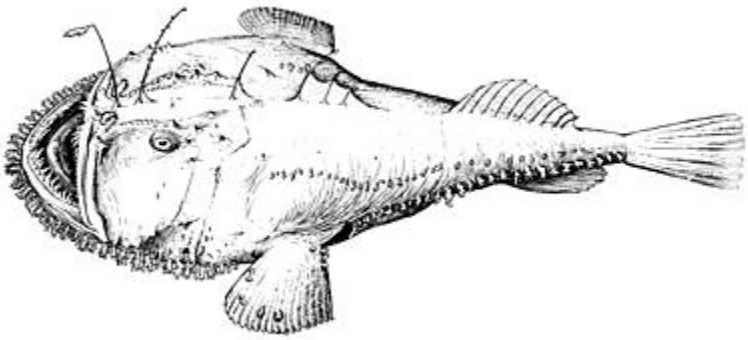
Monkfish Fishery Management Plan

Secretarial Emergency Action to Eliminate Monkfish Possession Limits in the Northern Fishery Management Area During Fishing Year 2013



Lophius americanus

Environmental Assessment

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1.0 Executive Summary

The monkfish fishery is jointly managed by the New England Fishery Management Council (NEFMC) and the Mid-Atlantic Fishery Management Council (MAFMC), with the NEFMC having the administrative lead. 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 (NFMA) covering the Gulf of Maine (GOM) and northern part of Georges Bank (GB), and the Southern Fishery Management Area (SFMA) extending from the southern flank of GB through the Mid-Atlantic Bight to North Carolina (see Figure 1). The monkfish fishery is primarily managed by possession 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 NFMA and SFMA for each fishing year (FY). Monkfish are often landed while fishing for species managed by the Northeast (NE) Multispecies (groundfish) Fishery Management Plan (FMP), particularly in the NFMA. During FY 2009, 73 percent of vessels issued limited access monkfish permits were also issued limited access groundfish permits. Such vessels are limited to landing a smaller incidental amount of monkfish unless the vessel declares into the directed monkfish fishery and fishes under both a monkfish and groundfish DAS on the same trip.

Monkfish are currently not subject to overfishing, and are considered rebuilt in both the NFMA and SFMA (NEFSC 2010). In recent years, the monkfish fishery has failed to fully harvest the ACT specified for each year, particularly in the NFMA. This suggests that monkfish landings could be increased with little risk of overfishing monkfish. In contrast, several groundfish stocks managed under the NE Multispecies FMP, including GOM cod, GOM haddock, GB cod, and GB yellowtail flounder, are overfished and subject to overfishing. Updated assessments for these stocks conducted in 2012 indicate that substantial reductions in the fishing mortality rate (F) for these stocks are necessary to prevent overfishing and rebuild overfished stocks consistent with rebuilding plans required under the Magnuson-Stevens Fishery Conservation and Management Act (MSA).

At its January 2013 meeting, the NEFMC adopted Framework Adjustment (FW) 50 to the NE Multispecies FMP (NEFMC, 2013) to address the results of updated assessments for several groundfish stocks. Among other measures, that action would specify annual catch limits (ACLs) for these stocks for FYs 2013 through 2015 that are substantially reduced when compared to ACLs specified for previous fishing years. These reductions, if approved by the Secretary of Commerce (Secretary), would likely become effective May 1, 2013, and would result in substantial adverse economic impacts to vessels participating in the groundfish fishery. To help mitigate the adverse economic impacts of reduced fishing opportunities in the groundfish fishery during FY 2013, the NEFMC requested that NOAA's National Marine Fisheries Service (NMFS) implement an emergency action to eliminate monkfish possession limits for sector vessels fishing under a groundfish DAS in the NFMA at its November 13-15, 2012, meeting.

The Secretary finds that emergency action, under the authority of the MSA, is necessary to increase monkfish landings from the NFMA to help mitigate the substantial adverse economic and social impacts associated with substantial reductions to several groundfish ACLs during FY 2013. This is based on recent updates to groundfish stock assessments that would likely result in substantial adverse economic impacts to the groundfish fishery and associated communities that

can be, at least in part, mitigated by increasing monkfish landings during FY 2013. This Environmental Assessment (EA) analyzes the environmental impacts of an emergency action that proposes to eliminate monkfish possession limits for vessels issued both a Federal limited access NE multispecies and monkfish permit (i.e., vessels issued a Federal limited access monkfish Category C or D permit) while fishing under a monkfish and/or groundfish DAS in the NFMA during FY 2013. This EA compares alternatives, as required under the National Environmental Policy Act (NEPA), to quickly implement measures that would help mitigate adverse economic impacts in the groundfish fishery.

Summary of Environment Consequences

Eliminating monkfish possession limits for limited access monkfish Category C and D vessels fishing under a groundfish DAS or on both a monkfish and groundfish DAS in the NFMA during FY 2013 would likely result in increased landings of monkfish during FY 2013 compared to the No Action Alternative. A projection of expected landings indicates that monkfish landings from the NFMA would approach 92 percent of the FY 2013 NFMA monkfish TAL (5,400 mt, or 11,904,502 lb), which is 541,736 lb more landings than anticipated from the current possession limits (i.e., the No Action Alternative). Assuming that recent monkfish DAS usage and landing trends continue, it is unlikely that the proposed emergency action would cause monkfish catch to exceed the 5,854 mt TAL or the 6,567 mt ACT, once discards are included, specified for the NFMA during FY 2013 as part of FW 7. Both scientific and management uncertainty are accounted for in these catch levels, so the risks of negative biological impacts have been minimized. Because the FY 2013 TAL and ACT were set at a level that would not result in overfishing of monkfish in the NFMA as part of FW 7 to the Monkfish FMP, the preferred alternative would not likely result in overfishing monkfish, and would not have any biological impacts beyond those analyzed in the EA developed in support of FW 7 (NEFMC 2011b).

Compared to the other alternatives considered in this action, the preferred alternative poses a greater risk that inactive groundfish DAS could be used to increase fishing effort on monkfish beyond that observed in recent years that could potentially increase the likelihood of exceeding the monkfish NFMA TAL during FY 2013. An alternative projection using a higher rate of assumed groundfish DAS usage under the preferred alternative suggests that NFMA monkfish landings could potentially reach 6,283 mt, or 429 mt in excess of the FY 2013 NFMA TAL if not further constrained.

The scope of the expected increase in monkfish landings under the preferred alternative would be constrained due to restrictions on overall fishing effort already implemented in the Monkfish and NE Multispecies FMPs. Overall fishing effort and, therefore, landings of monkfish in the NFMA, would still be at least partially controlled by the number of groundfish DAS allocated during FY 2013, and by groundfish ACLs. Instead of increasing overall effort in the fishery, the proposed emergency action would more likely simply convert some amount of monkfish discards into landings. In doing so, the preferred alternative would more closely achieve optimum yield (OY) in the monkfish fishery by increasing the proportion of the TAL and ACT harvested during FY 2013. Any marginal increase in effort in the monkfish fishery resulting from the proposed emergency action compared to the No Action Alternative would slightly increase the interactions of monkfish gear with protected resources and essential fish habitat (EFH). However, the scope of this increase with respect to the overall fishery is expected to be negligible.

Another alternative, Alternative 1, was analyzed that would eliminate monkfish possession limits for vessels issued a limited access monkfish Category C or D permit that fished under both a monkfish and a groundfish DAS in the NFMA during 2013. This alternative is slightly different than the preferred alternative in that it would apply to vessels fishing only on a monkfish DAS in the NFMA. Analysis of the biological impacts of this alternative suggests that it would result in monkfish landings that would approach, but not exceed the FY 2013 monkfish ACT in the NFMA, with little, if any, risk of increasing the likelihood that additional groundfish DAS would be used to target monkfish during FY 2013. Alternative 1 would not likely increase monkfish landings as much as the preferred alternative.

The increased landings of monkfish under the preferred alternative would represent an increase of potential revenue of nearly $661,000 compared to the No Action Alternative. This assumes recent that recently observed landing rates and average ex-vessel prices continue throughout FY 2013. The maximum revenue that could be realized from this emergency action is if catch rates increase such that the entire FY 2013 NFMA monkfish TAL is caught. If this were to occur, this could result in up to an additional $1.9 million in fishing revenue compared to the No Action Alternative. Therefore, the potential economic benefits of the preferred alternative range from an additional $661,000 – $1.9 million in additional fishing revenue due to increased landings of monkfish. Economic impacts from Alternative 1 indicate that it would result in an increase of potential fishing revenue of approximately $490,000 compared to the No Action Alternative. This is approximately $171,000 less than the expected potential revenue from the preferred alternative.

Similar to the expected biological impacts of this action, the expected economic impacts of this action are difficult to predict, as several factors may influence the degree to which the emergency action is able to influence fishing behavior. Current regulations for the NE Multispecies FMP require the cessation of fishing activities by sector participants once an individual sector's allocation of a groundfish stock's ACL has been harvested. Given the substantially reduced ACLs for GOM and GB groundfish stocks during FY 2013, it is possible that one or more sectors will fully harvest the available ACL for one or more of these stocks before the end of FY 2013 on April 30, 2014, and be required to cease fishing operations. Because a majority of groundfish sector vessels are also issued a limited access monkfish permit, such a closure would prevent such vessels from targeting monkfish in the NFMA for the remainder of FY 2013, resulting in less fishing revenue than expected. Non-sector vessels are regulated by groundfish DAS and trip 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 under this proposed emergency action. Finally, motivations that affect fishermen's behavior cannot be easily predicted. Based on comments by monkfish vessel owners during the development of Amendment 6 to the FMP, the decision whether to use a monkfish DAS on a particular trip depends upon many factors, including anticipated length of the trip, market price, amount of other species catch, and the catch rates for monkfish. The latter factor was considered the most important.

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2.0 Background, Purpose, and Need

2.1 Background

2.1.1 Management of the Monkfish FMP

The Monkfish FMP was originally implemented in November 1999. The monkfish fishery is jointly managed by the NEFMC and the 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 NFMA covering the GOM and northern part of GB, and the SFMA extending from the southern flank of GB through the Mid-Atlantic Bight to North Carolina (see Figure 1). The monkfish fishery is primarily managed by possession limits, in conjunction with a yearly allocation of DAS calculated to enable vessels participating in the fishery to catch, but not exceed, thee target TAL and ACT in each management area calculated to maximize yield in the fishery over the long term. For a more complete description of the history of the monkfish fishery, see FW 7 (NEFMC 2011b).

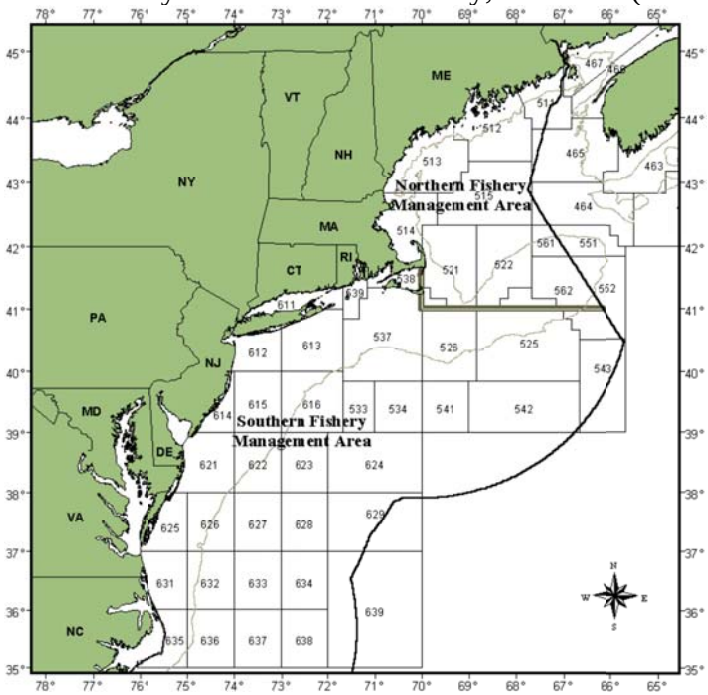


Figure 1. Monkfish Fishery Management Areas.

Since its inception, the Monkfish FMP has implemented a number of management actions to respond to changes in the status of monkfish stocks and underlying legal requirements. The most recent substantial change to the FMP was Amendment 5. The final rule for Amendment 5 was published in the *Federal Register* on May 25, 2011 (76 FR 30265), and brought the FMP into compliance with the MSA by establishing overfishing levels (OFLs), acceptable biological catch (ABC) amounts, ACLs, and accountability measures (AMs) for the monkfish fishery in each management area. The OFL was set as the amount of catch above which overfishing is deemed to be occurring, while the ABC represents the level of catch that accounts for the scientific uncertainty in the estimate of OFL and any other uncertainty such as that associated with the specification of biological reference points. The ACL was set equal to

the ABC because the Councils chose to specify an ACT as a proactive AM. The ACT was set lower than the ACL to account for management uncertainty, or the uncertainty in the "ability of management measures to control catch" (NEFMC 2011a). Amendment 5 used the ACT to set the DAS and possession limits for both the NFMA and SFMA.

The Amendment 5 measures were based on a 2007 monkfish assessment by the Data Poor Working Group (NEFSC 2007). However, an updated monkfish assessment in 2010 (SAW 50, NEFSC 2010) that was completed after the Councils adopted final measures in Amendment 5 concluded that both monkfish stocks were not overfished or subject to overfishing (NEFSC 2010). It also indicated that the NFMA ABC and ACT adopted in Amendment 5 needed to be revised. Therefore, the Councils developed FW 7 to the Monkfish FMP to incorporate that updated information.

The final rule for FW 7, which published in the *Federal Register* on October 26, 2011 (76 FR 66192), incorporated the results of SAW 50 and the advice of the NEFMC's Scientific and Statistical Committee (SSC) to specify the monkfish ACT for the NFMA for FY 2011 through FY 2013 at 6,567 mt. An estimate of the monkfish discard rate in the NFMA in all fisheries, calculated as the average of the most recent three years used in the most recent stock assessment, is deducted from the NFMA ACT to arrive at the target total allowable landings (TAL). For the NFMA, the discard rate estimated by SAW 50 was 11 percent. Deducting this discard rate from the ACT results in a TAL of 5,854 mt for FYs 2011 – 2013. FW 7 used this TAL to specify the number of DAS allocated to all vessels issued a limited access monkfish permit, and the monkfish possession limits for each monkfish permit category (NEFMC 2011b).

Monkfish measures specified in FW 7 (monkfish DAS allocations and trip limits) are based upon achieving, but not exceeding, the monkfish TAL specified in the NFMA. As noted above, the TAL is derived from the ACT, which was set at a level that would prevent overfishing the monkfish resource in the NFMA based upon the most recent stock assessment (SAW 50, NEFSC 2010) and input from the SSC, after taking into consideration the estimate of scientific and management uncertainty. The NFMA monkfish ACT is a form of a proactive accountability measure (AM) to ensure that the NFMA ACL will not be exceeded and cause the stock to be subject to overfishing. In the rare case that the ACL is ever exceed, the NEFMC and MAFMC will deduct the ACL overage from the ACT on a pound-for-pound basis the second FY following the FY in which to overage occurred.

Monkfish are often landed while fishing for species managed by the NE Multispecies FMP, particularly in the NFMA. During FY 2012, nearly 80 percent of vessels issued a limited access monkfish Category C or D permit are participating in groundfish sectors. Such vessels are limited to landing a smaller incidental amount of monkfish[1] unless the vessel declares into the directed monkfish fishery and fishes under both a monkfish and groundfish DAS on the same trip. Therefore, there is a lot of interaction between the monkfish and groundfish fisheries. Accordingly, a management action that affects one fishery will invariably have an effect on the other. In recent years, the monkfish fishery has failed to fully harvest the ACT specified for each

[1] If the vessel is fishing under a groundfish DAS, but not a monkfish DAS, it may land monkfish in an amount up to 25 percent of the total weight of fish on board not to exceed 300 lb per DAS, when all monkfish is converted to tail weight. If not fishing under a groundfish DAS, such vessels would be restricted to an amount of monkfish up to 5 percent of the total weight of fish on board when all monkfish is converted to tail weight, or 50 lb per day or partial day, not to exceed 150 lb per trip, depending on the gear type used.

year, particularly in the NFMA. This can be explained, at least in part, by a series of effort reductions in the groundfish fishery (either reductions to DAS allocations or available ACLs) that were necessary to eliminate overfishing and rebuild overfished stocks. For a more complete discussion of the history of the groundfish fishery, see the EA prepared for FW 47 to the NE Multispecies FMP (NEFMC 2012).

2.1.2 Justification for Emergency Action

If the Secretary finds that an emergency exists, Section 305(c) of the MSA authorizes him to promulgate emergency regulations to address the emergency for any fishery. NMFS last issued policy guidelines in determining whether the use of an emergency rule is justified (62 FR 44421; August 21, 1997). The guidelines state that the preparation of management actions under the emergency provisions of the MSA should be limited to special circumstances where substantial harm or disruption of the resource, fishery, or community would be caused in the time it would take to follow standard rulemaking procedures. The emergency criteria of the policy guidelines define the existence of an emergency as a situation that: "(1) Results from recent, unforeseen events or recently discovered circumstances; and (2) presents serious conservation or management problems in the fishery; and (3) can be addressed through emergency regulations for which the immediate benefits outweigh the value of advance notice, public comment, and deliberative consideration of the impacts on participants to the same extent as would be expected under the normal rulemaking process." The justifications described in the guidelines include the prevention of significant direct economic loss or to preserve a significant economic opportunity that otherwise might be foregone, and the prevention of significant community impacts.

Several issues facing the groundfish fishery for FY 2013 present recently discovered circumstances that would likely cause serious management problems in the fishery and result in substantial economic and social impacts for the groundfish fishery and associated communities. First, recent stock assessments indicate that several groundfish stocks are still overfished and subject to overfishing, and that biomass for some stocks continues to decline. In March 2012, stock assessment updates were conducted for 13 stocks managed by the NE Multispecies FMP, indicating that stock size declined for several stocks since the last comprehensive stock assessment in 2008 (NEFSC 2012). A July 2012 stock assessment for GB yellowtail flounder indicated that the stock is overfished and continues to be subject to overfishing (TRAC 2012), while a December 2012 stock assessment reached similar conclusions for GOM and GB cod (NEFSC 2013a). Another stock assessment for white hake is scheduled for January 2013, with a preliminary data workshop indicating that this stock is also in poor condition (NEFSC 2013b). Cumulatively, these assessments present a recent awareness of the full scope of the current status of managed groundfish stocks. Second, in response to these recent assessment updates, the NEFMC adopted FW 50 to specify ACLs for several groundfish stocks for FYs 2013 through 2015. For the several stocks mentioned above, updated assessment data indicates that ACLs must be substantially reduced in FY 2013 to ensure that overfishing is ended immediately and overfished stocks are rebuilt, as required by the MSA (see Table 1). Due to the comingled nature of the groundfish fishery, such reductions will also decrease the catch of other, healthier stocks managed by the FMP. This will likely result in substantial adverse economic and social impacts to the groundfish fishery and associated fishing communities that build upon adverse impacts from previous recent actions in the FMP. Although FW 50 contains administrative measures that

would help reduce some monitoring costs and increase flexibility of fishing operations, the suite of measures developed in FW 50 would not be able to mitigate the economic impacts of reductions to the ACLs for several stocks, because the fishery would still be limited in the smaller amount of groundfish that could be landed in FY 2013. This is particularly important considering that portions of the ACLs are allocated as groundfish bycatch in other fisheries, such as GB yellowtail flounder bycatch in the Atlantic sea scallop fishery. Finally, since the existing ACLs for most groundfish stocks expire at the end of FY 2012 on April 30, 2012, the NEFMC had to prioritize implementing FY 2013 ACLs above all other measures to maintain compliance with the MSA and established rebuilding programs. To ensure that FY 2013 groundfish ACLs would become effective by the start of FY 2013, the NEFMC adopted final measures for FW 50 at its January 2013 meeting. Therefore, there was not enough time for the NEFMC to develop further measures to preserve economic opportunities in the groundfish fishery and prevent substantial community impacts through the conventional fishery management council process before FY 2013 begins on May 1, 2013.

Table 1. Proposed Reductions in 2013 Groundfish Annual Catch Limits Compared to 2012 Annual Catch Limits.

Groundfish Stock	Percent Reduction Compared to FY 2012
GB cod	55 percent
GOM cod	77 percent
GOM haddock	71 percent
GB yellowtail flounder	62 percent
Cape Cod/GOM yellowtail flounder	53 percent
American plaice	57 percent
Witch flounder	52 percent

As noted above, monkfish are often caught while fishing for groundfish, particularly in the NFMA, because both are bottom-dwelling species comingling in the same fishing locations and susceptible to gear types used in both fisheries. During FY 2009, 73 percent of vessels issued a limited access monkfish permit were also issued a limited access groundfish permit (NEFMC 2011a), while in FY 2012 nearly 80 percent of groundfish sector vessels (representing 99 percent of historic groundfish landings) are also issued limited access monkfish Category C or D permits. Therefore, the two fisheries are closely related, and influence one another in both the nature of fishing operations (what species to target and where to fish) and resulting economic and social impacts of applicable management measures. As such, when the projected catch of the groundfish ACL for a single stock triggers a reduction or cessation of fishing effort, as required by the ground FMP for non-sector and sector vessels, respectively, not only is the catch of that stock affected, but the catch of numerous other stocks that are caught concurrently, including monkfish, is also reduced. It may also increase incentives for vessel operators to alter their behavior and increase discards of such limiting stocks on unobserved trips to avoid triggering such measures. This would undermine the conservation objectives of the groundfish FMP, and could result in further future measures to ensure that rebuilding targets are met by the fishery. Accordingly, the proposed reductions in groundfish ACLs for FY 2013 present serious management problems not only for the groundfish fishery, but also for the monkfish fishery, because they would reduce the likelihood that both fisheries will achieve OY for managed stocks and could result in substantial economic impacts that may jeopardize the potential for the

continued participation of vessels and fishing communities in either fishery, contradictory to the mandates of the MSA.

Monkfish landings could be increased from the NFMA without adversely impacting the monkfish resource. Monkfish in the NFMA are not overfished or subject to overfishing (NEFSC 2010). Further, in recent years, monkfish landings have fallen short of monkfish target total allowable landings amounts specified for the NFMA (see Table 2). These lower landings levels are likely, at least in part, due to recent reductions in effort in the groundfish fishery. As noted above, monkfish ACTs are specified sufficiently below the OFL adopted in Amendment 5 to allow the full ACT to be harvested without resulting in overfishing monkfish in the NFMA. This suggests that monkfish landings from the NFMA could be increased beyond recent levels without increasing the risk of overfishing this stock. Thus, the proposed emergency action could serve as a means of increasing fishing opportunities and associated fishing revenue by vessels operating in the groundfish fishery to preserve a substantial economic opportunity that otherwise might be foregone by further reducing groundfish fishing effort and, therefore, monkfish landings. In doing so, this action would help mitigate anticipated adverse economic and social impacts resulting from substantially reduced groundfish ACLs in FY 2013.

Table 2. Recent Northern Fishery Management Area Monkfish Landings Compared to Associated Target Total Allowable Landings Amounts.

Fishing Year	Target Total Allowable Landings Amount (mt)	Amount Landed (mt)	Percent of Target Total Allowable Landings Amount Landed
2008	5,000	3,528	71 percent
2009	5,000	3,344	67 percent
2010	5,000	2,834	57 percent
2011	5,854	3,699	63 percent

Emergency measures could be implemented in a more timely manner than if such measures were developed through the conventional council process. This is because public meetings requiring advanced public notice do not have to be conducted. Instead, the NMFS could use the NEFMC request for emergency action, adopted with input from the public at the November 2012 NEFMC meeting, to form the foundation of proposed measures analyzed by NMFS staff and evaluated by the public through rulemaking consistent with the Administrative Procedures Act.

In conclusion, the combined effect of a series of recent groundfish stock assessment updates, a late decision by the NEFMC to adopt substantially lower groundfish ACLs for certain stocks for FY 2013, and the lack of time to develop additional measures to mitigate the economic and social impacts of reduced FY 2013 groundfish ACLs through the conventional management process present serious management problems in the groundfish fishery and other fisheries, such as the Atlantic sea scallop and monkfish fisheries, that can be, at least in part, addressed through emergency action. An emergency action to eliminate monkfish possession limits for vessels issued both a limited access groundfish and monkfish permit in the NFMA can provide necessary additional fishing revenue to mitigate expected substantial adverse economic and social impacts from reduced groundfish ACLs in FY 2013 without increasing the risk of overfishing monkfish in the NFMA. Such measures can be developed and implemented by NMFS more swiftly than a council action that is subject to procedural and other requirements not applicable to the Secretary. Under the normal regulatory process, it would take substantially longer for the new

limits to be implemented, and could result in triggering restrictive, and economically harmful management actions that otherwise may have been avoided.

2.2 Purpose and Need

This purpose of this action is to increase monkfish fishing opportunities for vessels issued both a limited access groundfish and monkfish permit in the NFMA to help mitigate adverse economic and social impacts in the groundfish fishery during FY 2013. The objective is to develop an action that is consistent to the extent possible with the NEFMC request for emergency action, without resulting in exceeding the monkfish TAL in the NFMA and, ultimately, contributing to overfishing monkfish in the NFMA. This action is needed to help mitigate the adverse economic and social impacts associated with substantially reduced groundfish ACLs necessary for FY 2013 based on recent updated stock assessments for several groundfish stocks. The scope of this action would be limited to FY 2013 (May 1, 2013, through April 30, 2014). Accordingly, this action would facilitate the short-term increase in the FY 2013 landings of monkfish from the NFMA by vessels issued both limited access groundfish and monkfish permits. This would provide increased catch and associated economic benefits to the fishing industry to the maximum extent practicable while long-term measures that would more adequately mitigate economic and social impacts in the groundfish fishery and more closely achieve the ACTs specified for monkfish in the NFMA can be implemented through the fishery management council process.

3.0 Alternatives

As described above, the purpose of this action is to eliminate monkfish possession limits in the NFMA during FY 2013 (May 1, 2013, through April 30, 2014) for vessels issued both a limited access groundfish and monkfish permit to help mitigate substantial adverse economic and social impacts associated with necessarily reduced ACLs for certain groundfish stocks. In addition to the No Action Alternative, two alternatives were analyzed. Although the NFMA monkfish possession limits would be revised under this action, this action does not change the ABC, ACL, ACT, TAL, and methods of calculating such catch limits implemented by Amendment 5 and FW 7 to the Monkfish FMP. In order to implement measures in a timely manner, it was necessary to consider only those measures that were within the scope of existing management measures that would not require substantial time to develop and administer prior to the beginning of FY 2013 on May 1, 2013. Given the short duration that this action will be in effect, if the NEFMC and MAFMC choose to implement similar measures on a more permanent basis, additional alternatives could be developed and analyzed as part of a future management action.

3.1 Monkfish Possession Limits

3.1.1 No Action

Under the No Action Alternative, the monkfish possession limits adopted by FW 7 for the NFMA would not be changed (see Table 3). Also, under the No Action Alternative, the

OFL, ABC/ACL, and ACT would remain as 19,557 mt, 7,592 mt, and 6,567 mt, respectively, as implemented in either Amendment 5 or FW 7 (NEFMC 2011a and b).

Table 3. No Action Alternative Monkfish Possession Limits in the Northern Fishery Management Area for 2013.

	DAS Type	Monkfish Permit Category	Possession Limit
Incidental	Non-DAS	E	Up to 5% of total weight of fish onboard
Monkfish (no groundfish permit)	Monk	A	1,250 lb/DAS
		B	600 lb/DAS
Common Pool	NE Mults A DAS	Any	Up to 25% of total weight of fish onboard, not to exceed 300 lb
	NE Mults A & Monk	C	1,250 lb/DAS
		D	600 lb/DAS
Sector	Non-DAS	Any	Up to 5% of total weight of fish onboard
	NE Mults A DAS	Any	Up to 25% of total weight of fish onboard, not to exceed 300 lb
	NE Mults A & Monk	C	1,250 lb/DAS
		D	600 lb/DAS

3.1.2 Alternative 1 – Elimination of Monkfish Possession Limits on When Fishing on a Monkfish DAS

Under Alternative 1, monkfish possession limits would be eliminated for vessels issued both a Federal limited access groundfish and monkfish permit when fishing under both a monkfish and groundfish DAS in the NFMA during FY 2013. Alternative 1 would also allow the Regional Administrator to reinstate existing possession limits in the NFMA if available data indicate that the NFMA monkfish TAL will be exceeded during FY 2013. Existing monkfish possession limits for vessels fishing under only a monkfish DAS, only under a groundfish DAS, or under no DAS at all (i.e., vessels that catch monkfish while targeting other fisheries) would remain the same, as specified in Table 4. The OFL, ABC/ACL, ACT, and TAL would remain as 19,557 mt, 7,592 mt, 6,567 mt, and 5,854 mt, respectively, as implemented in either Amendment 5 or FW 7 (NEFMC 2011a and b).

Alternative 1 would affect vessels issued a Federal limited access monkfish Category C or D permit, regardless of whether such vessels are participating in a groundfish sector during FY 2013. Vessels would still be required to either declare a trip under a monkfish DAS, or a groundfish trip with the potential to convert to a monkfish trip (i.e., declare a groundfish trip with the monkfish option) at the dock prior to starting a trip in order to be exempt from the monkfish possession limits under this alternative. A vessel that does not at least declare a trip

under a groundfish DAS at the dock prior to starting a trip would not be exempt from the monkfish possession limits under this alternative.

Table 4. Alternative 1 Monkfish Possession Limits in the Northern Fishery Management Area for 2013.

	DAS Type	Monkfish Permit Category	Possession Limit
Incidental	Non-DAS	E	Up to 5% of total weight of fish onboard
Monkfish (no groundfish permit)	Monk	A	1,250 lb/DAS
		B	600 lb/DAS
Common Pool	Groundfish A DAS	Any	Up to 25% of total weight of fish onboard, not to exceed 300 lb
	Groundfish A & Monk DAS	C	Unlimited
		D	Unlimited
Sector	Non-DAS	Any	Up to 5% of total weight of fish onboard
	Groundfish A DAS	Any	Up to 25% of total weight of fish onboard, not to exceed 300 lb
	Groundfish A & Monk DAS	C	Unlimited
		D	Unlimited

As specified in Section 2.2 above (Purpose and Need), Alternative 1 is consistent to the extent possible with the original NEFMC request for emergency action adopted at its November 14, 2012, meeting, without resulting in overfishing monkfish in the NFMA. Alternative 1 differs from the Council's original emergency action request in that the elimination of the monkfish possession limit would apply to both groundfish sector and non-sector vessels, and only when also targeting monkfish on a concurrent monkfish and groundfish DAS. The original emergency action request, by exempting only groundfish sector vessels from the monkfish possession limits, would not be consistent with National Standard 4 of the MSA because it would not allocate fishing privileges fairly or equitably among all groundfish vessels that would be affected by this emergency action.

Duration of Alternative 1 Measures:

Because Alternative 1 would be implemented based upon the authority of the Secretary of Commerce to take emergency action, the duration of the action would be limited by the MSA to an initial period of 180 days, with a potential extension of an additional 186 days. Unless higher catch rates would lead to exceeding the FY 2013 monkfish TAL, or ACT when discards are included, before the end of FY 2013, NMFS would likely renew measures adopted under this emergency action through the end of FY 2013 on April 30, 2014.

Rationale

The rationale for this alternative is provided in Section 2.0 as part of the purpose and need for this action and the justification for emergency action (Section 2.1.2 above) and the purpose and need for this action (Section 2.2 above).

