkfish in the NMA and SMA, given management measures implemented in the fishery, NMA and SMA monkfish landings would not exceed the established NMA and SMA monkfish TALs beginning in FY 2014. Thus, there would be positive changes to previously anticipated levels of monkfish catch as a result of the preferred alternatives, without causing negative impacts on either the northern or southern stocks. The preferred alternatives, along with protections afforded through other management

plans, such as FW 50 to the NE Multispecies FMP and Atlantic Sea Scallop FMP actions, as well as actions under development to protect habitat and EFH via the Omnibus Habitat FMP would also not likely result in changes that would affect the current status of the monkfish resource in the NMA or the SMA. It is expected that all actions combined would still result in NMA and SMA monkfish being considered rebuilt and not subject to overfishing and managed in a manner that would preserve the sustainability of the fishery over the long term. Therefore, the cumulative effect of this action is expected to continue to maintain a healthy monkfish stock in the NMA and SMA, with no anticipated significant impacts.

Other Stocks

Effort control measures implemented under the Monkfish FMP over the past decade have reduced overall fishing effort with its associated incidental catch of non-target species, particularly skates and dogfish. This trend is likely to continue under the preferred alternative, notwithstanding the potential for the preferred alternatives to increase monkfish landings and, potentially, fishing effort. While the increased opportunity to target monkfish will allow for effort to shift from other fisheries, particularly the groundfish fishery, as intended, there may be increased incidental catch of some species, particularly skates and dogfish. However, such an increase would likely be negligible and controlled by management measures in those fisheries that are designed to prevent overfishing and rebuild overfished stocks consistent with the requirements of the Magnuson-Stevens Act. Thus, the cumulative effect of this action would likely result in negligible changes to the sustainable management of those fisheries, with no anticipated significant impacts.

Endangered and Other Protected Species

As with target and non-target species, past effort controls and other actions developed under the Monkfish FMP have reduced the potential for interaction with protected species. The preferred alternatives may have mixed effects on protected species, depending on the time and area where the increased effort allocation is applied. Since the monkfish fishery in the NMA is predominantly a trawl fishery with relatively low protected species impacts, increasing directed monkfish effort could have a positive effect on protected species if the increase attracts effort from other fisheries where protected species interactions are greater such as the groundfish gillnet fishery and the SMA monkfish gillnet fishery. The 2013 BO indicated that the monkfish fishery does not jeopardize the continued existence of any protected species, including Atlantic sturgeon and no additional measures affecting monkfish fishing operations were necessary under the ESA. Overall, the cumulative positive trend in impacts to protected species should continue as a result of the fishing effort controls under the Monkfish FMP, in combination with actions taken or in development under the ALWTRP and HPTRP, as well as sea turtle and Atlantic sturgeon protection measures.

Habitat Including Non-fishing Effects

Past actions taken under the Monkfish FMP, particularly the controls on fishing effort and the closure of two offshore canyon areas, have had a positive effect on protecting habitat, including EFH. The preferred alternatives may be neutral or negative with respect to habitat depending on the time and area where any potential increased effort may materialize. A negative effect might occur if, for example, vessels fish more directed monkfish trips rather than simply converting monkfish discards into landings. As noted above, directed monkfish effort levels, as measured

by DAS, are proposed to increase above the baseline of 40 DAS established and analyzed in the EIS for the original FMP and Amendment 2. Historically, and following the recent increase in ACT resulting from FW 7, many allocated monkfish DAS go unused. Under the preferred alternatives, groundfish ACLs and DAS, not monkfish DAS or TAL, would be the factors most likely to limit directed monkfish effort levels during FY 2014-2016. The likelihood that the preferred alternatives would activate the use of groundfish DAS to target monkfish is difficult to predict and prone to uncertainty. However, even if DAS are activated and more effort is directed on monkfish, because the preferred alternative would still ensure that monkfish landings do not exceed established NMA and SMA monkfish TALs and, when discards are included, ACT, effort would not increase beyond levels evaluated in the EA. The recent substantially-reduced groundfish ACLs and associated measures to prevent these ACLs from being exceeded are likely an even more limiting factors to control effort. Therefore, in the context of the monkfish and groundfish fisheries as a whole, the overall recent effort reductions in the groundfish fishery, the constrains in fishing effort in effect in both the monkfish and groundfish fisheries, and the ongoing development of the Omnibus Habitat FMP, the net effect of the preferred alternatives will likely be negligible overall.

While the impact analysis in this action is focused on direct and indirect impacts to habitat and EFH, there are a number of non-fishing impacts that must be considered when assessing cumulative impacts. Many of these activities are concentrated near-shore and likely work either additively or synergistically to decrease habitat quality. Other non-fishing factors such as climate change and ocean acidification are also thought to play a role in the degradation of habitat. The effects of these actions, combined with impacts resulting from years of commercial fishing activity, have negatively affected habitat and EFH. However, the general trend in fisheries management toward effort reductions has yielded positive impacts to habitat and EFH. Based on the above, it is not expected that the preferred alternative would alter that trend and result in significant impacts to EFH.

Human Communities

Rebuilding of the monkfish resource over the past decade, along with stability afforded by the multi-year specifications-setting process has had an overall positive effect on affected human communities. This trend is likely to continue under the preferred alternatives, which allow for increased fishing opportunities through increased DAS allocations and increased landing limits in the NMA and the SMA beginning in FY 2014. These alternatives would result in up to a $2.3 million increase in revenue beginning in FY2014. While helpful, this increase would not likely offset the substantial revenue reductions of past actions in the NE Multispecies FMP. Therefore, the cumulative impact of this action in conjunction with other past, present and reasonably future actions would likely do little to offset the larger trend of substantial negative impacts on communities affected by the groundfish fishery until future stock rebuilding occurs for a number of groundfish stocks. However, from a monkfish perspective, the cumulative effect of the ongoing management of the monkfish fishery at sustainable levels, as well as actions taken under other FMPs as they meet MSA mandates, as revised, will likely be positive over the long term. As stocks rebuild, greater fishing opportunities will be made available, thereby increasing revenue and benefits to the affected communities. However, it is not likely that stock rebuilding, particularly for groundfish stocks, will occur through the temporal scope evaluated for this

action. Thus, it is not expected that the cumulative effects of this and other actions would result in significant impacts to human communities.

6.0 Consistency with Applicable Laws

6.1 Magnuson-Stevens Act (MSA)

6.1.1 National Standards

Section 301 of the Magnuson-Stevens Act requires that FMPs contain conservation and management measures that are consistent with the 10 National Standards (NS). The following section summarizes, in the context of the National Standards, the analyses and discussion of the proposed action that appear in various sections of this framework adjustment document.

(1) Conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery for the United States fishing industry.

The existing NMA and SMA monkfish ACTs were set at a level that will prevent overfishing after taking into account the scientific uncertainty in the estimate of the overfishing level of catch and management uncertainty. OY is defined in Amendment 5 as the yield corresponding to the ACT. The preferred alternatives would help increase monkfish landings to increase the proportion of the NMA and SMA monkfish ACTs caught beginning in FY 2014 and, in doing so, more likely achieve optimum yield in the fishery.

(2) Conservation and management measures shall be based upon the best scientific information available.

The proposed measures are based upon the existing TAL and ACT in each area that were adopted by the NEFMC and MAFMC. These catch levels were based upon the most recent stock assessment (Operational Assessment for Monkfish, NEFSC 2013) and the recommendations of the SSC following their review of the results of the 2013 Operational Monkfish Assessment and additional analysis by the Monkfish PDT. These catch levels were then used in developing the NMA and SMA monkfish DAS and landing limit measures proposed in this action.