3.1.3 Alternative 2 (Preferred Alternative) – Elimination of Monkfish Possession Limits on When Fishing on a Groundfish DAS

Under Alternative 2, monkfish possession limits would be eliminated for vessels issued both a Federal limited access groundfish and monkfish permit when fishing under a groundfish DAS in the NFMA during FY 2013. Unlike Alternative 1, Alternative 2 would eliminate monkfish possession limits for vessels fishing under a groundfish DAS, not just a concurrent monkfish and groundfish DAS. Alternative 2 would also allow the Regional Administrator to reinstate existing possession limits in the NFMA if available data indicate that the NFMA monkfish TAL will be exceeded during FY 2013. Existing monkfish possession limits for vessels fishing under only a monkfish DAS, or under no DAS at all (i.e., vessels that catch monkfish while targeting other fisheries) would remain the same, as specified in Table 5. The OFL, ABC/ACL, ACT, and TAL would remain as 19,557 mt, 7,592 mt, 6,567 mt, and 5,854 mt, respectively, as implemented in either Amendment 5 or FW 7 (NEFMC 2011a and b).

Similar to Alternative 1, Alternative 2 would also affect vessels issued a Federal limited access monkfish Category C or D permit, regardless of whether such vessels are participating in a groundfish sector during FY 2013. Vessels would still be required to declare a trip under a groundfish DAS at the dock prior to starting a trip in order to be exempt from the monkfish possession limits under Alternative 2. A vessel that does not declare a trip under a groundfish DAS at the dock prior to starting a trip would not be exempt from the monkfish possession limits under this Alternative 2.

Table 5. Alternative 2 Monkfish Possession Limits in the Northern Fishery Management Area for 2013.

Permit Type or Sector Participation	DAS Type	Monkfish Permit Category	Possession Limit
Incidental	Non-DAS	E	Up to 5% of total weight of fish onboard
Monkfish (no groundfish permit)	Monk	A	1,250 lb/DAS
		B	600 lb/DAS
Common Pool	No DAS	Any	Up to 5% of total weight of fish onboard
	NE Mults A DAS	A or B	Up to 25% of total weight of fish onboard, not to exceed 300 lb (tail weight)
		C or D	Unlimited
	NE Mults	C	Unlimited

	A & Monk	D	Unlimited
Sector	Non-DAS	Any	Up to 5% of total weight of fish onboard
	NE Mults A DAS	A or B	Up to 25% of total weight of fish onboard, not to exceed 300 lb (tail weight)
		C or D	Unlimited
	NE Mults A & Monk	C	Unlimited
		D	Unlimited

As specified in Section 2.2 above (Purpose and Need), Alternative 2 is consistent to the extent possible with the original NEFMC request for emergency action adopted at its November 14, 2012, meeting. Alternative 2 differs from the Council's original emergency action request in that the elimination of the monkfish possession limit would apply to both groundfish sector and non-sector vessels. The original emergency action request, by exempting only groundfish sector vessels from the monkfish possession limits, would not be consistent with National Standard 4 of the MSA because it would not allocate fishing privileges fairly or equitably among all groundfish vessels that would be affected by this emergency action.

Duration of Alternative 2 Measures:

Because the Alternative 2 would be implemented based upon the authority of the Secretary of Commerce to take emergency action, the duration of the action would be limited by the MSA to an initial period of 180 days, with a potential extension of an additional 186 days. Unless higher catch rates would lead to exceeding the FY 2013 monkfish ACT before the end of FY 2013, NMFS would likely renew measures adopted under this emergency action through the end of FY 2013 on April 30, 2014.

Rationale

The rationale for this alternative is provided in Section 2.0 as part of the purpose and need for this action and the justification for emergency action (Section 2.1.2 above) and the purpose and need for this action (Section 2.2 above).

3.2 Considered but Rejected

NMFS considered, but rejected an alternative that would have eliminated all NFMA monkfish possession limits for all vessels issued a Federal limited access monkfish permit, and another alternative that would have eliminated NFMA monkfish possession limits for all vessels in the NFMA. Both alternatives would have applied to vessels that are not affected by proposed reductions to groundfish ACLs for FY 2013. Further, because such alternatives would have applied to a much broader set of vessels, the resulting catch during FY 2013 would have likely exceeded the 5,854 mt monkfish TAL and 6,567 mt monkfish ACT established for FY 2013 in the NFMA. Therefore, such alternatives are beyond the scope of the purpose and need for this action, because they would have applied to vessels that are not affected by adverse economic and social impacts from recent groundfish effort reductions, and would likely have led to monkfish catch levels that may lead to overfishing monkfish in the NFMA during FY 2013.

NMFS also rejected an alternative identical to the NEFMC's original request for emergency action. That alternative would have eliminated monkfish possession limits for vessels issued a Federal limited access monkfish permit when fishing on a groundfish DAS under sector management rules in the NFMA. The original emergency action request, by exempting only groundfish sector vessels from the monkfish possession limits, would not be consistent with National Standard 4 of the MSA, because it would not allocate fishing privileges fairly or equitably among all groundfish vessels that would be affected by this emergency action. Thus, that alternative would have been inconsistent with applicable law, and could not be implemented under this emergency action.

4.0 Affected Environment

The Valued Ecosystem Components (VECs) affected by the preferred alternative include the physical environment, Essential Fish Habitat (EFH), target species, non-target species/bycatch, protected resources, and human communities, which are described below.

4.1 Physical Environment/Habitat/EFH

The Northeast U.S. Shelf Ecosystem (Figure 2) has been described as including the area from the Gulf of Maine south to Cape Hatteras, North Carolina, extending from the coast seaward to the edge of the continental shelf, including 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 meters (m). Four distinct sub-regions comprise the NOAA Fisheries Northeast Region: The GOM, Georges Bank (GB), the southern New England (SNE)/Mid-Atlantic (MA) region, and the continental slope. Since the groundfish fleet will primarily be fishing in the inshore and offshore waters of the GOM, GB, and the SNE/MA areas, the description of the physical and biological environment is focused on these sub-regions. Information on the affected environment was extracted from Stevenson et al. (2004). 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.

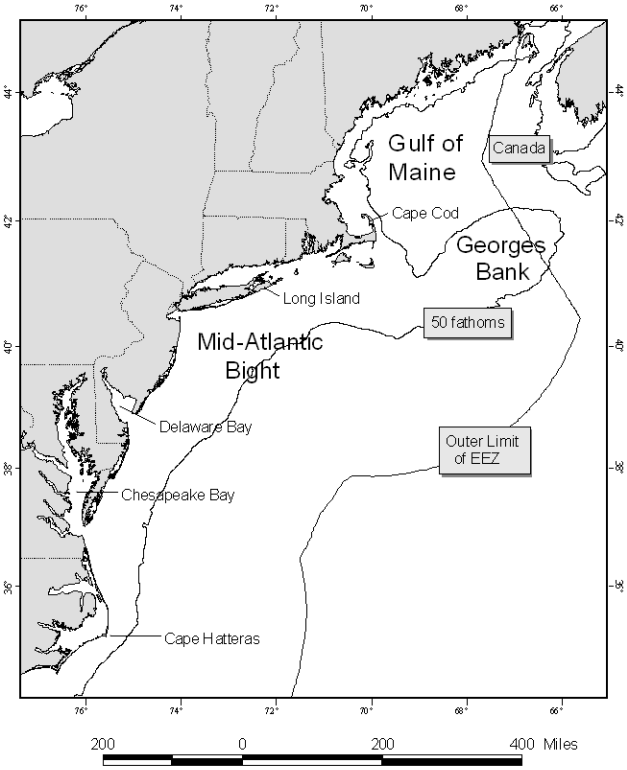


Figure 2. Northeast U.S. Shelf Ecosystem

4.1.1 Affected Physical Environment

Because this action is focused on monkfish within the NFMA, the affected physical environment is limited to the GOM and northern portions of GB. That is not to suggest that the fishery does not operate in other areas. The monkfish fishery occurs in southern portions of GB, as well as Southern New England (SNE) and Mid-Atlantic (MA) waters. These areas are described in more detail in Section 4.2 of the environmental impact statement (EIS) prepared for Amendment 5 to the Monkfish FMP (NEFMC 2011a), including sediment type, geologic morphology, habitat types, and species presence. While several vessels issued a Federal limited access monkfish Category C or D permit may operate in both the NFMA and SFMA on the same trip, it is expected that the impacts of this action will be minimal in areas outside of the NFMA.

The GOM is an enclosed coastal sea, characterized by relatively cold waters and deep basins, with a patchwork of various sediment types (see Figures 3 and 4). 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 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.

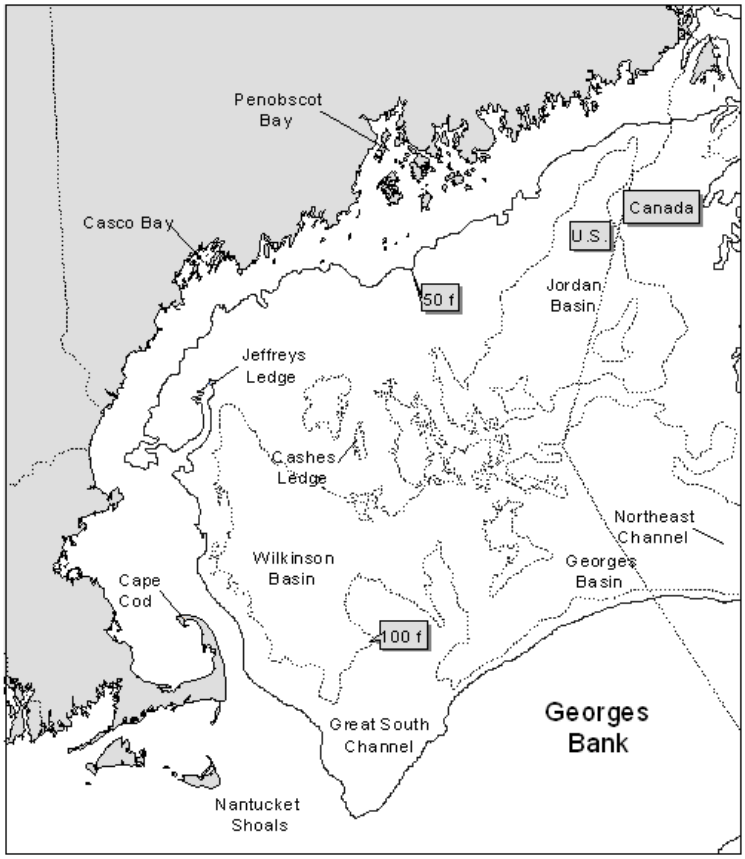
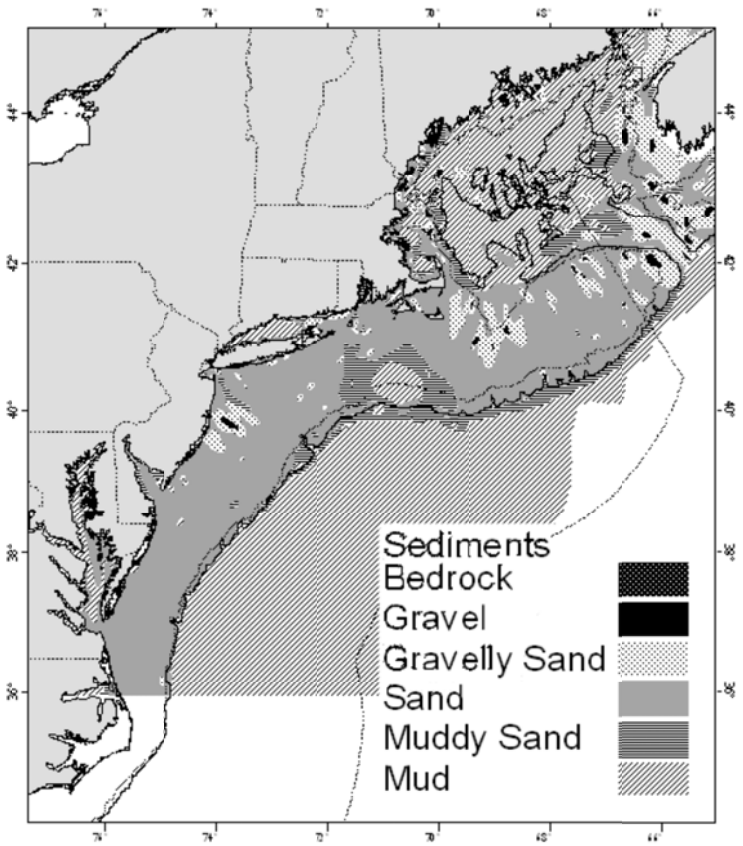


Figure 3. Gulf of Maine



Modified from Poppe *et al*. (1989a and b)

Figure 4. Northeast Region Sediments.

Two studies (Gabriel 1992, Overholtz and Tyler 1985) reported common[2] demersal fish species by assemblages in the GOM and GB:

- Deepwater/Slope and Canyon: Offshore hake, blackbelly rosefish, Gulf stream flounder;
- Intermediate/Combination of Deepwater GOM-GB and GOM-GB Transition: Silver hake, red hake, goosefish (monkfish);
- Shallow/GOM-GB Transition Zone: Atlantic Cod, haddock, pollock;
- Shallow water GB-SNE: Yellowtail flounder, windowpane flounder, winter flounder, winter skate, little skate, longhorn sculpin;
- Deepwater GOM-GB: White hake, American plaice, witch flounder, thorny skate; and
- Northeast Peak/GOM-GB Transition: Atlantic cod, haddock, pollock.

4.1.2 Essential Fish Habitat

EFH is defined by the Sustainable Fisheries Act of 1996 as "[t]hose waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." Section 4.4 of Amendment 5 contains a detailed description of monkfish essential fish habitat (EFH), EFH of

[2] Other species were listed as found in these assemblages, but only the species common to both studies are listed.

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 (NEFMC 2011a). 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).

The Amendment 5 monkfish EFH 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): American plaice (Juvenile (J), Adult (A)), Atlantic cod (J, A), Atlantic halibut (J, A), haddock (J, A), pollock (A), ocean pout (E, J, A), red hake (J, A), redfish (J, A), white hake (J), silver hake (J), winter flounder (A), witch flounder (J, A), yellowtail flounder (J, A), black sea bass (J, A), scup (J), tilefish (J, A), barndoor skate (J, A), clearnose skate (J, A), little skate (J, A), rosette skate (J, A), smooth skate (J, A), thorny skate (J, A), and winter skate (J, A).

Full descriptions and maps of EFH for each species and life stage (except Atlantic wolffish) are available on the NMFS Northeast Region website at http://www.nero.noaa.gov/hcd/index2a.htm. In general, EFH for species and life stages that rely on the seafloor for shelter (e.g., from predators), reproduction, or food is vulnerable to disturbance by bottom tending gear. The most vulnerable habitat is more likely to be hard or rough bottom with attached epifauna.

There are no species or life stages for which EFH is more than minimally vulnerable to bottom gillnets (Stevenson et al., 2004). The following table identifies the species, life stages and geographic area of their EFH, for those species whose EFH is vulnerable to bottom trawling:

Table 6. 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. (see Stevenson et al. 2004)

Species	Life Stage	Geographic Area of EFH	Depth (meters)	EFH Description
American plaice	juvenile	GOM 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	GOM 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	GOM, 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	GOM, 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	GOM, GB	20 - 60	Bottom habitats with a substrate of sand, gravel, or clay
Atlantic halibut	adult	GOM, GB	100 - 700	Bottom habitats with a substrate of sand, gravel, or clay
Atlantic herring	eggs	GOM, 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	GOM, 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	GOM, 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

Species	Life Stage	Geographic Area of EFH	Depth (meters)	EFH Description
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
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

Species	Life Stage	Geographic Area of EFH	Depth (meters)	EFH Description
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, maNFMAde 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 maNFMAde), sand and shell substrates preferred

Species	Life Stage	Geographic Area of EFH	Depth (meters)	EFH Description
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
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

Species	Life Stage	Geographic Area of EFH	Depth (meters)	EFH Description
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
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

Species	Life Stage	Geographic Area of EFH	Depth (meters)	EFH Description
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

4.1.3 Fishing Effects on Essential Fish Habitat

A detailed discussion of monkfish fishing on essential fish habitat (EFH) is contained in the Affected Environment Section of Amendment 5 (Section 4.0 of NEFMC 2011a). Since monkfish EFH has been determined to not be vulnerable to any fishing gear (Stevenson, et al. 2004, NEFMC 2003), 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, because gillnets are stationary or static, and have been determined to not have an adverse effect on EFH (NEFMC, 2003). 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, NRC 2012). These impacts are more discernable with repeated trawl use and in low energy environments (NRC 2002). An additional source of information for various gear types that relates specifically to the Northeast region is the report of a “Workshop on the Effects of Fishing Gear on Marine Habitats off the Northeastern U.S.” sponsored by the NEFMC and MAFMC in October 2001 (NEFSC 2002). The report of this workshop concluded that, in general, impacts from trawling were determined to be greater in gravel/rock habitats with attached epifauna. Impacts on biological structure were ranked higher than impacts on physical structure. Effects of trawls on major physical features in mud (deep water clay-bottom habitats) and gravel bottom were described as permanent, and impacts to biological and physical structure were given recovery times of months to years in mud and

gravel. Impacts of trawling on physical structure in sand were of shorter duration (days to months) given the exposure of most continental shelf sand habitats to strong bottom currents and/or frequent storms. According to the workshop panel, impacts of sink gillnets and longlines on sand and gravel habitats would result in low degree impacts (NEFSC 2002). Duration of impacts to physical structures from these gear types would be expected to last days to months on soft mud but could be permanent on hard bottom clay structures along the continental slope. Impacts to mud would be caused by gillnet lead lines and anchors. Physical habitat impacts from sink gillnets on sand would not be expected. A report by Morgan and Chuenpagdee (2003) concluded that bottom trawls have relatively high habitat impacts, bottom gillnets and pots and traps have low to medium impacts, and bottom longlines have low impacts.

4.2 Target Species

Because this action would implement an emergency action in the monkfish fishery to help alleviate economic and social impacts in the groundfish fishery, this section is primarily focused on monkfish within the NFMA and groundfish stocks caught in the GOM and on GB. Information regarding the monkfish stock assessment and life history information is summarized in Section 4.2.1, while similar information for affected groundfish stocks are presented in Section 4.2.2. The most recent stock status for any species can be accessed via the NMFS website at http://www.nmfs.noaa.gov/sfa/statusoffisheries/SOSFMAin.htm.

4.2.1 Monkfish

Life History:

Monkfish is a bottom-oriented ambush predator distributed in the northwest Atlantic from the Grand Banks through Florida. A commercial fishery exists in the United States, but the species is generally not sought by recreational anglers. Monkfish are found in temperatures ranging from 0 – 24 degrees Celsius. Monkfish mature between 3 and 4 years old at around 40 cm length. Monkfish spawn in the spring, summer, and early fall depending on latitude. There is evidence of seasonal onshore-offshore movement by monkfish, particularly in the SFMA (Richards et al., 2008). Limited information is known about potential movements within the NFMA, although tagging studies to examine this are underway and proposed for expansion.

Stock Distribution and Identification:

Monkfish were divided into two stocks based primarily on the different operational practices between vessels in the NFMA and SFMA. Information on fundamental biological parameters including growth, maturity, and genetics seems to suggest a single biological stock. Different recruitment patterns, however, lend support to the argument that two stocks exist. Ongoing research, including tagging studies and genetic research, indicates there is limited movement between the NFMA and SFMA. This emergency action focuses on the NFMA stock of monkfish based on the purpose and need specified in Section 2.

The monkfish NFMA includes waters within the GOM and most of GB. The NFMA is bound on the north and west by the coastline of Maine, New Hampshire, and Massachusetts, and on the east by the U.S./Canadian maritime boundary. The NFMA is bound on the south by a line running along 41 degrees N. latitude from the U.S./Canadian maritime boundary west until it intersects 70 degrees W. longitude, and then north until it intersects the southern coast of Cape Cod, MA (see Figure 1).

Status of the Stock:

According to SAW 50, monkfish in the NFMA was not overfished and overfishing was not occurring in 2009 (NEFSC 2010). The report also indicated that a large retrospective pattern exists for NFMA monkfish that has overestimated biomass and underestimated F since 2002. Even when adjusting for this retrospective pattern, monkfish in the NFMA was not overfished or subject to overfishing in 2009.

Data and Assessment:

Several sources of data were used in the 2010 assessment for monkfish, including NEFSC surveys, state surveys, cooperative surveys with the fishing industry, observer data, and data from commercial logbooks and dealer reports. The natural mortality rate was assumed to be 0.3, although this was raised as an element of uncertainty in the assessment report due to the differences in longevity between male and female monkfish. A statistical catch-at-length (SCALE) model was used to estimate F and stock sizes. This model incorporates a variety in information and allows estimates of uncertainty of stock sizes to be calculated (NEFSC 2010).

The assessment report concludes that there is a high degree of uncertainty in the assessment due to a number of factors, including under-reported landings, unknown historic discards, uncertainty in survey indices, distribution of monkfish in relation to areas covered by the state and NEFSC surveys, incomplete understanding of key biological parameters such as age and growth, longevity, natural mortality and stock structure (NEFSC 2010). These uncertainties lead to a retrospective pattern in the NFMA that overestimates biomass and underestimates F, although the scale of the retrospective pattern has decreased in recent years. Research into monkfish life history parameters and the continued use of the R/V *Henry Bigelow*, NOAA's survey vessel that is more effective at catching monkfish, should help reduce uncertainty in future stock assessments.

Projections:

The SCALE model used in SAW 50 was approved by the peer-review panel. This model, along with AGEPRO software, was used to analyze stock trends from 2011 through 2016. Projections were run using $F_{threshold}$ (F = 0.43), and proposed ABCs and ACTs. Projections assumed stochastic long-term recruitment and that F estimated in 2009 would continue into 2010. Projections of total catch varied based on whether $F_{threshold}$ or the proposed ABCs or ACTs were used. Projections using a proposed ACT in the NFMA (10,750 mt) resulted in F increasing slightly from 0.22 to 0.24 by 2016, while projections using a proposed ABC in the NFMA (17,485 mt) increased F from 0.38 in 2011 to 1.69 by 2016. Projections using $F_{threshold}$ initially increased total catch to 19,557 mt in 2011, but then declined to 10,883 mt by 2016. SAW 50 cautioned that projections for NFMA monkfish were uncertain due to the retrospective pattern, concluding that NFMA monkfish are more likely than SFMA monkfish to be subject to overfishing during 2011 – 2016 if total catch approach proposed ABCs (NEFSC 2010).

Biological Reference Points:

Previously, the monkfish biomass targets and thresholds were based on "long-term average biomass and a low point in the biomass time series from which the stock recovered" (NEFSC 2010). However, SAW 50 recommended using the approach currently used to estimate

groundfish biomass. This used long-term projections of biomass associated with F_{MSY} or its proxy. For monkfish, the F_{MSY} proxy is referred to as F_{max}, or F = 0.43 (NEFSC 2010). Accordingly, biomass targets (B_{target}, or B_{max} at F_{max}) and biomass thresholds ($B_{threshold}$, or ½ B_{max}) were calculated as 52,930 mt and 26,465 mt, respectively. SAW 50 estimates that the total monkfish catch that could be harvested from the NFMA (i.e., $B_{threshold}$ subject to F_{max}) is 10,745 mt (NEFSC 2010).

Current estimates of monkfish F, biomass, and recruitment are as of 2009. SAW 50 estimated that the F in 2009 was 0.10 in the NFMA, with F declining since 2003. This is well below the $F_{threshold}$ of 0.43. Monkfish NFMA biomass in 2009 was estimated at 66,062 mt, or about 25 percent above B_{target}. Average recruitment (20 million age 1 fish) has been observed since 2001, with the strongest year classes last observed in 1999 (NEFSC 2010).

4.2.2 Groundfish

A detailed description of updated information regarding the life history, stock distribution and identification, and recent assessments for each groundfish stock is included in FW 50 to the NE Multispecies FMP (NEFMC 2013b). Recent stock assessments indicate that several groundfish stocks are still overfished and subject to overfishing, and that biomass for some stocks continue to decline. In March 2012, stock assessment updates were conducted for 13 stocks managed by the NE Multispecies FMP, indicating that stock size declined for several stocks since the last comprehensive stock assessment in 2008 (NEFSC 2012). A July 2012 stock assessment for GB yellowtail flounder indicated that the stock is overfished and continues to be subject to overfishing (TRAC 2012), while a December 2012 stock assessment for GOM and GB cod reached similar conclusions for those stocks (NEFSC 2013a). Another stock assessment for white hake is scheduled for January 2013, with a preliminary data workshop indicating that this stock is also in poor condition (NEFMC 2013b). Table 7 summarizes the current status and associated biological reference points for each groundfish stock based on these stock assessments and updates. The most recent stock status descriptions can be accessed via the NMFS website at http://www.nmfs.noaa.gov/sfa/statusoffisheries/SOSFMAin.htm.

Table 7. Current Status and Biological Reference Points for Managed Groundfish Stocks.

Stock	Overfishing Occurring?	Overfished ?	F	F_{MSY}	B (mt)	B_{MSY} (mt)
GB Cod	***Yes***	***Yes***	0.45	0.23	11,289	140,424
GOM Cod	***Yes***	***Yes***	1.14	0.2	11,869	61,218
GB Haddock	No	No	0.18	0.39	167,279	124,900
GOM Haddock	***Yes***	No	0.82	0.46	2,868	4,904
GB Yellowtail Flounder	***Yes***	***Yes***	0.31	0.25	4,600	43,200
SNE/MA Yellowtail Flounder	No	No	0.12	0.316	3,873	2,995
CC/GOM Yellowtail Flounder	***Yes***	***Yes***	0.36	0.26	1,680	7,080
American Plaice	No	No	0.13	0.18	10,805	18,398
Witch Flounder	***Yes***	***Yes***	0.47	0.27	4,099	10,051
GB Winter Flounder	No	No	0.15	0.42	9,703	11,800
GOM Winter Flounder	No	Unknown	0.03	0.23	Unk	Unk
SNE/MA Winter Flounder	No	***Yes***	0.051	0.29	7,076	43,661
Acadian Redfish	No	No	0.006	0.04	314,780	238,000
White Hake	--	--			--	--
Pollock	No	No	0.07	0.25	196,000	91,000
Northern (GOM-GB) Windowpane Flounder	***Yes***	***Yes***	0.51	0.44	0.46	1.60
Southern (SNE-MA) Windowpane Flounder	No	No	1.4	2.09	0.35	0.24
Ocean Pout	No	***Yes***	0.31	0.76	0.41	4.94
Atlantic Halibut	No	***Yes***	0.032	0.073	1,700	49,000
Atlantic Wolffish	No	***Yes***	0.07	0.33	505	1,756

4.2.3 Assemblages of Fish Species

GB and the GOM have been historically characterized by high levels of fish production. Several studies have attempted to identify demersal fish assemblages over large spatial scales. Overholtz and Tyler (1985) found five depth-related groundfish assemblages for GB and the GOM that were persistent temporally and spatially. Depth and salinity were identified as major physical influences explaining assemblage structure. Gabriel (1992) identified six assemblages, which are compared with the results of Overholtz and Tyler (1985) in Table 8 (adapted from Amendment 16 to the NE Multispecies FMP, NEFMC 2009). For the affected area, these assemblages and relationships are considered to be relatively consistent for purposes of general description. The assemblages include allocated target, non-allocated target, and bycatch species. As presented in Table 8, the terminology and definitions of habitat types varies slightly between the two studies. For further information on fish habitat relationships, see Table 6.

Table 8. Comparison of Demersal Fish Assesmblages of Georges Bank and the Gulf of Maine.

Overholtz and Tyler (1985)		Gabriel (1992)	
Assemblage	**Species**	**Species**	**Assemblage**
Slope and Canyon	offshore hake blackbelly rosefish Gulf stream flounder fourspot flounder, goosefish, silver hake, white hake, red hake	offshore hake blackbelly rosefish Gulf stream flounder fawn cusk-eel, longfin hake, armored sea robin	Deepwater
Intermediate	silver hake red hake goosefish Atlantic cod, haddock, ocean pout, yellowtail flounder, winter skate, little skate, sea raven, longhorn sculpin	silver hake red hake goosefish northern shortfin squid, spiny dogfish, cusk	Combination of Deepwater Gulf of Maine/GB and Gulf of Maine-GB Transition
Shallow	Atlantic cod haddock pollock silver hake white hake red hake goosefish ocean pout	Atlantic cod haddock pollock	Gulf of Maine-GB Transition Zone
	yellowtail flounder windowpane winter flounder winter skate little skate longhorn sculpin summer flounder sea raven, sand lance	yellowtail flounder windowpane winter flounder winter skate little skate longhorn sculpin	Shallow Water GB-SNE
Gulf of Maine-Deep	white hake American plaice witch flounder thorny skate silver hake, Atlantic cod, haddock, cusk, Atlantic wolffish	white hake American plaice witch flounder thorny skate redfish	Deepwater Gulf of Maine-GB
Northeast Peak	Atlantic cod haddock pollock ocean pout, winter flounder, white hake, thorny skate, longhorn sculpin	Atlantic cod haddock Pollock	Gulf of Maine-GB Transition Zone

4.2.4 Areas Closed to Fishing within the Monkfish NFMA

Select areas are closed to some level of fishing to protect the sustainability of fishery resources. The designation of long-term closures has resulted in the removal or reduction of fishing effort from important fishing grounds, with an expected result that fishery-related mortalities to stocks utilizing the closed areas may have been reduced. Figure 5 depicts the year round closed areas, regulated mesh areas, habitat closure areas, and restricted gear areas applicable to monkfish and groundfish vessels. Additional areas in the GOM and GB are closed on an intermittent basis. FW 48 to the NE Multispecies FMP proposes to allow groundfish sectors to request access to these areas. This would enable potentially all groundfish vessels to access these areas in the future.

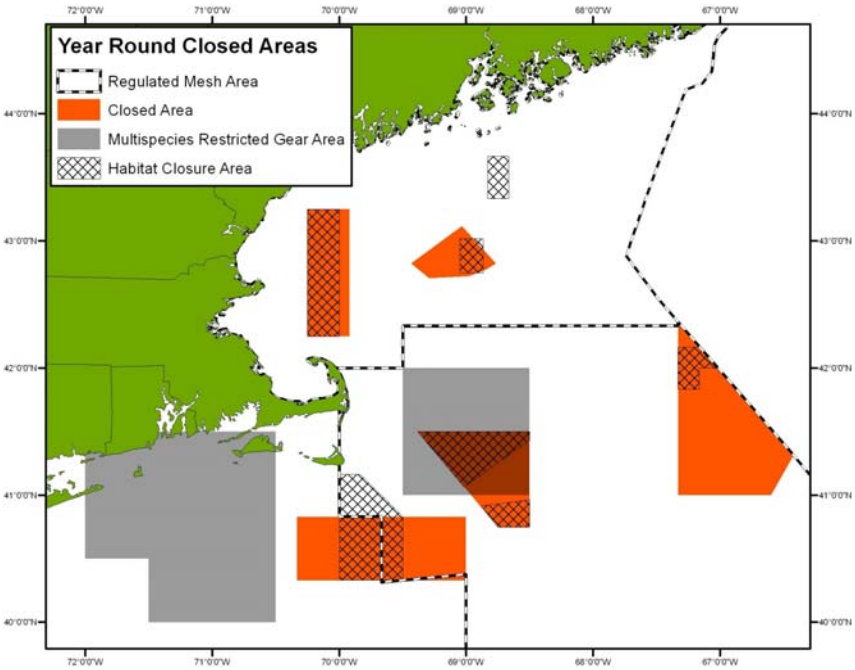


Figure 5. Northeast Multispecies Closed Areas.

4.3 Other Species (non-groundfish incidental and bycatch species)

The most recent assessment of bycatch of other species in the monkfish fishery was conducted under Amendment 2 to the Monkfish FMP in 2006 (see Section 5.3.5.2 of NEFMC 2005). Precise information regarding the amount of other species caught while targeting monkfish is not readily available. However, the assessment of bycatch of other species caught while targeting monkfish in the NFMA in Amendment 2 indicated that winter skates and dogfish are the predominant species discarded in the NFMA. Although this assessment is several years old, the EA supporting FW 7 to the Monkfish FMP indicated that there is no new information available that would change the species caught while targeting monkfish (NEFMC 2011b). The status of these other species has changed since Amendment 2, however.

Skates are managed under the Northeast Skate Complex FMP. Regionally, skates are harvested in two very different fisheries, one for lobster bait and one for wings for food. Vessels tend to catch skates when targeting other species like groundfish, monkfish, and scallops and land them if the price is high enough. Management of skates relies on DAS effort controls in the monkfish, groundfish, and Atlantic sea scallop fishery, along with possession limits, and annual quotas. Seven species of skates are managed under the Northeast Skate Complex FMP, including winter skate, barndoor skate, thorny skate, smooth skate, little skate, clearnose skate, and rosette skate. Generally, clearnose and rosette skates are most often found in the Mid-Atlantic waters, and are not likely affected by this emergency action. Based on survey data through spring 2011 and catch data through calendar year 2010, overfishing is not occurring on any skate species, and only thorny skate is overfished (NEFMC 2012b).

Spiny dogfish are managed jointly by the MAFMC and the NEFMC, with the MAFMC having the lead. Dogfish are managed by an annual coastwide quota for commercial fisherman, split into two semi-annual periods, with daily possession limits designed to discourage a directed

fishery. Based on a 2011 stock assessment, spiny dogfish are neither overfished, nor subject to overfishing (MAFMC 2012).

4.4 Protected Resources

Numerous protected species inhabit the environment within the monkfish NFMA. Therefore, many protected species potentially occur in the operations area of the monkfish and groundfish fisheries. These species are under NMFS jurisdiction and are afforded protection under the Endangered Species Act of 1973 (ESA) and/or the Marine Mammal Protection Act of 1972 (MMPA). As listed in Table 9, 17 marine mammal, sea turtle, and fish species are classified as endangered or threatened under the ESA, three others are candidate species under the ESA. Non ESA-listed species protected by the MMPA that utilize this environment and have no documented interaction with either the monkfish or groundfish fisheries will not be discussed in this section.

4.4.1 Species Present in the Area

Table 9 lists the species, protected either by the ESA, the MMPA, or both, that may be found in the environment that would be utilized by the monkfish and groundfish fisheries. Table 9 also includes three candidate fish species, as identified under the ESA. Candidate species are those petitioned species that are actively being considered for listing as endangered or threatened under the ESA, as well as those species for which NMFS has initiated an ESA status review that it has announced 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 and 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. Please note that once a species is proposed for listing the conference provisions of the ESA apply (see 50 CFR 402.10).

Table 9. Species Protected Under the Endangered Species Act and/or Marine Mammal Protection Act that May Occur in the Operations Area for the 2013 Monkfish and Groundfish Fisheries in the Northern Fishery Management Area.

Species	Status
Cetaceans	
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
Long-finned pilot whale (*Globicephala melas*)	Protected
Short-finned pilot whale (*Globicephala macrorhynchus*)	Protected
Risso's dolphin (*Grampus griseus*)	Protected
Atlantic white-sided dolphin (*Lagenorhynchus acutus*)	Protected
Common dolphin (*Delphinus delphis*)	Protected
Spotted dolphin (*Stenella frontalis*)	Protected
Bottlenose dolphin (*Tursiops truncatus*)[b]	Protected
Harbor porpoise (*Phocoena phocoena*)	Protected
Sea Turtles	
Leatherback sea turtle (*Dermochelys coriacea*)	Endangered
Kemp's ridley sea turtle (*Lepidochelys kempii*)	Endangered
Green sea turtle (*Chelonia mydas*)	Endangered[c]
Loggerhead sea turtle (*Caretta caretta*), Northwest Atlantic DPS	Threatened
Hawksbill sea turtle (*Eretmochelys imbricate*)	Endangered
Fish	
Shortnose sturgeon (*Acipenser brevirostrum*)	Endangered
Atlantic salmon (*Salmo salar*)	Endangered
Atlantic sturgeon *(Acipenser oxyrinchus)*	
Gulf of Maine DPS	Threatened
New York Bight DPS, Chesapeake Bay DPS, Carolina DPS & South Atlantic DPS	Endangered
Cusk (*Brosme brosme*)	Candidate
Alewife (*Alosa pseudo harengus*)	Candidate
Blueback herring (*Alosa aestivalis*)	Candidate
Pinnipeds	
Harbor seal (*Phoca vitulina*)	Protected
Gray seal (*Halichoerus grypus*)	Protected
Harp seal (*Phoca groenlandicus*)	Protected
Hooded seal (*Cystophora cristata*)	Protected

Notes:
[a] 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.
[b] Bottlenose dolphin (*Tursiops truncatus*), Western North Atlantic coastal stock is listed as depleted.
[c] 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.

4.4.2 Species Potentially Affected

The monkfish and multispecies fisheries have the potential to affect the sea turtle, cetacean, and pinniped species discussed below. A number of documents contain 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 bottom longlines). These documents include sea turtle status reviews and biological reports (NMFS and USFWS 1995; Turtle Expert Working Group 1998, 2000, 2009; NMFS and USFWS 2007a, 2007b, 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; 2009), and other publications (e.g., Perry et al. 1999, Best et al. 2001, ASSRT 2007).

4.4.2.1 Sea Turtles

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. Turtles generally move up the coast from southern wintering areas as water temperatures warm in the spring (Braun-McNeill and Epperly 2004, Morreale and Standora 1998, Musick and Limpus 1997, Shoop and Kenney 1992, Keinath et al. 1987). A reversal of this trend occurs in the fall when water temperatures cool. Turtles pass Cape Hatteras by December and return 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 typically occur as far north as CC whereas the more cold-tolerant leatherbacks occur in more northern GOM waters in the summer and fall (Shoop and Kenney 1992, STSSN database http://www.sefsc.noaa.gov/seaturtleSTSSN.jsp).

On March 16, 2010, NMFS and USFWS published a proposed rule (75 FR 12598) to divide the worldwide population of loggerhead sea turtles into nine DPSs, as described in the 2009 Status Review. Two of the DPSs were proposed to be listed as threatened and seven of the DPSs, including the Northwest Atlantic Ocean DPS, were proposed to be listed as endangered. NMFS and the USFWS accepted comments on the proposed rule through September 13, 2010 (June 2, 2010, 75 FR 30769). On March 22, 2011 (76 FR 15932), NMFS and USFWS extended the date by which a final determination on the listing action will be made to no later than September 16, 2011. This action was taken to address the interpretation of the existing data on status and trends and its relevance to the assessment of risk of extinction for the Northwest Atlantic Ocean DPS, as well as the magnitude and immediacy of the fisheries bycatch threat and measures to reduce this threat. New information or analyses to help clarify these issues were requested by April 11, 2011.

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 emergency 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. Sea turtles from the NEA DPS are not expected to be present over the North American continental shelf in U.S. coastal waters, where this emergency action would occur (P. Dutton, NMFS, personal communication, 2011). Previous literature (Bowen et al. 2004) 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.

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).

4.4.2.2 Large Cetaceans

The most recent Marine Mammal Stock Assessment Report (SAR) (Waring et al. 2011) reviewed the current population trend for each of these cetacean species within U.S. Economic Exclusion Zone (EEZ) waters. The SAR also estimated annual human-caused mortality and serious injury. Finally, it described the commercial fisheries that interact with each stock in the U.S. Atlantic. The following paragraphs summarize information from the SAR.

The western North Atlantic baleen whale species (North Atlantic right, humpback, fin, sei, and minke whales) follow a general annual pattern of migration. They migrate from high latitude summer foraging grounds, including the GOM and GB, to and latitude winter calving grounds (Perry et al. 1999, Kenney 2002). However, this is a simplification of species movements as 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).

Available information suggests that the North Atlantic right whale population increased at a rate of 2.4 percent per year between 1990 and 2007. The total number of North Atlantic right whales is estimated to be at least 396 animals in 2007 (Waring et al. 2011). The minimum rate of annual human-caused mortality and serious injury to right whales averaged 2.4 mortality or serious injury incidents per year during 2005 to 2009 (Waring et al. 2011). Of these, fishery interactions resulted in an average of 0.8 mortality or serious injury incidents per year.

The North Atlantic population of humpback whales is conservatively estimated to be 7,698 (Waring et al. 2011). The best estimate for the GOM stock of humpback whale population is 847 whales (Waring et al. 2011). 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 (Nova Scotia stock), 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 2011). Insufficient information exists to determine trends for these other large whale species.

Recent revisions to the Atlantic Large Whale Take Reduction Plan (ALWTRP) (72 FR 57104, October 5, 2007) continue to address entanglement risk of large whales (right, humpback, and fin whales, and acknowledge benefits to minke whales) in commercial fishing gear. The revisions seek to reduce the risk of death and serious injury from entanglements that do occur.

4.4.2.3 Small Cetaceans

There is anthropogenic mortality of numerous small cetacean species (Atlantic white-sided dolphins, common dolphin, pilot whales, and harbor porpoise) in Northeast multispecies fishing gear. Seasonal abundance and distribution of each species off the coast of the Northeast U.S. varies with respect to life history characteristics. Some species such as white-sided dolphin and harbor porpoise primarily occupy continental shelf waters. Other species such as the Risso's dolphin occur primarily in continental shelf edge and slope waters. Still other species like the common dolphin occupy all three habitats. Waring et al. (2011) summarizes information on the western North Atlantic stocks of each species.

4.4.2.4 Pinnipeds

Harbor seals have the most extensive distribution of the four species of seal expected to occur in the area. Harbor seals sighting have occurred 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. They occur primarily in waters off of 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. Although there are at least three gray seal pupping colonies in U.S., the majority of harbor seal pupping likely occurs in U.S. waters and the majority of gray seal pupping likely occurs in Canadian waters. Observations of harp and hooded seals are less common in U.S. EEZ waters. Both species form aggregations for pupping and breeding off eastern Canada in the late winter/early spring. They then travel to more northern latitudes for molting and summer feeding (Waring et al. 2006). Both species have a seasonal presence in U.S. waters from Maine to New Jersey, based on sightings, stranding, and fishery bycatch information (Waring et al. 2009).

4.4.2.5 Atlantic Sturgeon

Atlantic sturgeon from any of the five DPSs could occur in the monkfish NFMA. A status review for Atlantic sturgeon was completed in 2007 which indicated that five distinct population segments (DPS) of Atlantic sturgeon exist in the United States (ASSRT 2007). 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. Population estimates used in the February 6, 2012, ESA determinations will be updated as part of the bi

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 Gulf of Maine (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.

4.4.3 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, the GOM DPS of Atlantic salmon, 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 (discussed in Section 4.4.2.2) 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 sectors would not operate in or near the rivers where concentrations of shortnose sturgeon are most likely found, it is highly unlikely that sectors would affect shortnose sturgeon.

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). 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). Therefore, commercial fisheries deploying small-mesh active gear (pelagic trawls and purse seines within 10 m of the surface) in nearshore waters of the Gulf of Maine may have the potential to incidentally take smolts. However, it is highly unlikely that the action being considered will affect the GOM DPS of Atlantic salmon given that operation of the multispecies fishery does not occur in or near the rivers where concentrations of Atlantic salmon are likely to be found. Additionally, multispecies gear operates in the ocean at or near the bottom rather than near the surface where Atlantic salmon are likely to occur. Thus, this species will not be considered further in this EA.

North Atlantic right whales occur in coastal and shelf waters in the western North Atlantic (NMFS 2005). Section 4.4.2.2 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 North Atlantic right whale critical habitat in June 1994 (59 FR 28793). NMFS has designated additional critical habitat in the southeastern U.S. Multispecies 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 North Atlantic right whale (59 FR 28793). As discussed in the FW 7 EA for monkfish and FW 47 EA for groundfish operations

and further in Section 5.0 for this action, monkfish and groundfish operations under the preferred alternative would result in a negligible effect on physical habitat. Therefore, fishing operations proposed in this action would not result in a significant impact on North Atlantic right whale critical habitat. Further, mesh sizes used in the multispecies fishery (smaller mesh sizes are used when on a monkfish/groundfish DAS, while larger mesh sizes are used when fishing only on a monkfish DAS) do not significantly impact the North Atlantic right whale's planktonic food supply (59 FR 28793). Therefore, North Atlantic right whale food sources in areas designated as critical habitat would not be adversely affected by this preferred alternative. For these reasons, North Atlantic right whale critical habitat will not be considered further in this EA.

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). Operations in the monkfish or groundfish fisheries would not occur in waters that are typically used by hawksbill sea turtles. Therefore, it is highly unlikely that fishery 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 sectors 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 sectors would operate, and monkfish and groundfish fishery operations would not affect the availability of blue whale prey or areas where calving and nursing of young occurs. Therefore, the preferred alternative 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 MA Bight (Waring et al. 2006). Distribution extends further northward to areas north of GB and the Northeast Channel region in summer and then south of New England in fall, back to the MA Bight (Waring et al. 1999). In contrast, the sectors would operate 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 sectors would operate, monkfish or groundfish fishery operations would not affect the

availability of sperm whale prey or areas where calving and nursing of young occurs. Therefore, the preferred alternative would not be likely to adversely affect sperm whales.

Although marine turtles and large whales could be potentially affected through interactions with fishing gear, NMFS has determined that the continued authorization of the monkfish and multispecies fisheries, and, therefore, the preferred alternative, 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 or groundfish. Right whales and sei whales feed on copepods (Horwood 2002, Kenney 2002). The monkfish and multispecies fisheries will not affect the availability of copepods for foraging right and sei whales because copepods are very small organisms that will pass through monkfish and groundfish 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 and groundfish fishing gear operates on or very near the bottom. Fish species caught in monkfish and groundfish gear are species that live in benthic habitat (on or very near the bottom) such as flounders. 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 or groundfish fisheries, or the approval of the preferred alternative will not affect the availability of prey for foraging humpback or fin whales.

4.4.4 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 the preferred alternative. 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.[3] 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

[3] 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.

indicate how each type of gear proposed for use in the preferred alternative may affect marine mammals. Table 10 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 10. 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 abunbance. 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 11 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.

Table 11. 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.

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 Atlantic Large Whale Take Reduction

Plan (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 Harbor Porpoise Take Reduction Plan (HPTRP) within the Northeast multispecies area. The Bottlenose Dolphin Take Reduction Plan restricts night time use of gillnets in the MA gillnet region. The HPTRP aims to reduce interactions between the harbor porpoise and gillnets in the Gulf of Maine. 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.

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 (NMFS 2009c). 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 MA 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 TC 2007). Of these gear types, sink gillnet gear poses the greatest known risk of mortality for bycaught sturgeon (ASMFC TC 2007). Sturgeon deaths were rarely reported in the otter trawl observer dataset (ASMFC TC 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 TC 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 TC 2007). The ASMFC analysis determined that an average of 650 Atlantic sturgeon mortalities occurred per year (during the 2001 to 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 (fzone>0) 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 (7,848 sturgeon) gear. 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.

Although a final BO has not yet been completed for Atlantic sturgeon, NMFS concludes that any interactions between Atlantic sturgeon and gear used in the monkfish and groundfish fisheries that will occur between now and the time a final BO will be published is not likely to cause an appreciable reduction in survival and recovery of any of the five DPSs. This is documented by a Section 7(a)(2) determination under the ESA in an August 28, 2012, memo to the record in which the Northeast Regional Administrator concluded that continuing both of these fisheries would not likely jeopardize the continued existence of whale, sea turtles, or any Atlantic sturgeon DPS (see Appendix II). Once the BO is completed (likely in the spring of 2013), NMFS will implement any appropriate measures outlined in the BO to mitigate harm to Atlantic sturgeon.

4.5 Human Communities/Social-Economic Environment

This EA considers changes to the monkfish possession limits that will affect vessels issued both a Federal limited access monkfish and groundfish permit. Although it is possible that economic and social impacts would be solely experienced by individual fishery participants, it is more likely that impacts would be experienced across communities, gear cohorts, and/or vessel size classes.

A comprehensive overview of the monkfish fishery was provided in Section 4.5 of the EA prepared for Amendment 5 to the Monkfish FMP (NEFMC 2011a). An updated summary of this information was presented in the EA prepared for FW 7 (NEFMC 2011b). This section updates fundamental information regarding the operation of the monkfish fishery to evaluate the impacts of the preferred alternative, along with a brief description of the groundfish fishery and recent bycatch of monkfish when targeting groundfish.

4.5.1 Monkfish Fishery

4.5.1.1 Overview of the Monkfish Fishery and Vessel Permits

In FY 2012, 2,212 vessels were issued Federal monkfish permits across seven permit categories (see Table 12). Limited access permit categories (Categories A, B, C, D, F, and H) are considered the “directed” monkfish fishery. Such vessels are allocated monkfish DAS, and are subject to higher monkfish possession limits when fishing under a monkfish DAS (see Table 3. Category E vessels are those that historically did not qualify for a limited access permit.

These vessels are considered the "incidental" fishery, and are restricted to smaller amounts of monkfish when targeting other species (see Table 3).

Table 12. Federal Monkfish Permits Issued During Fishing Year 2012.

Monkfish Permit Category	Number of Permits Issued in FY 2012	Proportion of Monkfish Permits
A	21	1%
B	42	2%
C	290	13%
D	268	12%
E	1,575	71%
F	9	0%
H	7	0%
Total	2,212	100%

Vessels participating in the directed monkfish fishery also participate in other fisheries. In FY 2012, vessels issued a limited access monkfish Category C or D permit (those vessels affected by this action) were also issued a limited access permit in a number of other New England and Mid-Atlantic fisheries (Table 13). Based on permit issuance alone, such vessels are likely most active in the groundfish and American lobster fisheries, although a substantial number are also issued limited access permits in the Atlantic sea scallop, summer flounder, and red crab fisheries, although participation in each of these other fisheries may vary. Because there are no restrictions in these fisheries that would prohibit Category C or D vessels from fishing outside of the NFMA during FY 2012 or 2013, Table 13 includes vessels that may fish exclusively in the SFMA during FY 2013, and may not be affected by this action. The number of monkfish Category C or D permits issued a limited access groundfish permit during FY 2012 is substantially reduced compared to FY 2009, with nearly a 23 percent and 24 percent reduction in groundfish permit issuance for Category C and D monkfish vessels, respectively. This decline is likely a continuation of reductions in groundfish permits resulting from recent groundfish actions that reduced groundfish fishing opportunities (either DAS allocations and trip limits, or ACLs and sector allocations) associated with efforts to rebuild overfished stocks.

Table 13. Other Federal Limited Access Fishery Permits Issued to Vessels A Federal Limited Access Monkfish Category C or D Permit During Fishing Year 2012.

Monkfish Permit Category	Black Sea Bass	Summer Flounder	Atlantic Herring	General Category Scallop	Limited Access Scallop	American Lobster	NE Multispecies	Red-crab	Scup	Squid, Mackerel, Butterfish
C	107	224	16	153	162	238	158	228	116	93
D	102	163	14	49	18	241	263	193	125	83
Total	209	387	30	202	180	479	421	421	241	176

The average size and horsepower for vessels affected by this action is listed in Table 14. During FY 2011, approximately 63 percent of all FY 2011 trips in the NFMA were taken by vessels <48 feet overall length. This is similar to data presented in FW 7 in which vessels in the 30-49' length category landed the most monkfish, and were the most dependent on monkfish compared to other sources of fishing revenue (see Tables 21 and 22 in NEFMC 2011b). This

table is simply intended to illustrate the size and fishing capacity of vessels that may be affected by this action.

Table 14. Average, Maximum, and Minimum Size and Horsepower of Monkfish Category C and D Vessels During Fishing Year 2011.

Monkfish Permit Category	Horsepower			Gross Tons			Length (ft)		
	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.
C	758	1,650	130	137	200	1	76	109	20
D	443	1,380	130	68	201	1	57	113	20

4.5.1.2 Directed Monkfish Fishery Fishing Activity

During FY 2011, 189 unique Category C or D monkfish vessels fished on a groundfish or monkfish trip in the NFMA, taking just over 8,100 trips throughout the year. Of these 189 vessels, 183 (97 percent) were enrolled in a groundfish sector. A majority of the 8,102 trips taken by such vessels were groundfish trips, with 7,669 trips taken under a groundfish activity code (95 percent). A total of 4,196 trips were taken under groundfish A DAS (52 percent), while 3,461 trips were taken under no DAS at all (43 percent). Only 433 trips were taken under a monkfish and groundish DAS (5 percent). Of the 433 trips using monkfish and groundfish DAS during FY 2011, 360 trips (83 percent) were declared into the NFMA, while 73 were declared into the SFMA and fished in both the NFMA and SFMA on the same trip. However, the 73 trips with SFMA declarations are trips that were fished in both the NFMA and SFMA on the same trip. Thus, trips under both a monkfish and groundfish DAS in the NFMA represented a small fraction of the overall number of trips taken by vessels affected by this action during FY 2011.

Overall monkfish DAS usage has been low since the FMP was first implemented. In recent years, monkfish DAS usage has varied, peaking at 21 percent in FY 2008, but declining to 16 percent in FY 2011(see Table 15). Monkfish DAS were not required to be used in the NFMA until FY 2007. Thus, historical DAS usage through FY 2006 only reflected directed monkfish trips in the SFMA. Monkfish DAS used in the NFMA have declined from 1,822 DAS in FY 2007 to 1,097 DAS in FY 2009, before rising to 1,159 DAS by FY 2011.

Table 15. Monkfish DAS Allocations and Usage in Both Fishery Management Areas During Fishing Years 2006 Through 2011.

Fishing Year	Monkfish DAS Used in NFMA	Monkfish DAS Used	Monkfish DAS Allocated	Proportion of Monkfish DAS Used
2006	NA	4,101	37,809	11%
2007	1,822	5,780	31,090	19%
2008	1,315	5,348	25,354	21%
2009	1,097	4,350	25,083	17%
2010	1,126	4,270	24,020	18%
2011	1,159	5,558	31,937	17%

Due to the low number of monkfish DAS used each year, there are concerns that a lot of latent effort exists in the fishery. Even active vessels (those that use monkfish DAS during a FY) do not use all of their allocated DAS. The differing DAS usage rates for different permit

categories and for those fishing in the NFMA versus the SFMA are listed in Tables 25 and 26 of FW 7 (NEFMC 2011b). In October 2011, the monkfish Plan Development Team examined recent monkfish DAS usage, concluding that about half of allocated monkfish DAS are unlikely to be used in the foreseeable future. The PDT listed several factors that contribute to low monkfish DAS usage, including vessels that are issued monkfish permits, but are inactive in any fishery; vessels that are also issued limited access Atlantic sea scallop fisheries that focus fishing effort on the higher-valued scallop resource; and vessels fishing primarily in the SFMA that do not use the remainder of their monkfish DAS allocation in the NFMA.

4.5.1.3 Directed Monkfish Fishery Landings and Revenues

Table 16 shows NFMA monkfish landings since FY 2000. NFMA landings peaked in FY 2001, but have since declined each year through FY 2010 where landings bottomed out at 2,834 mt (see Figure 6). FY 2011 landings increased slightly, possibly due to measures adopted in FW 7 that allowed vessels to land an additional day's worth of monkfish each trip. Monkfish landings during the first five months of FY 2012 appear to continue to increase, with monkfish landings through September 2012 higher compared to those recorded from May through September during FYs 2009 – 2011. Prior to FY 2007, vessels issued a Federal limited access monkfish Category C or D permit were allocated 40 monkfish DAS, but there were no monkfish possession limits in the NFMA. During these years, total monkfish landings were substantially higher than the ACT specified for FY 2013 (6,567 mt), although landings in FY 2006 did come very close to the FY 2013 ACT without any possession limit restrictions.

Table 16. Monkfish Target Total Allowable Catch Amounts, Trip Limits, Days-at-sea Restrictions, and Landings in the Northern Fishery Management Area During Fishing Years 2000 – 2012.

Fishing Year	Target TAC (lbs)	Target TAC/TAL (mt)	Trip Limits*		DAS Restrictions**	Landings (lbs)	Landings (mt)	Percent of TAC
			Cat. A & C	Cat. B & D				
2000	12,507,000	5,673	n/a	n/a	40	26,145,000	11,859	209%
2001	12,507,000	5,673	n/a	n/a	40	32,745,000	14,853	262%
2002	25,737,000	11,674	n/a	n/a	40	31,947,000	14,491	124%
2003	39,039,000	17,708	n/a	n/a	40	31,207,000	14,155	80%
2004	37,408,000	16,968	n/a	n/a	40	25,905,000	11,750	69%
2005	29,012,834	13,160	n/a	n/a	40	21,016,667	9,533	72%
2006	17,057,165	7,737	n/a	n/a	40	14,720,265	6,677	86%
2007	11,023,100	5,000	1,250	470	31	11,133,344	5,050	101%
2008	11,023,100	5,000	1,250	470	31	7,777,909	3,528	71%
2009	11,023,100	5,000	1,250	470	31	7,372,258	3,344	67%
2010	11,023,100	5,000	1,250	470	31	6,247,901	2,834	57%
2011	12,905,845	5,854	1,250	600	40	8,153,433	3,699	63%
2012	12,905,845	5,854	1,250	600	40			

* Trip limits are specified in pounds tail weight per DAS
** Excluding up to 10 DAS carryover, became 4 DAS carryover in FY2007
Note: In 2011, the target total allowable catch (TAC) amount became a target total allowable landing (TAL) amount

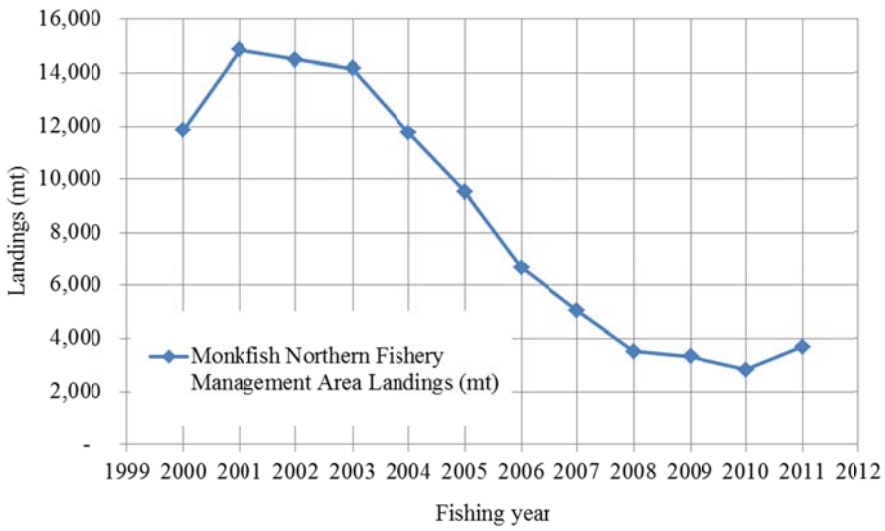


Figure 6. Reported Monkfish Northern Fishery Management Area Landings (mt) During Fishing Years 2000 - 2011.

As illustrated in Table 17, most of the monkfish landed from the NFMA comes from trawl vessels. This pattern has not substantively changed since the implementation of the FMP in 2000. In general, however, gillnet landings have been converted to trawl landings since 2000.

Table 17. Proportion of Monkfish Landings from the Northern Fishery Management Area by Gear Type During Fishing Years 2000 - 2011.

Gear Type	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Gillnet	30%	25%	24%	22%	30%	26%	29%	24%	22%	21%	17%	16%
Trawl	67%	73%	76%	77%	70%	73%	68%	72%	77%	77%	83%	82%
Dredge	3%	2%	0%	1%	0%	1%	2%	3%	1%	2%	0%	2%
Other	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Table 18 shows monkfish landings and gear usage by port and port state during FY 2011. This illustrates that Massachusetts vessels landed the most monkfish from the NFMA compared to other states, with smaller amounts landed by vessels operating out of Maine and New Hampshire. Trace amounts of monkfish from the NFMA were landed by vessels operating out of other states. The ports of Gloucester, New Bedford, and Boston, MA, along with Portland, ME are considered primary monkfish ports within the NFMA according to Amendment 5 (NEFMC 2011a). Vessels operating out of these ports landed the most monkfish from the NFMA during FY 2011. Similar landings patterns are evident in previous FYs, with only the scale of landings from each port or state varying from year to year (see Table 18 of FW 7 (NEFMC 2011b) and http://www.nero.noaa.gov/ro/fso/mul.htm for tables detailing state landings during previous FYs). This suggests that such vessels and associated fishing communities would be most affected by the preferred alternative. Secondary ports that may be affected by this action include Rockland, ME; Port Clyde, ME; South Bristol, ME; Chatham, MA; Provincetown, MA; Scituate, MA; Plymouth, MA; Westport, MA; and Portsmouth, NH. A more comprehensive

description of the primary and secondary ports involved with the monkfish fishery is contained in Section 4.5.2 of the EA prepared for FW 7 (NEFMC 2011b).

Table 18. Monkfish Landings and Gear Usage by Port/State During Fishing Year 2011.

PORT/ STATE	MAY - APRIL FY'11	STOCK AREAS				GEAR TYPES							
		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	272	272	100%	0	0%	248	91%	24	9%	0	0%	0	0%
Gloucester, MA	1,435	1,419	99%	16	1%	1,157	81%	267	19%	0	0%	11	1%
Boston, MA	769	767	100%	2	0%	766	100%	0	0%	0	0%	3	0%
New Bedford, MA	2,106	886	42%	1,220	58%	1,305	62%	520	25%	0	0%	280	13%
Point Judith, RI	997	6	1%	991	99%	635	64%	348	35%	0	0%	14	1%
MAINE	377	377	100%	0	0%	340	90%	37	10%	0	0%	0	0%
NEW HAMPSHIRE	69	69	100%	0	0%	7	11%	62	89%	0	0%	0	0%
MASSACHUSETTS	5,020	3,239	65%	1,781	35%	3,249	65%	1,475	29%	0	0%	295	6%
RHODE ISLAND	1,589	7	0%	1,583	100%	637	40%	928	58%	0	0%	24	2%
CONNECTICUT	278	1	0%	277	100%	33	12%	217	78%	0	0%	28	10%
NEW YORK	655	4	1%	651	99%	78	12%	573	88%	0	0%	4	1%
NEW JERSEY	1,062	1	0%	1,061	100%	42	4%	900	85%	0	0%	120	11%
OTHER NORTHEAST	449	1	0%	448	100%	59	13%	368	82%	0	0%	23	5%
TOTAL	**9,500**	**3,699**	**39%**	**5,801**	**61%**	**4,446**	**47%**	**4,560**	**48%**	**0**	**0%**	**494**	**5%**

*Landings are derived from dealer reports and reported in live weight, while gear type used are derived from vessel trip reports.

The average ex-vessel price paid for monkfish landings depends upon the market category landed. Table 19 lists the average monkfish ex-vessel price during FYs 2000 – 2012 based on various market categories. Because each vessel may land different amounts of each market category of monkfish, monkfish revenue per trip will vary greatly. Therefore, revenue from monkfish landings depends upon the amount of each market category landed. To compare monkfish revenue among alternatives that would change the amount of monkfish landed, it is necessary to list the average price paid per live weight equivalent by converting all landings to live weight using established conversion factors for each market category (see Table 20).

Table 19. Average Monkfish Price per Pound by Market Category During Fishing Years 2000 - 2012.