(3) To the extent practicable, an individual stock of fish shall be managed as a unit throughout its range, and interrelated stocks of fish shall be managed as a unit or in close coordination.

Based on the different operations of the monkfish fishery in the NMA and SMA, the FMP established a two-area management program for monkfish that covers the exploitable range of the species. As stated in FW 7, the NEFMC and MAFMC considered a single-stock approach, but rejected it, based in part, on scientific information from SARC 34 (NEFSC 2002) that concluded information was insufficient to make a determination whether to manage monkfish as one or two monkfish stocks. The latest assessment, the Operational Monkfish Assessment

(NEFSC 2013), did not change the findings of the previous assessment, and the NEFMC and MAFMC did not change this two-area approach due to the insufficient scientific information.

(4) Conservation and management measures shall not discriminate between residents of different States. If it becomes necessary to allocate or assign fishing privileges among various United States fishermen, such allocation shall be (A) fair and equitable to all such fishermen; (B) reasonably calculated to promote conservation; and (C) carried out in such manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges.

The preferred alternatives do not discriminate between residents of different states. The two-area management program is based on differences in the fisheries between the two areas, and not based on allocation of fishing privileges differently among sectors of the industry. While the preferred alternatives do not discriminate between permit holders, they do have different impacts on different participants. The preferred alternatives would increase DAS allocations and landing limits, modify DAS usage requirements and modify the fishing boundary for permit Category H vessels. Thus, as specified in the purpose and need for this action (Section 2.0), this was specifically designed to revise existing management measures to achieve, but not exceed, catch limits specified based on the most recent monkfish stock assessment update and more effectively harvest OY, as required by the MSA.

(5) Conservation and management measures shall, where practicable, consider efficiency in the utilization of fishery resources; except that no such measure shall have economic allocation as its sole purpose.

The preferred alternatives do not have economic allocation as their sole purpose, and do not distribute fishery resources among fishermen on the basis of economic factors alone. The preferred alternatives were designed as compromises between biological and economic benefits to the monkfish fishery. Due to scientific uncertainty in the stock assessment the preferred DAS and landing limit alternatives in the NMA and SMA incorporated a precautionary buffer from the maximum amount that could have been allocated under the existing TALs and ACTs. While scientific uncertainty was considered in the selection of the preferred alternatives, the preferred alternatives for both the NMA and SMA were designed to increase efficient utilization of the monkfish resource in both stock areas. Additionally, modification to the DAS usage requirements and modification to the permit Category H fishing boundary were based on the need to increase efficient use of monkfish DAS and landing limits in the NMA and SMA. This action contributes to the control of fishing mortality by allowing the fishery to catch, but not exceed, the amount of monkfish that is appropriate given the status of the stock, and the requirements of the FMP and MSA, based upon updated scientific information.

(6) Conservation and management measures shall take into account and allow for variations among, and contingencies in, fisheries, fishery resources, and catches.

The two-area management approach of the FMP is specifically intended to take into account the differences in fisheries between the two areas. Other measures in the FMP, such as the permit categories and gear and area-based incidental and directed catch limits are also based on the

differences among various fisheries that catch monkfish either as a target or incidental catch species. These considerations are not changed under the preferred alternatives. The primary effort controls in the monkfish fishery, DAS and landing limits, allow each vessel operator some flexibility to fish when and how it best suits his or her business. The preferred alternatives further enhance operational flexibility based on the purpose and need for this action.

(7) Conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication.

The DAS allocations and landing limits implemented by this action would provide additional fishing opportunity and revenue for vessels fishing in both the NMA and SMA. Modifications to the DAS usage requirements and permit Category H fishing boundaries will similarly increase efficient utilization of the resource and operational flexibility. The measures do not duplicate other regulatory efforts, and were designed to achieve the management objectives of the Monkfish FMP.

(8) Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities by utilizing economic and social data that meet the requirements of paragraph (2), 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.

Consistent with the requirements of the MSA to prevent overfishing and rebuild overfished stocks, this action would likely increase monkfish landings from both the NMA and SMA without resulting in overfishing monkfish in either stock area. Analyses of the impacts of this action show that overall landings and revenues are likely to increase, thereby reducing adverse impacts on fishing communities, without exceeding the NMA or SMA TALs or ACTs established by Amendment 5 and FW 7 to the Monkfish FMP. At the individual level, landings and revenue will depend upon the vessel's fishing behavior and fishing history. This action attempts to provide for the sustained participation of communities associated with the monkfish fishery by providing additional fishing opportunities and potential revenue by allowing more monkfish to be landed from the NMA and SMA and increasing operational flexibility beginning in FY 2014.

(9) Conservation and management measures shall, to the extent practicable, (A) minimize bycatch and (B) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch.

By increasing monkfish landing limits in the NMA and SMA, this action would reduce incentives to discard monkfish, and may turn some discards, particularly regulatory discards, into landings. Although the preferred alternatives will increase fishing effort and, therefore, may increase bycatch levels of non-target species, the overall impact on non-target species will be negligible, and increased discarding of certain species (some skate species and spiny dogfish)

may be a result of stock rebuilding of those non-target species rather than the measures proposed in this action.

(10) Conservation and management measures shall, to the extent practicable, promote the safety of human life at sea.

Under the current monkfish DAS and landing limits requirements, if a vessel caught more monkfish than its intended monkfish DAS charge would allow, it would be forced to either discard the fish or remain at sea until the monkfish DAS charge was sufficient. Increasing monkfish DAS allocations and landings limits for the NMA and SMA is expected to have a positive impact on the safety of fishing operations of vessels fishing under a monkfish DAS because such vessels would not have to remain at sea to ensure that the number of monkfish DAS charged is sufficient to account for the amount of monkfish onboard the vessel.

6.1.2 Required Provisions

Section 303 of the MSFCMA contains fifteen additional required provisions for FMPs, which are discussed below. Any FMP prepared by any Council, or by the Secretary, with respect to any fishery, shall:

(1) contain the conservation and management measures, applicable to foreign fishing and fishing by vessels of the United States, which are: (A) necessary and appropriate for the conservation and management of the fishery to prevent overfishing and rebuild overfished stocks, and to protect, restore, and promote the long-term health and stability of the fishery; (B) described in this subsection or subsection (b), or both; and (C) consistent with the National Standards, the other provisions of this Act, regulations implementing recommendations by international organizations in which the United States participates (including but not limited to closed areas, quotas, and size limits), and any other applicable law;

Foreign fishing is not allowed under this management plan, or this action and so specific measures are not included that specify and control allowable foreign catch. The measures in the preferred alternatives are designed to prevent overfishing and rebuild overfished stocks by vessels of the U.S. consistent with the National Standards. The preferred alternatives would rely upon measures implemented by previous management actions, including the monkfish NMA and SMA ACLs and ACTs adopted in Amendment 5 and FW 7, to ensure that overfishing is prevented for NMA and SMA monkfish. There are no international agreements that are germane to the management of NMA or SMA monkfish.

(2) contain a description of the fishery, including, but not limited to, the number of vessels involved, the type and quantity of fishing gear used, the species of fish involved and their location, the cost likely to be incurred in management, actual and potential revenues from the fishery, any recreational interest in the fishery, and the nature and extent of foreign fishing and Indian treaty fishing rights, if any;

The fishery and its components, including biological, social and economic aspects, are described in the Affected Environment section of the EIS for the FMP, as well as in subsequent environmental documents prepared for previous management actions, including Amendment 5 and FW 7 to the FMP. Section 4.0 of this document updates this information, including the number of vessels involved, the type of fishing gear used, and potential revenues from the fishery beginning in FY 2014. There is no foreign fishing for monkfish, no directed recreational fishery, and there are no known Indian treaty fishing rights pertaining to monkfish.