Fishing Year	Market Category				
	Head On, Gutted	Tails Only	Large Tails	Small Tails	Unclassified Round
2000	$1.38	$0.73	$0.83	$0.73	$1.53
2001	$1.17	$0.51	$0.64	$0.48	$1.32
2002	$1.10	$0.39	$0.48	$0.32	$1.26
2003	$0.89	$0.44	$0.52	$0.46	$0.96
2004	$0.81	$0.54	$0.62	$0.57	$0.96
2005	$1.21	$0.71	$0.81	$0.75	$1.47
2006	$1.22	$0.74	$0.84	$0.70	$1.58
2007	$1.06	$0.84	$0.97	$0.88	$1.44
2008	$1.03	$0.87	$0.99	$0.95	$1.45
2009	$1.01	$0.85	$0.91	$0.75	$1.31
2010	$1.21	$0.93	$1.05	$0.85	$1.47
2011	$1.56	$0.94	$1.19	$1.04	$1.78
2012	$1.56	$0.88	$1.16	$0.83	$1.84

Table 20. 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

Based on dealer data, for data reported through 12/14/2012

Table 21. Monkfish Landings and Revenues During Fishing Years 1995 - 2009 (from NEFMC 2011b).

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	29,373	$37,551
2004	18,405	$30,981
2005	22,806	$42,646
2006	14,749	$28,549
2007	14,136	$29,001
2008	11,610	$23,144
2009	9,408	$18,220

** May include data from CT vessels without a 2001-2009 Monkfish permit*

1995-2001 data based on vessels that were issued a monkfish permit during the 2001 fishing year. 2002-2009 fishing year data are based on vessels issued a monkfish permit during the 2002-2009 fishing years, respectively.

The EA supporting FW 7 evaluated the dependence on monkfish as a source of revenue by vessels issued a Federal limited access monkfish permit (see Tables 19 and 20 from NEFMC 2011b, presented below as Tables 22 and 23). This analysis suggested that dependence on monkfish has decreased over time, particularly for vessels issued a Category C permits. For example, monkfish revenues as a proportion of total revenues fell from 14 percent in FY 1998 to

3.1 percent in FY 2009 vessels issued a limited access monkfish Category C permit. FW 7 suggests that this drop in dependence on monkfish is attributed to the recovery of Atlantic sea scallops and the revenue this high-value species can provide compared to other fisheries (see Tables 23 and 24 of NEFMC 2011b).

Table 22. Monkfish Landings as a Proportion of Total Landings by Monkfish Permit Category During Fishing Years 1995 - 2009.

Monkfish Permit Category	1,000 pounds, landed weight														
	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
A	453	817	563	1,093	1,277	845	1,152	1,072	1,375	777	1,147	631	932	992	728
% of Total A Landings	49.1%	54.1%	13.4%	10.0%	20.5%	6.5%	6.8%	4.6%	4.9%	6.7%	12.7%	9.6%	8.3%	8.6%	9.0%
B	322	583	479	992	1,474	1,050	2,084	1,594	1,932	819	1,817	1,204	1,617	1,549	1,093
% of Total B Landings	14.0%	18.2%	23.4%	24.1%	36.9%	30.2%	46.4%	40.1%	48.9%	26.4%	42.6%	37.4%	44.3%	47.6%	26.8%
C	11,504	12,322	12,364	12,144	11,876	10,583	12,708	10,360	11,022	6,870	8,528	5,569	4,935	3,738	3,238
% of Total C Landings	10.4%	9.3%	7.5%	8.2%	8.5%	6.9%	6.4%	7.9%	8.5%	5.4%	8.4%	6.2%	5.3%	3.8%	3.3%
D	4,094	5,020	6,139	7,509	8,982	8,905	11,974	10,388	12,969	8,414	9,393	5,831	5,323	4,448	3,637
% of Total D Landings	4.6%	5.3%	5.8%	6.7%	11.1%	9.7%	11.7%	9.9%	12.9%	8.5%	10.9%	8.0%	7.3%	5.7%	4.3%
H											280	242	183	228	208
% of Total H Landings											27.9%	19.4%	24.1%	23.9%	32.7%
E (Open Access)	1,014	1,257	1,637	1,845	1,911	1,459	1,816	1,450	1,492	1,152	1,222	978	882	596	401
% of Total E Landings	0.5%	0.6%	0.5%	0.6%	0.8%	0.6%	0.7%	0.6%	0.4%	0.3%	0.3%	0.3%	0.3%	0.2%	0.1%
CT	1,029	733	592	574	557	580	787	448	583	373	420	294	263	61	102
% of Total CT Landings	5.7%	4.0%	3.3%	3.5%	2.9%	3.3%	4.5%	2.9%	3.8%	2.4%	3.2%	2.8%	3.1%	2.0%	5.7%
TOTAL MONK LANDED	18,416	20,733	21,774	24,156	26,077	23,423	30,520	25,312	29,373	18,405	22,806	14,749	14,136	11,610	9,408

Source: NMFS Statistics Office, dealer weighout database

** May include data from CT vessels without a 2001-2009 Monkfish permit*

1995-2001 data based on vessels that were issued a monkfish permit during the 2001 fishing year. 2002-2008 fishing year data are based on vessels issued a monkfish permit during the 2002-2009 fishing years, respectively.

Table 23. Monkfish Revenues as a Proportion of Total Revenues by Monkfish Permit Category During Fishing Years 1995 - 2009.

Monkfish Permit Category	$1,000, nominal (not discounted)														
	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
A	$582	$849	$663	$1,262	$2,011	$1,428	$1,615	$1,439	$1,432	$946	$1,870	$1,006	$1,296	$1,405	$992
% of Total A Revenues	36.9%	41.4%	35.7%	51.2%	63.5%	46.6%	50.6%	42.5%	35.8%	32.5%	50.5%	35.3%	40.0%	33.1%	32.8%
B	$391	$583	$552	$1,183	$2,528	$1,699	$2,828	$2,099	$1,998	$992	$2,837	$1,785	$2,263	$2,075	$1,546
% of Total B Revenues	24.6%	33.5%	38.7%	49.6%	62.2%	48.1%	60.3%	53.3%	54.2%	29.1%	50.1%	41.7%	45.7%	51.6%	35.8%
C	$16,014	$16,423	$18,091	$18,501	$23,250	$22,380	$17,503	$14,715	$15,579	$13,011	$16,945	$11,771	$12,219	$8,878	$7,615
% of Total C Revenues	13.0%	12.0%	13.3%	14.0%	13.5%	11.5%	9.2%	7.4%	7.1%	5.1%	6.1%	4.6%	4.8%	3.7%	3.1%
D	$4,736	$5,649	$7,514	$10,076	$16,043	$16,620	$16,836	$14,434	$15,766	$13,556	$17,508	$11,235	$10,301	$8,783	$6,714
% of Total D Revenues	8.2%	9.3%	11.2%	14.9%	20.4%	19.9%	20.2%	17.3%	18.4%	14.9%	17.6%	12.1%	11.7%	9.8%	8.0%
H											$398	$338	$217	$251	$219
% of Total H Revenues											43.8%	38.1%	33.0%	40.1%	39.9%
E (Open Access)	$1,263	$1,452	$2,270	$2,642	$3,471	$2,848	$2,504	$1,967	$2,005	$1,928	$2,491	$2,080	$2,280	$1,591	$1,010
% of Total E Revenues	1.1%	1.2%	1.7%	2.1%	2.4%	1.9%	1.6%	1.2%	1.0%	0.8%	0.8%	0.7%	0.7%	0.5%	0.3%
CT	$1,772	$1,233	$1,036	$1,018	$1,410	$1,148	$1,067	$603	$772	$548	$597	$333	$426	$163	$123
% of Total CT Revenues	4.1%	2.5%	3.1%	3.0%	3.6%	3.8%	3.5%	2.2%	2.5%	1.7%	1.6%	0.9%	1.1%	3.6%	1.3%
TOTAL MONK REVENUE	$24,759	$26,188	$30,127	$34,682	$48,714	$46,123	$42,354	$35,256	$37,551	$30,981	$42,646	$28,549	$29,001	$23,144	$18,220

Source: NMFS Statistics Office, dealer weighout database

** May include data from CT vessels without a 2001-2009 Monkfish permit*

1995-2001 data based on vessels that were issued a monkfish permit during the 2001 fishing year. 2002-2009 fishing year data are based on vessels issued a monkfish permit during the 2002-2009 fishing years, respectively.

4.5.2 Groundfish Fishery

A complete summary of the groundfish fishery is provided in Section 6.5.1 of the EA prepared for FW 47 to the NE Multispecies FMP (NEFMC 2012a). According to FW 47, during FY 2010, 1,347 vessels were issued limited access groundfish permits, 740 of which were enrolled in sectors. Similar to the monkfish fishery, not every vessel was active. During that year, only 900 vessels were active in any fishery (sector and non-sector vessels combined), and only 450 vessels had revenue from at least 1 groundfish trip. Table 24 shows fishing effort in the groundfish fishery, including the number of trips and average trip length (from NEFMC 2012a).

Nearly 80 percent of the monkfish Category C and D vessels issued a limited access groundfish permit during FY 2012 are enrolled in groundfish sectors. Groundfish sectors are exempt from groundfish DAS requirements, unless fishing for other species (monkfish, skates, and dogfish) that require the use of groundfish DAS. Groundfish sectors are allocated a portion of the overall ACL for each stock based on the fishing history of participating permits. Once a sector's ACL for a groundfish stock has been reached, participating vessels must cease fishing in that stock area.

Non-sector groundfish vessels are managed by groundfish DAS and trip limits for each stock. They are also governed by trimester quotas. Once a trimester quota for a particular stock is reached, non-sector vessels fishing with gear that can catch that species must cease in the stock area until the beginning of the next trimester.

As noted above in Section 2.1.1, the groundfish fishery often catches monkfish as bycatch when targeting groundfish stocks. See Table 25 for recent groundfish and non-groundfish landings (from NEFMC 2012a), and Table 26 for landings (in lb) and revenue from other non-groundfish species landed by groundfish vessels.

Table 24. Fishing Effort in the Groundfish Fishery During Fishing Years 2007 - 2010.

					2010	
	2007	2008	2009	2010	Sector Vessels	Common Pool
Number of groundfish trips	27,004	26,468	26,032	14,045	11,770	2,275
Number of non-groundfish trips	46,635	46,721	46,815	47,539	20,061	27,478
Number of days absent on groundfish trips	28,158	27,146	24,947	18,818	17,216	1,602
Number of days absent on non-groundfish trips	35,186	36,134	36,397	35,220	17,785	17,435
Average trip length on groundfish trips	7.63	7.82	8.06	8.55	8.70	3.31
(standard deviation)	(6.15)	(5.98)	(6.10)	(6.07)	(6.02)	(3.93)
Average trip length on non-groundfish trips	5.42	4.78	4.85	4.82	5.52	4.21
(standard deviation)	(5.95)	(5.67)	(5.84)	(5.81)	(6.44)	(5.25)

Table 25. Total Groundfish and Non-groundfish Landings During Fishing Years 2007 - 2010.

	2007	2008	2009	2010 (Total)	2010 (Sectors)	2010 (Non-Sectors)
Total Landings (lb)	259,448	277,118	262,679	239,103	155,032	84,072
Total Groundfish Landings (lb)	64,004	72,162	70,568	58,492	57,068	1,424
Total Non-groundfish Landings (lb)	195,444	204,955	192,111	180,611	97,963	82,647

Table 26. Nominal Value and Landed Pounds of Top 11 Non-groundfish Species Landed by Limited Access Groundfish Vessels During Fishing Years 2009 - 2011.

	2009	2010			2011		
		Total	Sector Vessels	Common Pool	Total	Sector Vessels	Common Pool
HERRING, ATLANTIC	$3,434,062	$2,887,611	$1,331,795	$1,555,816	$6,369,746	$3,021,805	$3,347,941
(CLUPEA HARENGUS)	33,978,259	25,764,815	10,227,797	15,537,018	56,372,358	22,423,670	33,948,688
SKATES(RACK)	$7,104,671	$4,987,841	$3,657,503	$1,330,337	$6,543,826	$4,838,628	$1,705,198
(RAJIDAE)	24,570,804	16,971,171	11,502,603	5,468,569	19,694,680	14,024,300	5,670,380
MENHADEN	$751,152	$1,325,429	$192,752	$1,132,677	$1,985,945	$1,250,414	$735,531**
(BREVOORTIA TYRANNUS)	10,690,429	18,568,358	1,983,817	16,584,541	22,278,749	14,832,219	7,446,530**
HAKE, SILVER	$8,469,907	$11,138,757	$8,542,696	$2,596,061	$10,781,911	$8,162,032	$2,619,879
(MERLUCCIUS BILINEARIS)	17,131,138	17,467,396	13,731,207	3,736,190	16,406,068	13,021,438	3,384,629
SQUID (LOLIGO)	$14,916,603	$18,017,856	$15,763,176	$2,254,681	$20,144,791	$15,420,391	$4,724,400
(LOLIGO PEALEI)	15,805,159	16,531,121	14,527,997	2,003,125	15,725,053	12,207,789	3,517,264
SCALLOP, SEA	$60,923,741	$71,612,613	$33,749,492	$37,863,121	$90,321,367	$47,839,882	$42,481,485
(PLACOPECTEN MAGELLANICUS)	9,516,450	8,299,108	3,960,112	4,338,996	9,007,734	4,768,314	4,239,420
SQUID (ILLEX)	$1,473,893	$1,639,236	$1,381,614	$257,622	$4,187,007	$3,548,926	$638,082
(ILLEX ILLECEBROSUS)	8,963,047	6,324,303	5,160,472	1,163,831	11,098,568	8,928,661	2,169,907
LOBSTER	$29,547,961	$34,453,495	$13,801,908	$20,651,587	$29,375,211	$16,340,807	$13,034,404
(HOMARUS AMERICANUS)	8,509,174	8,897,093	3,691,931	5,205,162	7,472,527	4,296,854	3,175,673
DOGFISH SPINY	$1,949,278	$1,643,263	$1,221,346	$421,917	$1,993,602	$1,587,699	$405,903
(SQUALUS ACANTHIAS)	8,320,829	7,517,460	5,478,064	2,039,396	8,971,670	7,294,223	1,677,447
SCUP	$3,849,887	$4,763,207	$3,285,555	$1,477,651	$6,833,021	$5,302,799	$1,530,222
(STENOTOMUS CHRYSOPS)	6,276,826	7,967,585	5,333,769	2,633,815	10,542,792	8,202,302	2,340,490
MONKFISH	$14,432,148	$14,896,249	$10,724,178	$4,172,071	$21,637,981	$15,886,164	$5,751,817
(LOPHIUS AMERICANUS)	7,809,814	6,596,421	4,041,504	2,554,917	8,571,214	5,478,913	3,092,301

5.0 Analysis of Impacts

Both Alternative 1 and Alternative 2 would benefit only a portion of the directed monkfish fishery – those vessels issued a Federal limited access monkfish Category C or D permit fishing in the NFMA. Vessels issued a Federal limited access monkfish Category A, B, or H permit would not benefit from this action. Limiting the benefits of this emergency action is consistent with the purpose and need for this action (see Section 2.0) to help mitigate impacts of substantially reduced groundfish ACLs in FY 2013. Vessels issued other limited access monkfish permits are not directly affected by such reduced groundfish ACLs, and either rarely fish for monkfish within the NFMA based on existing regulations in the groundfish fishery, or, in the case of Category H permits, cannot legally target monkfish in the NFMA.

5.1 Biological Impacts

5.1.1 Impacts on Monkfish and Other Species

5.1.1.1 No Action

Under the No Action Alternative described in Section 3.1.1, no revisions would be made to the current monkfish possession limits in the NFMA. The existing monkfish possession limits would remain as specified by FW 7 (NEFMC 2011b), as shown in Table 3.

As shown in Table 16, NFMA monkfish landings have been decreasing during FYs 2002 – 2010. In FY 2011, landings increased. Based on available data, landings continue to increase during the first part of FY 2012 relative to landing rates from May – September during FYs 2009 through 2011. Using reported monthly landings for all of FY 2009 – 2011, as well as reported landings for the first five months of FY 2012, NFMA landings for FY 2012 are projected to reach 4,358 metric tons for the year, which is 74 percent of the 5,854 mt TAL (Table 27). Using total reported annual landings for FY 2010 and FY 2011 and reported and projected landings for the last seven months of FY 2012, landings under the current DAS and trip limits are projected to continue on an upward trajectory to 5,152 mt during FY 2013, or 88 percent of the 5,854 mt TAL for the NFMA (Table 27 and Figure 7).

Based on the above information, it is unlikely that the No Action Alternative will result in monkfish landings exceeding the FY 2013 monkfish NFMA TAL or the ACT, assuming discard rates calculated in the most recent stock assessment (11 percent in the NFMA) do not change. This level of catch has a very low risk that overfishing will occur on monkfish in the NFMA during FY 2013. Given the current understanding of the status of the stock (the stock is not overfished, and overfishing is not occurring), the fact that the No Action monkfish possession limits will not exceed the FY 2013 TAL or ACT, and that AMs would be triggered if the ACL specified for this stock is exceeded, the No Action Alternative is unlikely to have negative biological impacts on the stock.

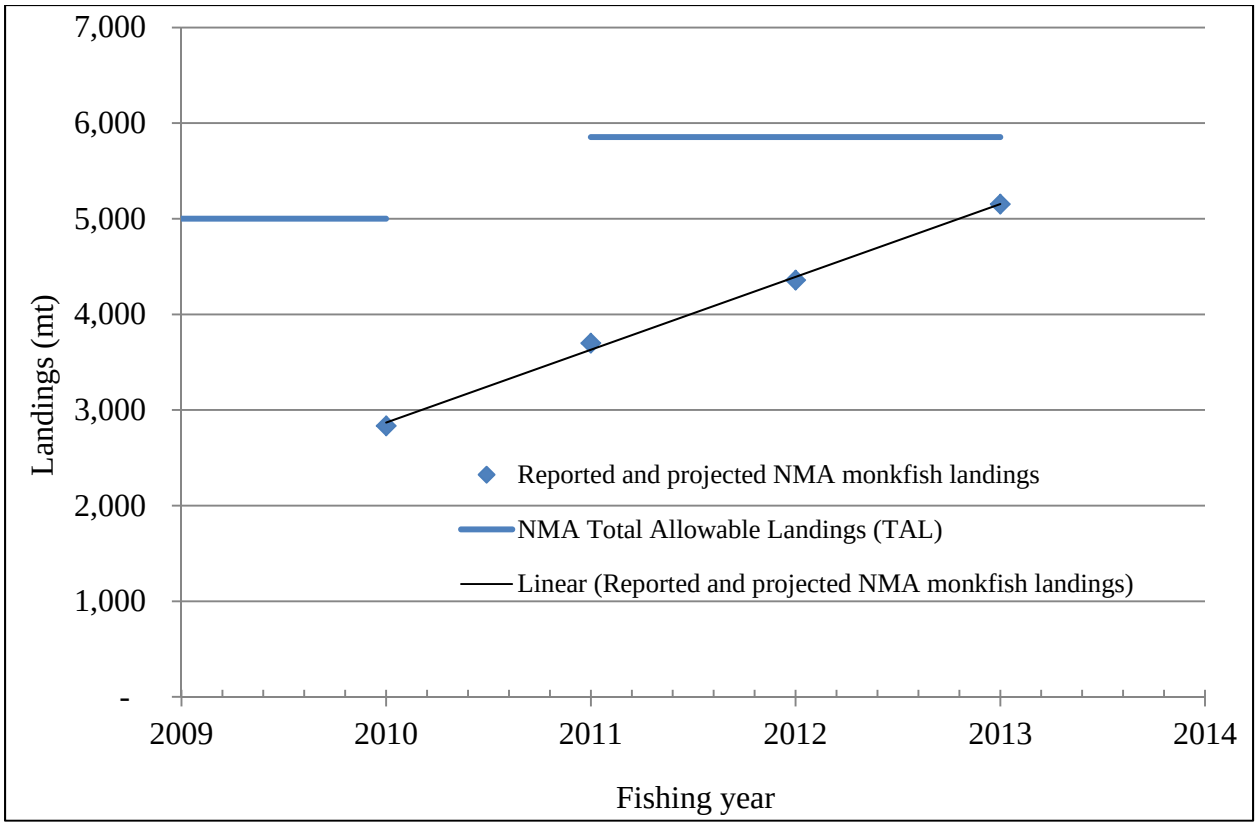


Figure 7. Monkfish Northern Fishery Management Area Reported and Projected Landings Under Current Monkfish Days-at-sea and Trip Limits for Fishing Years 2010 - 2013.

Northern Fishery Management Area Monkfish Landings During Fishing Years 2009 - 2011 Under
nd Projected Monkfish Landings for Fishing Years 2012 and 2013 Under the No Action Alternative.

FY2009			FY2010				FY2011				FY2012				FY2013			
(b)	(c)	(d)	(a)	(b)	(c)	(d)	(a)	(b)	(c)	(d)	(a)	(b)	(c)	(d)	(a)	(b)	(c)	(d)
127	4%	4%	112	112	4%	4%	143	143	4%	4%	208	208	4%	4%	201	201	4%	4%
407	8%	12%	194	306	7%	11%	237	380	6%	10%	278	486	7%	11%	351	552	7%	11%
737	10%	22%	204	510	7%	18%	260	640	7%	17%	308	794	8%	19%	383	935	7%	18%
988	7%	30%	210	720	7%	25%	265	905	7%	24%	301	1,095	7%	26%	377	1,312	7%	25%
1,226	7%	37%	202	922	7%	33%	278	1,184	8%	32%	375	1,470	7%	34%	376	1,688	7%	33%
1,493	8%	45%	193	1,114	7%	39%	212	1,396	6%	38%	298	1,768	7%	41%	333	2,021	6%	39%
1,723	7%	52%	180	1,295	6%	46%	275	1,671	7%	45%	301	2,068	7%	47%	356	2,376	7%	46%
1,891	5%	57%	260	1,554	9%	55%	358	2,028	10%	55%	346	2,415	8%	55%	460	2,836	9%	55%
2,227	10%	67%	308	1,862	11%	66%	422	2,450	11%	66%	469	2,884	11%	66%	568	3,404	11%	66%
2,662	13%	80%	379	2,242	13%	79%	502	2,952	14%	80%	580	3,465	13%	80%	692	4,096	13%	79%
3,111	13%	93%	360	2,602	13%	92%	453	3,405	12%	92%	558	4,022	13%	92%	649	4,744	13%	92%
3,343	7%	100%	232	2,834	8%	100%	294	3,699	8%	100%	335	4,358	8%	100%	410	5,154	8%	100%
			2,834				3,699				4,358				5,154			
			57%				63%				74%				88%			

cumulative landings; (c) percent of annual landings by month; and (d) cumulative percentage of annual landings.
cted landings and percentages under current DAS and trip limits.

5.1.1.2 Alternative 1

Alternative 1 would eliminate the monkfish possession limits for vessels issued a Federal limited access monkfish Category C or D permit fishing on a monkfish and groundfish DAS in the NFMA during FY 2013 (see Table 4). 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 1. These catch limits, along with the allocation of 40 monkfish DAS, would be preserved to ensure that overfishing does not occur during FY 2013. In addition, ACE allocated to groundfish sectors, and groundfish DAS, trip limits, and trimester TACs applicable to non-sector groundfish vessels would continue to serve as restraints on groundfish fishing effort. Finally, Alternative 1 would maintain the AMs established under Amendment 5 to the Monkfish FMP and recent actions in the NE Multispecies FMP to account for any overage of the ACL and prevent future fishing operations from compromising the conservation objectives of either fishery.

Dealer-reported monkfish landings were matched to a monkfish DAS declaration, monkfish permit category, and monkfish DAS charge to create a distribution of the number of days charged per amount of tail weight landed per DAS. For Category C vessels on NFMA trips under a monkfish DAS during FY 2011, relatively few days approached the 1,250 lb tail weight per DAS limit (Figure 8). Figure 8 suggests that very few Category C vessels were constrained by the existing monkfish possession limits during FY 2011. Accordingly, it is not expected that Alternative 1 would result in any increased landings by Category C vessels during FY 2013.

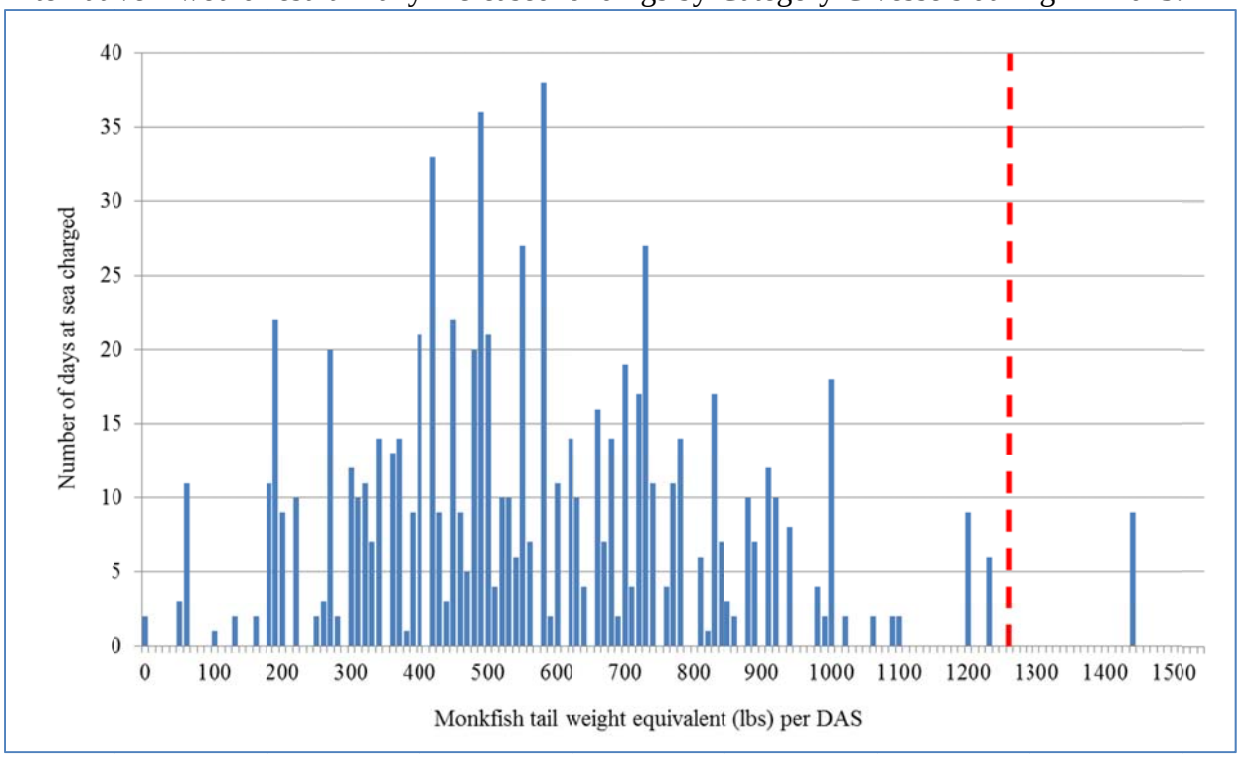


Figure 8. Monkfish Landings and Days-at-sea Charged in the Northern Fishery Management Area by Category C Vessels During Fishing Year 2011. (Note: Red dashed line represents the current trip limit of 1,250 lb tail weight per day-at-sea)

In contrast to Category C vessels, it appears that the existing NFMA monkfish possession limits for Category D vessels (600 lb tail weight per DAS) may have constrained monkfish

landings by Category D vessels during FY 2011. As depicted in Figure 9, more monkfish DAS charged to Category D vessels approached the daily landing limit compared to the number charged to Category C vessels during FY 2011 in Figure 8. This suggests that Category D vessels would have been able to land more monkfish during FY 2011 if they were not restricted by existing possession limits. To project DAS usage with no possession limit in place for Category D vessels, the distribution of DAS usage in an assumed DAS-unconstrained situation was used. Category D DAS usage was scaled to the distribution of DAS usage by Category C vessels on directed monkfish NFMA trips in FY2011 (see Figure 9). Assuming the same numbers of DAS were used, but that landings would increase on some of those DAS, FY2011 landings by Category D vessels on a declared NFMA monkfish trip potentially would have increased from 656,862 lb to 945,285 lb of monkfish live weight if not constrained by existing possession limits (see Table 28). As noted above in the description analysis of the No Action Alternative, NFMA monkfish landings are expected to continue to increase by approximately 39 percent between FYs 2011 and 2013. Applying this same increase to the estimated "unconstrained" landings by Category D vessels during FY 2011 suggests that Category D vessels would land approximately 1,317,112 live weight lb during FY 2013 (see Table 28).

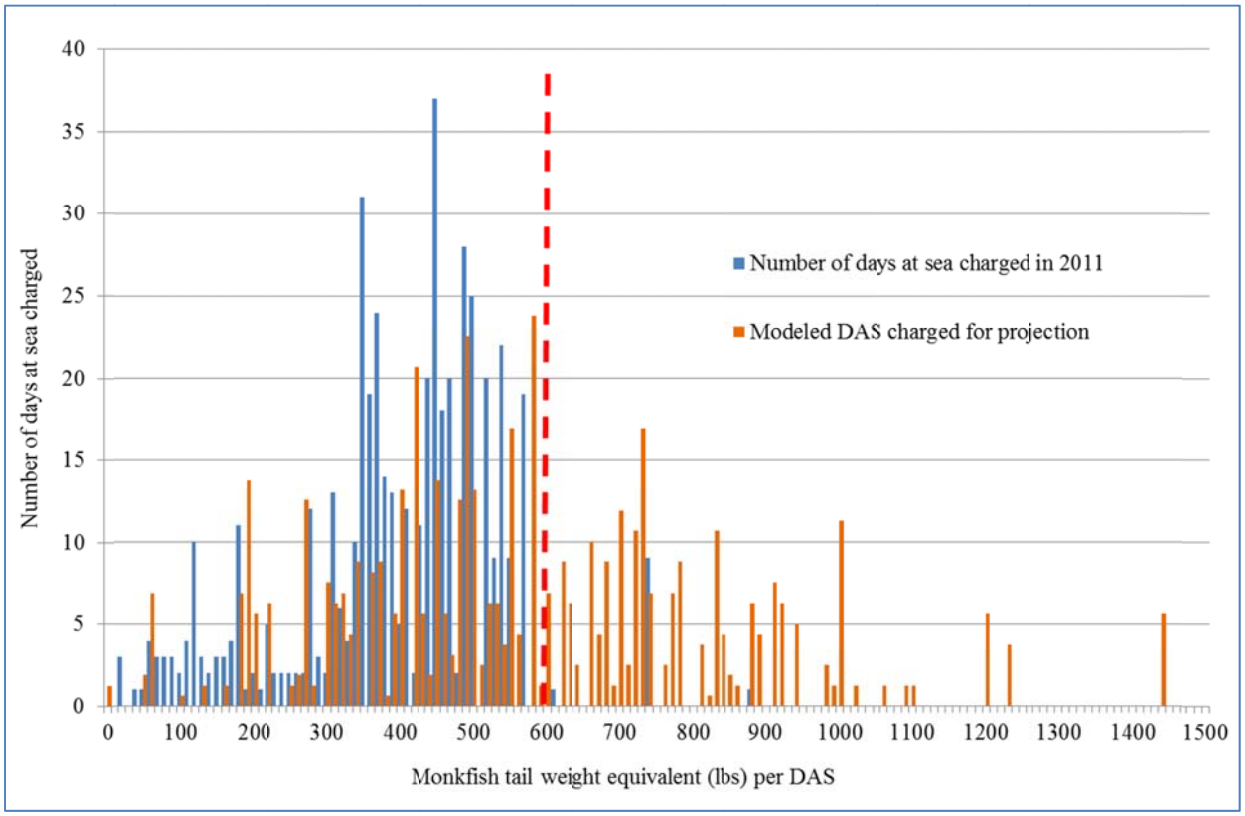


Figure 9. Monkfish Landings and Days-at-sea Charged in the Northern Fishery Management Area by Category D Vessels During Fishing Year 2011 and Projected Monkfish DAS Charged Assuming Unlimited Monkfish Possession Allowance. (Note: Red dashed line represents the current trip limit of 600 lb tail weight per day-at-sea)

Compared to the No Action Alternative, Alternative 1 is expected to increase NFMA monkfish landings by 182 mt (401,241 lb) during FY 2013, resulting in about 91 percent of the

FY 2013 TAL being landed (5,336 mt). Assuming that FY 2013 discards do not exceed the average monkfish discard rate calculated during the last monkfish stock assessment (11 percent), the 5,923 mt of projected NFMA monkfish landings and discards (5,336 mt landings + 587 mt discards) would not exceed the 6,567 mt NFMA monkfish ACT during FY 2013.

Table 28. Projected Monkfish Landings and Source of Landings from Fishing Year 2011 and Each Alternative Considered.

Source of Monkfish Landings	FY 2011	No Action	Alternative 1	Alternative 2
Category C vessels fishing on a monkfish DAS	1,508,674	2,102,111	2,102,111	2,102,111
Category D vessels fishing on a monkfish DAS	656,862	915,238	1,317,112	1,317,112
Category C and D vessels fishing on a groundfish DAS only	3,871,518	5,394,378	5,394,378	5,534,241
All other vessels	2,117,945	2,951,038	2,951,038	2,951,038
Total landings (live lbs)	8,155,000	11,362,766	11,764,639	11,904,502
Total landings (mt)	3,699	5,154	5,336	5,400
Percent of TAL (5,854 mt)	63%	88%	91%	92%

If monkfish landing rates under Alternative 1 exceed those observed during FY 2011 and the first part of FY 2012, there is a possibility that the FY 2013 TAL or ACT could be exceeded. However, that risk is tempered by several factors that limit the amount of monkfish that may be caught during FY 2013. First, because 80 percent of monkfish Category C and D vessels are enrolled in sectors, sector allocations of groundfish stocks (ACE) will limit fishing operations in the groundfish fishery and, therefore, monkfish landings that may result from monkfish/groundfish DAS usage by sector vessels. Sector allocations for several stocks caught within the NFMA are substantially reduced compared to previous FYs, including GOM cod and haddock, GB yellowtail flounder, among others. Should a sector exceed its ACE for these stocks, all fishing activity must cease for the rest of the FY, or until the sector can acquire additional ACE for that stock from another groundfish sector. In either occurrence, fishing activity would be controlled. Similar controls exist for non-sector participants in that stock areas would be closed to fishing under a groundfish DAS and, therefore, under a monkfish/groundfish DAS, for the remainder of a trimester (4-month period) if the trimester quota for a particular stock is exceeded. Second, monkfish fishing effort is still confined by monkfish DAS allocations. Although such allocations have not limited operations in previous years, they represent a maximum amount of effort that may be expended in the fishery nonetheless. Third, the number of directed monkfish trips has been decreasing in recent years. Despite a 17 percent increase in NFMA monkfish quotas starting in FY 2011, 650 fewer directed monkfish trips were taken that year compared to FY 2007. Therefore, it does not appear that increased fishing opportunities in the monkfish fishery result in increased number of directed monkfish trips. Fourth, monkfish trip limits have not really constrained monkfish catch in the NFMA in recent years, particularly for vessels issued a monkfish Category C permit. This, in conjunction with the fact that the monkfish DAS usage rate has been low, suggests that monkfish availability has limited catch more than other constraints such as DAS or possession limits. Therefore, monkfish availability, or lack thereof, may limit the increase of monkfish landings under this alternative.

Finally, emergency actions are only implemented for 180 days, but may be renewed for up to another 186 days. Therefore, the Secretary has discretion whether to continue the emergency action if monkfish landings are likely to exceed the NFMA monkfish TAL or ACT before the end of FY 2013. That determination would be made prior to renewing the emergency action in October 2013. Moreover, as proposed in this alternative, the Regional Administrator would be allowed to reinstate existing monkfish possession limits if available data indicate that the FY 2013 monkfish TAL in the NFMA could be exceeded before the end of FY 2013.

Alternative 1 may convert some monkfish discards into landings. This is because vessels issued a monkfish Category C and D permit would not be restrained by monkfish possession limits when fishing on a monkfish DAS. Further, such vessels would have incentives to fish more of their monkfish DAS during FY 2013, and to switch from a groundfish trip to a monkfish trip if the vessel encounters large amounts of monkfish due to the small incidental allowances of monkfish when not fishing under a monkfish DAS.

Analysis of the FY 2013 NFMA monkfish ACT was conducted in FW 7. Section 5.1.2.3 of the EA supporting FW 7 concluded that the likelihood of the NFMA monkfish stock becoming overfished or subject to overfishing from specifying a FY 2011 – 2013 ACT of 6,567 mt is nearly zero (NEFMC 2011b). Assuming this ACT is not exceeded, biomass would increase, and F would decrease through FY 2016 (see Figures 10 and 11). This would result in positive impacts to the monkfish resource. Because Alternative 1 is intended to achieve, but not exceed the FY 2013 ACT specified under FW 7, it is expected that the impacts to monkfish in the NFMA analyzed for the FY 2013 ACT in FW 7 will occur under Alternative 1.

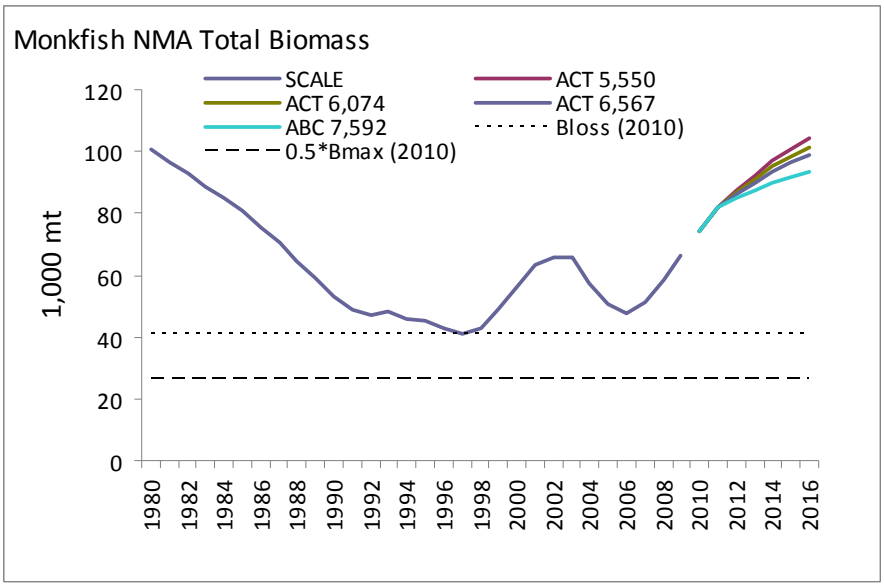


Figure 10. Projection of Monkfish Northern Fishery Management Area Biomass for 2013 - 2013 Under Three Annual Catch Target Options and the Acceptable Biological Catch Considered in Framework Adjustment 7 (from NEFMC 2011b).

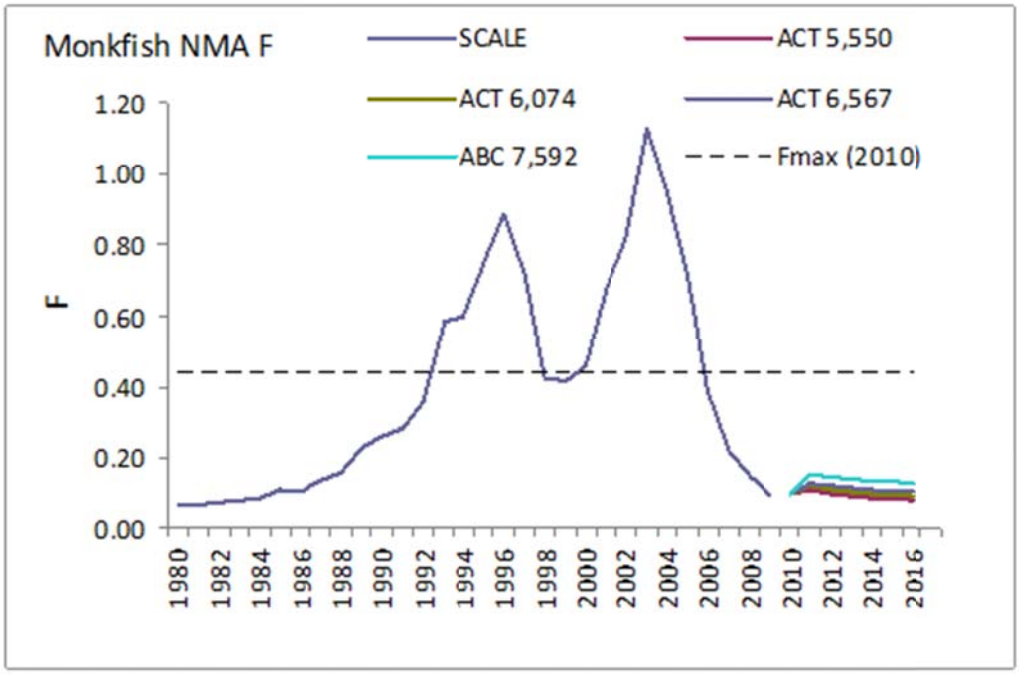


Figure 11. Projection of Monkfish Northern Fishery Management Area Fishing Mortality Rates for 2013 - 2016 Under the Three Annual Catch Target Options and the Acceptable Biological Catch Considered in Framework Adjustment 7 (from NEFMC 2011b).

It is unlikely that Alternative 1 would have any negative biological impacts on monkfish in the NFMA. Because Alternative 1 is expected to result in increased monkfish catch that is still below the FY 2013 ACT specified in the NFMA, there is a low risk that overfishing will occur on monkfish in the NFMA during FY 2013. Both scientific and management uncertainty are accounted for in the ACT established for the NFMA during FY 2013. Therefore, the risks of negative biological impacts have been minimized. Moreover, similar to applicable regulations under the No Action Alternative, AMs will be triggered if the FY 2013 monkfish NFMA ACL is exceeded, further reducing the risk of overfishing and adverse impacts to the stock.

Alternative 1 would also not likely have any negative impacts on groundfish stocks. As noted above, existing groundfish measures would ensure that overfishing does not occur during FY 2013. Given the substantially reduced ACLs for GOM and GB groundfish stocks during FY 2013, it is possible that one or more sectors will fully harvest the available ACL for one or more of these stocks before the end of FY 2013 on April 30, 2014, and be required to cease fishing operations. Because a majority of groundfish sector vessels are also issued a limited access monkfish permit, such a closure would prevent such vessels from targeting monkfish in the NFMA for the remainder of FY 2013, resulting in less monkfish landings than expected. Non-sector vessels are regulated by groundfish DAS and trip 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 under this proposed emergency action. 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. Therefore, any additional groundfish catch resulting from increased targeting of monkfish under Alternative 1would not result in adverse biological impacts on groundfish stocks that are not already accounted for in existing measures and analyzed by previous actions.

5.1.1.3 Alternative 2 (Preferred Alternative)

Alternative 2 would eliminate the monkfish possession limits for vessels issued a Federal limited access monkfish Category C or D permit fishing under a groundfish DAS in the NFMA during FY 2013 (see Table 4). None of the catch limits (ABC, ACL, ACT, or TAL) specified under either Amendment 5 or FW 7 would be revised as part of this alternative; these catch limits would be preserved to ensure that overfishing does not occur during FY 2013. Further, this alternative would maintain the AMs established under Amendment 5 to account for any overage of the ACL and prevent future fishing operations from compromising the conservation objectives of the FMP.

During FY 2011, monkfish Category C or D vessels fishing under only a groundfish DAS were likely constrained by the existing incidental catch limit (300 lb of monkfish tail weight per DAS, up to 25 percent of the total weight of fish on board) (see Figure 12). The distribution of monkfish landings per DAS charged for Category C and D vessels fishing in the NFMA appeared to follow an exponential distribution (Figure 12). Accordingly, an exponential function was fit to the frequency distribution for days where daily average tail weight was less than 290 lb to model the effect of removal of the trip limit on FY 2011 landings. DAS charged with an average greater than or equal to 290 lb tail weight per DAS were simulated to project the potential effect of no daily landing limit on monkfish FY 2011 landings on a multispecies-only DAS. Based on this analysis, FY 2011 monkfish landings by Category C and D vessels fishing in the NFMA under only a groundfish DAS potentially would have increased by 100,379 lb of monkfish live weight (from 3,871,518 lb to 3,971,897 lb).

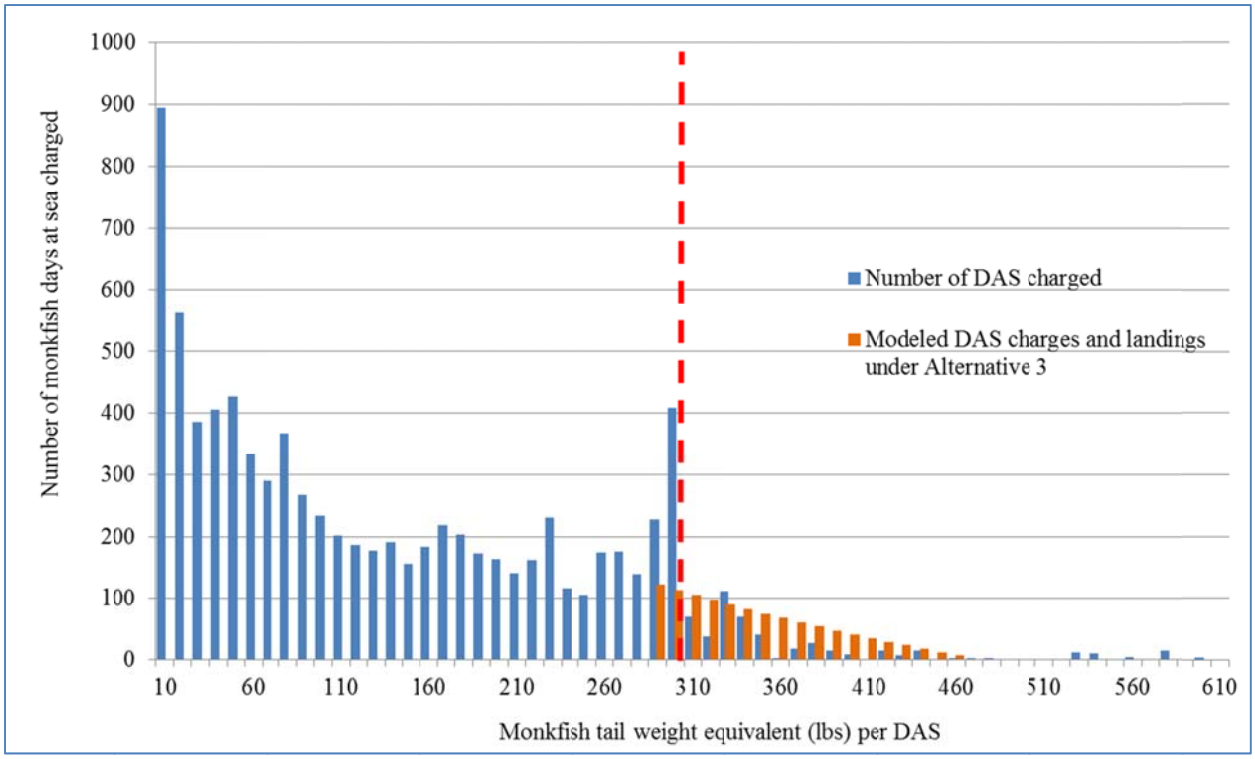


Figure 12. Monkfish Landings and Northeast Multispecies Days-at-sea Charged in the Northern Fishery Management Area by Category C and D Vessels During Fishing Year 2011 and Projected Monkfish Days-at-sea Charged Assuming Unlimited Monkfish Possession Allowance. (Note: Red dashed line represents the current trip limit of 300 lb tail weight per day-at-sea, and Alternative 3 corresponds to Alternative 2 in this analysis)

As noted above in the description analysis of the No Action Alternative, NFMA monkfish landings are expected to continue to increase by approximately 39 percent between FYs 2011 and 2013. Applying this 39 percent increase to Category C and D vessels fishing on a groundfish DAS in the NFMA results in projected monkfish landings in the NMA of 5,534,241 live weight lb (Table 28). When combined with the expected increase in monkfish landings by Category C and D vessels fishing under a monkfish DAS, as described under Alternative 1 above, total NFMA monkfish landings during FY 2013 under Alternative 2 are projected to reach about 5,400 mt (11,904,962 lb), or 92 percent of the FY 2013 NFMA TAL. Assuming that FY 2013 discards do not exceed the average monkfish discard rate calculated during the last monkfish stock assessment (11 percent), the 5,994 mt of projected NFMA monkfish landings and discards (5,400 mt landings + 594 mt discards) would not exceed the 6,567 mt NFMA monkfish ACT during FY 2013. Compared to the No Action Alternative, Alternative 2 is expected to increase NFMA monkfish landings by an estimated 246 mt (542,337 lb) in FY 2013. Compared to Alternative 1, Alternative 2 is expected to increase NFMA monkfish landings by 64 mt (141,096 lb).

Similar to Alternative 1, Alternative 2 would likely convert some monkfish discards into landings that would otherwise not occur under the No Action Alternative. However, Alternative 2 would more likely convert more monkfish discards into landings. This is because of the combined effect of eliminating monkfish possession limits for Category C and D vessels when

fishing on a groundfish DAS, or a monkfish DAS. Unlike Alternative 1, Category C and D vessels would not be required to burn monkfish DAS to land an unlimited amount of monkfish.

Similar to Alternative 1, any increase in monkfish landings as a result of Alternative 2 would also be constrained by measures implemented by the groundfish fishery and by the duration of the emergency action. Monkfish landings by sector vessels would be restricted by sector ACE for allocated groundfish stocks, while monkfish landings by non-sector vessels would be restricted by trimester TACs and applicable groundfish trip limits. As noted above, ACLs for several groundfish stocks will be substantially reduced during FY 2013 compared to FY 2012. Thus, groundfish fishing effort is expected to decrease during FY 2013. Accordingly, it is possible that one or more sector ACEs or non-sector trimester TACs will be caught before the end of FY 2013, resulting in the cessation of groundfish fishing operations for the rest of the particular trimester or FY. Further, both sector and non-sector vessels would be restricted by groundfish DAS allocations in FY 2013. While sector vessels are not subject to groundfish DAS requirements when targeting groundfish, they nonetheless represent a maximum amount of fishing effort that can be expended to target monkfish. Finally, emergency actions are only implemented for 180 days, but may be renewed for up to another 186 days. Therefore, the Secretary has discretion whether to continue the emergency action if monkfish landings are likely to exceed the NFMA monkfish TAL or ACT before the end of FY 2013. That determination would be made prior to renewing the emergency action in October 2013.

In contrast to Alternative 1, the projections associated with Alternative 2 are much more difficult to predict, and are associated with more risk. Monkfish landing projections for Alternative 2 presume that monkfish catch rates under a groundfish DAS and groundfish DAS usage will not change compared to previous FYs. The projections for both Alternative 1 and 2 also rely on the assumption that the projected 39 percent increase in monkfish landings from FY 2011 to FY 2013 will continue and be equally distributed among all components of the fishery that land monkfish from the NFMA. If, for example, the removal of monkfish possession limits fundamentally changes monkfish permit category C and D vessel behavior and triggers an unanticipated increase of new entrants to and activity in this fishery, these projections would likely represent underestimates of future landings.

Current monkfish landing limits for vessels under a groundfish DAS only are capped at 300 lb per groundfish DAS (see Table 3). Based on landings in recent years, there is evidence that this has limited the amount of monkfish landed under a groundfish DAS (see Figure 11). The projection of monkfish landings under Alternative 2 presumed that excess monkfish catch would be converted into landings. It did not, however, include the possibility that fishing operations may change from previous years to more directly target and, therefore, land more monkfish under a groundfish DAS. This potential is especially relevant for sector vessels, in that groundfish DAS are not constraining, and can be acquired at relatively low costs by leasing DAS from other sector vessels. Sector vessels alone were allocated 33,500 groundfish Category A DAS during FY 2012. Given the substantial reductions in FY 2013 ACLs for several groundfish stocks and the generally higher price paid per pound of monkfish compared to groundfish stocks, it is entirely conceivable that groundfish vessel owners/operators may decide that it is more profitable to use what minimal groundfish ACE is available (for sector vessels) or possession limits (for non-sector vessels) as bycatch when targeting monkfish. If this were to occur, then it is likely that the monkfish landing projections mentioned above would underestimate potential monkfish landings during FY 2013. Because the projections of monkfish landings under Alternative 2 suggest that nearly the entire FY 2013 monkfish TAL would be caught, any

additional unanticipated landings could possibly cause monkfish landings in FY 2013 to exceed the NFMA TAL and that overall catch, when discards are included, would exceed the FY 2013 NFMA ACT as well.

An alternative projection presuming that groundfish DAS usage under Alternative 2 would increase during FY 2013 suggests that monkfish landings could increase by as much as 10,900,444 lb under Alternative 2. This would result in overall NFMA monkfish landings of about 6,283 mt, or 429 mt (7 percent) in excess of the FY 2013 NFMA TAL if not further constrained. The risk that fishing behavior would change and excessive monkfish landings would occur is difficult to quantify, as operational decisions would be made by each vessel owner/operator, and the resulting landings would vary based on catch rates of both monkfish and groundfish stocks. As noted above for Alternative 1, because Alternative 2 would also allow the Regional Administrator to reinstate existing monkfish possession limits if available data indicate that the FY 2013 monkfish TAL in the NFMA would be exceeded before the end of FY 2013, even if Alternative 2 would increase groundfish DAS usage, the Regional Administrator would be able to take action to prevent the TAL from being exceeded during FY 2013.

Analysis of the FY 2013 NFMA monkfish ACT conducted in FW 7 suggests that the likelihood of the NFMA monkfish stock becoming overfished or subject to overfishing is nearly zero (NEFMC 2011b). Both scientific and management uncertainty are accounted for in the ACT established for the NFMA during FY 2013, indicating that maintaining catch at or below the ACT would minimize the risk of any negative biological impacts to monkfish in the NFMA. Moreover, similar to applicable regulations under the No Action Alternative, AMs will be triggered if the FY 2013 monkfish NFMA ACL is exceeded, further reducing the risk of overfishing and adverse impacts to the stock. Assuming this ACT is not exceeded under Alternative 2, biomass would likely increase, and F would decrease through FY 2016 (see Figures 7 and 8). This would result in positive impacts to the monkfish resource. Reactive AMs established for the groundfish would ensure that any additional groundfish catch resulting from increased targeting of monkfish under Alternative 2would not result in adverse biological impacts on groundfish stocks that are not already accounted for in existing measures and analyzed by previous actions.

5.1.2 Impacts on Protected Species

5.1.2.1 No Action

Under the No Action Alternative, there would be no change to the monkfish possession limits in the NFMA during FY 2013. The No Action possession limits are consistent with the measures implemented under FW 7 to achieve, but not exceed, the TAL and ACT specified in that action. Because the NFMA TAL and ACT would not change under the No Action Alternative, fishing opportunities or effort would not be affected. Thus, 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 (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. However, due to recent fishing patterns, the analysis concluded that FW 7 measures would not likely have an impact on protected species. Because there have been no recent observed takes associated with

the monkfish fishery in the NFMA based on 2006-2010 NEFOP data and the fact that the monkfish fishery in the NFMA predominantly uses trawl gear, the FW 7 analysis also concluded that such measures will have minimal impact to Atlantic sturgeon. As noted above, once a final BO is completed, NMFS will implement any measures that may be necessary to ensure that the monkfish and groundfish fisheries do no jeopardize the continued existence of Atlantic sturgeon.

5.1.2.2 Alternative 1

Alternative 1 would eliminate the monkfish possession limits for vessels issued a Federal limited access monkfish Category C or D permit fishing under a monkfish and groundfish DAS in the NFMA during FY 2013. However, none of the monkfish or groundfish catch limits or effort controls would be revised as part of this alternative. These measures would continue to serve as restraints on fishing effort in both fisheries, along with AMs that account for any overage of ACLs and prevent future fishing operations from compromising the conservation objectives of either fishery.

It is always difficult to predict future fishing behavior because of the numerous variables that affect a vessel operator's decision to fish in a particular way, including applicable regulations, market price, species availability, and opportunities in other fisheries, among others. As shown in Figure 5, existing trip limits do not appear to be limiting the monkfish fishery's ability to land monkfish. Most of the increased landings are likely to come from converting discards into landings, but fishing effort could increase by a small, and limited, amount. As a result, the increase in monkfish landings resulting from Alternative 1 is expected to be relatively small compared to the No Action Alternative. However, given the substantially reduced groundfish ACLs in FY 2013, any opportunity to increase vessel revenue such as that provided by Alternative 1 is likely to increase fishing effort in the monkfish fishery. As discussed in Section 4.5.1, fewer directed monkfish have been taken in recent years, even despite increased fishing opportunities in the monkfish fishery as a result of a 17 percent increase in target TAL starting in FY 2011. Therefore, it is unclear whether additional monkfish trips will be taken as a result of this alternative. Even if additional trips were taken, it is possible that the increase would still be lower than the number of trips taken during previous FYs.

Although the amount of fishing effort associated with Alternative 1 may be slightly greater than that associated with the No Action Alternative, the overall fishing effort in both the monkfish and groundfish fisheries, including effort targeting monkfish, will still be constrained by existing limits to regulate catch in those fisheries. For example, the monkfish fishery is still governed by an allocation of 40 monkfish DAS per year, a proactive ACT set below the ACL, and a pound-for-pound deduction in the subsequent year's ACL if the NFMA monkfish ACL is exceeded. For groundfish, if a stock with a low ACL such as GOM cod or haddock (785 – 1,550 mt and 274 mt, respectively), or GB yellowtail flounder (215 mt) is exceeded, regulations would be triggered that require sectors to cease fishing operations in the respective stock area, or the Regional Administrator to implement restrictive in-season trip limits or close a particular stock area for the remainder of a trimester (4-month period) for non-sector vessels. One final control mechanism is the duration of the emergency action. Emergency actions are implemented for a period of 180 days, and can be renewed for up to an additional 186 days. Accordingly, if monkfish catch has, or is likely to, exceed the FY 2013 NFMA monkfish ACT, the Secretary may elect not to renew the emergency action for the remainder of FY 2013. Therefore, it is

highly unlikely that the amount of fishing effort overall will be greater than the fishing effort in the combined fisheries during recent years.

NMFS has implemented specific regulatory actions to reduce injuries and mortalities to marine mammals from gear interactions. NMFS implemented the Harbor Porpoise Take Reduction Plan (HPTRP) in 1998, and the Atlantic Large Whale Take Reduction Plan (ALWTRP) in 1999 that positively affect large whales (North Atlantic right, humpback, and fin) and harbor porpoises in waters off the U.S. East Coast by reducing mortality due to incidental entanglement in fishing gear. This action does not modify provisions of either the HPTRP or the ALWTRP. Because such measures apply predominantly to gillnet gear, it is not expected that this action would have an adverse impact on species protected by those plans based on recent fishing patterns indicating that the directed monkfish fishery in the NFMA is primarily conducted by trawl vessels (see Table 17). However, if recent fishing patterns change as a result of this action and result in increased use of gillnet gear to target monkfish, greater impacts to protected resources may occur that are beyond the anticipated scope of the HPTRP and ALWTRP. Considering the anticipated duration of this action, any impacts would be temporary, and limited to one year.

As noted in Section 4.4, one of the primary factors affecting Atlantic sturgeon cited in NMFS' proposed listing for the five DPSs of Atlantic sturgeon is bycatch. Previous analyses concluded that to remain stable or grow, populations of Atlantic sturgeon can sustain only very low anthropogenic sources of mortality (Kahnle et al. 2007). Therefore, because the proposed listing was finalized in February 2012, reductions in bycatch mortality will likely be required in order to recover Atlantic sturgeon. Based on this final listing determination, a formal Section 7 ESA consultation will be completed that includes a biological opinion (BO) and measures necessary to reduce Atlantic sturgeon bycatch in the monkfish fishery. To date, a final BO for Atlantic sturgeon has not completed, but is expected in early 2013.

According to analysis conducted in FW 7, there are no recent observed takes of Atlantic sturgeon associated with the monkfish fishery in the NFMA based on 2006-2010 NEFOP data (see Section 4.1.4.3.5 of NEFMC 2011b). Therefore, Alternative 1 is not likely to have a negative impact on Atlantic sturgeon. NMFS is considering whether the NE monkfish and groundfish fisheries are likely to jeopardize the continued existence of any of the Atlantic sturgeon DPSs. While it is likely that there will be interactions between Atlantic sturgeon and gear used in the monkfish and groundfish fisheries, the amount of interactions attributable to these fisheries that will occur between now and the time a final BO will be published is not likely to cause an appreciable reduction in survival and recovery of any of the five DPSs. This is documented by a Section 7(a)(2) determination under the ESA in an August 28, 2012, memo to the record in which the Northeast Regional Administrator concluded that continuing both of these fisheries would not likely jeopardize the continued existence of whale, sea turtles, or any Atlantic sturgeon DPS. Once the BO is completed, NMFS will implement any appropriate measures outlined in the BO to mitigate harm to Atlantic sturgeon, including measures to reduce Atlantic sturgeon bycatch in the monkfish fishery, as necessary.

In general, the impacts on protected resources will track the trend in fishing effort. Any increase in fishing effort resulting from Alternative 1 may increase the interactions of monkfish and groundfish gear with protected resources compared to the No Action Alternative. Any increase in the use of gillnet gear specifically would have a disproportionate impact on the bycatch of protected species, particularly harbor porpoise. The scope of the expected increase in fishing effort with respect to the overall fishery is expected to be negligible, however, especially

considering the duration of this action (May – October 2013, with possible renewal through April 2014), recent trends in monkfish trip declarations and DAS usage, and the fact that other regulations restricting catch of both monkfish and groundfish will likely limit the overall increase in fishing effort resulting from this alternative. Moreover, because this action would limit the potential increase in monkfish catch to the ACT specified in FW 7 to the Monkfish FMP, anticipated impacts to protected resources from this alternative are expected to be consistent with those already analyzed in that action assuming that recent trends in gear usage continue (see Section 5.1.2.3 in NEFMC 2011b and Table 17). In the context of the monkfish and groundfish fisheries at large, and in light of the overall recent effort reductions in the fishery and the constrains in fishing effort in effect, the net effect of the increase in the monkfish possession limits for the FY 2013 will be neutral if not slightly negative impacts to interactions with protected species, but overall negligible compared to operations in these fisheries during recent years.

5.1.2.3 Alternative 2 (Preferred Alternative)

Alternative 2 would eliminate the monkfish possession limits for vessels issued a Federal limited access monkfish Category C or D permit fishing under a groundfish DAS in the NFMA during FY 2013. None of the monkfish or groundfish catch limits or other effort controls would be revised as part of this alternative. These measures would continue to serve as restraints on fishing effort in both fisheries, along with AMs that account for any overage of ACLs and prevent future fishing operations from compromising the conservation objectives of either fishery.

The increase in monkfish landings resulting Alternative 2 is expected to be higher than both the No Action Alternative and Alternative 1. Similar to Alternative 1, most of the increased landings are likely to come from converting discards into landings. Under Alternative 2, fishing effort may increase more so than under either the No Action Alternative or Alternative 1. This is because groundfish DAS, particularly for sector vessels, are readily available and cheap to acquire. Although sector vessels are allocated groundfish DAS each year, they do not need to use them to fish for groundfish. That means that such DAS could be used simply to catch greater amounts of monkfish, thereby increasing effort compared to either the No Action Alternative or Alternative 1.