(3) assess and specify the present and probable future condition of, and the maximum sustainable yield and optimum yield from, the fishery, and include a summary of the information utilized in making such specification;

The most recent stock assessment (Monkfish Operational Assessment; NEFSC 2013) contains the best estimate of the present condition of the monkfish resource. That information, in conjunction with an evaluation of that stock assessment by the SSC, was used to support the continuation of the NMA and SMA monkfish TALs and ACTs originally implemented under FW 7 and Amendment 5, respectively, under this action. The impact of the NMA and SMA DAS and landing limits on stock conditions in the future is summarized in Section 5.0 of this document. OY is defined in Amendment 5 as the yield corresponding to the ACT. Assuming these ACTs are not exceeded, as projected in the preferred alternatives, overfishing will not occur on NMA or SMA monkfish, and these stocks will continue to not be overfished.

(4) assess and specify: (A) the capacity and the extent to which fishing vessels of the United States, on an annual basis, will harvest the optimum yield specified under paragraph (3); (B) the portion of such optimum yield which, on an annual basis, will not be harvested by fishing vessels of the United States and can be made available for foreign fishing; and (C) the capacity and extent to which United States fish processors, on an annual basis, will process that portion of such optimum yield that will be harvested by fishing vessels of the United States;

Although in recent years the monkfish fishery has not been able to fully harvest OY in the NMA or SMA, this action is specifically designed to increase the efficient utilization of the monkfish resource, with the preferred alternatives designed to increase monkfish landings to more fully harvest, but not exceed, the ACTs in the NMA and SMA. Projections discussed in Section 5.0 and Appendix 1 suggest that the preferred alternatives would increase the likelihood that a greater proportion of the NMA and SMA monkfish TALs and ACTs will be caught beginning in FY 2014. This suggests that there is sufficient capacity for U.S. vessels to harvest the optimum yield from the monkfish resource. In previous FYs, the domestic fishery has caught monkfish in amounts equivalent to the TALs and ACTs specified in each year that would be continued under this action. Thus, there is no amount of OY available for foreign fishing. Furthermore, sufficient domestic processing capacity exists to utilize all monkfish harvested by United States vessels.

(5) specify the pertinent data which shall be submitted to the Secretary with respect to commercial, recreational, charter fishing, and fish processing in the fishery, including, but not limited to, information regarding the type and quantity of fishing gear used, catch

by species in numbers of fish or weight thereof, areas in which fishing was engaged in, time of fishing, number of hauls, economic information necessary to meet the requirements of this Act, and the estimated processing capacity of, and the actual processing capacity utilized by, United States fish processors;

Current reporting requirements for this fishery have been in effect since the implementation of the FMP in 1999. The requirements include VTRs that are submitted by each fishing vessel and DAS declaration requirements. Dealers are also required to submit reports on the purchases of regulated groundfish from permitted vessels. Current reporting requirements are detailed in 50 CFR 648.7. The Monkfish Plan Development Team (PDT) compiles and publishes annually a description of the fishery, including affected communities, as part of the SAFE Report, most recently in Section 4.0 of this document. There is no significant recreational or charter fishery for monkfish.

(6) consider and provide for temporary adjustments, after consultation with the Coast Guard and persons utilizing the fishery, regarding access to the fishery for vessels otherwise prevented from harvesting because of weather or other ocean conditions affecting the safe conduct of the fishery; except that the adjustment shall not adversely affect conservation efforts in other fisheries or discriminate among participants in the affected fishery;

Vessels issued a limited access monkfish permit are allowed to carry over up to 4 monkfish DAS into the next fishing year to minimize incentives to fish during inclement weather. Further, the framework adjustment mechanism established in the FMP provides the NEFMC and MAFMC with the ability to change regulations to address issues such as vessel safety within the context of the fishery management program on an annual, or as needed basis.

(7) describe and identify essential fish habitat for the fishery based on the guidelines established by the Secretary under section 305(b)(1)(A), minimize to the extent practicable adverse effects on such habitat caused by fishing, and identify other actions to encourage the conservation and enhancement of such habitat;

Section 4.0 contains the description of monkfish essential fish habitat, and Section 5.2 contains the analysis of impacts of the preferred alternatives and other alternatives on EFH.

(8) in the case of a fishery management plan that, after January 1, 1991, is submitted to the Secretary for review under section 304(a) (including any plan for which an amendment is submitted to the Secretary for such review) or is prepared by the Secretary, assess and specify the nature and extent of scientific data which is needed for effective implementation of the plan;

Stock assessments are typically conducted by the NEFSC every three years including a discussion of research needs in the fishery, along with an annual SAFE Report prepared by the NEFMC. Such needs are documented in the 2013 operational assessment (NEFSC 2013). Section 4.0 of this document serves as the most recent SAFE Report developed for the monkfish fishery.

(9) include a fishery impact statement for the plan or amendment (in the case of a plan or amendment thereto submitted to or prepared by the Secretary after October 1, 1990) which shall assess, specify, and analyze the likely effects, if any, including the cumulative conservation, economic, and social impacts, of the conservation and management measures on, and possible mitigation measures for: (A) participants in the fisheries and fishing communities affected by the plan or amendment; (B) participants in the fisheries conducted in adjacent areas under the authority of another Council, after consultation with such Council and representatives of those participants; and (C) the safety of human life at sea, including whether and to what extent such measures may affect the safety of participants in the fishery

Biological impacts are evaluated for monkfish, non-target species, protected species, and EFH in Sections 5.1 and 5.2 of this EA. Economic and social impacts of the preferred alternatives on fishing communities directly affected by this action and adjacent areas can be found in Sections 5.3 and 5.4 of this EA. Consideration of the effect of measures considered under this action have on the safety of fishery participants is evaluated in Section 6.1.1 of this EA.

(10) specify objective and measurable criteria for identifying when the fishery to which the plan applies is overfished (with an analysis of how the criteria were determined and the relationship of the criteria to the reproductive potential of stocks of fish in that fishery) and, in the case of a fishery which the Council or the Secretary has determined is approaching an overfished condition or is overfished, contain conservation and management measures to prevent overfishing or end overfishing and rebuild the fishery;

Based on the recommendations of the most recent stock assessment, the 2013 Monkfish Operational Assessment, BRPs are used to identify when a stock is overfished. The $B_{threshold}$ used to evaluate whether the monkfish stock is overfished was specified in 2013 by the NEFMC SSC, and is set at 23,037 mt for the NMA, and 35,834 mt for the SMA. Based on the 2013 monkfish update assessment, monkfish is not overfished in the NMA or the SMA.

(11) establish a standardized reporting methodology to assess the amount and type of bycatch occurring in the fishery, and include conservation and management measures that, to the extent practicable and in the following priority: (A) minimize bycatch; and (B) minimize the mortality of bycatch which cannot be avoided;

NMFS currently has in place reporting requirements for all vessels participating in the Federal monkfish fishery, including requirements to report all bycatch on VTRs, and maintains, to the extent the budget allows, a fishery observer program onboard vessels. Additionally, VMS usage is mandatory on the majority of limited access monkfish vessels through the requirements of the Atlantic Sea Scallop and Northeast Multispecies FMPs. Since VMS allows the tracking of fishing vessels, coordination of this information with observer coverage may allow for more accurate bycatch assessment and projection.