As with the other alternatives considered in this action, Alternative 2 would not substantially change the current operation of the monkfish or groundfish fisheries in the NFMA that would result in adverse impacts to protected resources. The directed monkfish fishery is prosecuted in the NFMA using predominantly trawl gear. Because trawl gear has fewer interactions with protected resources, it is not expected that Alternative 2 would result in more than negligible impacts to protected resources. Moreover, because this action would limit the potential increase in monkfish catch to the ACT specified in FW 7 to the Monkfish FMP, anticipated impacts to protected resources from this alternative are expected to be consistent with those already analyzed in that action (see Section 5.1.2.3 in NEFMC 2011b) and summarized above in the discussion of impacts to protected species from the No Action Alternative. Finally, Alternative 2 would not modify provisions of either the HPTRP or the ALWTRP. Because such measures apply predominantly to gillnet gear, it is not expected that this action would have an adverse impact on species protected by those plans based on recent fishing patterns indicating

that the directed monkfish fishery in the NFMA is primarily conducted by trawl vessels (see Table 17). If recent trends in the operation of the fishery change as a result of Alternative 2, then greater impacts to protected resources may occur, particularly for harbor porpoise if gillnets are used more frequently to target monkfish in the NFMA.

While it is likely that there will be interactions between Atlantic sturgeon and gear used in the monkfish and groundfish fisheries, the amount of interactions attributable to these fisheries that will occur between now and the time a final BO will be published is not likely to cause an appreciable reduction in survival and recovery of any of the five DPSs. This is documented by a Section 7(a)(2) determination under the ESA in an August 28, 2012, memo to the record in which the Northeast Regional Administrator concluded that continuing both of these fisheries would not likely jeopardize the continued existence of whale, sea turtles, or any Atlantic sturgeon DPS. Once the BO is completed, NMFS will implement any appropriate measures outlined in the BO to mitigate harm to Atlantic sturgeon, including measures to reduce Atlantic sturgeon bycatch in the monkfish fishery, as necessary.

In general, the impacts on protected resources will track the trend in fishing effort. An increase in fishing effort compared to the No Action Alternative or Alternative 1 may increase the interactions of monkfish and groundfish gear with protected resources. Any increase in the use of gillnet gear, specifically, would have a disproportionate impact on the bycatch of protected species, particularly harbor porpoise. The scope of the potential increase with respect to the overall monkfish and groundfish fisheries is expected to be small, however, especially considering the duration of this action (May – October 2013, with possible renewal through April 2014), and the fact that other regulations restricting catch of both monkfish and groundfish will likely limit the overall increase in fishing effort resulting from this alternative. As noted above for those alternatives, monkfish DAS allocations, substantial reductions to FY 2013 groundfish ACLs, monkfish availability, and the ability for the Secretary to not renew the emergency action following an initial implementation period of 180 days all contribute to ensuring that overall fishing effort would not result in increased interactions with protected species. In the context of the monkfish and groundfish fisheries at large, and in light of the overall recent effort reductions in the fishery and the constrains in fishing effort in effect, the net effect of the increase in the monkfish possession limits for the FY 2013 will be neutral if not slightly negative impacts to interactions with protected species, but overall negligible compared to operations in these fisheries during recent years.

5.1.3 Habitat Impacts

5.1.3.1 No Action

Under the No Action Alternative, there would be no change to the monkfish possession limits in the NFMA during FY 2013. The No Action possession limits are consistent with the measures implemented under FW 7 to achieve, but not exceed, the TAL and ACT specified in that action. The NFMA 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 recent actions for the monkfish fishery in the NFMA, there would not have an adverse impact to EFH. In addition,

because vessels operating in the NFMA 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 impact the expected interactions of monkfish or groundfish gear with EFH.

5.1.3.2 Alternative 1

Alternative 1 would eliminate the monkfish possession limits for vessels issued a Federal limited access monkfish Category C or D permit fishing under a monkfish and groundfish DAS in the NFMA during FY 2013. However, none of the monkfish or groundfish catch limits or effort controls would be revised as part of this alternative. These measures would continue to serve as restraints on fishing effort in both fisheries, along with AMs that account for any overage of ACLs and prevent future fishing operations from compromising the conservation objectives of either fishery.

Alternative 1 is expected to increase monkfish landings by a relatively small amount compared to the No Action Alternative. Most of the increased landings are likely to come from converting discards into landings, but fishing effort could increase by a small, and limited, amount. In general, the impacts of Alternative 1 on EFH will track the trend in fishing effort. An increase in fishing effort compared to the No Action Alternative would slightly 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 negligible. This is because existing controls on fishing effort, including monkfish DAS allocations, the FY 2013 monkfish ACT, and ACLs and non-sector trimester TACs in the groundfish fishery will constrain overall fishing effort in both fisheries. Therefore, in the context of the monkfish and groundfish fisheries as a whole, the overall recent effort reductions in the groundfish fishery, and the constrains in fishing effort in effect in both the monkfish and groundfish fisheries, the net effect of the elimination of the monkfish possession limits in the NFMA during FY 2013 will likely be negligible and neutral overall.

5.1.3.3 Alternative 2 (Preferred Alternative)

Alternative 2 would eliminate the monkfish possession limits for vessels issued a Federal limited access monkfish Category C or D permit fishing under a groundfish DAS in the NFMA during FY 2013. However, none of the monkfish or groundfish catch limits or effort controls would be revised as part of this alternative. These measures would continue to serve as restraints on fishing effort in both fisheries, along with AMs that account for any overage of ACLs and prevent future fishing operations from compromising the conservation objectives of either fishery.

Impacts to EFH expected to Alternative 2 mirror those described above for Alternative 1with the exception of scale. It is likely that Alternative 2 will increase monkfish landings and fishing effort beyond levels expected from either the No Action Alternative or Alternative 1. This will result in greater potential impacts to EFH compared to those alternatives. However, as stated above for Alternative 1, 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, compared to

the No Action Alternative and Alternative 1, Alternative 2 would result in slightly greater impacts to EFH, although the overall impacts are expected to be negligible and neutral overall.

5.2 Economic Impact

The economic impacts of this emergency action are constrained by the purpose and need for this action. As specified in Section 2.0 above, this action is intended to increase monkfish landings in the NFMA as a means of providing additional fishing revenue for groundfish vessels to help mitigate adverse economic impacts of reductions in FY 2013 groundfish ACLs without causing overfishing for NFMA monkfish. Therefore, the 5,854 mt FY 2013 NFMA monkfish TAL specified in FW 7 (i.e., the ACT minus 11 percent assumed discards) sets the upper limit of the revenue possibilities that may be derived from increasing NFMA monkfish landings through this emergency action (see Section 5.3.1.3 of the NEFMC 2001b). Assuming that the average ex-vessel price recorded during the first part of FY 2012 (when landings are converted to live weight equivalents) continues into FY 2013, the maximum potential revenue that would be possible from any alternative considered in this action would be $15,745,150 (12,905,861lb TAL x $1.22/lb).

The realized economic impacts of this action will depend upon actual monkfish landings during FY 2013, along with the landings of any other species caught concurrently, including groundfish stocks. The amount of additional monkfish landed in FY 2013 will depend upon not only the catch rates of monkfish, but also the catch rates of groundfish stocks. As noted above in Section 5.1, it is likely that the substantially reduced groundfish ACLs in FY 2013 could cause groundfish vessels to fully harvest their groundfish allocations before the end of FY 2013, triggering reactive AMs that would cease groundfish fishing operations temporarily, or for the duration of FY 2013. This would prevent the monkfish and groundfish fishery from fully realizing the full economic benefits of eliminating monkfish possession limits for vessels fishing under a monkfish or groundfish DAS in the NFMA.

As noted in Section 4.5.1.3, the economic value of monkfish landings depends upon the market category landed due to price variation among the various monkfish market categories. 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 (see Table 20). Therefore, realized revenues during FY 2013 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.

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. Recent discussions with monkfish operators suggest that a recent drop in monkfish prices is a result of increased monkfish landings in Europe. Expected economic impacts associated with FY 2013 ACLs for groundfish stocks are detailed in the actions that specified those ACLs, including FW 50 (NEFMC 2013b), FW 47 (NEFMC 2012a), and FW 45 (NEFMC 2011c).

5.2.1 No Action

The No Action Alternative would maintain the existing monkfish possession limits in place, as implemented by FW 7 (see Table 3). As noted above in Table 27, the No Action Alternative is expected to result in 5,154 mt (11,362,766 lb) of monkfish landings from the NFMA during FY 2013. Assuming that the average monkfish prices observed during FY 2012 continues into FY 2013 ($1.22 per pound when converted to live weight), this would result in monkfish revenues of $13,862,575 during FY 2013. This estimate is nearly $1.9 million lower than the maximum potential revenue that would be realized if the total FY 2013 NFMA monkfish TAL (12,905,861 lb) was landed during FY 2013 at an average ex-vessel price of $1.22 (see Table 29).

As noted above in the introduction to this section, the realized impacts of taking No Action are difficult to predict, but may be expected to differ between the various segments of the monkfish fishery. Overall, it is unlikely that the No Action Alternative itself will 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 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 FY 2013 NFMA monkfish TAL, resulting in greater economic benefits to affected vessels.

5.2.2 Alternative 1

Alternative 1 would eliminate monkfish possession limits for vessels issued a Federal limited access monkfish Category C or D permit fishing in the NFMA under a monkfish and groundfish DAS during FY 2013. As noted above in Table 28, Alternative 1 is expected to result in 5,336 mt (11,764,639 lb) of monkfish landings from the NFMA during FY 2013, or 91 percent of the FY 2013 NFMA monkfish TAL. This represents an increase of approximately 401,873 lb of monkfish landings compared to the No Action Alternative (3.5 percent), and an increase of 3,609,639 lb (44 percent) compared to NFMA monkfish landings during FY 2011. Assuming that the average monkfish prices observed during FY 2012 continues into FY 2013 ($1.22 per pound when converted to live weight), this would result in monkfish revenues of approximately $14.3 million during FY 2013. This estimate is nearly $1.4 million lower than the maximum potential revenue that would be realized if the total FY 2013 NFMA monkfish TAL was landed during FY 2013 at an average ex-vessel price of $1.22. Compared to the No Action Alternative, Alternative 1 would result in approximately $490,285 more in revenue associated with increased monkfish landings alone (see Table 29).

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 during FY 2013 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.

As noted above for the economic impacts of the No Action Alternative, benefits resulting from Alternative 1 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 FY 2013 NFMA monkfish TAL and ACT, resulting in greater economic benefits to affected vessels.

5.2.3 Alternative 2 (Preferred Alternative)

Alternative 2 would eliminate monkfish possession limits for vessels issued a Federal limited access monkfish Category C or D permit fishing in the NFMA under a groundfish DAS during FY 2013. As noted above in Table 28, Alternative 2 is expected to result in 5,400 mt (11,904,502 lb) of monkfish landings from the NFMA during FY 2013, or 92 percent of the FY 2013 NFMA monkfish TAL. This represents increased monkfish landings of 541,736 lb (nearly 5 percent) compared to the No Action Alternative, and 139,863 lb (1 percent) compared to Alternative 1. Compared to NFMA monkfish landings during FY 2011, expected landings under Alternative 2 represent an increase of 3,749,502 lb (46 percent). Assuming that the average monkfish prices observed during FY 2012 continues into FY 2013 ($1.22 per pound when converted to live weight), this would result in monkfish revenues of $14.5 million during FY 2013. This estimate is approximately $1.2 million lower than the maximum potential revenue that would be realized if the total FY 2013 NFMA monkfish TAL was landed during FY 2013 at an average ex-vessel price of $1.22. Compared to the No Action Alternative, Alternative 2 would result in $660,918 more in revenue associated with increased monkfish landings alone, and $170,633 more revenue than Alternative 1 (see Table 29).

Table 29. Comparison of Expected Revenue from Projected Fishing Year 2013 Monkfish Landings Under Each Alternative Considered.

Alternatives Considered	Revenue	Expected Monkfish Landings in FY 2013 (lb)
Full TAL Landed	$15,745,150	12,905,861
No Action	$13,862,575	11,362,766
Alternative 1	$14,352,860	11,764,639
Alternative 2	$14,523,492	11,904,502

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 during FY 2013 compared to the No Action Alternative and Alternative 1. The composition of such additional catch and associated ex-vessel price would dictate the degree of additional fishing revenue. Thus, it is extremely 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 and Alternative 1.

Similar to Alternative 1, benefits resulting from Alternative 2 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 FY 2013 NFMA monkfish TAL and ACT, resulting in greater economic benefits to affected vessels.

5.3 Social Impacts

This emergency action would only affect ports of vessels that operate in the NFMA. Amendment 5 evaluated FY 2008 data to determine the ports in which more than 50 percent of their vessels fished only in the NFMA. These ports were identified as Port Clyde, ME; Provincetown, MA; Scituate, MA; Seabrook, NH; Rye, NH; Portland, ME and Gloucester, MA. Gloucester had the most vessels that fished only in the NFMA, with 63 percent of monkfish vessels fished in the NFMA only. Other ports had fewer vessels fishing exclusively in the NFMA, but such vessels represented a higher proportion of vessels within those ports (NEFMC 2011a). Ports in which at least 50 percent of vessels fished in both management areas include: New Bedford, MA; Boston, MA; Chatham, MA; Stonington, CT; Portsmouth, NH; Cape May, NJ; Point Judith, RI; and Newport, RI. All of these ports would be affected by this action.

5.3.1 No Action

The No Action Alternative would have a neutral to slightly negative social impact. The No Action Alternative represents measures that have been in place since October 2011. Existing trip limits, DAS allocations, and TAL/ACT in the NFMA do not appear to be limiting a vast majority of the directed monkfish fishery. Vessels and associated communities are accustomed to these measures, and would not necessarily be affected if this alternative is adopted. However, because the NEFMC specifically requested an emergency action be taken in the NFMA monkfish fishery to increase monkfish landings and mitigate the adverse economic impact of reduced groundfish ACLs in FY 2013, the No Action Alternative could be perceived as foregone fishing opportunity and associated potential economic benefits. Therefore, compared to both Alternative 1 and Alternative 2, the No Action Alternative would have greater adverse social impacts.

5.3.2 Alternative 1 and Alternative 2 (Preferred Alternative)

As noted above, Alternatives 1 and 2 are both expected to increase NFMA monkfish landings and, potentially, fishing effort in the directed monkfish fishery during FY 2013. This would increase fishing opportunities and associated revenue in both the monkfish and groundfish fisheries, thereby providing at least temporary economic relieve 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. Eliminating monkfish possession limits would also reduce regulatory discards, allowing the combined monkfish and groundfish fisheries to more fully harvest the NFMA TAL and ACT specified for

FY 2013. This could enhance perceptions of NMFS, the NEFMC, and management legitimacy in general because a management action was implemented based upon a request from the fishing industry. Therefore, compared to the No Action Alternative, both Alternatives 1 and 2 would result in positive social impacts.

It should be noted that, despite the positive social impacts associated with either Alternatives 1 or 2, the substantial reductions in groundfish ACLs for FY 2013 that prompted this action are the largest contributors to impacts of a social nature in the groundfish and, incidentally, the monkfish fisheries during FY 2013. Social impacts associated with such reductions are addressed in the EA prepared for FW 50 (NEFMC 2013b).

6.0 Cumulative Impacts

6.1 Introduction

A cumulative effects assessment (CEA) is a required 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 emergency EA together with past, present, and reasonably foreseeable future actions that affect the groundfish 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.

6.2 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 (includes economic and social effects on the 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 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, 2014. This is the

end of FY 2013 and the period of approval for this action. Therefore, the cumulative effects will need to be reassessed as part of the NEPA action taken for FY 2014 and beyond.

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) of this document and more fully in Amendment 5 (NEFMC 2011a) and FW 47 (NEFMC 2012) for the monkfish and groundfish fisheries, respectively. However, the analyses of impacts presented in this EA focuses primarily on actions related to the harvest of monkfish. 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 sociological 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 sociological 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.

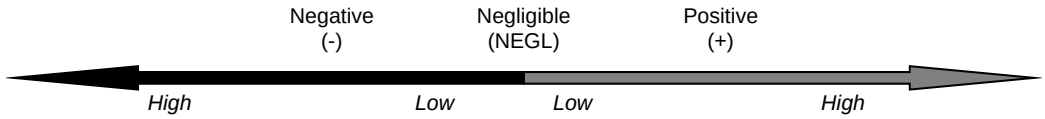
6.3 Evaluation Criteria

This EA evaluates the potential impacts of past, present, and reasonably foreseeable future actions using the criteria outlined in Table 30. 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; PLUS (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); PLUS (3) impacts from the preferred alternative and alternatives.

Table 30. 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		



6.4 Past, Present, and Reasonably Foreseeable Future Actions

A summary of past, present and reasonably foreseeable future actions is presented immediately below in Table 31. 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 32 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 2012 onward. A more thorough summary of the primary past, present and reasonably foreseeable future actions effecting this amendment can be found in

Appendix III of the FW 7 EA (NEFMC 2011b) for monkfish, and Appendix I of the FW 47 EA (NEFMC 2012a).

Most of the actions affecting this EA and considered in Table 32 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 in water temperature, 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 31. Summary of Effects on Valued Ecosystem Components from Past, Present, and Reasonably Foreseeable Fishery Management Plan 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 effect 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 effect 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; specfications 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 fishng effort or stock rebuilding	**Neutral** Measures did not have a direct impact on fishng 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 fishng 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 limimted 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
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,
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

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 under the plan, and requires additional markings on gear to improve information about entanglements ; future actions will seek to 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
Amendment 3 to the Skate FMP (2010)	This amendment addresses rebuilding of winter and thorny skates and reduce mortality on little and smooth skates; reduces trip limits, adopts ACLs and AMs	**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 leadto increased targeting of non-monkfish species	**Unknown** If actions are taken to reduce skate mortality, they could impact 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

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 Fishery Management Plan	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	**Indirect positive** Measures affecting spiny dogfish fishing in the groundfish fishery should also help minimize impacts to protected species; 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 of the Omnibus EFH Amendment would 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. 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
Offshore Wind Energy Facilities (w/in 5 years)	Construction of wind turbines to harness electrical power (Several facilities proposed from ME through NC, including off the coast of MA)	**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	**Potentially Direct Negative** Localized decreases in habitat quality possible in the immediate project area	**Mixed** End users benefit from a clean energy production but reduced habitat quality may impact fisheries and revenues

Table 32. Summary Effects of Past, Present and Reasonably Foreseeable Future Actions on the Valued Ecosystem Components.

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	**Positive** Future actions are anticipated to continue rebuilding and strive to maintain sustainable stocks	**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

6.5 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 33 below illustrates the baseline conditions found as part of the FW 7 cumulative effects analysis. These conditions remain timely and relevant.

Table 33. Summary of Baseline Conditions for Each Valued Ecosystem Component

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

6.6 Summary of the Impacts from the Preferred Alternative

The preferred alternative (Alternative 2) would eliminate monkfish possession limits for vessels issued a Federal limited access monkfish Category C or D permit fishing under a monkfish and groundfish DAS in the NFMA during FY 2013. The expected level of catch would be restricted by the FY 2013 NFMA monkfish ACT 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 this catch level, so the risks of negative biological impacts have been minimized. Allowing NFMA monkfish landings to exceed the NFMA monkfish ACT such as by eliminating the monkfish possession limits for monkfish Category C or D vessels fishing only on a groundfish DAS 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 alternative with respect to the overall fishery is expected to be negligible. Similarly, an increase in fishing effort from the preferred alternative 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, by eliminating monkfish possession limits for the directed monkfish fishery when fishing under a groundfish DAS in the NFMA is expected to increase fishing revenue by approximately $742,000 over the course of this action, assuming recent average prices continue. If this action enables the fishery

to fully harvest the monkfish NFMA TAL, fishing revenues may be increased by a total of nearly $1.9 million compared to existing measures (i.e., the No Action Alternative).

6.7 Summary of the Cumulative Effects

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 NFMA and SFMA such that neither stock is subject to overfishing or 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 alternative would allow greater harvest of NFMA monkfish, given management measures implemented in the fishery, NFMA monkfish landings would not exceed the previously established FY 2013 NFMA monkfish TAL. Thus, there would be negligible changes to previously anticipated levels of monkfish catch as a result of the preferred alternative. The preferred alternative, 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 NFMA. It is expected that all actions combined would still result in NFMA 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 NFMA, 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 alternative to increase monkfish landings and, potentially, fishing effort. While the increase 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 alternative 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 NFMA 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 SFMA monkfish gillnet fishery. The continuation of the monkfish fishery through the publication of a BO for Atlantic sturgeon (spring 2013) will not likely jeopardize the continued existence of that species (see Appendix II). Once a final BO is developed for Atlantic sturgeon, it is anticipated that any necessary measures to ensure the continued existence of the species will be implemented. 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 three offshore canyon areas have had a positive effect on protecting habitat, including EFH. The preferred alternative 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 not increased 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 alternative, groundfish ACLs and DAS, not monkfish DAS or TAL, would be the factors most likely to limit directed monkfish effort levels during FY 2013. The likelihood that the preferred alternative 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 the FY 2013 NFMA monkfish TAL and, when discards are included, ACT, effort would not increase beyond levels evaluated in the EA prepared for FW 7. The substantially-reduced FY 2013 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 elimination of the monkfish possession limits in the NFMA during FY 2013 will likely be negligible and neutral 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

The rebuilding of the monkfish resource over the past decade, along with the stability afforded by the multi-year specifications-setting process have had an overall positive effect on the affected human communities. This trend is likely to continue under the preferred alternative, which allows for increased fishing opportunities through the elimination of monkfish possession limits in the NFMA during FY 2013, while preventing overfishing by constraining landings to the monkfish NFMA ACT for FY 2013. This alternative would result in up to an approximately $742,000 increase in revenue over the course of FY 2013. While helpful, this increase would not likely offset the substantial revenue reductions of past actions in the NE Multispecies FMP. Therefore, while this action will likely provide some temporary economic benefits to the groundfish fishery, 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.

7.0 Applicable Law

7.1 Magnuson-Stevens Fishery Conservation and Management Act

7.1.1 Consistency with National Standards

Section 301 of the Magnuson-Stevens Act requires that regulations implementing any fishery management plan or amendment be consistent with the ten national standards listed below.

(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 FY 2013 NFMA monkfish ACT adopted by FW 7 to the Monkfish FMP was 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 alternative would help increase monkfish landings to increase the proportion of the NFMA monkfish ACT caught

during FY 2013 and, in doing so, more likely achieve optimum yield in the fishery. Eliminating monkfish possession limits only for monkfish Category C and D vessels fishing under a groundfish DAS in the NFMA under the preferred alternative helps ensure that expected catch does not exceed the ACT during FY 2013.

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

The proposed measures are based upon the FY 2011 – 2013 TAL and ACT adopted under FW 7 to the Monkfish FMP. These catch levels were based upon the most recent stock assessment (SAW 50, NEFSC 2010) and the recommendations of the SSC, which also reviewed the results of SAW 50 in making its NFMA monkfish catch recommendation.

(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 NFMA and SFMA, the FMP established a two-area management program for monkfish that covers the exploitable range of the species. As recalled in FW 7, the NEFMC and MAFMC considered a single-stock approach, but rejected it based, in part, on equivocal scientific information from SARC 34 (NEFSC 2002b) that concluded information was insufficient to make a determination whether to manage monkfish as one or two monkfish stocks. The latest assessment, SAW 50 (NEFSC 2010), did not change the findings of the previous assessment, and the NEFMC and MAFMC did not change this two-area approach due to the equivocal 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 a manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges.

The preferred alternative does 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 alternative does not discriminate between permit holders, they do have different impacts on different participants. The preferred alternative would eliminate monkfish possession limits for both sectors and non-sector vessels fishing under a groundfish DAS in the NFMA during FY 2013. Thus, as specified in the purpose and need for this action (see Section 2.0), this was specifically designed to help mitigate the adverse economic impacts of substantial reductions to ACLs of several groundfish stocks during FY 2013 without compromising conservation objectives of the Monkfish FMP. Eliminating monkfish possession limits for other monkfish vessels, including those issued a Federal incidental catch monkfish permit, a Federal limited access monkfish Category A or B permit, or to monkfish Category C or D permits fishing

only on a groundfish DAS would likely have resulted in monkfish landings exceeding the FY 2013 monkfish NFMA ACT that would be inconsistent with the purpose and need for this action.

(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 alternative would not have economic allocation as its sole purpose, and it does not distribute fishery resources among fishermen on the basis of economic factors alone. Substantial reductions in FY 2013 ACLs for several groundfish stocks represent real social and economic impacts to the groundfish fishery and associated communities. The preferred alternative would help mitigate those impacts to allow optimize yield and maximize economic benefits to sectors within the monkfish fishery, without leading to overfishing monkfish in the NFMA, consistent with objectives 1 and 2 of the Monkfish FMP. 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. Although not every fishery participant may benefit from the preferred alternative, particularly those issued a Federal limited access monkfish Category A or C permit, such vessels do not often operate within the NFMA due to limited fishing opportunities required to minimize the impact on groundfish stocks. That is, to fish in the GOM or on GB (i.e., within the NFMA), a vessel must either fish under a groundfish DAS in the NFMA or in an exempted fishery. The only exempted monkfish fishery that exists is the GOM/GB Dogfish and Monkfish Gillnet Fishery Exemption. As noted in Section 4.5.1, a vast majority of monkfish landed from the NFMA are caught with trawl gear. Thus, NFMA monkfish landings by Category A and B monkfish vessels fishing for monkfish with gillnet gear in the only exempted fishery in the NFMA represent a small percentage of yearly monkfish landings. Accordingly, the preferred alternative would not change the economic structure of the industry or the economic conditions under which the fishery operates. Finally, this action does not allocate any fishery resources, and does not have economic allocation as its sole purpose.

(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 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 alternative. The primary effort controls in the monkfish fishery – DAS and trip limits – allow each vessel operator some flexibility to fish when and how it best suits his or her business. This preferred alternative would eliminate the monkfish possession limits for certain vessels to 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 catch limits implemented by this action would provide additional fishing opportunity and revenue for vessels fishing under a monkfish and groundfish DAS in the NFMA. The measures do not duplicate other regulatory efforts, but have been proposed in close coordination with the management of the groundfish fishery to achieve the management objectives of both FMPs.

(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 in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse 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 the NFMA without resulting in overfishing monkfish in the NFMA. 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 NFMA ACT established by FW 7 to the Monkfish FMP. At the individual level, landings and revenue will depend upon the vessel's fishing behavior and fishing history (if fishing in a sector). This action explicitly attempts to minimize impacts and provide for the sustained participation of communities associated with the groundfish fishery by providing additional fishing opportunities and potential revenue by allowing more monkfish to be landed from the NFMA during FY 2013.

(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 eliminating monkfish possession limits in the NFMA for certain vessels, this action would reduce incentives to discard monkfish, and may turn some discards, particularly regulatory discards for common pool vessels, into landings.

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

Under the current monkfish DAS and possession limit 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. Eliminating monkfish possession limits in the NFMA is expected to have a positive impact on the safety of the fishing operations of vessels fishing under a monkfish and groundfish DAS because such vessels would not have to potentially remain at sea to ensure that the number of monkfish DAS charged is sufficient to account for the amount of monkfish onboard the vessel.

7.1.2 Other Magnuson-Stevens Act Requirements

Section 303(a) of the MSA contains 14 required provisions for FMPs. These are discussed below. It should be emphasized that the requirement is imposed on the FMP. In some cases noted below, the MSA requirements are met by information in the Monkfish FMP, as amended. Any fishery management plan that is 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 this preferred alternative are designed to prevent overfishing and rebuild overfished stocks by vessels of the United States consistent with the National Standards. The preferred alternative would rely upon measures implemented by previous management actions, including the monkfish NFMA ACL and ACT adopted in FW 7, to ensure that overfishing is prevented for NFMA monkfish. Eliminating monkfish possession limits for certain vessels under this preferred alternative would increase monkfish landings and, potentially, fishing effort, but would not likely lead to landings exceeding the FY 2013 monkfish NFMA ACT or result in overfishing of this stock. There are no international agreements that are germane to the management of NFMA 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 FW 7 to the FMP. Section 4.0 of this document updates this information, including the number of vessels involved, the type of fishing ear used, and potential revenues from the fishery during FY 2013. 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 (SAW 50, NEFMC 2010) 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 generate the FY 2011 – 2013 monkfish NFMA ACT adopted in FW 7 to the Monkfish FMP. The impact of the NFMA ACT on stock conditions in the future is discussed in FW 7 and summarized in Section 4.2 of this document for the NFMA, and in Amendment 5 for the SFMA. OY is defined in Amendment 5 as the yield corresponding to the ACT (6,567 mt). Assuming this ACT is not exceeded, as projected in this preferred alternative, overfishing will not occur on NFMA monkfish and the stock will continue to not be overfished. Impacts resulting from substantial reductions in FY 2013 ACLs for several groundfish stocks and associated measures necessary to ensure overfished groundfish stocks continue to rebuild are discussed in FW 47 (NEFMC 2012a) and in FW 50 (NEFMC 2013b).

(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 optimum yield in the NFMA, catch rates are increasing each year. Projections discussed in Section 5.0 suggest that the preferred alternative would increase the likelihood that a greater proportion of the NFMA monkfish ACT will be caught during FY 2013. This suggests that there is sufficient capacity for United States' vessels to harvest the optimum yield from the monkfish resource. Thus, there is no amount of optimum yield 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, and charter fishing 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, 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 Vessel Trip Reports (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 4.5 of the EA prepared for FW 7 (NEFMC 2011b). 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;

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 4.1 contains the description of monkfish essential fish habitat, and Section 5.1.3 contains the analysis of impacts of the preferred alternative and other alternatives on essential fish habitat.

(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 usually conducted by the NEFSC every three years include a discussion of research needs in the fishery, along with an annual SAFE Report prepared by the NEFMC. Section 4.0 of the EA prepared for FW 7 (NEFMC 2011b) serves as the last 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 describe the likely effects, if any, of the conservation and management measures on-- (A) participants in the fisheries and fishing communities affected by the plan or amendment; and (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;

Economic and social impacts of this preferred alternative on fishing communities directly affected by this action and adjacent areas can be found in Sections 5.2 and 5.3 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, SAW 50, biological reference points are used to identify when a stock is overfished. The $B_{threshold}$ used to evaluate whether the NFMA monkfish stock is overfished was specified in FW 7, and is set at 26,465 mt. Based on SAW 50 (NEFMC 2010), monkfish is not overfished in the NFMA.

(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 on board vessels. Additionally, vessel monitoring system (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. Also, the emerging Study Fleet Program can provide another source of bycatch information for the different gear types and areas. The Study Fleet Program is designed to enhance fishery-dependent data necessary for management decisions through the development of electronic reporting technology.

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: Explain the methods and processes by which bycatch is currently monitored and assessed for Northeast Region fisheries; determine whether these methods and processes need to be modified and/or supplemented; establish standards of precision for bycatch estimation for all Northeast Region fisheries; and document the SBRM established for all fisheries managed through the FMPs of the Northeast 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.

Although there are NFMA monkfish possession limits (see Table 3) currently in place, possession limits do not appear to have been a limiting factor in determining catch of NFMA monkfish, particularly in the directed fishery, and has not resulted in excessive bycatch and discards of this stock (current monkfish discard rate in the NFMA is 11 percent based on SAW

50). The proposed elimination of monkfish possession limits for certain vessels proposed in this action would likely convert some monkfish bycatch into landings.

(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 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 4.5 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 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 National Standard 4 in the previous section, 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. Eliminating NFMA monkfish possession limits for both groundfish sector and non-sector vessels ensures that all affected vessels are provided an equal opportunity to benefit from increased access to monkfish landings from the preferred alternative without resulting in exceeding the FY 2013 NFMA monkfish ACT or overfishing this stock.

(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 Annual Catch Limits and AMs. The ACTs are a proactive form of AM. FW 7 revised the NFMA ACT as a result of newer scientific information (SAW 50), and the SSC's revision to the ACL for the NFMA.