Since this provision requires the establishment of a Standardized Bycatch Reporting Methodology (SBRM), in January 2006, development began on the Northeast Region Omnibus

SBRM Amendment. This amendment covers 13 FMPs, 39 managed species, and 14 types of fishing gear. The purpose of the amendment is to: (1) explain the methods and processes by which bycatch is currently monitored and assessed for Greater Atlantic Region fisheries; (2) determine whether these methods and processes need to be modified and/or supplemented; (3) establish standards of precision for bycatch estimation for all Greater Atlantic Region fisheries; and (4) document the SBRM established for all fisheries managed through the FMPs of the Greater Atlantic Region. The SBRM Amendment was approved on October 22, 2007, and a final rule became effective on February 27. 2008. Although this SBRM was vacated by a ruling by the District Court for the District of Columbia in September 2011, NMFS will continue to utilize the existing SBRM until a comprehensive SBRM can be developed that addresses issues raised in the District Court's ruling can be remedied through an omnibus action by both the NEFMC and MAFMC. An omnibus SBRM amendment is currently under consideration by both Councils, and is expected to be implemented in April 2015, if adopted and approved.

(12) assess the type and amount of fish caught and released alive during recreational fishing under catch and release fishery management programs and the mortality of such fish, and include conservation and management measures that, to the extent practicable, minimize mortality and ensure the extended survival of such fish;

Monkfish catch in recreational fisheries is not significant enough to be recorded in the recreational catch data.

(13) include a description of the commercial, recreational, and charter fishing sectors which participate in the fishery, including its economic impact, and, to the extent practicable, quantify trends in landings of the managed fishery resource by the commercial, recreational, and charter fishing sectors;

Monkfish catch in recreational fisheries is not significant enough to be recorded in the recreational catch and vessel data. Commercial fishery sectors are described in the Affected Environment section of the EIS for the original FMP, as well as in subsequent environmental documents (plan amendments and framework adjustments), and is updated in Section 4.0 of this document.

(14) to the extent that rebuilding plans or other conservation and management measures which reduce the overall harvest in a fishery are necessary, allocate, taking into consideration the economic impact of the harvest restrictions or recovery benefits on the fishery participants in each sector, any harvest restrictions or recovery benefits fairly and equitably among the commercial, recreational, and charter fishing sectors in the fishery;

As noted under the discussion of NS 4, while conservation measures may have a differential impact on different sectors of the industry, that differential impact is not the purpose of the regulations, and is done in a manner that is intended to achieve the conservation and management goals of the FMP. Neither the northern or southern monkfish stocks are overfished nor is either experiencing overfishing. The purpose of this action was to increase DAS allocations and landing limits in the NMA and SMA to achieve, but not exceed the NMA and

SMA TALs and ACTs. Neither stock is in a rebuilding plan, and this action proposes to increase fishing effort and monkfish catch levels beginning in FY 2014.

(15) establish a mechanism for specifying annual catch limits in the plan (including a multiyear plan), implementing regulations, or annual specifications, at a level such that overfishing does not occur in the fishery, including measures to ensure accountability.

The NEFMC and MAFMC completed Amendment 5 to the FMP in September 2010, which includes, among other provisions, specification of ACLs and AMs. The ACTs are a proactive form of AM. FW 7 revised the NMA ACT as a result of newer scientific information (SAW 50), and the SSC's revision to the ACL for the NMA, resulting from SAW 50.

6.1.3 EFH Assessment

This 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 NMFS.

Description of Action

The preferred alternatives are described in Section 3.0, and consist of increasing DAS allocations and landing limits in the NMA and SMA, modifying the DAS usage requirements, and modifying the permit Category H fishing boundary.

In general, the activity within the scope of this action, fishing for monkfish within the NMA and SMA, occurs off the U.S. coast 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 Northeast 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; NEFMC 1998). The overall effect of the monkfish fishery on EFH was discussed and mitigated for in Amendment 2, and in Multispecies Amendment 13, and the alternatives proposed in this action do not change those findings. 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 Fishery Management Council as all of the relevant species are pelagic and not directly affected by benthic habitat impacts.

Assessing the Potential Adverse Impacts

The potential adverse impacts to habitat are described in Section 5.2. This section demonstrates that the overall habitat impacts of the proposed measures have negligible or neutral impacts overall relative to the baseline habitat protections established under the original Monkfish FMP. As such, additional measures to mitigate or minimize adverse effects of the monkfish fishery on EFH beyond those established under the original FMP are not necessary.

Conclusions

Because there are no adverse impacts associated with this action relative to the original Monkfish FMP baseline, no EFH consultation is required.

6.2 National Environmental Policy Act (NEPA)

NEPA provides a mechanism for identifying and evaluating the full spectrum of environmental issues associated with federal actions, and for considering a reasonable range of alternatives to avoid or minimize adverse environmental impacts. This document is designed to meet the requirements of both the MSA and NEPA. The Council on Environmental Quality (CEQ) has issued regulations specifying the requirements for NEPA documents (40 CFR 1500-1508), as has NOAA in its agency policy and procedures for NEPA in NAO 216-6 §5.04b.1. All of those requirements are addressed in this document, as referenced below.

6.2.1 Environmental Assessment

The required elements of an Environmental Assessment (EA) are specified in 40 CFR 1508.9(b) and NAO 216-6 §5.04b.1. They are included in this document as follows:

- The purpose and need for this action is described in section 2.2;
- The alternatives that were considered are described in section 3.0;
- The environmental impacts of the preferred alternative are described in section 5.0;
- The agencies, preparers and persons consulted on this action are listed in section 7.0.
- An Executive Summary can be found in section 1.0.
- A table of contents can be found on page iii.
- Background and purpose are described in Section 2.0.
- A brief description of the affected environment is in Section 4.0.
- Cumulative impacts of the preferred alternatives are described in Section 5.0.
- A determination of significance is in Section 6.2.2

6.2.2 Finding of No Significant Impact (FONSI Statement)

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

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

<u>Response:</u> This action cannot be reasonably expected to jeopardize the sustainability of any target species that may be affected by the action. Analysis of the measures in Section 5.0 indicates that increasing monkfish possession limits and DAS for vessels fishing in both the northern and southern management areas during FY 2014-2016 would not result in monkfish catch exceeding the ACTs for these fishing years. Constraining monkfish catch within the ACT is consistent with preventing overfishing and sustaining the biomass over the long term. Both scientific and management uncertainty are accounted for in this catch level, so the risks of negative biological impacts have been minimized.

(2) *Can the Proposed Action reasonably be expected to jeopardize the sustainability of any non-target species?*

Response: This action cannot be reasonably expected to jeopardize the sustainability of any non-target species that may be affected by the action. The preferred alternative may increase fishing effort during FY 2014 -2016 . However, this action would not affect management measures for any other fishery. Therefore, measures designed to limit fishing mortality on monkfish as well as other stocks, particularly groundfish stocks, are expected to limit the potential increase and ensure that any increase in fishing mortality as a result of this action does not compromise conservation measures designed to prevent overfishing and rebuild overfished stocks. There are no indications that an increase in monkfish fishing activity will jeopardize the sustainability of non-target species particularly given the other constraints in these other fisheries.

Gear used to target monkfish on a monkfish DAS has very low bycatch and incidental catch of other species. Therefore, increases in fishing effort targeting monkfish will not result in more than negligible catch of these species. Additionally, the catch of skates on trips incidentally targeting monkfish and skates is constrained by skate possession limits, not monkfish possession limits. Allowing vessels in the NMA to used groundfish DAS to catch more monkfish also will not increase fishing on groundfish species that are almost entirely controlled through sector allocations, but instead will allow vessels to land more monkfish on these trips.

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

Response: The preferred alternatives cannot be reasonably expected to cause substantial damage to the ocean and coastal habitats and/or EFH, as defined under the Magnuson-Stevens Act and identified in the FMP. As discussed in section 5.2, the preferred alternative in the context of the FMP as a whole, is expected to have a minor negative impact on habitat compared to the no action alternative, with overall effort less than effort observed when the FMP was first developed and the impacts of EFH first assessed.