7.1.3 Essential Fish Habitat 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 alternative is described in Section 3.0, and consists of eliminating monkfish possession limits for vessels issued a Federal limited access monkfish Category C or D permit that is fishing under a groundfish DAS in the NFMA to help mitigate the substantial economic and social impacts expected from substantially reduced FY 2013 ACLs for several groundfish stocks.

In general, the activity within the scope of this Action, fishing for monkfish within the NFMA, occurs off the New England 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 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 5.1.3.3 (habitat impacts of preferred alternative). 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 multispecies fishery on EFH beyond those established under the original FMP are not necessary.

<u>Conclusions</u>

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

7.2 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 Magnuson-Stevens Act 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.

7.2.1 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 need for this action is described in section 2.2;
- The alternatives that were considered are described in section 3.0 (No Action, Alternative 1, and Alternative 2);
- The environmental impacts of the preferred alternative are described in section 5.0;
- The agencies and persons consulted on this action are listed in section 8.0.

While not required for the preparation of an EA, this document includes the following additional sections that are based on requirements for an Environmental Impact Statement (EIS).

- An Executive Summary can be found in section 1.0.
- A table of contents can be found on page 5.
- 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 alternative are described in Section 6.0.
- A determination of significance is in Section 7.2.2
- A list of preparers is in Section 8.0.

7.2.2 Finding of No Significant Impact (FONSI)

National Oceanic and Atmospheric Administration 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 Council on Environmental Quality regulations at 40 C.F.R. '1508.27 state that the significance of an action should be analyzed both in terms of "context" and "intensity." Each criterion listed below is relevant 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 eliminating monkfish possession limits for vessels fishing in the NFMA under a groundfish DAS during FY 2013 would not result in monkfish catch exceeding the FY 2013 monkfish NFMA ACT. 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 reasonable expected to jeopardize the sustainability of any non-target species that may be affected by the action. The proposed measures will eliminate monkfish possession limits for certain vessels, and may increase fishing effort slightly during FY 2013. However, this action would not affect any other effort control in the monkfish fishery (DAS allocations, ACTs, AMs, etc.) or 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.

(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 alternative 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 5.1.3.3, the proposed measure in the context of the FMP as a whole, is expected to have a negligible to neutral impact on habitat since it may allow a slight increase in fishing effort that is still less than the baseline effort level established in the original FMP and subsequent actions.

(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, eliminating 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 slightly as part of the preferred alternative, the net effect on protected species is expected to be negligible (Section 5.1.2). With the exception of Atlantic sturgeon, the activities and fishing effort levels conducted under the preferred alternative 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' actions being proposed or taken to protect 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.

NMFS recently listed several DPSs of Atlantic sturgeon as endangered or threatened under the ESA, and a section 7 consultation has been reinitiated. While it is possible that there will be interactions between Atlantic sturgeon and gear used in the monkfish and groundfish fisheries, NMFS concluded in its August 28, 2012, Memorandum to the Record (see Appendix II) that allowing several commercial fisheries to operate during the reinitiation period, including monkfish, would not violate section 7(a)(2) or 7(d) of the ESA and is not likely to jeopardize the continued existence of any Atlantic sturgeon DPS. Once the section 7 consultation is completed, NMFS will implement any appropriate measures outlined in the BO to mitigate harm to Atlantic sturgeon, including measures to reduce Atlantic sturgeon bycatch in the monkfish fishery, as necessary.

(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 alternative is not expected to have a substantial impact on biodiversity and/or ecosystem function with the affected area. The use of the NFMA monkfish ACT will control catch of monkfish in the NFMA. 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 alternative. There are no significant natural or physical environmental effects resulting from the preferred alternative that may have an impact on communities or the human environment in the context of NEPA. The preferred alternative is designed to eliminate monkfish possession limits in the NFMA for vessels fishing under a groundfish DAS to help mitigate substantial economic and social impacts resulting from the substantially reduced FY 2013 groundfish ACLs for some stocks. As described in section 5.1.1.3, the preferred alternative would ensure that NFMA monkfish landings do not exceed the FY 2013 NFMA monkfish ACT set by FW 7 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 FW 7 and considered not significant. The action cannot be reasonably expected to have a substantial impact on habitat or protected species, as the level of fishing effort targeting NFMA monkfish is still limited by groundfish 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 5.2 and 5.3, respectively) and more specifically in the Executive Order 12866 review and the Regulatory Impact Review (Section 7.11).

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

Response: While there is some controversy over the stock assessments recommending substantially reduced groundfish ACLs in FY 2013, that controversy is unrelated to the effects of the quality of the human environment from this preferred alternative. There is no concern regarding the current status of the monkfish stock at this time, or the potential effects of this action on the monkfish fishery or associated fishing communities. The preferred alternative would likely benefit more affected vessels than the NEFMC's original request for emergency action. As noted above in Section 7.1.1, the preferred alternative differs from the NEFMC's original request in that it would apply to both sector and non-sector groundfish to ensure compliance with National Standard 4 of the MSA. Therefore, this difference is consistent with the purpose and need for this action and applicable law.

(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 possession limits for limited access monkfish vessels fishing under a groundfish DAS in the monkfish NFMA during FY 2013. Other types of commercial fishing already occur in this area, 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 alternative is 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 2013 were based on a relatively consistent increase in 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 alternative are reasonably expected to be reasonably accurate in predicting monkfish landings during FY 2013. Known risks include whether the reduced fishing opportunities caused by the substantially reduced FY 2013 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. Not only is a slight shift in operations into the monkfish fishery expected, it is intended as part of this preferred alternative. 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.

For all resources except Atlantic sturgeon, the analysis of the effects on the human environment of the proposed adjustment 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 preferred alternative is not related to other monkfish actions with individually insignificant, but cumulatively significant impacts. The preferred alternative is 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 alternative is 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 possession limits for limited access monkfish vessels fishing under a groundfish DAS in the monkfish NFMA during FY 2013. 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 Northeast 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: No, the preferred alternative 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 preferred alternative would eliminate monkfish possession limits in an effort to more fully harvest available monkfish and better achieve optimum yield for monkfish in the NFMA as a means to address an emergency situation in the groundfish fishery. 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: As specified in the responses to the first two criteria of this section, the preferred alternative 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 in the NFMA. 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 and the EA prepared for FW 7 to the Monkfish FMP, it is hereby determined that this emergency action to eliminate monkfish possession limits for vessels issued a Federal limited access monkfish Category C or D permit that are fishing under a groundfish DAS in the NFMA during FY 2013 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.

_____ _____

Northeast Regional Administrator, NOAA Date

7.3 Endangered Species Act (ESA)

While ESA Section 7 consultations are required when the preferred alternative may affect listed species, a conference is required only when the preferred alternative is likely to jeopardize the continued existence of a proposed species or destroy or adversely modify proposed critical habitat. Therefore, a conference would be required if it was determined that the monkfish fishery was likely to jeopardize one or more of the proposed five distinct population segments (DPS) of Atlantic sturgeon or one or more of the nine DPSs of loggerhead sea turtles.

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. A formal Section 7 consultation was completed in October 2010 which analyzed the effects of the monkfish fishery on listed species and designated critical habitat, including loggerhead sea turtles.

That October 2010 BO for the monkfish fishery concluded that the monkfish fishery may affect, but was not likely to jeopardize, loggerhead sea turtles. An incidental take statement and associated reasonable and prudent measures and terms and conditions were included with that BO. In reaching that conclusion, the BO considered the effect of the estimated take on nesting beach aggregations and ultimately to the global species as listed. The difference between the analysis contained in the October 2010 BO and that conducted for the proposed species would be that it was conducted at the level of the global species and it was conducted for a species listed as threatened whereas the proposal is for nine DPSs, two of which are proposed to be listed as threatened and seven to be listed as endangered. The Northwest Atlantic DPS is the one affected the most by the monkfish fishery and it is proposed to be listed as endangered. It is important to note that the effects analysis was conducted by examining the estimated number of takes against what is known about the biological status of loggerhead sea turtles and did not explicitly include any specific variable that would be affected by the listing status (e.g. threatened or endangered). Since the October 2010 BO considered effects at the nesting beach aggregation level first and then aggregated up to consider effects at the species level, an analysis considering effects at the DPS rather than species level and on an endangered rather than threatened species would not change the jeopardy conclusion of that BO. Therefore, NMFS concluded that a conference for the proposed loggerhead DPSs is not required.

Atlantic sturgeon are known to be captured in sink gillnet, drift gillnet, and otter trawl gear. Of these gear types, sink gillnet gear poses the greatest known risk of mortality for bycaught sturgeon. Sturgeon deaths were rarely reported in the otter trawl observer dataset. However, the level of mortality after release from the gear is unknown. Recent preliminary analysis estimates that between 2006 and 2010, a total of 15,587 lb of Atlantic sturgeon were captured and discarded in bottom otter trawl (7,740 lb) and sink gillnet (7,848 lb) gear. The analysis found that 7.1 percent (549.5 lb) of the weight of sturgeon discards in bottom otter trawl gear could be attributed to the large mesh gillnet fisheries if a correlation of FMP species landings (by weight) was used as a proxy for fishing effort; this equates to 3.5 percent of the weight of sturgeon discards in both gear types. A review of the monkfish and groundfish fisheries concluded that the continuation of these fisheries until such time as a final BO for Atlantic sturgeon could be completed (expected in the spring of 2013) would not jeopardize the continued existence of any DPS (see the August 28, 2012, Section 7(a)(2) determination in Appendix I). In the final BO, an additional evaluation will be included to describe any impacts of the monkfish and groundfish fisheries on Atlantic sturgeon, and define any measures needed to mitigate those impacts, if necessary. It is anticipated that any measures, terms and conditions included in an updated BO will further reduce impacts to the species through at least the duration of this preferred alternative.

7.4 Marine Mammal Protection Act (MMPA)

NMFS, Northeast 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 elimination of monkfish possession limits may increase fishing effort, and thus

could affect species inhabiting the multispecies 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 5.1.2 of this document.

7.5 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.

7.6 Administrative Procedure 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 emergency action to eliminate the monkfish possession limits for vessels fishing under both a groundfish and monkfish DAS in the NFMA during FY 2013, 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.

Because this rule relieves a restriction by eliminating the current monkfish possession restrictions for vessels fishing under both a monkfish and groundfish DAS in the NFMA, it is not subject to the 30-day delayed effectiveness provision of the APA pursuant to 5 U.S.C. 553(d)(1). Vessels issued a Federal limited access monkfish Category C or D permit fishing in the NFMA under a monkfish and groundfish DAS are currently subject to a monkfish possession limit of 1,250 lb or 600 lb tail weight per DAS fished, respectively (see Table 3). If monkfish catch exceeds these limits, a vessel must either discard monkfish, or retain legal-sized fish and remain at sea until sufficient time has elapsed to account for the amount of monkfish retained. This action would eliminate those possession limits to encourage greater monkfish landings and associated fishing revenue as a means to help alleviate the substantial economic and social

impacts expected from substantially reduced groundfish ACLs in FY 2013. Accordingly, implementing this action following a 30-day delayed effectiveness is contrary to the public interest because it would unnecessarily delay the public's ability to take advantage of unlimited monkfish possession limits and associated economic benefits of higher monkfish landings. A swift implementation of the preferred alternative would minimize the chances a negative economic impacts resulting from the reduced groundfish ACLs for some stocks during FY 2013.

7.7 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 section addresses 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 Endangered Species Act. 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 a request for emergency action from the NEFMC to help mitigate the adverse economic impacts associated with expected reductions in annual catch limits in the groundfish fishery during FY 2013. Both the EA and the proposed rule to implement emergency measures 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 emergency measures and associated analyses in the EA are based upon the latest monkfish stock assessment information from the peer-reviewed July 14, 2010, report of SAW 50 (NEFSC 2010). Although a new monkfish assessment is scheduled for 2013, that assessment will not be completed in time for the data to be used to support this emergency action. Therefore, information from SAW 50 represents the best information available. The proposed emergency measures also rely upon the monkfish ACT in the NFMA specified for FY 2013 as part of FW 7 to the FMP to determine the maximum amount of monkfish that may be caught from the NFMA during FY 2013. This ACT was NEFMC's SSC. The impacts of this ACT are analyzed in the EA prepared for FW 7 in 2011. That 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 emergency action reflects updated evaluations on the status of these species and how fishing activities will affect the future abundance of these species. 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.

National Standard 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 emergency measures 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 National Standard 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 National Standard 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 Northeast 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 rules 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.

7.8 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 possession limits specified by 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 (all affected states are represented as voting members of at least one Regional Fishery Management Council) and their discussion of the emergency action request during Monkfish and Groundfish Committee meetings and the November 2012 NEFMC meeting. No comments were received from any state officials relative to any federalism implications that may be associated with this action.

7.9 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 FMP, 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.

7.10 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 collection of information requirements implemented by previous amendments to the Monkfish FMP that are subject to the PRA.

7.11 Regulatory Impact Review

7.11.1 Determination of Economic Significance for E.O. 12866

E.O. 12866 requires a review of proposed regulations to determine whether or not the expected effects would be significant, where a significant action is any regulatory action that may:

1. Have an annual effect on the economy of $100 million or more, or adversely affect in a material way the economy, a sector of the economy, productivity, 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; or
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.

Of these four criteria, the discussion to follow focuses only on the expected magnitude and duration of the economic impacts of the revised preferred alternative. This action is not likely to create a serious inconsistency or interfere with an action taken or planned by another agency or raise novel legal or policy issues. This action would also not alter any budgetary impact of entitlements or other grans. This action would modify existing measures to better achieve optimum yield in the monkfish fishery and help alleviate adverse economic impacts in the groundfish fishery consistent with applicable law.

The preferred alternative would eliminate the current monkfish possession limits for vessels issued a Federal limited access monkfish Category C or D permit fishing on a groundfish DAS in the NFMA during FY 2013 (see Table 5). The potential economic impacts of this change are discussed in more detail in Section 5.2.3. The following provides a summary of findings. Due to the increased amount of monkfish catch allowed, the preferred alternative would represent an increase of potential revenue of approximately $742,000 compared to current measures, based on a projection of monkfish landings during FY 2013 and using recent average monkfish price (when landings are converted to live weight) that was recorded during the first part of FY 2012. This also presumes that the emergency action would continue for the duration of FY 2013. Therefore, this is the maximum *likely* benefits that may accrue during FY 2013.

Monkfish landings from the NFMA during recent FYs have been under the applicable TALs (see Table 16), and have been decreasing. This suggests that potential revenues from the preferred alternative, as estimated in this EA, may be overestimated, unless the preferred alternative prompts more vessels to land additional monkfish. If, however, the substantial reductions in FY 2013 groundfish ACLs cause more vessels to target monkfish in the NFMA, then these potential revenues may be underestimated. The economic benefit of the preferred

alternative would likely be even greater than the value of additional monkfish landings alone, since vessels operating under this preferred alternative would also be fishing for groundfish simultaneously. It is, therefore, possible that additional monkfish fishing effort will lead to additional revenue of non-target species. However, any additional catch, particularly of groundfish stocks, would be restricted by regulations governing those fisheries. In the groundfish fishery, this means that catch limits (sector ACE or non-sector trimester TACs) may constrain the ability to obtain higher economic yield from additional catch of other non-target species. Reduced ACLs for a number of groundfish stocks may trigger reactive measures designed to prevent overfishing of groundfish stocks, including cease of fishing operations by sector vessels and stock area closures for non-sector vessels. Sectors may be able to acquire sufficient ACE of stocks often caught concurrently with monkfish through an in intra-company, intra-sector, or inter-sector transfer to offset the potential of sector closures due to the attainment of sector ACE for a particular stock. If so, such sector participants would benefit more from this action than other sectors or non-sector vessels. Because of these interactions, the magnitude of the economic benefit of the elimination of monkfish possession limits for certain vessels in the NFMA is difficult to predict.

The overall economic impact of the preferred alternative is expected to be positive. The primary economic benefit would be expected to enable higher levels of economic yield in the monkfish and groundfish fisheries as a whole. However, since this action would be limited to increasing monkfish landings, the economic impact is not expected to result in an annual effect on the economy as a whole that exceeds $100 million. Therefore, the preferred alternative would not be a significant action for purposes of E.O. 12866.

7.11.2 Regulatory Flexibility Act (RFA) Analysis

The purpose of the RFA is to reduce the impacts of burdensome regulations and recordkeeping requirements on small businesses. To achieve this goal, the RFA requires Federal agencies to describe and analyze the effects of proposed regulations, and possible alternatives, on small business entities.

Description of the Reasons Why Action by Agency is Being Considered

A complete description of the reasons why this action is being considered is summarized in the purpose and need for this action (see Section 2.0). This action proposes to eliminate the monkfish possession limits for vessels fishing under a groundfish DAS in the NFMA during FY 2013 to help mitigate the substantial economic and social impacts that are likely to result from substantially reduced ACLs for several groundfish stocks for FY 2013. The FY 2013 ACLs for several stocks will be reduced from between 52 – 82 percent compared to FY 2012. Because the monkfish fishery overlaps substantially with the groundfish fishery, particularly in the NFMA and because monkfish landings have been well below target TALs in recent years, increasing monkfish landings during FY 2013 could provide additional fishing opportunities and associated revenue for the groundfish fishery.

The Objectives and Legal Basis for the Revised Preferred Alternative

As noted in Section 2.1, the combined effect of a series of recent groundfish stock assessment updates, a late decision by the NEFMC to adopt substantially lower groundfish ACLs

for certain stocks for FY 2013, and the lack of time to develop additional measures to mitigate the economic and social impacts of reduced FY 2013 groundfish ACLs through the conventional management process present serious management problems in the groundfish fishery and other fisheries, such as the monkfish fishery, that can be, at least in part, addressed through emergency action. An emergency action under Section 305(c) of the MSA to eliminate monkfish possession limits for fishing under a groundfish DAS in the NFMA can provide necessary additional fishing revenue to mitigate expected substantial adverse economic and social impacts from reduced groundfish ACLs in FY 2013 without increasing the risk of overfishing monkfish in the NFMA. Such measures can be developed and implemented by NMFS more swiftly than a council action that is subject to procedural and other requirements not applicable to the Secretary. Under the normal regulatory process, it would take substantially longer for the new limits to be implemented, and could result in triggering restrictive, and economically harmful management actions that otherwise may have been avoided.

Estimate of the Number of Small Entities and the Impacts to Such Entities

The preferred alternative would affect any vessel issued a valid limited access monkfish Category C or D permit during FY 2013. All of the vessels affected by this action are considered small entities under the Small Business Administration size standards for small fishing businesses ($4.0 million in gross sales). During FY 2012, 2,212 vessels were issued a Federal monkfish permit, of which 637 were limited access permits (Table 12). Vessels directly affected by this action are those issued a limited access monkfish Category C or D permit that fish in the NFMA. There are 558 vessels issued such permits in FY 2012, but only a fraction of these vessels will likely actually fish in the NFMA during FY 2012. Table 34 shows the number of active vessels issued a monkfish permit that fished in each management area during FY 2008 (from NEFMC 2011a). Assuming that the numbers in each column of Table 34 are distinct vessels, 400 Category C or D vessels fished in the NFMA during FY 2008 out of a total of 690 vessels that were issued a limited access monkfish Category C or D permit during FY 2008 (58 percent). During FY 2011, a total of 189 monkfish Category C or D vessels fished exclusively in the NFMA, or in both the NFMA and SFMA during the same trip out of 586 permits issued (32 percent). Overall, participation in the monkfish fishery within the NFMA is not expected to increase, although, as noted above, this is a possibility given incentives to land additional monkfish and the limited availability of fishing opportunities in the groundfish fishery. Thus, assuming recent trends in fishing effort in the NFMA will continue (or potentially increase), a substantial number of small entities would likely be affected by this action using the NMFS definition of what constitutes a substantial number of small entities (i.e. 20 percent of those small entities affected by the regulation).

Table 34. Number of Active Monkfish Vessels Fishing by Permit Category and Fishing Area During Fishing Year 2008.

Permit Category	Only NFMA Trips	Only SFMA Trips	NFMA and SFMA Trips
A	0	13	2
B	0	33	4
C	17	59	198
D	56	55	129
E	104	266	134
H	0	7	0

Assuming that higher monkfish landings do not depress monkfish ex-vessel prices during FY 2013, the preferred alternative should result in increased fishing revenue. Compared to current regulations, the preferred alternative is expected to increase fishing revenue by approximately $742,000. This is based on projections indicating that the preferred alternative would result in approximately 608,000 lb of additional monkfish landings (see Table 29) and the average monkfish price paid during FY 2011 ($1.22/pound live weight equivalent), when monkfish landings are converted to live weight equivalents. If the preferred alternative would result in the entire FY 2013 NFMA monkfish TAL to be caught, the maximum economic benefits that may be realized would be approximately $1.9 million more than expected from current regulations. Additional revenue is expected from the landing of other species when targeting monkfish that cannot be easily quantified. Compared to the other alternatives considered, the preferred alternative would result in the greatest increase in fishing revenue during FY 2013.

This action would not impose additional costs on affected entities, including compliance costs, reporting/recordkeeping, or administrative costs. Any costs incurred would be associated with operating the vessel, and are not specific to this action in itself. As noted above, this action is likely to result in few, if any, additional fishing trips, and would instead likely convert some amount of monkfish regulatory discards to landings. Therefore, any additional costs would likely be relatively minor, if any, and offset by increased revenue associated with landing additional monkfish.

Two criteria are listed in NMFS guidance regarding determining whether an action would impose significant economic impacts on affected entities: Disproportionality and profitability. This emergency action would not place a substantial number of small entities at a significant competitive disadvantage compared to large entities, as all entities affected by this action are considered small entities. Eliminating monkfish possession limits for affected vessels would increase, rather than decrease profitability during FY 2013. Vessels would be able to capitalize on additional catch of monkfish that would have previously been discarded if exceeding the existing possession restrictions. Therefore, vessels would be able to gain efficiency by retaining such monkfish without incurring additional operational expenses.

This action would not impose additional costs on affected entities and expected annual gross revenues would increase rather than decrease as a result of this action. Because revenues would increase, this action would help small entities remain in business compared to other alternatives considered.

Other Regulatory Flexibility Requirements

The preferred alternative is not expected to be controversial, because it would increase fishing opportunities and revenue for many groundfish vessels, not just sector vessels. It would also likely increase the amount of monkfish landed during 2013 to more closely achieve optimum yield in the fishery, without resulting in overfishing the monkfish resource in the NFMA. While there is some controversy over the stock assessments recommending substantially reduced groundfish ACLs in FY 2013, that controversy is unrelated to the effects of the quality of the human environment from this preferred alternative. There is also the concern that the preferred alternative does not reflect the exact intention of the original request by the NEFMC for emergency action. Any associated controversy is minor, and concerns the precise magnitude of the effects of this action, not the direction. As noted above in Section 7.1.1, the

preferred alternative differs from the NEFMC's original request in that it would apply to both sector and non-sector groundfish to ensure compliance with National Standard 4 of the MSA. Therefore, this difference is consistent with the purpose and need for this action.

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10.0 Glossary

Adult stage: One of several marked phases or periods in the development and growth of many animals. In vertebrates, the life history stage where the animal is capable of reproducing, as opposed to the juvenile stage.

Adverse effect: Any impact that reduces quality and/or quantity of EFH. May include direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to, benthic organisms, prey species and their habitat, and other ecosystem components, if such modifications reduce the quality and or quantity of EFH. Adverse effects to EFH may result from actions occurring within EFH or outside of EFH and may include sites-specific of habitat wide impacts, including individual, cumulative, or synergistic consequences of actions.

Aggregation: A group of animals or plants occurring together in a particular location or region.

Anadromous species: Fish that spawn in fresh or estuarine waters and migrate to ocean waters

Amphipods: A small crustacean of the order Amphipoda, such as the beach flea, having a laterally compressed body with no carapace.

Anaerobic sediment: Sediment characterized by the absence of free oxygen.

Anemones: Any of numerous flowerlike marine coelenterates of the class Anthozoa, having a flexible cylindrical body and tentacles surrounding a central mouth.

Annual Catch Entitlement (ACE): Pounds of available catch that can be harvested by a particular sector. Based on the total PSC for the permits that join the sector.

Annual total mortality: Rate of death expressed as the fraction of a cohort dying over a period compared to the number alive at the beginning of the period (# total deaths during year / numbers alive at the beginning of the year). Optimists convert death rates into annual survival rate using the relationship
S=1-A.

Bay: An inlet of the sea or other body of water usually smaller than a gulf; a small body of water set off from the main body; e.g. Ipswich Bay in the Gulf of Maine.

Benthic community: *Benthic* means the bottom habitat of the ocean, and can mean anything as shallow as a salt marsh or the intertidal zone, to areas of the bottom that are several miles deep in the ocean. *Benthic community* refers to those organisms that live in and on the bottom. (*In* meaning they live within the substrate; e.g, within the sand or mud found on the bottom. See *Benthic infauna*, below)

Benthic infauna: See *Benthic community*, above. Those organisms that live *in* the bottom sediments (sand, mud, gravel, etc.) of the ocean. As opposed to *benthic epifauna*, that live *on* the surface of the bottom sediments.

Benthivore: Usually refers to fish that feed on benthic or bottom dwelling organisms.

Berm: A narrow ledge typically at the top or bottom of a slope; e.g. a berm paralleling the shoreline caused by wave action on a sloping beach; also an elongated mound or wall of earth.

Biogenic habitats: Ocean habitats whose physical structure is created or produced by the animals themselves; e.g, coral reefs.

Biomass: The total mass of living matter in a given unit area or the weight of a fish stock or portion thereof. Biomass can be listed for beginning of year (Jan-1), Mid-Year, or mean (average during the entire year). In addition, biomass can be listed by age group (numbers at age * average weight at age) or summarized by groupings (e.g., age 1^+, ages 4+ 5, etc). See also spawning stock biomass, exploitable biomass, and mean biomass.

B_{MSY}: The stock biomass that would produce MSY when fished at a fishing mortality rate equal to F_{MSY}. For most stocks, B_{MSY} is about ½ of the carrying capacity. The proposed overfishing definition control rules call for action when biomass is below ¼ or ½ B_{MSY}, depending on the species.

$B_{threshold}$: 1) A limit reference point for biomass that defines an unacceptably low biomass i.e., puts a stock at high risk (recruitment failure, depensation, collapse, reduced long term yields, etc). 2) A biomass threshold that the SFA requires for defining when a stock is overfished. A stock is overfished if its biomass is below $B_{threshold}$. A determination of overfished triggers the SFA requirement for a rebuilding plan to achieve B_{target} as soon as possible, usually not to exceed 10 years except certain requirements are met. In Amendment 9 control rules, $B_{threshold}$ is often defined as either $1/2B_{MSY}$ or $1/4\ B_{MSY}$. $B_{threshold}$ is also known as $B_{minimum}$.

B_{target}: A desirable biomass to maintain fishery stocks. This is usually synonymous with B_{MSY} or its proxy.

Biomass weighted F: A measure of fishing mortality that is defined as an average of fishing mortality at age weighted by biomass at age for a ranges of ages within the stock (e.g., ages 1^+ biomass weighted F is a weighted average of the mortality for ages 1 and older, age 3^+ biomass weighted is a weighted average for ages 3 and older). Biomass weighted F can also be calculated using catch in weight over mean biomass. See also fully-recruited F.

Biota: All the plant and animal life of a particular region.

Bivalve: A class of mollusks having a soft body with plate-like gills enclosed within two shells hinged together; e.g., clams, mussels.

Bottom roughness: The inequalities, ridges, or projections on the surface of the seabed that are caused by the presence of bedforms, sedimentary structures, sedimentary particles, excavations, attached and unattached organisms, or other objects; generally small scale features.

Bottom tending mobile gear: All fishing gear that operates on or near the ocean bottom that is actively worked in order to capture fish or other marine species. Some examples of bottom tending mobile gear are otter trawls and dredges.

Bottom tending static gear: All fishing gear that operates on or near the ocean bottom that I snot actively worked; instead, the effectiveness of this gear depends on species moving to the gear which is set in a particular manner by a vessel, and later retrieved. Some examples of bottom tending static gear are gillnets, traps, and pots.

Boulder reef: An elongated feature (a chain) of rocks (generally piled boulders) on the seabed.

Bryozoans: Phylum aquatic organisms, living for the most part in colonies of interconnected individuals. A few to many millions of these individuals may form one colony. Some bryozoans encrust rocky surfaces, shells, or algae others form lacy or fan-like colonies that in some regions may form an abundant component of limestones. Bryozoan colonies range from millimeters to meters in size, but the individuals that make up the colonies are rarely larger than a millimeter. Colonies may be mistaken for hydroids, corals or seaweed.

Burrow: A hole or excavation in the sea floor made by an animal (as a crab, lobster, fish, burrowing anemone) for shelter and habitation.

Bycatch: (v.) The capture of nontarget species in directed fisheries which occurs because fishing gear and methods are not selective enough to catch only target species; (n.) fish which are harvested in a fishery but are not sold or kept for personal use, including economic discards and regulatory discards but not fish released alive under a recreational catch and release fishery management program.

Capacity: The level of output a fishing fleet is able to produce given specified conditions and constraints. Maximum fishing capacity results when all fishing capital is applied over the maximum amount of available (or permitted) fishing time, assuming that all variable inputs are utilized efficiently.

Catch: The sum total of fish killed in a fishery in a given period. Catch is given in either weight or number of fish and may include landings, unreported landings, discards, and incidental deaths.

Closed Area Model: A General Algebraic Modeling System (GAMS) model used to evaluate the effectiveness of effort controls used in the Northeast Multispecies Fishery. Using catch data from vessels in the fishery, the model estimates changes in exploitation that may result from changes in DAS, closed areas, and possession limits. These changes in exploitation are then converted to changes in fishing mortality to evaluate proposed measures.

Coarse sediment: Sediment generally of the sand and gravel classes; not sediment composed primarily of mud; but the meaning depends on the context, e.g. within the mud class, silt is coarser than clay.

Commensalism: See *Mutualism*. An interactive association of two species where one benefits in some way, while the other species is in no way affected by the association.

Continental shelf waters: The waters overlying the continental shelf, which extends seaward from the shoreline and deepens gradually to the point where the sea floor begins a slightly steeper descent to the deep ocean floor; the depth of the shelf edge varies, but is approximately 200 meters in many regions.

Control rule: A pre-determined method for determining fishing mortality rates based on the relationship of current stock biomass to a biomass target. Amendment 9 overfishing control rules define a target biomass (B_{MSY} or proxy) as a management objective. The biomass threshold ($B_{threshold}$ or B_{min}) defines a minimum biomass below which a stock is considered overfished.

Cohort: See yearclass.

Crustaceans: Invertebrates characterized by a hard outer shell and jointed appendages and bodies. They usually live in water and breathe through gills. Higher forms of this class include lobsters, shrimp and crawfish; lower forms include barnacles.

Days-at-sea (DAS): The total days, including steaming time that a boat spends at sea to fish.

Demersal species: Most often refers to fish that live on or near the ocean bottom. They are often called benthic fish, groundfish, or bottom fish.

Diatoms: Small mobile plants (algæ) with silicified (silica, sand, quartz) skeletons. They are among the most abundant phytoplankton in cold waters, and an important part of the food chain.

Discards: Animals returned to sea after being caught; see Bycatch (n.)

Dissolved nutrients: Non-solid nutrients found in a liquid.

Echinoderms: A member of the Phylum Echinodermata. Marine animals usually characterized by a five-fold symmetry, and possessing an internal skeleton of calcite plates, and a complex water vascular system. Includes echinoids (sea urchins), crinoids (sea lillies) and asteroids (starfish).