(4) *Can the Proposed Action be reasonably expected to have a substantial adverse impact on public health or safety?*

Response: None of the measures proposed in this action would alter fishing procedures or otherwise create a safety or public health concern. In fact, increasing monkfish possession limits as part of this action may reduce unsafe fishing practices by allowing vessels to land more monkfish in a shorter period of time, without having to wait for monkfish DAS charges to accrue to account for the amount of monkfish caught.

(5) *Can the Proposed Action reasonably be expected to adversely affect endangered or threatened species, marine mammals, or critical habitat of these species?*

Response: Although it is expected that fishing effort will increase under the preferred alternatives, the net effect on protected species is expected to be proportional to effort increases,

suggesting minor negative impacts to protected species (Section 5.1). The activities and fishing effort levels conducted under the preferred alternatives are within the scope of the original FMP, and do not change the basis for the determinations made in previous consultations, as noted in Section 5.1. The measures controlling fishing effort in the monkfish fishery, including those in this action, in combination with NMFS's actions being taken to protect Atlantic sturgeon, sea turtles, harbor porpoise, and large whales will mitigate much of the impact of the fisheries (both the directed monkfish fishery and other fisheries in the region) on protected species, and keep such interactions within acceptable limits.

An updated batched BO was issued for seven fisheries in the Northeast, including the monkfish fishery, on December 16, 2013 (NMFS 2013). The BO reviewed the current status of large marine mammals, sea turtles, and Atlantic sturgeon, the environmental baseline, and cumulative effects in the action area, including the effects of the continued operation of the Monkfish FMP and other FMPs over the next 10 years. The BO concluded that the continuation of these fisheries "may adversely affect, but is not likely to jeopardize, the continued existence of" North Atlantic right whales, humpback whales, fin whales, sei whales, the Northwest Atlantic DPS of loggerhead sea turtles, leatherback turtles, Kemp's ridley turtles, green sea turtles, any of the five DPSs of Atlantic sturgeon, or the GOM DPS for Atlantic salmon. This BO also concluded that these fisheries will not adversely affect hawksbill sea turtles, shortnose sturgeon, smalltooth sawfish DPS, *Acroporid* corals, Johnson's seagrass, sperm whales, blue whales, designated critical habitat for right whales in the Northwest Atlantic, or designated critical habitat for GOM DPS Atlantic salmon (NMFS 2013).

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

Response: The preferred alternatives are not expected to have a substantial impact on biodiversity and/or ecosystem function with the affected area. The use of the NMA and SNA monkfish ACTs will control catch of monkfish. As noted in FW 7 and SAW 50, although the role of monkfish within the ecosystem is not well understood, monkfish account for upwards of six percent of total consumption by all finfish in the ecosystem (NEFMC 2011b, NEFSC 2010). Accordingly, maintaining sustainable levels of monkfish would likely promote biodiversity and ecosystem function over the long term.

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

Response: The EA documents that no significant natural or physical effects will result from the implementation of the preferred alternatives. There are no significant natural or physical environmental effects resulting from the preferred alternatives that may have an impact on communities or the human environment in the context of NEPA. The preferred alternatives are designed to increase monkfish DAS and landing limits in the NMA and SMA in order to increase efficient use of the monkfish resource, increase operational flexibility and to reach, but not exceed the ACTs in FY 2014-2016. As described in section 5.1, the preferred alternatives would ensure that monkfish landings do not exceed existing NMA or SMA monkfish TALs or ACTs

recommended by the NEFMC SSC at a level that would prevent overfishing and sustain the biomass over the long term. Accordingly, expected impacts fall within the scope of those analyzed under Amendment 5, FW 7, and this document, and are considered to not be significant. The action cannot be reasonably expected to have a substantial impact on habitat or protected species, as the level of fishing effort targeting monkfish is still limited by monkfish DAS allocations and other effort controls in both the monkfish and groundfish fisheries, including ACLs, gear restrictions, size limits, and AMs. The action's potential economic and social impacts are also addressed in this EA (see Sections 5.3 and 5.4, respectively) and more specifically in the Executive Order 12866 review and the Regulatory Impact Review (Section 6.3). Based on that analysis, the preferred alternatives would likely result in moderate increases in fishing revenue for affected entities, which is not characterized as a significant impact.

(8) *Are the effects on the quality of the human environment likely to be highly controversial*?

Response: As noted above, there is acknowledged uncertainty with the results of the 2013 monkfish operational assessment due to uncertainties in some of the fundamental monkfish life history parameters and the continuation of retrospective patterns in the model results with respect to biomass and F. Based on these uncertainties, a portion of the fishing industry is skeptical that monkfish stocks are as healthy as indicated in the assessment results. Accordingly, there was concern expressed about the assessment results during the development of this action. Despite the uncertainties of the SCALE model used in the assessment, the operational assessment represents the best available science regarding the status of monkfish stocks according to the assessment review panel, a group of independent scientists tasked with reviewing the adequacy of the operational assessment. Further, the SSC considered the SCALE model to be superior to the previously used survey-based approach because it integrated much more information and allowed for the consideration of uncertainties in various parameters. While the SSC attempted to address some of the uncertainties identified in the assessment panel's report and integrate adjustments to correct for the retrospective patterns, the SSC ultimately concluded that the assessment report provided sufficient basis for maintaining existing ABCs for both monkfish stocks. In addition, the analyses used to evaluate the impacts of the proposed measures were reviewed by both the Monkfish Committee and both Councils, with no concerns regarding the methods used. Therefore, while there is some public controversy associated with the results of the 2013 operational assessment, there is little controversy associated with the SCALE model itself, or the methods used to recommend the quotas forming the basis for the measures proposed in this action and evaluate the impacts of such measures.

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

Response: This action revises monkfish DAS and landing limits for limited access monkfish vessels in the NMA and SMA beginning in FY 2014. Other types of commercial fishing already occur in these areas, and although it is possible that historic or cultural resources such as shipwrecks could be present, vessels try to avoid fishing too close to wrecks due to the possible loss or entanglement of fishing gear. Therefore, it is not likely that the preferred alternative would result in substantial impacts to unique areas.

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

Response: The preferred alternatives are not expected to result in highly uncertain effects on the human environment or involve unique or unknown risks. Projections undertaken to estimate likely monkfish landings during FY 2014-2016 were based on a relatively consistent DAS usage patterns and increasing monkfish landing rates over the past few years. Therefore, while it is difficult to project future fishing operations, the projections used to evaluate the effects of the preferred alternatives are expected to be reasonably accurate in predicting monkfish landings beginning in FY 2014. Known risks include whether the reduced fishing opportunities caused by substantially reduced groundfish ACLs will shift fishing operations into other fisheries, including the monkfish fishery. This risk is relatively low due to the aforementioned close linkage between the groundfish and monkfish fisheries and the interrelatedness of associated regulations. In addition, as noted above, any shift in fishing effort would likely be constrained by applicable regulations in either fishery. Therefore, overall, the impacts of the preferred alternative can be, and are, described with a relative amount of certainty.

The analysis of the effects on the human environment of the proposed action is consistent with the analyses done for prior adjustments and a broad range of fishery management actions taken by the Councils. While these analyses have some inherent uncertainty because they involve predicting future impacts that depend on a wide range of variables, such as the response of the target species to the management measures and the short-term range of alternative fisheries for affected vessels, the effects are not considered highly uncertain. Thus, while the risks inherent in analyses of the effects on the human environment are due to some uncertainty, those risks are not unique or unknown.