Ecosystem-based management: A management approach that takes major ecosystem components and services—both structural and functional—into account, often with a multispecies or habitat perspective

Egg stage: One of several marked phases or periods in the development and growth of many animals. The life history stage of an animal that occurs after reproduction and refers to the developing embryo, its food store, and sometimes jelly or albumen, all surrounded by an outer shell or membrane. Occurs before the *larval* or *juvenile stage*.

Elasmobranch: Any of numerous fishes of the class Chondrichthyes characterized by a cartilaginous skeleton and placoid scales: sharks; rays; skates.

Embayment: A bay or an indentation in a coastline resembling a bay.

Emergent epifauna: See *Epifauna*. Animals living upon the bottom that extend a certain distance above the surface.

Epifauna: See *Benthic infauna*. *Epifauna* are animals that live on the surface of the substrate, and are often associated with surface structures such as rocks, shells, vegetation, or colonies of other animals.

Essential Fish Habitat (EFH): Those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. The EFH designation for most managed species in this region is based on a legal text definition and geographical area that are described in the Habitat Omnibus Amendment (1998).

Estuarine area: The area of an estuary and its margins; an area characterized by environments resulting from the mixing of river and sea water.

Estuary: A water passage where the tide meets a river current; especially an arm of the sea at the lower end of a river; characterized by an environment where the mixing of river and seawater causes marked variations in salinity and temperature in a relatively small area.

Eutrophication: A set of physical, chemical, and biological changes brought about when excessive nutrients are released into the water.

Euphotic zone: The zone in the water column where at least 1% of the incident light at the surface penetrates.

Exclusive Economic Zone (EEZ): A zone in which the inner boundary is a line coterminous with the seaward boundary of each of the coastal States and the outer boundary is line 200 miles away and parallel to the inner boundary

Exempt fisheries: Any fishery determined by the Regional Director to have less than 5 percent regulated species as a bycatch (by weight) of total catch according to 50 CFR 648.80(a)(7).

Exploitable biomass: The biomass of fish in the portion of the population that is vulnerable to fishing.

Exploitation pattern: Describes the fishing mortality at age as a proportion of fully recruited F (full vulnerability to the fishery). Ages that are fully vulnerable experience 100% of the fully recruited F and are termed fully recruited. Ages that are only partially vulnerable experience a fraction of the fully recruited F and are termed partially recruited. Ages that are not vulnerable to the fishery (including discards) experience no mortality and are considered pre-recruits. Also known as the partial recruitment pattern, partial recruitment vector or fishery selectivity.

Exploitation rate (u): The fraction of fish in the exploitable population killed during the year by fishing. This is an annual rate compared to F, which is an instantaneous rate. For example, if a population has 1,000,000 fish large enough to be caught and 550,000 are caught (landed and discarded) then the exploitation rate is 55%.

Fathom: A measure of length, containing six feet; the space to which a man can extend his arms; used chiefly in measuring cables, cordage, and the depth of navigable water by soundings.

Fishing mortality (F): A measurement of the rate of removal of fish from a population caused by fishing. This is usually expressed as an instantaneous rate (F) and is the rate at which fish are harvested at any given point in a year. Instantaneous fishing mortality rates can be either fully recruited or biomass weighted. Fishing mortality can also be expressed as an exploitation rate (see exploitation rate) or less commonly, as a conditional rate of fishing mortality (m, fraction of fish removed during the year if no other competing sources of mortality occurred. Lower case m should not be confused with upper case M, the instantaneous rate of natural mortality).

$F_{0.1}$: A conservative fishing mortality rate calculated as the F associated with 10 percent of the slope at origin of the yield-per-recruit curve.

F_{MAX}: A fishing mortality rate that maximizes yield per recruit. F_{MAX} is less conservative than $F_{0.1}$.

F_{MSY}: A fishing mortality rate that would produce MSY when the stock biomass is sufficient for producing MSY on a continuing basis.

$F_{threshold}$: 1) The maximum fishing mortality rate allowed on a stock and used to define overfishing for status determination. Amendment 9 frequently uses F_{MSY} or F_{MSY} proxy for $F_{threshold.}$ 2) The maximum fishing mortality rate allowed for a given biomass as defined by a control rule.

Fishing effort: The amount of time and fishing power used to harvest fish. Fishing power is a function of gear size, boat size and horsepower.

Framework adjustments: Adjustments within a range of measures previously specified in a fishery management plan (FMP). A change usually can be made more quickly and easily by a framework adjustment than through an amendment. For plans developed by the New England Council, the procedure requires at least two Council meetings including at least one public hearing and an evaluation of environmental impacts not already analyzed as part of the FMP.

Furrow: A trench in the earth made by a plow; something that resembles the track of a plow, as a marked narrow depression; a groove with raised edges.

Glacial moraine: A sedimentary feature deposited from glacial ice; characteristically composed of unsorted clay, sand, and gravel. Moraines typically are hummocky or ridge-shaped and are located along the sides and at the fronts of glaciers.

Glacial till: Unsorted sediment (clay, sand, and gravel mixtures) deposited from glacial ice.

Grain size: The size of individual sediment particles that form a sediment deposit; particles are separated into size classes (e.g. very fine sand, fine sand, medium sand, among others); the classes are combined into broader categories of mud, sand, and gravel; a sediment deposit can be composed of few to many different grain sizes.

Growth overfishing: Fishing at an exploitation rate or at an age at entry that reduces potential yields from a cohort but does not reduce reproductive output (see recruitment overfishing).

Halocline: The zone of the ocean in which salinity increases rapidly with depth.

Habitat complexity: Describes or measures a habitat in terms of the variability of its characteristics and its functions, which can be biological, geological, or physical in nature. Refers to how complex the physical structure of the habitat is. A bottom habitat with *structure-forming organisms*, along with other three dimensional objects such as boulders, is more complex than a flat, featureless, bottom.

Highly migratory species: Tuna species, marlin, oceanic sharks, sailfishes, and swordfish

Hydroids: Generally, animals of the Phylum Cnidaria, Class Hydrozoa; most hydroids are bush-like polyps growing on the bottom and feed on plankton, they reproduce asexually and sexually.

Immobile epifaunal species: See *epifauna*. Animals living on the surface of the bottom substrate that, for the most part, remain in one place.

Juvenile stage: One of several marked phases or periods in the development and growth of many animals. The life history stage of an animal that comes between the *egg* or *larval stage* and the *adult stage*; juveniles are considered immature in the sense that they are not yet capable of reproducing, yet they differ from the larval stage because they look like smaller versions of the adults.

Landings: The portion of the catch that is harvested for personal use or sold.

Land runoff: The part of precipitation, snowmelt, or irrigation water that reaches streams (and thence the sea) by flowing over the ground, or the portion of rain or snow that does not percolate into the ground and is discharged into streams instead.

Larvae stage: One of several marked phases or periods in the development and growth of many animals. The first stage of development after hatching from the *egg* for many fish and invertebrates. This life stage looks fundamentally different than the juvenile and adult stages, and is incapable of reproduction; it must undergo metamorphosis into the juvenile or adult shape or form.

Lethrinids: Fish of the genus *Lethrinus*, commonly called emperors or nor'west snapper, are found mainly in Australia's northern tropical waters. Distinctive features of Lethrinids include thick lips, robust canine teeth at the front of the jaws, molar-like teeth at the side of the jaws and cheeks without scales. Lethrinids are carnivorous bottom-feeding fish with large, strong jaws.

Limited-access permits: Permits issued to vessels that met certain qualification criteria by a specified date (the "control date").

Lutjanids: Fish of the genus of the Lutjanidae: snappers. Marine; rarely estuarine. Some species do enter freshwater for feeding. Tropical and subtropical: Atlantic, Indian and Pacific Oceans.

Macrobenthos: See *Benthic community* and *Benthic infauna*. Benthic organisms whose shortest dimension is greater than or equal to 0.5 mm.

Maturity ogive: A mathematical model used to describe the proportion mature at age for the entire population. A_{50} is the age where 50% of the fish are mature.

Mean biomass: The average number of fish within an age group alive during a year multiplied by average weight at age of that age group. The average number of fish during the year is a function of starting stock size and mortality rate occurring during the year. Mean biomass can be aggregated over several ages to describe mean biomass for the stock. For example the mean biomass summed for ages 1 and over is the 1^+ mean biomass; mean biomass summed across ages 3 and over is 3^+ mean biomass.

Megafaunal species: The component of the fauna of a region that comprises the larger animals, sometimes defined as those weighing more than 100 pounds.

Mesh selectivity ogive: A mathematical model used to describe the selectivity of a mesh size (proportion of fish at a specific length retained by mesh) for the entire population. L_{25} is the length where 25% of the fish encountered are retained by the mesh. L_{50} is the length where 50% of the fish encountered are retained by the mesh.

Meter: A measure of length, equal to 39.37 English inches, the standard of linear measure in the metric system of weights and measures. It was intended to be, and is very nearly, the ten millionth part of the distance from the equator to the North Pole, as ascertained by actual measurement of an arc of a meridian.

Metric ton: A unit of weight equal to a thousand kilograms (1kgs = 2.2 lbs.). A metric ton is equivalent to 2,205 lbs. A thousand metric tons is equivalent to 2.2 million lbs.

Microalgal: Small microscopic types of algae such as the green algae.

Microbial: Microbial means of or relating to microorganisms.

Minimum spawning stock threshold: The minimum spawning stock size (or biomass) below which there is a significantly lower chance that the stock will produce enough new fish to sustain itself over the long term.

Mobile organisms: Organisms that are not confined or attached to one area or place, that can move on their own, are capable of movement, or are moved (often passively) by the action of the physical environment (waves, currents, etc.).

Molluscs: Common term for animals of the phylum Mollusca. Includes groups such as the bivalves (mussels, oysters etc.), cephalopods (squid, octopus etc.) and gastropods (abalone, snails). Over 80,000 species in total with fossils back to the Cambrian period.

Mortality: See Annual total mortality (A), Exploitation rate (u), Fishing mortality (F), Natural mortality (M), and instantaneous total mortality (Z).

Motile: Capable of self-propelled movement. A term that is sometimes used to distinguish between certain types of organisms found in water.

Multispecies: The group of species managed under the Northeast Multispecies Fishery Management Plan. This group includes whiting, red hake and ocean pout plus the regulated species (Atlantic cod, haddock, pollock, yellowtail flounder, winter flounder, witch flounder, American plaice, windowpane flounder, white hake, redfish, Atlantic halibut, and Atlantic wolffish).

Mutualism: See *Commensalism*. A symbiotic interaction between two species in which both derive some benefit.

Natural disturbance: A change caused by natural processes; e.g. in the case of the seabed, changes can be caused by the removal or deposition of sediment by currents; such natural processes can be common or rare at a particular site.

Natural mortality: A measurement of the rate of death from all causes other than fishing such as predation, disease, starvation, and pollution. Commonly expressed as an instantaneous rate (M). The rate of natural mortality varies from species to species, but is assumed to be M=0.2 for the five critical stocks. The natural mortality rate can also be expressed as a conditional rate (termed n and not additive with competing sources of mortality such as fishing) or as annual expectation of natural death (termed v and additive with other annual expectations of death).

Nearshore area: The area extending outward an indefinite but usually short distance from shore; an area commonly affected by tides and tidal and storm currents, and shoreline processes.

Nematodes: A group of elongated, cylindrical worms belonging to the phylum Nematoidea, also called thread-worms or eel-worms. Some non-marine species attack roots or leaves of plants, others are parasites on animals or insects.

Nemerteans: Proboscis worms belonging to the phylum Nemertea, and are soft unsegmented marine worms that have a threadlike proboscis and the ability to stretch and contract.

Nemipterids: Fishes of the Family Nemipteridae, the threadfin breams or whiptail breams. Distribution: Tropical and sub-tropical Indo-West Pacific.

Northeast Shelf Ecosystem: The Northeast U.S. Shelf Ecosystem has been described as including the area from the Gulf of Maine 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.

Northwest Atlantic Analysis Area (NAAA): A spatial area developed for analysis purposes only. The boundaries of this the area are within the 500 fathom line to the east, the coastline to the west, the Hague line to the north, and the North Carolina/ South Carolina border to the south. The area is approximately 83,550 square nautical miles, and is used as the denominator in the EFH analysis to determine the percent of sediment, EFH, and biomass contained in an area, as compared to the total NAAA.

Nutrient budgets: An accounting of nutrient inputs to and production by a defined ecosystem (e.g., salt marsh, estuary) versus utilization within and export from the ecosystem.

Observer: Any person required or authorized to be carried on a vessel for conservation and management purposes by regulations or permits under this Act

Oligochaetes: See *Polychaetes*. Oligochaetes are worms in the phylum Annelida having bristles borne singly along the length of the body.

Open access: Describes a fishery or permit for which there is no qualification criteria to participate. Open-access permits may be issued with restrictions on fishing (for example, the type of gear that may be used or the amount of fish that may be caught).

Opportunistic species: Species that colonize disturbed or polluted sediments. These species are often small, grow rapidly, have short life spans, and produce many offspring.

Optimum Yield (OY): The amount of fish which A) will provide the greatest overall benefit to the nation, particularly with respect to food production and recreational opportunities, and taking into account the protection of marine ecosystems; B) is prescribed as such on the basis of the maximum sustainable yield from the fishery, as reduced by any relevant economic, social, or ecological factor; and C) in the case of an overfished fishery, provides for rebuilding to a level consistent with producing the maximum sustainable yield in such fishery

Organic matter: Material of, relating to, or derived from living organisms.

Overfished: A conditioned defined when stock biomass is below minimum biomass threshold and the probability of successful spawning production is low.

Overfishing: A level or rate of fishing mortality that jeopardizes the long-term capacity of a stock or stock complex to produce MSY on a continuing basis.

Peat bank: A bank feature composed of partially carbonized, decomposed vegetable tissue formed by partial decomposition of various plants in water; may occur along shorelines.

Pelagic gear: Mobile or static fishing gear that is not fixed, and is used within the water column, not on the ocean bottom. Some examples are mid-water trawls and pelagic longlines.

Phytoplankton: Microscopic marine plants (mostly algae and diatoms) which are responsible for most of the photosynthetic activity in the oceans.

Piscivore: A species feeding preferably on fish.

Planktivore: An animal that feeds on plankton.

Polychaetes: Polychaetes are segmented worms in the phylum Annelida. Polychaetes (poly-chaetae = many-setae) differ from other annelids in having many setae (small bristles held in tight bundles) on each segment.

Porosity: The amount of free space in a volume of a material; e.g. the space that is filled by water between sediment particles in a cubic centimeter of seabed sediment.

Possession-limit-only permit: An open-access permit (see above) that restricts the amount of multispecies a vessel may retain (currently 500 pounds of "regulated species").

Potential Sector Contribution (PSC): The percentage of the available catch a limited access permit is entitled to after joining a sector. Based on landings history as defined in Amendment 16. The sum of the PSC's in a sector is multiplied by the groundfish sub-ACL to get the ACE for the sector.

Pre-recruits: Fish in size or age groups that are not vulnerable to the fishery (including discards).

Prey availability: The availability or accessibility of prey (food) to a predator. Important for growth and survival.

Primary production: The synthesis of organic materials from inorganic substances by photosynthesis.

Recovery time: The period of time required for something (e.g. a habitat) to achieve its former state after being disturbed.

Recruitment: The amount of fish added to the fishery each year due to growth and/or migration into the fishing area. For example, the number of fish that grow to become vulnerable to fishing

gear in one year would be the recruitment to the fishery. "Recruitment" also refers to new year classes entering the population (prior to recruiting to the fishery).

Recruitment overfishing: Fishing at an exploitation rate that reduces the population biomass to a point where recruitment is substantially reduced.

Regulated groundfish species: Atlantic cod, haddock, pollock, yellowtail flounder, winter flounder, witch flounder, American plaice, windowpane flounder, white hake, redfish, Atlantic halibut, and Atlantic wolffish. These species are usually targeted with large-mesh net gear.

Relative exploitation: An index of exploitation derived by dividing landings by trawl survey biomass. This measure does not provide an absolute magnitude of exploitation but allows for general statements about trends in exploitation.

Retrospective pattern: A pattern of systematic over-estimation or underestimation of terminal year estimates of stock size, biomass or fishing mortality compared to that estimate for that same year when it occurs in pre-terminal years.

Riverine area: The area of a river and its banks.

Saurids: Fish of the family Scomberesocidae, the sauries or needlefishes. Distribution: tropical and temperate waters.

Scavenging species: An animal that consumes dead organic material.

Sea whips: A coral that forms long flexible structures with few or no branches and is common on Atlantic reefs.

Sea pens: An animal related to corals and sea anemones with a featherlike form.

Sediment: Material deposited by water, wind, or glaciers.

Sediment suspension: The process by which sediments are suspended in water as a result of disturbance.

Sedentary: See *Motile* and *Mobile organisms*. Not moving. Organisms that spend the majority of their lives in one place.

Sedimentary bedforms: Wave-like structures of sediment characterized by crests and troughs that are formed on the seabed or land surface by the erosion, transport, and deposition of particles by water and wind currents; e.g. ripples, dunes.

Sedimentary structures: Structures of sediment formed on the seabed or land surface by the erosion, transport, and deposition of particles by water and wind currents; e.g. ripples, dunes, buildups around boulders, among others.

Sediment types: Major combinations of sediment grain sizes that form a sediment deposit, e.g. mud, sand, gravel, sandy gravel, muddy sand, among others.

Spawning adult stage: See *adult stage*. Adults that are currently producing or depositing eggs.

Spawning stock biomass (SSB): The total weight of fish in a stock that sexually mature, i.e., are old enough to reproduce.

Species assemblage: Several species occurring together in a particular location or region

Species composition: A term relating the relative abundance of one species to another using a common measurement; the proportion (percentage) of various species in relation to the total on a given area.

Species diversity: The number of different species in an area and their relative abundance

Species richness: See *Species diversity*. A measurement or expression of the number of species present in an area; the more species present, the higher the degree of species richness.

Species with vulnerable EFH: If a species was determined to be "highly" or "moderately" vulnerable to bottom tending gears (otter trawls, scallop dredges, or clam dredges) then it was included in the list of species with vulnerable EFH. Currently there are 23 species and life stages that are considered to have vulnerable EFH for this analysis.

Status Determination: A determination of stock status relative to $B_{threshold}$ (defines overfished) and $F_{threshold}$ (defines overfishing). A determination of either overfished or overfishing triggers a SFA requirement for rebuilding plan (overfished), ending overfishing (overfishing) or both.

Stock: A grouping of fish usually based on genetic relationship, geographic distribution and movement patterns. A region may have more than one stock of a species (for example, Gulf of Maine cod and GB cod). A species, subspecies, geographical grouping, or other category of fish capable of management as a unit.

Stock assessment: Determining the number (abundance/biomass) and status (life-history characteristics, including age distribution, natural mortality rate, age at maturity, fecundity as a function of age) of individuals in a stock

Structure-forming organisms: Organisms, such as corals, colonial bryozoans, hydroids, sponges, mussel beds, oyster beds, and seagrass that by their presence create a three-dimensional physical structure on the bottom. See *biogenic habitats*.

Submerged aquatic vegetation: Rooted aquatic vegetation, such as seagrasses, that cannot withstand excessive drying and therefore live with their leaves at or below the water surface in shallow areas of estuaries where light can penetrate to the bottom sediments. SAV provides an important habitat for young fish and other aquatic organisms.

Surficial sediment: Sediment forming the sea floor or land surface; thickness of the surficial layer may vary.

Survival ratio (R/SSB): An index of the survivability from egg to age-of-recruitment. Declining ratios suggest that the survival rate from egg to age-of-recruitment is declining.

Taxa: The plural of taxon. Taxon is a named group or organisms of any rank, such as a particular species, family, or class.

Ten-minute- "squares" of latitude and longitude (TMS): Are a measure of geographic space. The actual size of a ten-minute-square varies depending on where it is on the surface of the earth, but in general each square is approximately 70-80 square nautical miles in this region. This is the spatial area that EFH designations, biomass data, and some of the effort data have been binned into for analysis purposes in various sections of this document.

Topography: The depiction of the shape and elevation of land and sea floor surfaces.

Total Allowable Catch (TAC): The amount (in metric tons) of a stock that is permitted to be caught during a fishing year. TACs can either be "hard" (fishing ceases when the TAC is caught) or a "target" (the TAC is merely used as an indicator to monitor effectiveness of management measures, but does not trigger a closure of the fishery).

Total mortality: The rate of mortality from all sources (fishing, natural, pollution) Total mortality can be expressed as an instantaneous rate (called Z and equal to F + M) or Annual rate (called A and calculated as the ratio of total deaths in a year divided by number alive at the beginning of the year)

Trophic guild: Trophic is defined as the feeding level within a system that an organism occupies; e.g., predator, herbivore. A guild is defined as a group of species that exploit the same class of environmental resources in a similar way. The trophic guild is a utilitarian concept covering both structure and organization that exists between the structural categories of trophic groups and species.

Turbidity: Relative water clarity; a measurement of the extent to which light passing through water is reduced due to suspended materials.

Vulnerability: In order to evaluate the potential adverse effects of fishing on EFH, the vulnerability of each species EFH was determined. This analysis defines vulnerability as the likelihood that the functional value of EFH would be adversely affected as a result of fishing with different gear types. A number of criteria were considered in the evaluation of the vulnerability of EFH for each life stage including factors like the function of habitat for shelter, food and/or reproduction.

Yield-per-recruit (YPR): The expected yield (weight) of individual fish calculated for a given fishing mortality rate and exploitation pattern and incorporating the growth characteristics and natural mortality.

Yearclass: Also called cohort. Fish that were spawned in the same year. By convention, the "birth date" is set to January 1st and a fish must experience a summer before turning 1. For example, winter flounder that were spawned in February-April 1997 are all part of the 1997 cohort (or year-class). They would be considered age 0 in 1997, age 1 in 1998, etc. A summer flounder spawned in October 1997 would have its birth date set to the following January 1 and would be considered age 0 in 1998, age 1 in 1999, etc.

Z: Instantaneous rate of total mortality. The components of Z are additive (i.e., Z = F+M)

Zooplankton: See *Phytoplankton*. Small, often microscopic animals that drift in currents. They feed on detritus, phytoplankton, and other zooplankton. They are preyed upon by fish, shellfish, whales, and other zooplankton.

11.0 Appendix

11.1 Appendix I – Request for Emergency Action

New England Fishery Management Council
50 WATER STREET | NEWBURYPORT, MASSACHUSETTS 01950 | PHONE 978 465 0492 | FAX 978 465 3116
C. M. "Rip" Cunningham, Jr., *Chairman* | Paul J. Howard, *Executive Director*

December 10, 2012

Mr. John Bullard
Regional Administrator
NOAA/NMFS
55 Great Republic Drive
Gloucester, MA 01930

Dear John:

I want to advise you of two motions passed at the November Council meeting.

The first motion addressed the U.S./Canada area quotas for FY 2013. The Council considered the recommendations of the Transboundary Management Guidance Committee (TMGC) before passing the following motion:

> *that the Council approve the following 2013 quotas for the U.S./Canada resource sharing understanding: (1) Eastern Georges Bank cod – 600 mt (U.S. share 96 mt, Canadian share 504 mt); (2) Eastern Georges Bank haddock – 10,400 mt (U.S. share 3,952 mt, Canadian share 6,448 mt); (3) Georges Bank yellowtail flounder – 1,150 mt (U.S. share 495 mt, Canadian share 656 mt)*

This motion passed on a roll call vote (9-8-0). This decision is consistent with the recommendations of the TMGC for Eastern Georges Bank cod and Eastern Georges Bank haddock, but not for Georges Bank yellowtail flounder. The motion is, however, consistent with the advice of the Council's Science and Statistical Committee (SSC). The SSC advised that an 1,150 mt Acceptable Biological Catch could serve as a "backstop" TAC for a bycatch fishery. These quotas will be included in Framework (FW) Adjustment 48 as preferred alternatives.

The second motion is a Council request for Emergency Action:

> *that the Council request Emergency Action to eliminate the monkfish trip limit in the Northern Fishery Management Area for limited access vessels fishing on a groundfish days-at-sea under sector management rules as one means of mitigating the reductions in groundfish annual catch limits pending for 2013*

This motion passed on a show of hands (15-0-1). As we all know, the Northeast Multispecies Fishery is facing reduced Annual Catch Limits in FY 2013 for several key stocks. The most restrictive quotas may be for the key stocks of Gulf of Maine cod and Georges Bank cod. These reductions are expected to result in large reductions in revenue on groundfish fishing trips. While the actual cod quotas are not yet known and as a result analyses are not complete, preliminary Plan Development Team work for FW 48 suggests that revenue declines could be on the order of 40-60 percent from FY 2012. Several of the alternatives in FW 48 are attempts to mitigate, in part, these reductions.

The expected revenue declines are large enough that we should not limit ourselves to changes in groundfish regulations in our attempts to help the fishery survive this crisis. The requested emergency modification to the monkfish trip limit could increase the revenues on groundfish trips and provide a small measure of relief. Since emergency action is limited to a six-month period unless extended, the change can be evaluated to make sure it does not threaten monkfish mortality targets before it is extended for the rest of the year. Our staff is available to assist in any issues that need to be addressed.

Thank you for considering this request. Please contact me if there are questions.

Sincerely,

Paul J. Howard
Executive Director

11.2 Appendix II – August 28, 2012, Memorandum Documenting Section 7 Consultation for Seven Fisheries in the Northeast

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
NORTHEAST REGION
55 Great Republic Drive
Gloucester, MA 01930-2276

AUG 28 2012

MEMORANDUM FOR: The Record

FROM: for John K. Bullard
Regional Administrator

SUBJECT: Reinitiating section 7 consultation on the continued operation of seven fisheries due to the listing of new species

NOAA Fisheries Service (NMFS) Northeast Regional Office oversees the implementation of Fishery Management Plans (FMPs) in the Northeast region, from Maine to North Carolina. We previously completed formal consultation pursuant to Section 7 of the Endangered Species Act (ESA) of 1973, as amended for the following FMPs: Northeast multispecies, monkfish, dogfish, skate, Atlantic mackerel/squid/butterfish, bluefish, and summer flounder/scup/black sea bass. These consultations considered the effects on ESA listed species of the continued operation of each of these fisheries as managed under their respective FMPs. We authorize these fisheries through their respective FMPs and their implementing regulations.

On February 6, 2012, NMFS issued two final rules (*77 FR 5880-5912*; *77 FR 5914-5982*) listing five Distinct Population Segments (DPS) of Atlantic sturgeon as threatened or endangered. Four DPSs (New York Bight, Chesapeake Bay, Carolina and South Atlantic) are listed as endangered and one DPS (Gulf of Maine) is listed as threatened. The effective date of the listing was April 6, 2012.

We have reinitiated consultation on the seven fisheries noted above. Since the original reinitiation of consultation, three of the ten fisheries then considered have been addressed separately. The Incidental Take Statement (ITS) for the American lobster FMP biological opinion was signed August 3, 2012. In a Memorandum dated April 23, 2012 regarding the ITSs for the red crab and tilefish FMPs, it was determined that reinitiation triggers had not been met, and reinitiation was not necessary.

Included in this reinitiation are all extensions to the seven FMPs listed above in the form of gear and/or fishery related scientific research conducted by NMFS or any individual or enterprise working with federal source funds (e.g. grants from another line office, internal grants such as provided through cooperative research, etc.) or permits (e.g. exempted fishing permits, special management program gear permits, etc.), including research set asides. This memorandum documents our determinations that allowing these fisheries and associated research to continue during the reinitiation period will not violate ESA sections 7(a)(2) and

7(d). Preliminary analysis indicates that multiple DPSs of Atlantic sturgeon may be affected by the continued operation of these fisheries. During the reinitiation period, we will also review information on listed whales and sea turtles that has become available since consultations on these FMPs were last completed, and we will incorporate new information and analysis into the biological opinions as appropriate. The ESA and the Section 7 regulations (50 CFR 402.14) require that formal consultation be concluded within 90 calendar days of initiation, and that a biological opinion be completed within 45 days after the conclusion of formal consultation. Since initiating consultation and completing analysis under ESA sections 7(a)(2) and 7(d), new information has recently become available that will allow NMFS to gain a more accurate assessment of Atlantic sturgeon populations. Because effective utilization of this information is contingent upon completion of a scientific review process that will take at least 6 months to complete, the reinitiated consultation needs to be extended until the revised and scientifically validated information is available for use in the consultation.

Reinitiation of Consultation

As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of taking specified in the ITS is exceeded; (2) new information reveals effects of the action that may not have been previously considered; (3) the identified action is subsequently modified in a manner that causes an effect to listed species; or (4) a new species is listed or critical habitat designated that may be affected by the identified action. With regard to its authorization of these seven fisheries, NMFS retains discretionary involvement or control over the action for the benefit of listed species. We have determined that formal section 7 consultation on these seven fisheries must be reinitiated due to the new listing of Atlantic sturgeon DPSs.

Section 7(a)(2) Analysis for the Reinitiation Period

The Section 7(a)(2) analysis below for whales, sea turtles and Atlantic sturgeon is only applicable to the proposed action during the reinitiation period and does not address the agency's obligation to insure that the action over a longer term is not likely to jeopardize listed species. A jeopardy determination commensurate with the temporal scope of the action is appropriately made only in a biological opinion.

In the consultations being reinitiated, NMFS concluded that the actions considered would not jeopardize the continued existence of any species of whale or sea turtle. Allowing these fisheries to continue during the reinitiation period will not increase the likelihood of interactions with these species above the amount that would otherwise occur if consultation had not been reinitiated, because allowing these fisheries to continue does not entail making any changes to any fishery during the reinitiation period that would cause an increase in interactions with whales or sea turtles. Because of this, the continuation of these fisheries during the reinitiation period would not be likely to jeopardize the continued existence of any of these whale or sea turtle species.

We have determined that the continued operation of these fisheries during the reinitiation period is not likely to jeopardize the continued existence of any Atlantic sturgeon DPS. This is

based on the NMFS determination that the number of interactions with Atlantic sturgeon that may occur during this period is low and will only occur for a short period of time. Thus, this is not expected to increase the risk that the fisheries and associated research are jeopardizing the species.

Section 7(d) Considerations
Section 7(d) of the ESA prohibits Federal agencies from making any irreversible or irretrievable commitment of resources with respect to the agency action that would have the effect of foreclosing the formulation or implementation of any reasonable and prudent alternatives at the conclusion of the consultation. This prohibition is in force until the requirements of section 7(a)(2) have been satisfied. Section 7(d) does not prohibit all aspects of an agency action from proceeding during consultation; non-jeopardizing activities may proceed as long as their implementation would not violate section 7(d).

NMFS is not expending, and does not have to expend, any financial resources, enter into any binding agreements or commit other resources in order to allow these fisheries to continue to operate during the reinitiation period. The fisheries under consideration will continue to operate under their respective FMPs unless NMFS takes action under the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) to stop them or modify the operation in some manner. FMPs and their implementing regulations are always subject to future changes. NMFS has discretion to amend its Magnuson-Stevens Act and ESA regulations and may do so at any time subject to the Administrative Procedure Act and other applicable laws. Further, commitments of industry resources during the reinitiation period are not irreversible or irretrievable since NMFS retains the legal authority to restrict activities of fishery participants should new information require modification of current restrictions.

Conclusions
Based on this analysis, we have determined that reinitiation of consultation on the seven subject fisheries is required and that allowing these fisheries to continue to operate during the reinitiation period will not violate section 7(a)(2) or 7(d). This 7(a)(2) determination is only applicable during the reinitiation period (*i.e.*, until approximately Winter/Spring, 2013) and does not address the agency's longer term obligation to ensure the action is not likely to jeopardize the continued existence of listed species.

ec: F/NER2 – Darcy
F/NER3 – Damon-Randall, Murray-Brown, Crocker, Barnhill, Marrone, Madley, Kelliher
GCNE – Collins

File Code: H:\Section 7 Team\Section 7\Biological Opinion Documents\Spring 2012 Reinitiations\Batched BiOp