(11) *Is the Proposed Action related to other actions with individually insignificant, but cumulatively significant impacts?*

Response: The proposed action is not related to other monkfish actions with individually insignificant, but cumulatively significant impacts. The preferred alternatives are related to other recent management actions beginning with the implementation of the Monkfish FMP in 1999 which put in place most of the management measures that are currently in effect. While the FMP and the associated monkfish rebuilding program resulted in some significant impacts to the human environment, the framework actions and Amendment 2 which followed and which refined the original FMP measures were found to not result in significant impacts. Thus, while the preferred alternatives are related to a recent past action that was found to have significant impacts (the rebuilding plan under the FMP), as discussed and analyzed in the cumulative effects assessment (CEA), this action when combined with other past, present and RFFAs would not result in significant cumulative impacts.

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

Response: The impacts of the proposed measures on the human environment are described in Section 5.0 of the EA. This action revises monkfish DAS allocations and landing limits for limited access monkfish vessels in the NMA and SMA beginning in FY 2014. Although there are shipwrecks present in the area where fishing occurs, including some registered on the National Register of Historic Places, vessels typically avoid fishing too close to wrecks due to the possible loss or entanglement of fishing gear. Therefore, it is not likely that the preferred alternative would adversely affect the historic resources listed above.

(13) *Can the Proposed Action reasonably be expected to result in the introduction or spread of a non-indigenous species?*

Response: This action would not result in the introduction or spread of any non-indigenous species, as it would not result in any vessel activity outside of the Greater Atlantic region.

(14) *Is the Proposed Action likely to establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration?*

Response: The proposed action is not likely to establish a precedent for future action with significant effects, and it does not represent a decision in principle about future consideration. The proposed action would increase DAS allocations and landing limits in an effort to more fully harvest available monkfish and better achieve OY for monkfish beginning in FY 2014. As such, the action is designed to address a specific circumstance and is not intended to represent a decision about future management actions that may adopt different measures. The impact of any future changes will be analyzed as to their significance in the process of developing and implementing them.

(15) *Can the Proposed Action reasonably be expected to threaten a violation of Federal, State, or local law or requirements imposed for the protection of the environment?*

Response: The preferred alternative is intended to implement measures that are consistent with the protection of marine resources and would not threaten a violation of Federal, state, or local law or requirements to protect the environment.

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

Response: Cumulative effects are analyzed in Section 5.5 of this EA. That analysis concludes that the proposed action is expected to continue to maintain a healthy monkfish stock in the NMA and SMA, result in negligible changes to the sustainable management of those fisheries, with no anticipated significant impacts on either monkfish or non-target species. Further, as specified in the responses to the first two criteria of this section, the proposed action is not expected to result in cumulative adverse effects that would have a substantial effect on target or non-target species. This action would be consistent with optimizing the long-term sustainable use of the monkfish resource. Any impacts on target or non-target species would be minimized by other effort controls in the fishery that are designed to limit catch to sustainable levels.

FONSI Statement
In view of the information presented in this document and the analysis contained in this EA prepared for FW 8 to the Monkfish FMP, it is hereby determined that this action will not significantly impact the quality of the human environment as described above and in the supporting EA. In addition, all beneficial and adverse impacts of the preferred alternative have been addressed to reach the conclusion of no significant impacts. Accordingly, preparation of an EIS for this action is not required.

NMFS, Greater Atlantic Regional Administrator **Date**

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

6.3.1 Determination of significance under E.O. 12866

NMFS 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.

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

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

(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.

Section 5.3 provides a description of the economic analysis performed for the proposed action and is incorporated by reference herein. The total expected change in revenue resulting from the proposed action is approximately +$2.08 million per year based upon FY 2012 landings. The expected change in revenue accounts for expected decreases in the ex-vessel value of monkfish resulting from increases in landings that are assumed to follow increases in landing possession limits. Therefore, some economic value beyond the increased revenue would accrue to U.S. consumers of monkfish.

The proposed action would either increase or would hold constant trip landing limits on monkfish. It would not constitute an impact in excess of $100 million or more; would not be inconsistent with other agency actions; would not materially alter the budgetary impact of

entitlements, grants, user fees, or loan programs; and would not raise novel legal or policy issues. Other alternatives considered but not selected would not substantially alter the expected economic change from this action. Therefore, this action is consistent with the requirements set forth by EO12866.

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 Introduction

The RFA requires agencies to assess the impacts of their proposed regulations on small entities. The Regulatory Flexibility Act Analysis (RFAA) determines whether the proposed action would have a significant economic impact on a substantial number of small entities. The Small Business Administration (SBA) size standards define whether a business entity is small and, thus, eligible for Government programs and preferences reserved for "small business" concerns. Size standards have been established for all for-profit economic activities or industries in the North American Industry Classification System (NAICS). The SBA defines a small business in the finfish fishing sector (NAICS code 114111) as a firm or affiliate group with gross revenue of $19.0 million; and the shellfish fishing sector (NAICS code 114112) as a firm or affiliate group with gross revenue of $5.0 million or more.

This section provides an assessment and discussion of the potential economic impacts of the proposed action, as required of the RFA. The objective of the RFA is to require consideration of the capacity of those affected by regulations to bear the direct and indirect costs of regulation.

6.3.2.2 Basis and Purpose for Rule

The need and purpose of the actions are set forth in Section 2.2 of this document and are incorporated herein by reference. The goals and objectives of FW 8 are the same as those detailed in the original Monkfish FMP and subsequent amendments. In general, the intent of FW 8 is to revise existing management measures to achieve, but not exceed, catch limits specified based on the most recent stock assessment and more effectively OY, as required by the MSA.

6.3.2.3 Small Entities to which the Proposed Rule Will Apply

NMFS guidelines identify the affiliate group (or "entity") rather than permit as the appropriate level of analysis for regulatory actions. Affiliate groups were identified using permit ownership data recently added to the NMFS permit database. There were 651 affiliate groups (or "entities") that landed at least one pound of monkfish in FY 2012. Of these, 534 entities were comprised of a single vessel permit, 110 were comprised of two to five permits, and seven were comprised of six or more permits. The largest entity consisted of 17 permits active in the monkfish fishery.

The average total revenue for FY 2012 among the 651 directly affected entities was $1.17 million with a median of $340,339. The average monkfish landings for FY 2012 among these 651 entities was $31,030, with a median of $5,130. There were 135 entities that landed greater than 10% of total FY 2012 revenues as monkfish, and eight entities landed greater than 75% of total FY 2012 revenues as monkfish. There are 401 entities that are plurality-finfish, while 250

are plurality-shellfish, the preponderance of which have historically been scallop targeting vessels.

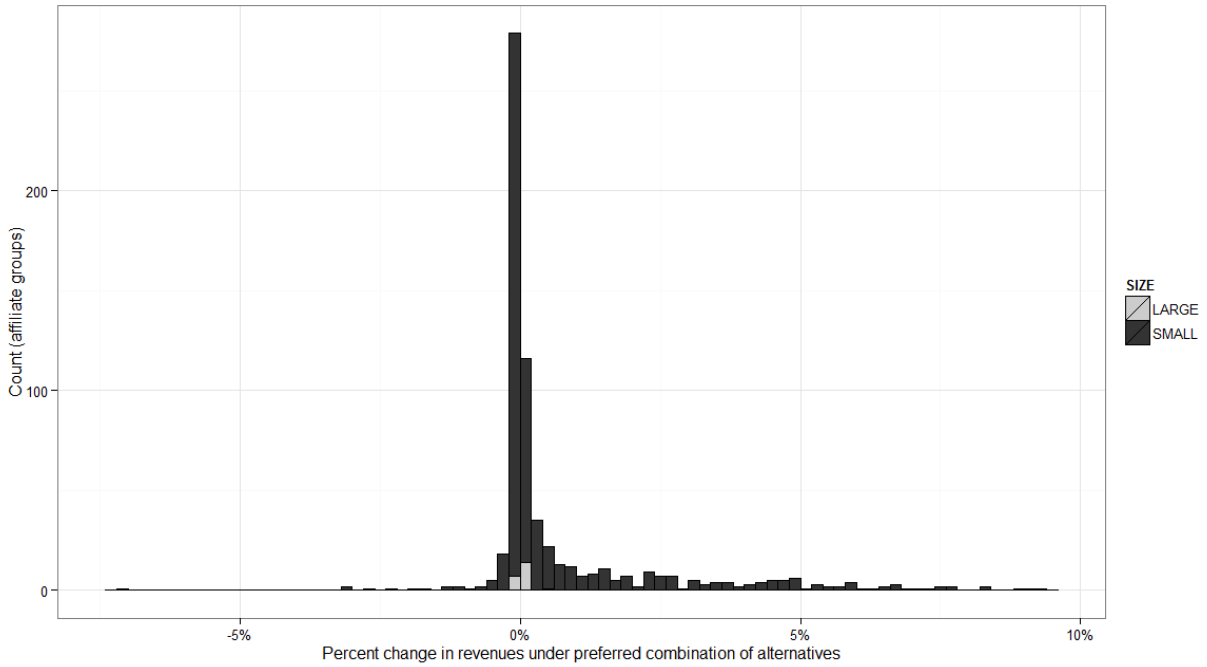
Designations of large and small entities were attached based on each entities' three-year average landings. For entities landing a plurality of revenue in shellfish (NAICS 111412), the threshold for "large" is $5.0 million. For entities landing a plurality of revenue in finfish (NAICS 111411), the threshold for "large" is $19.0 million. There were 629 entities that were classified as "small," while the remaining 22 were classified as "large." The average directly-regulated small entity had FY 2012 total landings of $761,581 versus $1.28 million for large entities. The average directly-regulated small entity had monkfish landings totaling $29,886 in FY 2012 versus $65,068 for large entities landing at least 1 pound of monkfish in FY 2012.

6.3.2.4 Description and Estimate of the Economic Impacts on Small Entities

The proposed action would alter possession limits for monkfish according to the type of trip (directed vs. incidental) and the management area (north vs. south). Because each possible type of landing would be affected differently, the impact of the proposed action would vary over entities based on the entities' distribution of monkfish landings over trip types and management areas. For instance, because the preferred combination of alternatives (NMA Alternative 3, SMA Alternative 2, DAS Usage Requirement Alternative 2 and Category H Fishing Boundary Alternative 2) would not alter incidental possession limits in the SMA, entities whose vessels primarily land incidental southern monkfish would not have been likely to see an increase in FY 2012 landings had the preferred combination of alternatives been in place. Section 5.2 and Appendix 2 established a price flexibility which was assumed to apply fishery-wide. Therefore, even for landings whose type and area are not proposed to change, a decrease in revenue would be expected as a result of a change in ex-vessel price. For the preferred combination of alternatives, the total change in landings is such that a price flexibility of -0.41 would result in an ex-vessel price decrease of approximately 7.8%. Using these change in prices and the expected change in landings for each type and area, a net percentage change in expected total entity revenues were calculated.

Of the 629 small entities that would be directly regulated under the proposed action, 309 would likely have a net decline in revenues, while 319 would likely have an increase in net revenues under the preferred combination of alternatives. The mean change would be +0.7 percent, suggesting that the distribution skews positively. Only one entity would have a decrease in expected revenues greater than 5 %, and a total of 11 entities would have a decrease in expected revenues greater than 1%. All of these 11 entities are categorized as finfish entities. For these entities, increases in landing limits under the proposed action may allow for some switching of fishing behavior that could mitigate the expected net loss. A histogram of entities' net percent changes in revenue is presented in Figure 6.1.

Figure 6.1. Distribution of changes in revenues (by affiliate group size).



In conclusion, the magnitude of potential losses to individual vessels are small and not widespread, and the proposed increases in possession limits could allow impacted vessels to reallocate effort in a net-positive manner. Only one small entity, out of 629, would likely face a net decrease of greater than 5% of net revenues, a clear *de minimis* level by any standards; and 11 small entities would likely face a decrease of greater than 1% of total revenues, a number insufficient to be considered substantial.

6.4 Endangered Species Act (ESA)

While ESA Section 7 consultations are required when the preferred alternatives may affect listed species, a conference is required only when the preferred alternatives are likely to jeopardize the continued existence of a proposed species or destroy or adversely modify proposed critical habitat. A biological assessment evaluates the potential effects of an action on listed and proposed species and designated and proposed critical habitat to determine whether any such species or habitat are likely to be adversely affected by the action. A biological assessment is used in determining whether formal consultation or a conference is necessary.

On February 9, 2012, NMFS reinitiated formal consultation to reconsider the effects of the continued authorization of several fisheries, including the monkfish fishery, on DPSs of Atlantic sturgeon listed as threatened or endangered under the ESA on February 6, 2012. An updated batched BO was issued for seven fisheries in the Northeast, including the monkfish fishery, on December 16, 2013 (NMFS 2013). The BO reviewed the current status of large marine mammals, sea turtles, and Atlantic sturgeon, the environmental baseline, and cumulative effects in the action area, including the effects of the continued operation of the Monkfish FMP and other FMPs over the next 10 years. The BO concluded that the continuation of these fisheries "may adversely affect, but is not likely to jeopardize, the continued existence of" North Atlantic right whales, humpback whales, fin whales, sei whales, the Northwest Atlantic DPS of

loggerhead sea turtles, leatherback turtles, Kemp's ridley turtles, green sea turtles, any of the five DPSs of Atlantic sturgeon, or the GOM DPS for Atlantic salmon. This BO also concluded that these fisheries will not adversely affect hawksbill sea turtles, shortnose sturgeon, smalltooth sawfish DPS, *Acroporid* corals, Johnson's seagrass, sperm whales, blue whales, designated critical habitat for right whales in the Northwest Atlantic, or designated critical habitat for GOM DPS Atlantic salmon (NMFS 2013).

In general, the impacts on protected resources will track the trend in fishing effort. The scope of the potential increase with respect to the overall monkfish and groundfish fisheries is expected to be small, however, and the fact that other regulations restricting catch of both monkfish and groundfish will likely limit the overall increase in fishing effort resulting from the preferred alternatives. The net effects of the preferred alternatives will be slightly negative impacts to protected species based on a slight increase in interactions associated with increasing effort.

6.5 Marine Mammal Protection Act (MMPA)

NMFS, Greater Atlantic Region has reviewed the impacts of this action on marine mammals and has concluded that the management action is consistent with the provisions of the MMPA. Although the increasing DAS allocations and landing limits may increase fishing effort, and thus could negatively affect species inhabiting the monkfish management unit, the measures will not alter the effectiveness of existing MMPA measures, such as take reduction plans, to protect those species based on overall reductions in fishing effort that have been implemented through the FMP. For further information on the potential impacts of the fishery and the proposed management action on marine mammals, see section 5.0 of this document.

6.6 Paperwork Reduction Act (PRA)

The purpose of the PRA is to control and, to the extent possible, minimize the paperwork burden for individuals, small businesses, nonprofit institutions, and other persons resulting from the collection of information by or for the Federal Government. The authority to manage information and recordkeeping requirements is vested with the Director of the Office of Management and Budget (OMB). This authority encompasses establishment of guidelines and policies, approval of information collection requests, and reduction of paperwork burdens and duplications. This action makes no alterations to the existing information collection requirements implemented by previous amendments to the Monkfish FMP that are subject to the PRA.

6.7 Coastal Zone Management Act (CZMA)

Section 307(c)(1) of the Federal CZMA of 1972 requires that all Federal activities that directly affect the coastal zone be consistent with approved state coastal zone management programs to the maximum extent practicable. Pursuant to Section 930.36(c) of the regulations implementing the CZMA, NMFS made a general consistency determination that the Monkfish FMP, including Amendment 5 and FW 7 are consistent to the maximum extent practicable with the enforceable policies of the approved coastal management program of Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, and North Carolina. This general consistency determination applies to the

current Monkfish FMP, and all subsequent routine Federal actions carried out in accordance with the FMP such as FWs and specifications. A general consistency determination is warranted because FWs to the FMP and catch specifications are repeated activities that adjust the use of management tools previously implemented in the FMP. A general consistency determination avoids the necessity of issuing separate consistency determinations for each incremental action. This determination was submitted to the above states on October 8, 2010. The states of New Hampshire, Rhode Island, Connecticut, Pennsylvania, Delaware, New Jersey, Virginia, and North Carolina responded to concur with the general consistency determination for Amendment 5; concurrence by all other states was inferred.

6.8 Data Quality Act (DQA)

Pursuant to NOAA 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 the information (including statistical information) disseminated by or for Federal agencies. The following sections address these requirements.

Utility of Information Product

The EA and the *Federal Register* document prepared for this action include a description of the proposed measures; the reasons why such measures are necessary; and the biological, economic, and social impacts of the proposed measures. The information in the EA is useful to understand the rationale for the action, along with the anticipated impacts associated with the proposed measures. The *Federal Register* notice provides a summary of the information contained in the EA to inform interested public of the scope and purpose of the proposed measures and to specify regulations that implement such measures. These documents provide the justification that the proposed measures are consistent with the Monkfish FMP, the conservation and management goals of the MSA, and other applicable law.

The EA includes new projections of monkfish landings expected to result from the proposed measures, as well as the expected biological, economic, and social impacts associated with such measures. This information builds upon previous analysis in other recent actions under the Monkfish FMP, and provides updated information on recent and projected monkfish catch rates. The EA also includes updated data summarizing the status of the other species that may be affected by this action, including information on Atlantic sturgeon and loggerhead sea turtles to reflect the recent listing of such species under the ESA. In this regard, the EA provides both more current and detailed information than what was presented in documents supporting previous management actions in the monkfish fishery. The proposed measures reflect the purpose of the action to achieve, but not exceed, ACTs in the NMA and SMA, and increase efficient utilization and operational flexibility of the monkfish fishery. Both the EA and the proposed rule to implement the proposed action will be made available to the public to review via publication in the Federal Register, along with posting on both the NEFMC and NMFS websites.

Integrity of Information Product

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, "Security of Automated Information Resources," of OMB Circular A-130; the Computer Security Act; and the Government Information Security Act. All confidential information (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 Act; and NOAA Administrative Order 216-100, Protection of Confidential Fisheries Statistics.

Objectivity of Information Product

For purposes of the Pre-Dissemination Review, this document 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.

The proposed action and associated analyses in the EA are based upon the Monkfish Operational Assessment, conducted and peer-reviewed in 2013 (NEFSC 2013). Information from the Monkfish Operational Assessment represents the best information available. The proposed action also relies upon the monkfish ACTs in the NMA and SMA specified for FY 2014 by the NEFMC's SSC. The impacts of these ACTs are analyzed in the EA prepared for Amendment 5 and FW 7 in 2011, and for this document. The EA contains updated information describing catch of monkfish, expected fishing revenue from monkfish operations, and DAS usage in the fishery based upon information collected through the vessel trip report and commercial dealer databases. Updated analysis for Atlantic sturgeon and loggerhead sea turtles included in the EA supporting the proposed action reflects findings from the December 16, 2013 BO. Original analyses in the EA were prepared using data from accepted sources. Finally, the summary of the impacts of proposed measures in the proposed rule is based upon information in the EA.
NS 2 of the MSA requires that the FMP's conservation and management measures shall be based upon the best scientific information available. Analyses of the proposed action incorporate the most complete data set from recent fishing years that is available to assess the impacts of these measures. These data represent the best information available, and are consistent with the principles for evaluating best scientific information available, as proposed in the NS 2 Guidelines (74 FR 65724; December 11, 2009) regarding relevance, inclusiveness, objectivity, transparency, timeliness, verification, validation, and peer review. These measures have been determined to be in compliance with NS 2 based upon the best scientific information available.

The policy choices are clearly articulated in Section 3.0 of this document as the management alternatives considered in this action. The supporting science and analyses, upon which the policy choices are based, are summarized and described in section 5.0 of this document. All supporting materials, information, data, and analyses within this document have been, to the

maximum extent practicable, properly referenced according to commonly accepted standards for scientific literature to ensure transparency.

The review process used in preparation of this document involves the NEFSC, the Greater Atlantic Regional Office, and NOAA Fisheries Service Headquarters. The NEFSC's technical review is conducted by senior level scientists with specialties in population dynamics, stock assessment methods, demersal resources, population biology, and the social sciences. Review by staff at the Regional Office is conducted by those with expertise in fisheries management and policy, habitat conservation, protected species, and compliance with the applicable law. Final approval of the action proposed in this document and clearance of a final rule prepared to implement the catch limits is conducted by staff at NOAA Fisheries Service Headquarters, the Department of Commerce, and the U.S. Office of Management and Budget.

6.9 Executive Order 13132 (Federalism)

This Executive Order (E.O.) established nine fundamental federalism principles for Federal agencies to follow when developing and implementing actions with federalism implications. The E.O. also lists a series of policy making criteria to which Federal agencies must adhere when formulating and implementing policies that have federalism implications. However, no federalism issues or implications have been identified relative to the proposed measures in this action. This action does not contain policies with federalism implications sufficient to warrant preparation of an assessment under E.O. 13132. The affected states have been closely involved in the development of the proposed management measures through their representation on the NEFMC and MAFMC (all affected states are represented as voting members of at least one Regional Fishery Management Council). No comments were received from any state officials relative to any federalism implications that may be associated with this action.

6.10 Executive Order 13158 (Marine Protected Areas)

The E.O. on Marine Protected Areas requires each federal agency whose actions affect the natural or cultural resources that are protected by an MPA to identify such actions, and, to the extent permitted by law, and to the maximum extent practicable, in taking such actions, avoid harm to the natural and cultural resources that are protected by an MPA. This E.O. directs federal agencies to refer to the MPAs identified in a list of MPAs that meet the definition of MPA for the purposes of the E.O. The E.O. requires that the Departments of Commerce and the Interior jointly publish and maintain such a list of MPAs. As of the date of submission of this FW, the list of MPA sites has not been developed by the departments. No further guidance related to this E.O. is available at this time.

6.11 Administrative Procedures Act (APA)

Section 553 of the APA establishes procedural requirements applicable to informal rulemaking by Federal agencies. The purpose of these requirements is to ensure public access to the Federal rulemaking process, and to give the public adequate notice and opportunity for comment. For the rulemaking that will implement this action to increase DAS allocations and landing limits in the NMA and SMA, modify DAS usage requirements, and modify the permit Category H fishing

boundary, pursuant to 5 U.S.C. 553(b)(3)(B) and (d)(3), there is good cause to waive the delayed effectiveness for this action, because a delayed effectiveness would be impracticable and contrary to the public interest.

7.0 List of Preparers and Persons Consulted; Point of Contact

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